



सत्यमेव जयते

## राज्य स्तरीय पर्यावरण समाघात निर्धारण प्राधिकरण, झारखण्ड

State Level Environment Impact Assessment Authority, Jharkhand

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पत्रांक:- 282

दिनांक:- 16/10/2024

प्रेषक:

सदस्य सचिव,  
राज्य स्तरीय पर्यावरण समाघात निर्धारण  
प्राधिकरण (SEIAA), झारखण्ड।

सेवा में,

उपायुक्त,  
जिला : जामताड़ा  
झारखण्ड।

विषय : जामताड़ा जिला का पत्थर खनिज से संबंधित DSR के अनुमोदन के संबंध में।

प्रसंग : आपका कार्यालय का पत्रांक-952/एम0, दि0-29.12.2023।

महाशय,

उपर्युक्त विषयक आपके कार्यालय के प्रासंगिक पत्र दिनांक 29.12.2023 द्वारा जामताड़ा जिला का पत्थर खनिज से संबंधित DSR की एक प्रति अनुमोदन हेतु दिनांक 19.07.2024 को SEIAA कार्यालय में समर्पित किया गया।

तदनुसार SEAC, झारखण्ड की 117वीं बैठक दिनांक 27.09.2024 से दिनांक 01.10.2024 में संबंधित DSR का आकलन किया गया तथा निम्नवत बिन्दुओं पर आपकी सहमति प्राप्त करते हुए DSR अनुमोदन हेतु SEIAA को अनुशंसा भेजा गया :

1. The final DSR had been placed in the public domain for 21 days from the 10.11.2023. As per the Sub Divisional Committee no comments / observations were obtained.
2. The DSR has been prepared as per the format provided in the notification no SO 3611 (E), dated-25.07.2018 issued by MoEF & CC Govt. of India. The DSR submitted has been **prepared** by the Sub-Divisional Committee for final approval. All the aspects of the notification dated 25.07.2018 are incorporated in the DSR and found to be satisfactory

तदालोक में SEIAA, झारखण्ड की 117वीं बैठक दिनांक 15.10.2024 एवं दिनांक 16.10.2024 में विचार किया गया तथा सामुहिक निर्णयोंपरांत जामताड़ा जिला का पत्थर खनिज से संबंधित DSR का अनुमोदन किया गया।



# DISTRICT SURVEY REPORT

OF

**MINOR MINERAL – STONE / EARTH WORK**  
**[OTHER THAN SAND MINING OR RIVER-BED MINING]**

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**JAMTARA DISTRICT OF JHARKHAND STATE**

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As per the Gazette Notification No. - S.O. - 3611 (E), 25<sup>th</sup> July 2018  
by Ministry of Environment Forest & Climate Change, Govt. of India

Prepared by:

**SUB-DIVISIONAL COMMITTEE**  
**JAMTARA DISTRICT, JHARKHAND**



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District Mining Officer  
Jamtara

DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



**Recommended by Sub-Divisional Committee and Deputy Commissioner, Jamtara**

*[Signature]*  
28/12/23

**District Mining Officer  
Jamtara**

*[Signature]*  
28/12/2023

**Assistant Director, Geology  
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**Deputy Commissioner  
Jamtara**

*[Signature]*  
16/10/24

**Member  
State Level Environment Impact  
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Approved by,

*[Signature]*  
16/10/24

**Chairman  
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**SEIAA, Jharkhand**

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**Member Secretary  
State Level Environment  
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Jharkhand**



## PREFACE

The need for District Survey Report (DSR) have been necessitated by Ministry of Environment, Forest and Climate Change (MoEF & CC) vide their Notification No. - 125 (Extraordinary, Part II Section 3, Sub-section ii), S.O. - 141 (E), dated 15<sup>th</sup> January 2016. The notification was addressed to bring certain amendments with respect to the EIA notification 2006 and in order to have a better control over the legislation, District level committees have been introduced in the system. As a part of this notification, preparation of District Survey Report has been emphasized. Subsequently, MoEF & CC has published Notification No. - 3611 (E), dated 25<sup>th</sup> July 2018 regarding inclusion of the format of District Survey Report (DSR) for "Minor minerals other than Sand Mining or River-bed Mining". This DSR has been prepared in conformity with the Notification No. - S.O. - 141 (E), S.O. - 3611 (E) and other Sand mining guidelines published by MoEF & CC time to time as well as the requirement specified in Jharkhand Minor Mineral Concession Rules.

The main purpose of DSR is to identify the mineral potential areas to develop the mining activities along with relevant current geological data of the district where mining can be allowed; and also to distinguish the areas where mining will not be allowed due to proximity to infrastructural structures and installations. The District Survey Report shall guide for systematic and scientific utilization of natural resources, so that present and future generation may be benefitted at large.

Jamtara is new district created by separating from Dumka district. It is bounded by Deoghar district in north, Dumka and West Bengal in the east, Dhanbad and West Bengal in the south and Giridih in the west. It has an area of 1811 km<sup>2</sup> and population of 7,91,042 persons (Census of India, 2011). The district comprises one subdivision (Jamtara) and six development blocks viz. Kundhit, Nala, Jamtara, Narayanpur, Karmatanr and Fatehpur.

The district is located at a lower altitude of Chhotanagpur plateau and its latitude and longitude vary from 24° 08' N, 87° 01' E - 23° 48' N, 86° 53' E (North - South) to 24° 02' N, 86° 28' E - 23° 55' N, 87° 17' E (East - West) respectively. The district lies in Survey of India Toposheets Nos. - 72 L/12, 72L/16, 72 P/4, 73 I/9, 73 I/13, 73M/1.

The history of Jamtara district is inseparable from the history of parent district of Santhal Pargana. Santhal Pargana was created as a separate district in the year 1855 by transferring out portions of Bhagalpur and Birbhum districts. The entire area comprising present divisions of Santhal Pargana, Hazaribag, Munger and Bhagalpur was termed as Jungleterry (Jungle Terai) by the English on assumption of Diwani in 1765.

Jamtara ranks 19<sup>th</sup> in terms of population (7,91,042) and 21<sup>st</sup> in terms of area (1811 km<sup>2</sup>) in the State of Jharkhand. The economy of the district mainly depends on cultivation or related work. More than 64% of the total workers are engaged in Primary sector. Sudrakshipur (Kundhit Block) has the largest area (1109.69 Hectare) and Sarodabarchak (Karmatanr Vidyasagar Block) has the smallest area (1.56 Hectare) among the villages in the district.

The district is mainly drained by the rivers Barakar, Rajiya Joriya, Ajay, Sheela (Shidheshwari), Kurli, Hingli Brahmani, Mayurakshi and their tributaries.

The occurrences of Minor minerals in the district have been established by Department of Mines and Geology, Government of Jharkhand and others in previous instances. It requires further systematic and scientific approach to quantify the resource along with their grade assessment. This report also recommends to undertake detail exploration program to assess the Minor mineral occurrences in the district and should have a proper development and production plan for the specified minerals so as to satisfy the demand and supply gap of Minor minerals in the district.



  
District Mining Officer  
Jamtara



## 1. INTRODUCTION

The District Survey Report of Jamtara District has been prepared as per the guidelines of Ministry of Environment, Forest & Climate Change (MoEF & CC), Government of India vide Notification S.O. - 1533(E) dated 14<sup>th</sup> Sept. 2006 and subsequent MoEF & CC Notification S.O. - 141(E) dated 15<sup>th</sup> Jan. 2016. This report shall guide systematic and scientific utilization of natural resources, so that present and future generation may be benefitted at large. Further, MoEF & CC published a notification S.O. - 3611(E), dated 25<sup>th</sup> July, 2018 and recommended the format for District Survey Report for Minor minerals other than Sand Mining or River-bed Mining.

The Objectives of the District Survey Report are as following:

1. Identification and Quantification of mineral resource and its optimal utilization.
2. To regulate the Minor mineral's mining in the Country, identification of site specific end-use consumers and reduction in demand & supply gaps.
3. Use of information technology (IT) & latest scientific method of mining for surveillance of the Minor mineral's mining at each step.
4. District Survey Report shall enable Environmental Clearance for cluster of Minor mineral. It shall assist concerned Department during post Environmental Clearance Monitoring.
5. To control the instance of illegal mining.
6. To maintain the livelihood of nearby village's peoples.
7. To keep accumulated data records viz. Details of Mineral Resource, Potential area, Lease, Approved Mining Plan, Co-ordinates of a District at one place.
8. To maintain the records of Royalty/Revenue generation.
9. A concise guideline can be framed considering the point discussed in the DSR for Minor mineral's mining in the district.

The District Survey report (DSR) is comprised of secondary data published and endorsed by various Departments and websites about Geology of the area, Mineral resources, Climate, Topography, Landforms, Forest, Rivers, Soil, Agriculture, Road, Transportation, Irrigation etc. Data on lease and mining activities in the district, revenue etc. are collected from concerned District Mining Office.

Details of Minerals/Earth work in Jamtara District:

- 1) **Coal:** Coal is a sedimentary deposit that is easily combustible and mostly made of carbon. Coal is a black or brownish-black substance that contains more than 50% by weight and more than 70% by volume of carbonaceous material (including inherent moisture).  
**Grade:** None Coking.  
**Coal Type:** Anthracite coal  
**Uses:** Power & Steel Sector.
- 2) **Feldspar:** Feldspar is the name given to a group of naturally occurring aluminosilicate minerals containing varying amounts of potassium, sodium, calcium, and/or lithium. The feldspar group of minerals is by far the most abundant group of minerals in the Earth's crust, making up about 50% of all rocks.  
**Grade:** Refractory.  
**Uses:** Refractory, Glass, Abrasive & Ceramic industry.
- 3) **Quartz:** The most common mineral we have is quartz. Oxygen and silicon, the two most plentiful chemical elements on Earth, are combined to form quartz. Tetrahedrons, or three-sided pyramids, are formed when silicon and oxygen atoms come together. Crystals are created by stacking these. Even a tiny crystal requires billions of tetrahedrons to construct.  
**Grade:** Refractory & Ceramic.  
**Uses:** Refractory, Glass, Watch & Ceramic industry.
- 4) **Ordinary Earth:** Ordinary Earth are a type of building material, Roads and other filling. They are generally used to construct walls, pavements and other types of architecture.

- 5) **Soil:** The soils occurring in different landforms have been characterised during soil resource mapping of the state on 1:250,000 scale (Halder et al. 1996) and three soil orders namely Entisols, Inceptisols and Alfisols were observed in Jamtara district.
- 6) **Granite:** Granite is a coarse-grained intrusive igneous rock composed mostly of quartz, alkali feldspar, and plagioclase. It forms from magma with a high content of silica and alkali metal oxides that slowly cools and solidifies underground

### 1.1 Statutory Framework:

The below table has mentioned the requirement of District Survey Report and its year wise modification;

Table 1.1: Requirement of District Survey Report & its year wise modification

Year	Particulars
1994	The Ministry of Environment, Forest & Climate Change (MoEF & CC) published Environmental Impact Assessment Notification 1994 which is only applicable for the Major minerals having mining lease area more than 5 Ha.
2006	In order to cover the Minor minerals also into the preview of EIA, the MoEF & CC issued EIA Notification S.O. - 1533 (E), dated 14 <sup>th</sup> September 2006, made mandatory to obtain Environmental Clearance for both Major & Minor mineral having mining lease area more than 5 Ha.
2012	Further, Hon'ble Supreme Court wide order dated 27 <sup>th</sup> February 2012 in I.A. No. - 12-13 of 2011 in Special Leave Petition (C) No. - 19628-19629 of 2009, in the matter of Deepak Kumar etc. Vs. State of Haryana and Others etc., ordered that "leases of minor minerals including their renewal for an area of less than five hectares be granted by the States/Union Territories only after getting environmental clearance from MoEF & CC"; and Hon'ble National Green Tribunal, order dated 13 <sup>th</sup> January, 2015 in the matter regarding Sand
	mining has directed for making a policy on Environmental Clearance for mining leases in cluster for Minor minerals.
2016	The MoEF & CC in compliance of above Hon'ble Supreme Court's and NGT's order has prepared "Sustainable Sand Mining Guidelines (SSMG), 2016" in consultation with State Governments, detailing the provisions on Environmental Clearance (EC) for cluster, creation of District Environment Impact Assessment Authority, preparation of District Survey Report and for proper monitoring of Minor minerals thereby issued notification dated 15.01.2016 for making certain amendments in the EIA Notification, 2006, and made mandatory to obtain EC for all Minor minerals. Provisions have been made for the preparation of District Survey Report (DSR) of River-bed material and other Minor minerals.
2018	MoEF & CC published a notification S.O. - 3611(E) Dated 25 <sup>th</sup> July 2018 and recommended the format for District Survey Report for Minor minerals other than Sand mining or River-bed mining. The notification stated about the objective of DSR, i.e. "identification of the mineral potential areas to develop the mining activities along with relevant current geological data of the District where mining can be allowed; and also to distinguish the areas where mining will not be allowed due to proximity to infrastructural structures and installations."



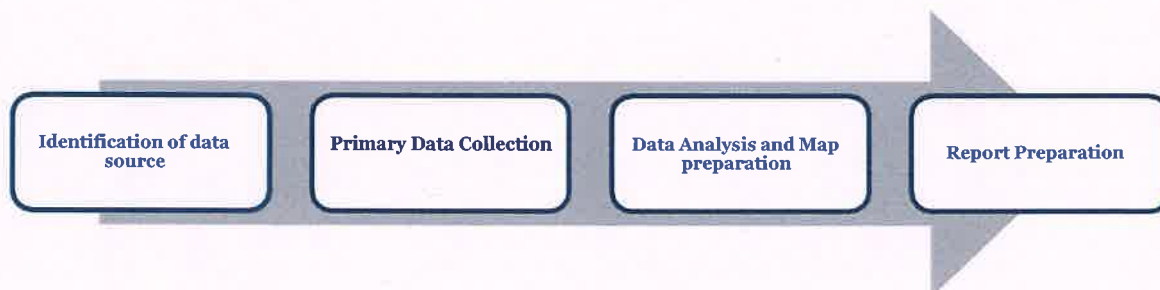
*[Signature]*  
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Jamtara



> The Ministry of Environment Forest & Climate Change formulated the format of District Survey Report for Minor minerals other than Sand Mining or River-bed Mining which focuses on the management of Minor mineral's mining in the country. But in the recent past, it has been observed that apart from management and systematic mining practices there is an urgent need to have a guideline for effective enforcement of regulatory provision and their monitoring. Section 23 C of MMDR 1957 empowered the State Government to make rules for preventing illegal mining, transportation and storage of minerals but in the recent past, it has been observed that there was large number of illegal mining cases in the Country and in some cases, many of the officers lost their lives while executing their duties for curbing illegal mining incidence. The illegal and uncontrolled illegal mining leads to loss of revenue to the State and degradation of the environment.

## 1.2 Methodology of DSR Preparation:

The data related to district profile, geology, mineralization, mining activity are sketchy and disjointed. There are multiple data sources, which are in the public domain, as well as in Government website. To prepare District Survey Report, need to collate all the available databases on these regards. A comprehensive and a meaningful interpretable database created, which would be necessary to demonstrate the district overview. Workflow for the DSR job is as follows.



**Data source Identification:** District Survey Report has been prepared based on the primary data base collected from different sources. The data sources which are used in DSR are mostly based on Government published data or the published report in reputed journal. District profile has been prepared based on the District Census 2021. Potential mineral resources have been described based on GSI or any other Govt. agencies work done. Mining lease details and the revenue generated from Minor minerals has been prepared based on available data from District Mining Office of the district. Satellite image has been used for map preparation related to physiography and land utilization pattern of the district.



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District Mining Officer  
Jamtara



**Primary Data Collection:** The field data collection is an integral part of DSR preparation. This report has been prepared with the holistic approach and data provided by District Mining Office. The DSR with all updated data has been prepared.

**Data Analysis and Map preparation:** Dataset which are captured during the report preparation, are gone through detail analysis work. District Survey Report involves the analytical implication of captured dataset to prepare relevant maps. Methodology adopted for preparation of relevant maps is explained below.

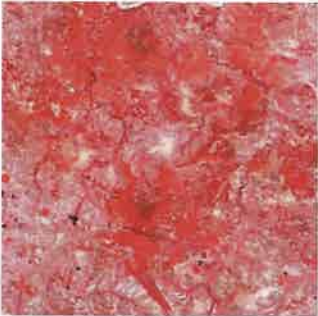
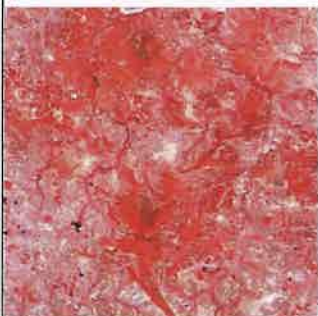
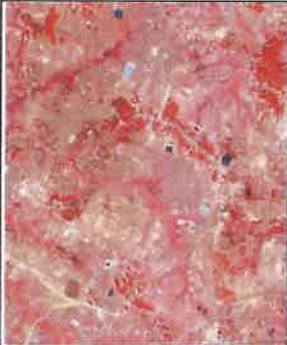
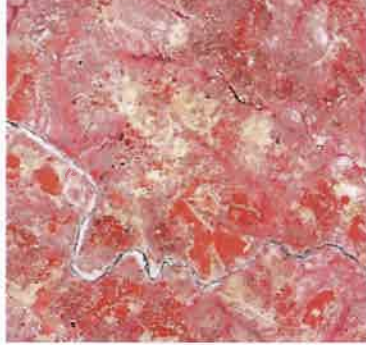
Land Use and Land Cover Map:

Land Use and Land Cover classification is a complex process and requires consideration of many factors. The major steps of image classification may include determination of a suitable classification system via Visual Image Interpretation, selection of training samples, Satellite image (FCC - False Color Composition) pre-processing, selection of suitable classification approaches, post-classification processing, and accuracy assessment.

Here LISS-III Satellite Imagery has been taken for Supervised Classification as supervised classification can be much more accurate than unsupervised classification, but depends heavily on the training sites, the skill of the individual processing the image, and the spectral distinctness of the classes in broader scale.

According to the Visual Image Interpretation (Tone, Texture, Colour etc.) training set of the pixel has been taken.

Table 1.2: Pictorial Descriptions of Physiographic Classification



	
<b>Agricultural Land</b> - Based on their Geometrical shape, Red and Pink color tone, Agricultural Land has been identified.	<b>Vegetation Covered Area</b> - Based on their continuous Red color tone, Vegetation Covered Area has been identified.
	



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<p><b>Agricultural Fallow Land</b> - Based on their Geometrical shape, Light and dark Cyan with light Pink color tone, Agricultural Fallow Land has been identified.</p>	<p><b>Bad Land Topography</b> - Light Yellowish mixed with Cyan color has been identified as Bad Land Topography.</p>	
		
<p><b>Settlement</b> – Area with Cyan color including geometrical shape has been recognized as Settlement Area.</p>	<p><b>Water Bodies</b> – Dark Blue color has been classified as Water Bodies.</p>	

**Geomorphological Map:**

The major steps of preparing Geomorphological Map is identifying features like – Alluvial Fan, Alluvial Plain, Hilly region etc. from Satellite imagery (FCC - False Color Composition) via Visual Image Interpretation and then digitization has been taken into the consideration to prepare map including all the Geomorphological features according to their location.

**Physiographical Map:**

The major step of preparing Physiographical Map is generating contour at a specific interval to show the elevation of the area using CARTOSAT DEM.

**Block Map:**

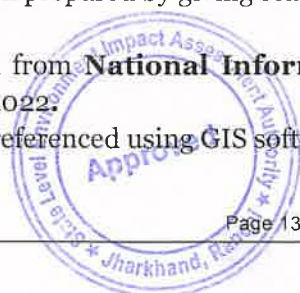
- Raw Data collected from **National Informatics Centre (NIC Website)** during March 2022 and October 2022.
- Data has been geo-referenced using GIS software.
- Digitization of Block boundary, District Boundary, State Boundary, International Boundary, and District Headquarter, sub–district Headquarter, Places, Road, Railway, River, Nala etc.
- Road name, River name, Railway name has been filled in attribute table of the Layers.
- Final layout has been prepared by giving scale, legend, north arrow, etc.

**Transportation Map:**

- Raw Data collected from **National Informatics Centre (NIC Website)** during March 2022 and October 2022.
- Data has been geo-referenced using GIS software.
- Digitization of Block boundary, District Boundary, State Boundary, International Boundary, and District Headquarter, sub–district Headquarter, Places, Road, Railway, River, Nala etc.
- Road name, River name, Railway name has been filled in attribute table of the Layers.
- Final layout has been prepared by giving scale, legend, north arrow, etc.

**Drainage Map:**

- Raw Data collected from **National Informatics Centre (NIC Website)** during March 2022 and October 2022.
- Data has been geo-referenced using GIS software.



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- Block boundary, District Boundary, State Boundary, International Boundary & District Headquarter, sub-district Headquarter, Places, Road, Railway, River, Nala etc.
- Road name, River name, Railway name has been filled in attribute table of the Layers.
- Final layout has been prepared by giving scale, legend, north arrow, etc.

#### Earthquake Map:

- Raw data collected from **Ministry of Earth Science**.
- Data has been geo-referenced using GIS software.
- Digitization of Earthquake zone and superimposed it over Block Boundary.
- Zone name has been filled in attribute table of the Layers.
- Final layout has been prepared by giving scale, legend, north arrow, etc.

#### Soil Map:

- Raw data collected from **National Bureau of Soil Survey and Land Use Planning**.
- Data has been geo-referenced using GIS software.
- Digitization of Soil classification zone and superimposed it over District Boundary.
- Soil classification has been filled in attribute table of the Layers.
- Final layout has been prepared by giving scale, legend, north arrow, etc.

#### Wildlife Sanctuary and National Park Location Map:

- Raw data collected from **ENVIS Centre on Wildlife & Protected Areas** during August 2022.
- Data has been geo-referenced using GIS software.
- Digitization of Wildlife Sanctuary & National park and superimposed it over Block Boundary.
- Wildlife Sanctuary & National Park name has been filled in attribute table of the Layers.
- Final layout has been prepared by giving scale, legend, north arrow, etc.

**Report Preparation:** District Survey Report has been prepared to fulfil the purpose of identification of mining area for Minor mineral and their impact on environment. Report provides details of the mineral potential zones. Assessing mining prospect with respect to Minor minerals, List of Letter of Intent (LoI) incorporated in this report. Report also provides the socio-environmental study for establishing mines of Minor minerals in the district.



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## **2. OVERVIEW OF MINING ACTIVITY IN THE DISRICT**

Jamtara is rich in minerals such as Dolerite, Quartz, Feldspar, Granite etc. Presence of Sandstone is observed in Karmatanr, Vidyasagar and Fatehpur blocks. Jamtara and Narayanpur block are rich in Rajmahal Trap Basalt, Garnet, Biotite Gneiss. Noticeable amount of Sandstone is observed in the southern part of Nala block.

Geologically, Jamtara district is quite monotonous consisting of Granite-Gneiss rocks in most of the area. These basement rocks are traversed by Dolerite dykes and Pegmatites. Therefore, most of the mining activity surrounds Stone & Quartz mining. The mining activity in the district is only restricted to the mining of Minor minerals. i.e Sand, Stone and Brick Clays. There is no any mining lease of Major minerals in the district. At present 13 Nos. of mining leases of Stone are existing which are operational in the district.

- a. Expired Stone Mines Leases (Granite Gneiss) that are present in Jamtara District are 104 Mines.
- b. Expired Sandstone Mines Leases that are present in Jamtara District are 2 Mines.
- c. Expired Quartz & Feldspar Mines Leases that are present in Jamtara District are 2 Mines.
- d. Existing Working Stone Mines (Granite Gneiss) that are present in Jamtara District are 6 Mines.
- e. Existing Non-Working Stone Mines (Granite Gneiss) that are present in Jamtara District is 7 Mines
- f. Existing Brick Earth Mines that are present in Jamtara District are 4 Mines.



  
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**DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING  
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**2.1 Details of Expired Mining Leases of Minor Mineral Stone, Quartz & Feldspar in the District:**

**DETAILS OF EXPIRED MINING LEASES OF MINOR MINERAL STONE, QUARTZ & FELDSPAR IN JAMTARA DISTRICT**

Sl. No.	Name of the Mineral	Name of the Lessee	Address of the Lessee	Area of the Mining Lease (Ha)	Location of the Mining Lease	Period of Mining Lease
1	2	3	4	5	6	7
1	Stone	Shri Hareesh Ansari S/o Sulemaan Ansari	At & P.O. - Sahardal P.S. - Mihijam Dist. - Jamtara	0.40	Mouza - Chandradipa Plot No. - 3238/Part Block - Jamtara	28-07-1987
2	Stone	Shri Sapan Kumar DasS/o Bhawtaran Das	At - Bodama P.O. - Chandradipa P.S. - Mihijam Dist. - Jamtara	1.21	Mouza - Chandradipa Plot No. - 843/Part Block - Jamtara	15-04-1999
3	Stone	Shri Asim Kumar MandalS/o Late Kartik Mandal	At & P.O. - Kelahi P.S. - Mihijam Dist. - Jamtara	0.61	Mouza - Murgatona Plot No. - 2049, 2050 Block - Jamtara	15-06-1993
4	Stone	Smt. Mahima Devi W/o Late Jagdish Mirdha	At - Gawalpipla P.O. - Dakhimbahal P.S. & Dist. - Jamtara	0.79	Mouza - Gawalpipla Plot-506, 507 & 509/P Block - Jamtara	01-08-1994
5	Stone	M/s Sagar Sadhu Proprietor: Shri Damodar Bhattacharya	At - Dadar P.O. - Devjor Dist. - Jamtara	0.81	Mouza - Dadar Plot no. 1138/P Block - Nala	28.05.1995
6	Stone	Shri Shanti Manjhi S/o Shri Basudeo Manjhi	At - Mathura P.O. - Manihari, Bindapathar Dist. - Jamtara	0.40	Mouza - Mathura Plot no. 99/P Block - Nala	26.07.1997
7	Stone	Shri Jawahar Sorens/o Likhham Soren	At - Gawalpipila P.O. - Dakhimbahal Dist. - Jamtara	0.73	Mouza - Gopalpur Plot no. 112/P Block - Nala	10.05.1998
8	Stone	Shri Gobind Tuddu S/o Late Rasik Tuddu	At - Mejhia P.O. & P.S. - Jamtara Dist. - Jamtara	0.61	Mouza - Mejhia Plot No. - 4078/P Block - Jamtara	17.06.1998



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9	Stone	1. Shri Puresh Chandra Choudhary S/o- Late Moti Lal Choudhary 2. Shri Shiromani YadavS/o Brajraj Yadav	1. At - Digharia P.O. - Chapuria P.S. - Bindapathar Dist. - Jamtara 2. At - Janumdi P.O. - Chapuria P.S. - Bindapathar Dist. - Jamtara	1.21	Mouza - Bamankanali Plot No. 1134/P Block - Fatehpur	03.09.1998	02.09.2008
10	Stone	M/s Keshaw Stone Udayog Proprietor: Shri Wakil Hembrom S/o Shri Rasik Hembrom	At - Lokdih (Pahrudih) P.O. - Bewa P.S. - Mihijam Dist. - Jamtara	0.61	Mouza - Lokdih Plot No. - 375/P Block - Jamtara	16.09.1998	15.09.2008
11	Stone	Shri Asit Kumar Mandal S/o Shri Malindra Mandal	At - Sukhjora P.O. - Gundlupahri P.S. & Dist. - Jamtara	0.32	Mouza - Fujjori Plot No. - 2217/P Block - Jamtara	26.09.2000	25.09.2010
12	Stone	Shri Nityanand YadavS/o Shri Soukhi Yadav	At - Palojori P.O. - Chapuria P.S. - Bindapathar Dist. - Jamtara	0.81	Mouza - Bamankanali Plot No. - 117/P Block - Fatehpur	18.11.2000	17.11.2010
13	Stone	Shri Heman Marandi S/o Shri Ranglal Marandi	At - Jiyajori P.O. - Sabardal Mihijam Dist. - Jamtara		Mouza - Sabdaha Plot No. - 117/P Block - Jamtara	14.06.2002	13.06.2012
14	Stone	Shri Shivdhan Hansda S/o Late Jaydeo Hansda	At - Murgatona P.O. - Kewatjali P.S. - Mihijam Dist. - Jamtara	1.21	Mouza - Kelahi Plot No. - 5288/PBlock - Jamtara	14.06.2002	13.06.2012
15	Stone	Shri Sukul Marandi S/o - Late Lakhu Manrandi	At - Bodama P.O. - Chandradipa P.S. - Mihijam Dist. - Jamtara	0.81	Mouza - Chandradipa Plot No. - 3238/Part Block - Jamtara	09.11.2000	08.11.2010
16	Stone	Shri Sukul Marandi S/o Late Lakhu Manrandi	At - Bodama P.O. - Chandradipa P.S. - Mihijam Dist. - Jamtara	1.07	Mouza - Chandradipa Plot No. - 271 Block - Jamtara	10.01.2003	09.01.2013
17	Stone	Shri Premanand Mahito S/o Late Narhari Mahito	At & P.O. - Mohnabank P.S. - Bindapathar Dist. - Jamtara	0.40	Mouza - Kalipahari Plot No. - 367/Part Block - Fatehpur	03.01.2001	02.01.2011

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**DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING  
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18	Stone	Shri Ashok Kumar Sinha S/o Shri Rumi Singh	At - Rananagar P.O. - Kurtha Dist. - Arwal (Bihar)	0.81	Mouza - Banspahari Plot No. - 693/Part Block - Narayanpur	16.12.2000	15.12.2010
19	Stone	Md. Niyamat Ali S/o Haji Abdul Gani	At - Mungiamami P.O. - Koridih P.S. - Narayanpur Dist. - Jamtara	0.81	Mouza - Mirilpahari Plot No. - 5/P Block - Narayanpur	02.02.2001	01.02.2011
20	Stone	Shri Rajendra Mandal S/o Shri Jhumar Mandal	At - Muchiyadh P.O. - Bankudih P.S. - Narayanpur Dist. - Jamtara	1.62	Mouza - Muchiyadh Plot No. - 1435/P Block - Narayanpur	08.11.2000	07.11.2010
21	Stone	Shri Sapan Kumar Yadav S/o Shri Anand Mahito	At - Barmasia P.O. - Tilaki P.S. - Bindapathar Dist. - Jamtara	0.81	Mouza - Bandarpahari Plot No. - 90/Part Block - Fatehpur	05.04.2002	04.04.2012
22	Stone	Shri Ganesh Hembrom S/o Shri Sukhu Hembrom	At - Harinarayanpur P.O. - Kundahit Dist. - Jamtara	0.47	Mouza - Soraki Plot No. - 653/Part Block - Kundahit	12.05.2001	11.05.2011
23	Stone	1. Shri Janardhan Mahto S/o Shri Yudhisthir Mahto 2. Shri Gopal Chandra Choudhary S/o Late Moti Lal Choudhary	1. At - Muram P.O. - Gubiyajori P.S. - Bindapathar Dist. - Jamtara 2. At - Digharia P.O. - Chapuria P.S. - Bindapathar Dist. - Jamtara	0.61	Mouza - Puttujore Plot No. - 2/Part Block - Fatehpur	01.02.2001	31.01.2011
24	Stone	M/s. Jharkhand Stone Udyog Proprietor: Md. Kamruddin Ansari S/o Shri Sobrati Miya	At - Muchiyadh P.O. - Bankudih Narayanpur Dist. - Jamtara	0.81	Mouza - Muchiyadh Plot No. - 1435/Part Block - Narayanpur	11.01.2003	10.01.2013
25	Stone	M/s. Bananchal Stone Udyog Proprietor: Shri Madan Pawaria S/o Late Shital Pawaria	At - Bewa (Jojodih) P.O. - Bewa P.S. - Mihijam Dist. - Jamtara	0.81	Mouza - Ladna Plot No. - 3202/Part Block - Jamtara	22.11.2002	21.11.2012
26	Stone	Shri Bijay Bahadur Singh S/o Late Duberi Singh	At - Rajbari P.S. - Mihijam Dist. - Jamtara	1.21	Mouza - Ladna Plot No. - 1424/Part Block - Jamtara	25.02.2003	24.02.2013



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27	Stone	Shri Dubraj Mandal S/o Shri Chhotelal Mandal	At - Supaidih P.S. & Dist. - Jamtara	2.02	Mouza - Banspahari Plot No. - 693/Part Block - Narayanpur	25.02.2003	24.02.2013
28	Stone	Sheikh Akbar S/o Sheikh Nijam	At - Tiliabad P.O. & P.S. - Bindapathar Dist. - Jamtara	2.02	Mouza - Ladna Plot No. - 4253/Part Block - Jamtara	25.02.2003	24.02.2013
29	Stone	Shri Henneswar Marandi S/o Shri Bipin Marandi	At - Bhandaro P.O. - Dhobna P.S. & Dist. - Jamtara	1.72	Mouza - Bhandaro Plot No. - 1294/Part Block - Jamtara	03.01.2003	02.01.2013
30	Stone	Shri Maheshwar Prasad Yadav S/o Shri Dulal Yadav	At - Haripur P.O. - Chapuriya P.S. - Bindapathar Dist. - Jamtara	0.83	Mouza - Dighariya Plot No. - 694/Part Block - Fatehpur	11.01.2003	10.01.2013
31	Stone	Shri Bishu Kumar Mahto S/o - Shri Narayan Mahto	At - Patharijuriya P.O. - Kariya P.S. - Bindapathar Dist. - Jamtara	0.87	Mouza - Bandardiha Plot No. - 1393 Block - Nala	27.02.2003	26.02.2013
32	Stone	Shri Gour Chandra Ghosh S/o Shri Babul Ghosh	At - Dewalkunda P.O. - Saguriya P.S. - Nala Dist. -Jamtara	0.85	Mouza - Kumbediya Plot No. - 279/29(P) Block - Jamtara	11.01.2003	10.01.2013
33	Stone	Shri Upendra Nath Duttia S/o Shri Shaktipad Dutta	At & P.O. - Panjaniya P.S. - Mihijam Dist. - Jamtara	1.01	Mouza - Saharjori Plot No. - 1757 Block - Jamtara	05.11.2002	04.11.2012
34	Stone	Shri Abhay Kumar Singh S/o Shri Ramadhin Singh	At - Bando P.O. & P.S. - Bindapathar Dist. - Jamtara	1.21	Mouza - Dhobna (Kalajhariya) Plot No. - 1757 Block - Jamtara	01.03.2003	28.02.2013
35	Stone	Shri Sudip Kumar Lachhiramka S/o Shri Pareesh Ram Lachhiramka	At & P.S. - Jamtara P.O. & Dist. - Jamtara	1.62	Mouza - Satsal Plot No. - 1413, 1414, 1420 Block - Jamtara	08.01.2003	07.01.2013
36	Stone	Shri Arjun Kol S/o Shri Kalo Kol	At - Mohulbona P.O. & P.S. - Bindapathar Dist. - Jamtara	0.81	Mouza - Salpatra Plot No. - 48/Part Block - Nala	03.06.2003	02.06.2013
37	Stone	Shri Prakash Kr. Gutgiya, S/o Shri Prabhu Dayal Gutgiya	At - Sitakata P.O. & P.S. - Karmatanr Dist. - Jamtara	1.78	Mouza - Kenduatand Plot No. - 404 Block - Karmatanr	06.06.2003	05.06.2013



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38	Stone	1. Shri Rajeev Kumar Verma S/o Late Satrudhan Prasad 2. Shri Rajendra Raout S/o Shri Baijnath Raout	At & P.O. - Jamtara Dist. - Jamtara	0.99	Mouza - Piplatand Plot No. - 1191/Part Block - Narayanpur	06.06.2003	05.06.2013
39	Stone	M/s Bhagwati Enterprises Partner 1: Shri Ashok Kumar Singh S/o Shri Lal Mohan Singh Partner 2: Shri Lalit Poddar S/o Shri Radhe Shyam Poddar	At & P.O. - Karmatamr Dist. - Jamtara	0.81	Mouza - Piplatand Plot No. - 848/Part Block - Karmatamr	05.06.2003	04.06.2013
40	Stone	Md. Niyamat Ali S/o Haji Abdull gani	At - Fuljharia & Murtipahari	1.62	Mouza - Piplatand Plot No. - 848/Part Block - Narayanpur	06.06.2003	05.04.2013
41	Stone	Shri Arun Chandra Choudhary S/o Late Motilal Choudhary	At - Dighariya P.O. - Chapuria P.S. - Bindapathar Dist. - Jamtara	0.60	Mouza - Bamunkalnali Plot No. - 209 Block - Fatehpur	05.02.2004	04.02.2014
42	Stone	Shri Sanjeev Kumar Singh S/o Shri Yogendra Prasad Singh	At - Krishna Nagar Ward No. - 3 P.O. & P.S. - Mihijam Dist. - Jamtara	1.21	Mouza - Siidhbari Plot No. - 1724/Part Block - Jamtara	23.05.2004	22.05.2014
43	Stone	Smt. Rina Ghosh W/o - Shri Ajay Kumar Mandal	At - Mathura P.O. - Manihari, Bindapathar Dist. - Jamtara	0.81	Mouza - Brindaban Plot No. - 1111/Part Block - Nala	23.05.2004	22.05.2014
44	Stone	Shri Uttam Kumar Mahto S/o Shri Sadhu Charan Mahto	At - Mahajori P.O. - Mohabank P.S. - Bindapathar Dist. - Jamtara	1.62	Mouza - Mahajori Plot No. - 342/Part Block - Fatehpur	23.05.2004	22.05.2014
45	Stone	Shri Parimal Nayak S/o - Late Baijnath Nayak	At & P.O. - Amba P.S. - Kundahit Dist. - Jamtara	0.35	Mouza - Mahajori Plot No. - 342/Part Block - Kundahit	23.05.2004	22.05.2014
46	Stone	Shri Lalkhan Ray S/o Late Kapil Ray	At - Bodhbhandh P.O. - Dhakhinabahal Dist. - Jamtara		Mouza - Tilabani Plot No. - 1026	27.07.2004	26.07.2014



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47	Stone	1. Shri Tapan Kumar Yadav S/o Shri Anand Mahto 2. Shri Pawan Kumar Dokania S/o Late Meghraj Dokania	1. At - Barmasia P.O. - Tilaki P.S. - Bindapathar Dist. - Jamtara 2. At - Nala Dist. - Jamtara	1.21	Mouza - Bandarpahari Plot No. - 92/Part Block - Fatehpur	27.07.2004	26.07.2014
48	Stone	M/s Nilkanth Stone Works Partner 1: Shri Narayan Chandra Mahto S/o Shri Narhari Mahto Partner 2: Shri Vijay Kumar Mahto S/o Shri Darish Chandra Mahto Partner 3: Shri Gunadhar Mahto S/o Late Sudharshan Mahto	1. At & P.O. - Mohanabank P.S. - Bindapathar Dist. - Jamtara, 2. At - Barmasia P.O. - Tilaki P.S. - Bindapathar Dist. - Jamtara 3. At - Barmasia P.O. - Tilaki P.S. - Bindapathar Dist. - Jamtara	0.70	Mouza - Bandarpahari Plot No. - 92/Part Block - Fatehpur	27.07.2004	26.07.2014
49	Stone	M/s Maa Tara Stones Proprietor: Shri Dilip Kr. Dokaniya	At & P.O. - Nala Dist. - Jamtara	0.81	Mouza - Kichakuri Plot No. - 223/Part Block - Nala	16.12.2004	15.12.2014
50	Stone	Shri Anup Kumar Yadav S/o Shri Baghamber Yadav	At - Baghmara P.O. - Mohanabank Dist. - Jamtara	1.01	Mouza - Kalipahari Plot No. - 50/Part Block - Fatehpur	16.12.2004	15.12.2014
51	Stone	Shri Saurav Kr. Gutgutiya S/o Shri Prakash Kr. Gutgutiya	At & P.O. - Karmatanr Dist. - Jamtara	3.64	Mouza - Nayadih Plot No. - 210/P Anchal - Narayanpur	16.12.2004	15.12.2014
52	Stone	M/s Shiv Shankar Black Stone Quarry Partner 1: Shri Manoranjan Pandit S/o Shri Purnendu Pandit Partner 2: Shri Babbam Mahto S/o Shri Anand Mahto	1. At - Bardehi P.O. & P.S. - Bindapathar Dist. - Jamtara 2. At - Khaira P.O. - Geria P.S. - Bindapathar Dist. - Jamtara	1.21	Mouza - Bardehi Plot No. - 693/P Anchal - Fatehpur	16.12.2004	15.12.2014
53	Stone	1. Shri Tapan Kr. Dutta S/o Shri Srishtipad Dutta 2. Shri Gour Chandra Yadav S/o Late Hakim Chandra Yadav	1. At & P.O. - Tasariya Dist. - Dumka 2. At - Jaridih, Bagdaham Dist. - Deoghar	0.61	Mouza - Charkadah Plot No. - 752/P Anchal - Nala	30.03.2005	29.03.2015





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54	Stone	Shri Ajit Kumar Majhi	At - Dadar P.O. - Devjor P.S. - Nala Dist. - Jamtara	0.40	Mouza - Dadar Plot no. - 1753/Part Anchal - Nala	18.07.2005	17.07.2015
55	Stone	Shri Shyamal Murmu S/o Late Nunnaa Murmu	At - Bhandaro P.O. - Dhobna P.S. & Dist. - Jamtara	2.02	Mouza - Bhandaro Plot no. - 1291/Part Anchal - Jamtara	05.10.2005	04.10.2015
56	Stone	Shri Prabhsh Hembrom S/o Shri Pradhan Hembrom 2. Shri Sanjay Kumar Yadav S/o Shri Anand Mahto	At - Lakhiyabad P.O. & P.S. - Bindapathar Dist. - Jamtara 2. At - Barmasia P.O. - Tilaki P.S. - Bindapatjar Dist. - Jamtara	1.21	Mouza - Bandarapahari Plot No. - 92/Part Block - Fathepur	26.08.2006	25.08.2011
57	Stone	Shri Nawa Kumar Mandai S/o Shri Funital Mandal	At - Pindargaria P.O. - Manihari P.S. - Bindapathar Dist. - Jamtara	0.81	Mouza - Karjuri Plot No. - 3016, 3041/Part Block - Nala	26.08.2006	25.08.2011
58	Stone	Shri Ishwar Hembrom S/o Late Govind Hembrom	At - Pahargoura P.O. - Chapuria P.S. - Bindapathar Dist. - Jamtara	0.80	Mouza - Pahargoura Plot No. - 2387 Block - Nala	25.08.2006	24.08.2011
59	Stone	1. Shri Dayamay Bhattacharya & Others S/o Late Dharmadas Bhattacharya 2. Shri Bipendra Nath Das S/o Shri Kantipad Das 3. Shri Sukhen Sadhu S/o Shri Sagar Sadhu	1. At - Siyarkatiya Nala Dist. - Jamtara 2. At - Kewaljuria P.O. - Devjor P.S. - Nala Dist. -Jamtara 3. At - Dadar P.O. - Devjor P.S. - Nala Dist. -Jamtara	1.01	Mouza - Dadar Plot No. - 994/PartAnchal -Nala	14.09.2006	13.09.2016
60	Stone	Md. Azad Ansari S/o Alim Miya	At - Dumdumi P.O. - Borwa P.S. - Gobindpur Dist. - Dhanbad	1.02	Mouza - Kusiyara Plot No. - 3134/P Anchal - Jamtara	14.09.2006	13.09.2016



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61	Stone	Shri Billawa Mangal Das S/o Late Guhiram Das	At - Bodma P.O. - Chandradipa Dist. - Jamtara	1.01	Mouza - Kelahi Plot No. - 5288/P Anchal - Jamtara	14.09.2006	13.09.2016
62	Stone	Shri Nawik Mandal S/o Late Kartik Mandal	At & P.O. - Kelahi Dist. - Jamtara	1.42	Mouza - Kelahi Plot No. - 5288/P Anchal - Jamtara	02-11-2006	01-11-2016
63	Stone	M/s Dunga Stone Partner 1: Shri Tripurari Malho Partner 2: Mursalin Ali S/o Md. Mouiddin Ali	1. At & P.O. - Mohnabank P.S. - Bindapathar Dist. - Jamtara 2. At Bamandiha P.O. - Tesjuria P.S. - Nala Dist. - Jamtara	0.81	Mouza - Chunkadar Plot No. - 1434/Part Anchal - Nala	02-11-2006	01-11-2016
64	Stone	M/s D.V. Black Stone Proprietor: Sri Deepak Kr. Sadhu	At - Late Narayan Chand Sadhu Dadar, Nala Dist. - Jamtara	0.81	Mouza - Dadar Plot No. - 1753/P Anchal - Nala	02-11-2006	01-11-2016
65	Stone	Shri Jugendra Hembrom S/o Late Mahan Hembrom	At - Bhogikatta P.O. - Genia, Dist. - Jamtara	0.59	Mouza - Dhobna Urif Kalajhariya Plot No. - 100/P Anchal - Nala	20-12-2006	19-12-2016
66	Stone	Smt. Sarobi Mandal W/o Shri Asit Kr. Mandal	At - Sukhjora P.O. - Gundlipahari Dist. - Jamtara	3.28	Mouza - Fuljori Plot No. - 2217/P Anchal - Narayanpur	15-02-2007	14-02-2017
67	Stone	Md. Akhtar Hussain S/o Haji Abdul Gani	At - Mongiyamarni P.O. - Koridih, Narayanpur Dist. - Jamtara	4.86	Mouza - Nayadh Plot No. - 210/P Anchal - Narayanpur	26-07-2007	25-07-2017
68	Stone	Shri Haresh Kumar Gutgutiya S/o Shri Prakash Kr. Gutgutiya	At & P.O. - Karmatanr Dist. - Jamtara	0.81	Mouza - Banspahari Plot No. - 693/P Anchal - Narayanpur	28-12-2007	27-12-2017
69	Stone	Smt. Seema Bhattacharya W/o Shri Damodar Bhattacharya	At - Siyarketiya P.O. - Nala Dist. - Jamtara	1.20	Mouza - Siyarketiya Plot No. - 921 Anchal - Nala	28-12-2007	27-12-2017
70	Stone	M/s Jharkhand Stone Udyog Partners: Md. Kamruddin Ansari & Others	At - Muchiyadh P.O. - Bankudih Narayanpur Dist. - Jamtara	0.61	Mouza - Muchiyadh Plot No. - 1435/P Anchal - Narayanpur	28-12-2007	27-12-2017



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**DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING  
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71	Stone	1. M/d. Asgar Ansuri S/o Late Isaka Miya 2. Shri Chand Soren	Both Add. - Chirudih P.O. - Bankudih Dist. - Jamtara	1.01	Mouza - Gundlipahri Plot No. - 639 Anchal - Narayanpur	28-12-2007	27-12-2017
72	Stone	M/s Bhole Nath Stone Quarry Partners: Shri Satyanarayan Yadav & Others S/o Shri Anand Yadav	At - Khaira P.O. - Geniya Dist. - Jamtara	2.55	Mouza - Bandehi Plot No. - 01/P Anchal - Nala	26-07-2008	25-07-2018
73	Stone	Shri Rameshwar Yadav S/o Late Hira Lal Mahito 2. Shri Anirudh Tiwari S/o Late Ganesh Tiwari	At - Devipur P.O. - Pattajoria Dist. - Jamtara	0.81	Mouza - Bamunkanali Plot No. - 1134/P Anchal - Nala	14-04-2008	13-04-2018
74	Stone	Shri Sanjeet Das S/o Late Moti Lal Das	At - Kaysthpura P.O. & Dist. - Jamtara	1.62	Mouza - Kusyara Plot No. - 3134/P Anchal - Jamtara	14-07-2008	13-07-2018
75	Stone	Shri Sanjeev Kumar Mishra S/o Shri Niwas Chandra Mishra	At - Kumardih P.O. - Chapuria Dist. - Deoghar	0.61	Mouza - Bamunkanali Plot No. - 1134/P Anchal - Nala	14-07-2008	13-07-2018
76	Stone	M/s Shyam Stone Partners: Shri Saurav Kumar Gutgutia & Shri Harsh Kumar Gutgutia S/o Shri Prakash Kumar Gutgutia	At - Sitakata P.O. & P.S. - Karmatanr Dist. - Jamtara	0.81	Mouza - Banspahari Plot No. - 693/Part Anchal - Narayanpur	14-07-2008	13-07-2018
77	Stone	Shri Anup Kumar Mandal S/o Shri Kailash Mandal	At & P.O. - Kelahi P.S. - Mihijam Dist. - Jamtara	1.21	Mouza - Kelahi Plot No. - 5288/Part Anchal - Jamtara	26-05-2008	25-05-2018
78	Stone	M/s Maa Anapurna Stone Proprietor: Shri Ganesh Hembrom	At - Harinarayanpur P.O. - Baragoljor P.S. - Kundahit Dist. - Jamtara	1.14	Mouza - Kusrupur Plot No. - 4/399 Anchal - Kundahit	11-10-2008	10-10-2018
79	Stone	Smt. Tarulata Marandi W/o Shri Ramlal Tuddu	At - Siwlibari P.O. - Kelahi, Mihijam Dist. - Jamtara	1.21	Mouza - Kelahi Plot No. - 5288/P Anchal - Jamtara	20-10-2008	19-10-2018
80	Stone	Shri Rabin Singh S/o Shri Pitamber Singh	At - Punsiyam P.O. & P.S. - Bindapather Dist. - Jamtara	0.61	Mouza - Punsiya Plot No. - 288/P Anchal - Nala	23-08-2008	22-08-2018



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81	Stone	Shri Sunil Kumar Mahato S/o Shri Mathur Mahato	At - Kali Mandir, Aambaga P.O. - Mihijam Dist. - Jamtara	1.01	Mouza - Kelahi Plot No. - 5288/P Anchal - Jamtara	03-12-2008	02-12-2018
82	Stone	Md. Atiqur Rahman S/o Md. Sataur Rahman	At - Jamtara Road P.O. & P.S. - Mihijam Dist. - Jamtara	2.02	Mouza - Kelahi Plot No. - 5288/P Anchal - Jamtara	23-12-2008	22-12-2018
83	Stone	Shri Laxman Dubey & Others S/o Shri Nilkanth Dubey	At & P.O. - Kukraha, Chitra Dist. - Deoghar	0.61	Mouza - Digharia Plot No. - 694/Part Anchal - Nala	22-12-2008	21-12-2018
84	Sandstone	M/s Diversified Vyapar Ltd. Proprietor: Shri Bir Kumar Agrawal	At - Shirampur Road Dhandhra Dist. - Jamtara	4.45	Mouza - Nawadih Plot No. - 223/1009/P, 575/P, 224 & 223 Anchal - Jamtara	04-02-2009	03-02-2019
85	Sandstone	M/s Diversified Vyapar Ltd. Proprietor: Shri Bir Kumar Agrawal	At - Shirampur Road Dhandhra Dist. - Jamtara	2.83	Mouza - Tinghara Plot No. - 249/P Anchal - Nala	04-02-2009	03-02-2019
86	Stone	M/s Raj Stone Proprietor: Shri Anand Raj S/o Shri Sitomani Yadav	At - Janumdi P.O. - Chapuria Dist. - Jamtara	0.40	Mouza - Manjhaladih Plot No. - 504 Anchhal - Nala	04-02-2009	03-02-2019
87	Stone	1. Shri Tapan Kr. Jha S/o Late Kashimath Jha 2. Shri Bablu Raut S/o Shri Jay Kumar Raut	Both Add. - Bauripara Dist. - Jamtara	1.05	Mouza - Dhobna Urf Kalajhariya Plot No. - 100/Part Anchal - Nala	03-09-2010	02-09-2020
88	Stone	M/s Express Infratech Ltd. Director: Shri Pankaj Das S/o Shri Manikant Das	A. J. C. Bose Road Karami Stategrd Floor Sheet No. - 109A Kolkata - 700017	4.84	Mouza - Chandradipa Plot No. - 636 to 639, 647, 1146 to 1149 & 1151 to 1154 Anchal - Jamtara	19-10-2010	18-10-2020
89	Stone	Smt. Janki Devi W/o Shri Gopal Pandit	At - Udalbani P.O. - Dhandhara P.S. & Dist. - Jamtara	2.02	Mouza - Udalbani Plot No. - 1091/P Anchal - Jamtara	05-01-2011	04-01-2021
90	Stone	M/s Maa Chanchala Stone Works Partners: Shri Nitai Gorai and Others S/o Shri Gokul Gorai	At - Kuchakuri P.O. - Sitamuri Dist. - Jamtara	1.62	Mouza - Kichakuri Plot No. - Anchal - Nala	23-02-2011	22-02-2021



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**DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING  
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91	Stone	M/s Devendra Stone Works Proprietor: Shri Wakil Hembrom S/o Sri Rasik Hembrom	At - Lokdih (Pahmdih) P.O. - Bewa P.S. - Mihijam Dist. - Jamtara	0.36	Mouza - Lokdih (Pahrudih) Plot No. - 362 to 366/P Anchal - Jamtara	05-08-2011	04-08-2021
92	Stone	Shri Sadhan Mandal S/o Shri Magaram Mandal	At. & P.O. - Dhobna P.S. & Dist. - Jamtara	0.81	Mouza - Dhobna, Plot No. - 2513/P Anchal - Jamtara	17-06-2011	16-06-2021
93	Stone	M/s Star Stone Proprietor: Shri Yasur Nawaz S/o Md. Nausad Alam	At - Jamtara Road Mihijam P.O. & P.S. - Mihijam Dist. - Jamtara	0.49	Mouza - Kelahi Plot No. - 5288/PAnchal - Jamtara	17-08-2011	16-08-2021
94	Stone	Shri Maheshwar Prasad YadavS/o Shri Lakhi Narayan Yadav	At - Harinadah P.O. - Chapuriya Dist. - Jamtara	0.61	Mouza - Digharia Plot No. - 694/P Anchal - Nala	20-07-2011	19-07-2021
95	Stone	Shri Shekhar Kumar SinghS/o Shri Ramdeo Ray	At - Kangoi P.O. & P.S. - Mihijam Dist. - Jamtara	0.55	Mouza - Kelahi Plot No. - 5288/P Anchal - Jamtara	20-07-2011	19-07-2021
96	Stone	Smt. Sunita Devi BhandariW/o Shri Vijay Bhandari	At - Kangoi P.O. & P.S. - Mihijam Dist. - Jamtara	0.61	Mouza - Kelahi Plot No. - 5288/P Anchal - Jamtara	20-07-2011	19-07-2021
97	Stone	1. Shri Mukesh Choudhary 2. Shri Vishal Kumar Jha	1. At- Kangoi P.O. & P.S. - Mihijam Dist. - Jamtara 2. At - New Town, Jamtara	0.55	Mouza - Kelahi Plot No. - 5288/PAnchal - Jamtara	20-07-2011	19-07-2021
98	Stone	Shri Hari Mohan Mishra S/o - Late Madhu Mangal Mishra	At - Court Road Prem DhamDist. - Jamtara	3.64	Mouza - Digharia Plot No. - 694/Part & 831/Part Anchal - Nala	08-08-2011	07-08-2021
99	Stone	Shri Asit Kumar Mandal S/o Shri Mahindra Mandal	At - Sukhjora P.O. - Gundlipahri P.S. & Dist. - Jamtara	3.04	Mouza - Phuljori Plot No. - 2217/P Anchal - Narayanpur	05-03-2011	04-03-2021
100	Stone	Shri Chandrashekhar Singh S/o Late Ravi Shanker Singh	At & P.O. - Babhangawan P.S. - Sarath Dist. - Deoghar	1.11	Mouza - Dhobna, Plot No. - 2513/P Anchal - Jamtara	30-08-2011	29-08-2021
101	Stone	M/s Mahabir Minerals Partner:L: Shri Manohar Rai	1. At - Near S.P.Kothi RoadDist. - Jamtara	1.01	Mouza - Banspahari Plot No. - 353/P Anchal - Narayanpur	05-09-2011	04-09-2021



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		S/o Sri Kangros Rai Partner: 2: Shri Saurav Kr. Gutgutiya S/o Shri Prakash Kr. Gutgutiya	2. At & P.O. - Karmatnar Dist. - Jamtara			
102	Stone	Shri Ankit Lachhramka S/o Late Ashok Lachhramka	At - Ushagram P.O. & P.S. - Asansol Dist. - Paschim Bardhaman (W.B.)	0.88	Mouza - Gawalpipla Plot No. - 507/P Anchal - Jamtara	23-09-2011 22-09-2021
103	Stone	M/s Laxmi Enterprises Proprietor: Shri Kishor Mandal S/o Shri Rajendra Mandal	At - Karon Road Karmatnar Dist. - Jamtara	0.51	Mouza - Fofnad Plot No. - 157/p, 158, 159, 160 Anchal - Karmatnar	27-12-2011 26-12-2021
104	Stone	Shri Dinesh Chand Mandal S/o Shri Rasraj Mandal	At & P.O. - Kelahi, Mihijam Dist. - Jamtara	0.49	Mouza - Murgatona Plot No. - 2046 & 2047 Anchal - Jamtara	27-12-2011 26-12-2021
105	Stone	M/s G.K.C. Project Ltd. Authorized Signatory: Shri Ankush Reddy S/o Shri Sidda Reddy	At - Islampur P.O. & P.S. - Baswa Kalyan Dist. - Bidar (Karnatak)	2.39	Mouza - Piplatand Plot No. - 262 to 264 & 271, 282, 265 to 277 Anchal - Narayanpur	09-12-2011 08-12-2021
106	Stone	M/s Mahaprabhu Stone Mines Proprietor: Shri Nimai Chand Ghosh S/o Shri Vijay Pad Ghosh	At - Dalabar P.O. - Nala Dist. - Jamtara	0.61	Mouza - Kewajuria Plot No. - 70 Anchal - Nala	21-05-2012 20-05-2022
107	Quartz & Feldspar	Shri Jayant Bhattacharya S/o Late Anand Gopal Bhattacharya	At - Puratngram P.O. - Mohammad Bazar Siuri Dist. - Bhirkhum (West Bengal)	2.21	Mouja - Jamkanali Plot No. - 525, 526, 530 & 531 Block - Nala	24-10-2000 23-10-2020
108	Quartz & Feldspar	Shri Umesh Singh S/o Late Gopal Singh	At - Sagarbhanga Colony Dist. - Bardwan (West Bengal)	2.02	Mouja - Bamanbhui Plot No. - 77 Block - Nala	18-12-2002 17-12-2022



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### 3. GENERAL PROFILE OF THE DISTRICT

#### 3.1 General Information:

Jamtara is new district created by separating from Dumka district. It is bounded by Deoghar district in north, Dumka and West Bengal in the east, Dhanbad and West Bengal in the south and Giridih in the west. It has an area of 1811 km<sup>2</sup> and population of 7,91,042 persons (Census of India, 2011). The district comprises one subdivision (Jamtara) and six development blocks viz. Kundhit, Nala, Jamtara, Narayanpur, Karmatanr and Fatehpur.

The district is located at a lower altitude of Chhotanagpur plateau and its latitude and longitude vary from 24° 08' N, 87° 01' E - 23° 48' N, 86° 53' S (North-South) to 24° 02' N, 86° 28' E - 23° 55' N, 87° 17' E (East-West) respectively. The district lies in Survey of India Toposheets Nos. - 72 L/12, 72L/16, 72 P/4, 73 I/9, 73 I/13, 73M/1.

The history of Jamtara district is inseparable from the history of parent district of Santhal Pargana. Santhal Pargana was created as a separate district in the year 1855 by transferring out portions of Bhagalpur and Birbhum districts. The entire area comprising present divisions of Santhal Pargana, Hazaribag, Munger and Bhagalpur was termed as Jungleterry (Jungle Terai) by the English on assumption of Diwani in 1765.

Jamtara ranks 19<sup>th</sup> in terms of population (7,91,042) and 21<sup>st</sup> in terms of area (1811 km<sup>2</sup>) in the State of Jharkhand.

The economy of the district mainly depends on cultivation or related work. More than 64% of the total workers are engaged in Primary sector.

Sudrakshipur (Kundhit Block) has the largest area (1109.69 Hectare) and Sarodabarchak (Karmatanr Vidyasagar Block) has the smallest area (1.56 Hectare) among the villages in the district.

The district is mainly drained by the rivers Barakar, Rajiya Joriya, Ajay, Sheela (Shiddheshwari), Kurli, Hingli Brahmani, Mayurakshi and their tributaries.

<b>EAST</b>	Dumka & West Bengal
<b>WEST</b>	Giridih District
<b>NORTH</b>	Deoghar District
<b>SOUTH</b>	Dhanbad & West Bengal

Table 3.1: Administrative Set up of the Jamtara District

Jamtara town is the Division headquarter of Jamtara itself. For administrative purpose the district has been divided into 1 sub-division and 06 nos. of Blocks/Tehsils as follows: -

#### Sub-Division & Blocks

- **Sub-Division:** 1 No.
- 1. Jamtara
- **Blocks/Tehsil:** 06 Nos.
- 1. Fatehpur
- 2. Jamtara
- 3. Karmatanr
- 4. Kundhit
- 5. Nala
- 6. Narayanpur



*[Signature]*  
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DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" IN JAMTARA DISTRICT OF JHARKHAND

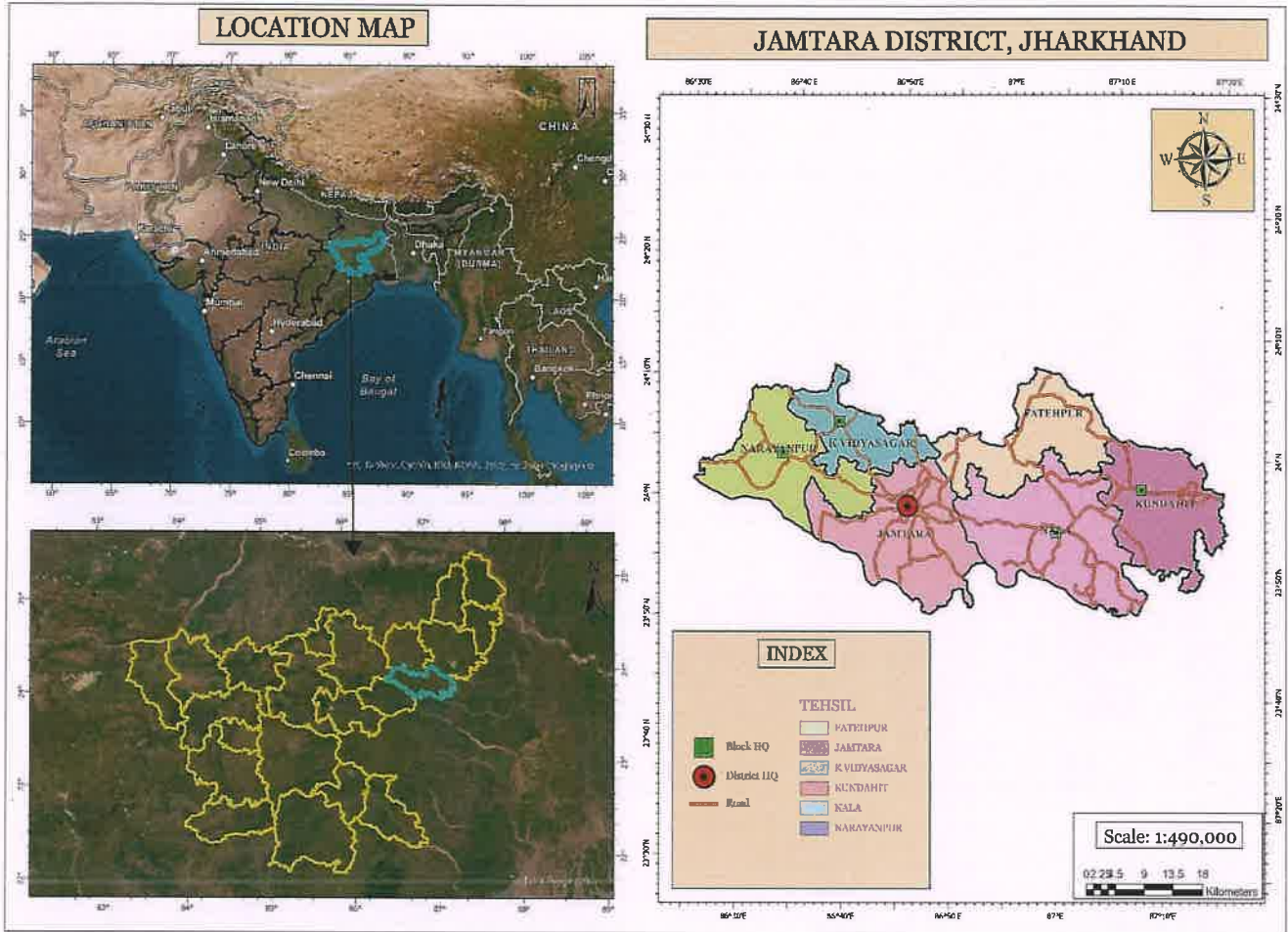


Figure 3.1: Location Map of Jamtara



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DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" IN JAMTARA DISTRICT OF JHARKHAND

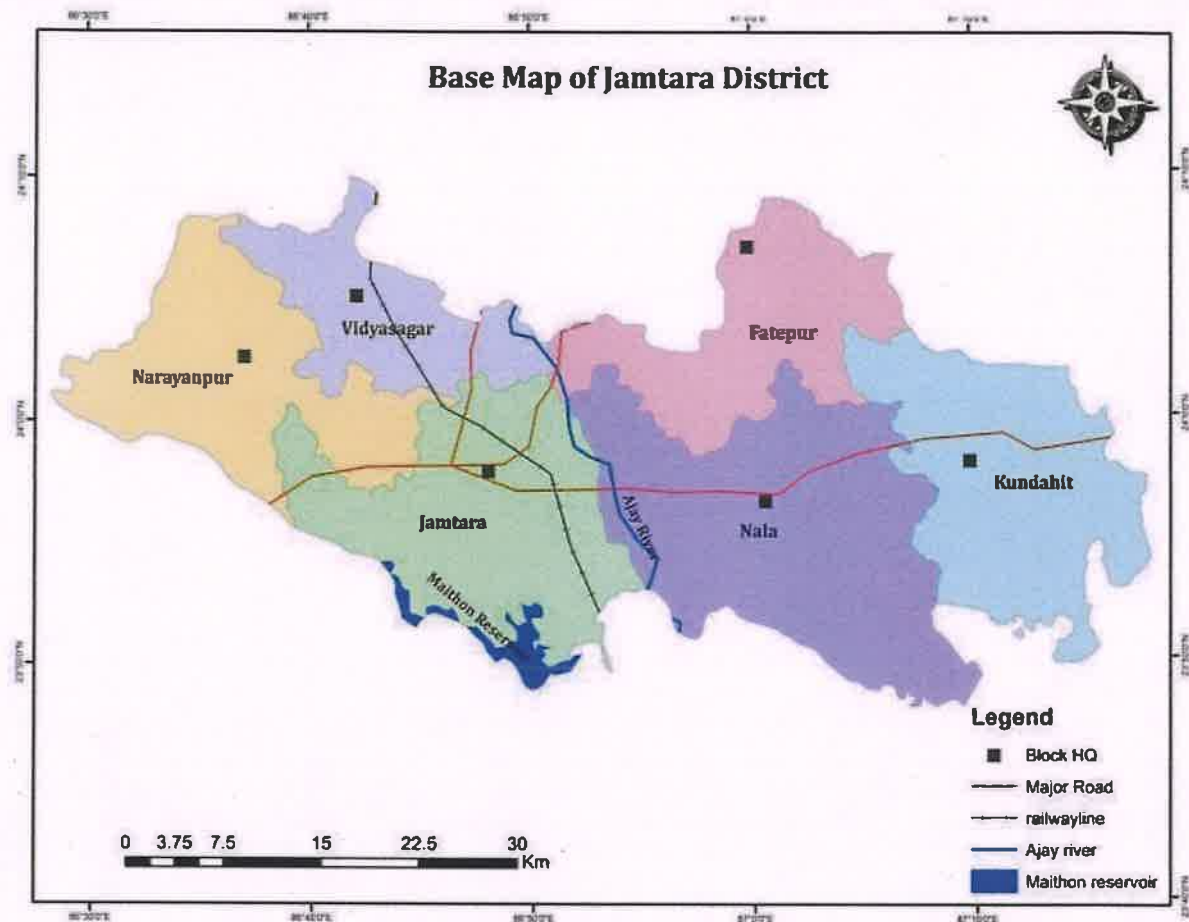


Figure 3.2: Base Map of Jamtara

(Source - Jamtara.nic.in)

**3.2 Climatic Condition:**

Owing to its position near West Bengal and hilly landscape of the region climatic condition is slightly different from the rest of the state. The district receives an annual rainfall of 1500 mm. and most of the rainfall occurs during the rainy season. During winter season the temperature varies between 10°C to 16°C and during summer season it varies between 22°C to 40°C.

(Source - jamtara.nic.in)

**Temperature**

The summer season starts from the month of March with warm and humid conditions and ends in June. The maximum highest temperature varies from 46°C in the month of May and June while minimum temperature varies from 4°C to 7°C during December and January. Table below mentions the temperature variation throughout the year -

Table 3.2: Monthly average temperature distribution of Jamtara District (in °C)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Nov	Oct	Dec	Year
Record high °C (°F)	41.0(83.8)	36.0(9)	40.0(1)	45.0(1)	47.0(1)	44.0(1)	38.0(1)	37.0(98.6)	35.0(1)	36.0(9)	33.0(9)	31.0(8)	37.0(1)
Average high °C (°F)	25.0(78)	29.0(83.7)	34.7(94.5)	38.0(1)	40.1(104.3)	37.0(97)	34.2(93.6)	33.2(91.8)	32.4(90.3)	31.0(87.8)	30.1(86.2)	26.2(79.2)	32.8(91.1)



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## DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" IN JAMTARA DISTRICT OF JHARKHAND



Daily mean °C (°F)	22.23(72.01)	26.27(79.29)	31.81(89.26)	35.54(95.97)	36.88(98.38)	35.57(96.03)	32.2(89.96)	31.31(88.36)	30.2(86.36)	28.63(83.53)	27.07(80.73)	22.97(73.35)	30.06(86.11)
Average low °C (°F)	16.59(61.86)	19.91(67.84)	24.56(76.21)	27.66(81.79)	29.29(84.72)	29.97(85.95)	27.76(81.97)	27.2(80.96)	26.21(79.18)	23.88(74.98)	21.39(70.5)	17.26(63.07)	24.31(75.76)
Record low °C (°F)	13.0(55.4)	15.0(59.0)	16.0(60.8)	19.0(66.2)	18.0(64.4)	23.0(73.4)	23.0(73.4)	25.0(77.0)	20.0(68.0)	19.0(66.2)	18.0(64.4)	11.0(51.8)	11.0(51.8)
Average precipitation on mm (inches)	196(0.08)	800(0.32)	66(0.26)	18.9(0.75)	24.78(0.98)	48.15(1.9)	117.49(4.63)	101.79(4.01)	102.0(4.01)	42.26(1.66)	0.1(0.0)	5.46(0.21)	39.8(1.57)
Average precipitation on days (≥ 1.0 mm)	0.36	1.0	1.27	2.45	2.27	4.55	7.0	7.73	6.09	3.09	0.0	0.55	3.03
Average relative humidity (%)	41.86	37.39	29.55	38.07	44.19	52.32	67.88	73.88	75.43	65.99	47.32	41.98	51.32
Mean monthly sunshine hours	8.49	8.49	10.78	12.68	13.22	12.99	11.55	11.42	9.44	10.28	10.16	8.48	10.66

(Source: World Weather Online)

### 3.3 Rainfall & Humidity:

Owing to its position near West Bengal and hilly landscape of the region climatic condition is slightly different from the rest of the State. The district receives an annual rainfall of 1500 mm. and most of the rainfall occurs during the rainy season. During winter season the temperature varies between 10°C to 16°C and during summer season it varies between 22°C to 40°C.

Table 3.3: Rainfall Data (in mm) of Jamtara from 2014-23

Year	Jan	Feb	March	April	May	June	July	Aug.	Sep	Oct.	Nov	Dec	Total
2014	9.1	42	20.8	9.3	87.3	166.5	279.1	220	159	11.3	0.0	0.0	1004.4
2015	18	5.7	56.3	42.1	31.1	213.9	578.2	335	87.3	7.3	0.0	0.0	1374.9
2016	13	7.3	5.2	0.8	122	234.3	360.7	342	280	39.3	0.0	0.0	1404.6
2017	0.0	0.0	0.0	0.0	74.2	139.1	455	174	151	227	0.0	0.0	1220.3
2018	0.0	0.0	0.0	129.4	50.5	202.5	266.7	184	177	19	0.0	10	1039.1
2019	0.0	1.01	0.33	0.99	3.10	3.12	9.53	7.11	9.79	5.08	0.0	0.09	40.19
2020	0.59	0.17	2.02	1.31	4.76	9.40	11.41	10.18	5.32	0.36	0.05	0.0	45.62
2021	0.0	0.00	0.22	0.51	5.84	11.26	12.27	7.93	9.65	4.73	0.79	0.39	53.65
2022	0.52	2.23	0.0	0.12	4.02	2.50	3.44	8.29	7.65	5.36	0.0	0.06	34.20
2023	0.0	0.0	2.31	0.76	2.25	7.10	3.45	6.12	9.01	4.17	0.0	1.23	36.43



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### Relative Humidity, Wind Speed & Wind Direction

The entire district experiences a high relative humidity that is spread uniformly. Generally, the humidity ranging from 61% to 81% during the monsoon and the relative humidity generally decreases in drier months of March and April are less humid with the relative humidity ranging between 25% - 35%.

The winds over the district are high during monsoon, the average wind speed in monsoon seasons varies from 7 mph to 9 mph, and occasionally the wind speed goes over the 18 mph due to depression and local storm. The wind direction in the monsoon season is South-West wind.

### 3.4 Topography & Terrain:

The area is characterized by undulating topography with hills and plain. The district is located in Rajmahal highland. It consists of rolling open land surface with long ridges and intervening depressions. The highest and lowest elevation identified in north western and south eastern part of the district. The area having a relief of above +319 above msl constitutes scattered hill features of pre-cambrian rocks. In central part of the district near ajay river basin, elevation range occurs between 97-150 above msl. Eastern zone of the district is mostly low land aarea whereas western part of the district is generally upland area. The digital elevation model of Jamtara district has been prepared and shown in figure.

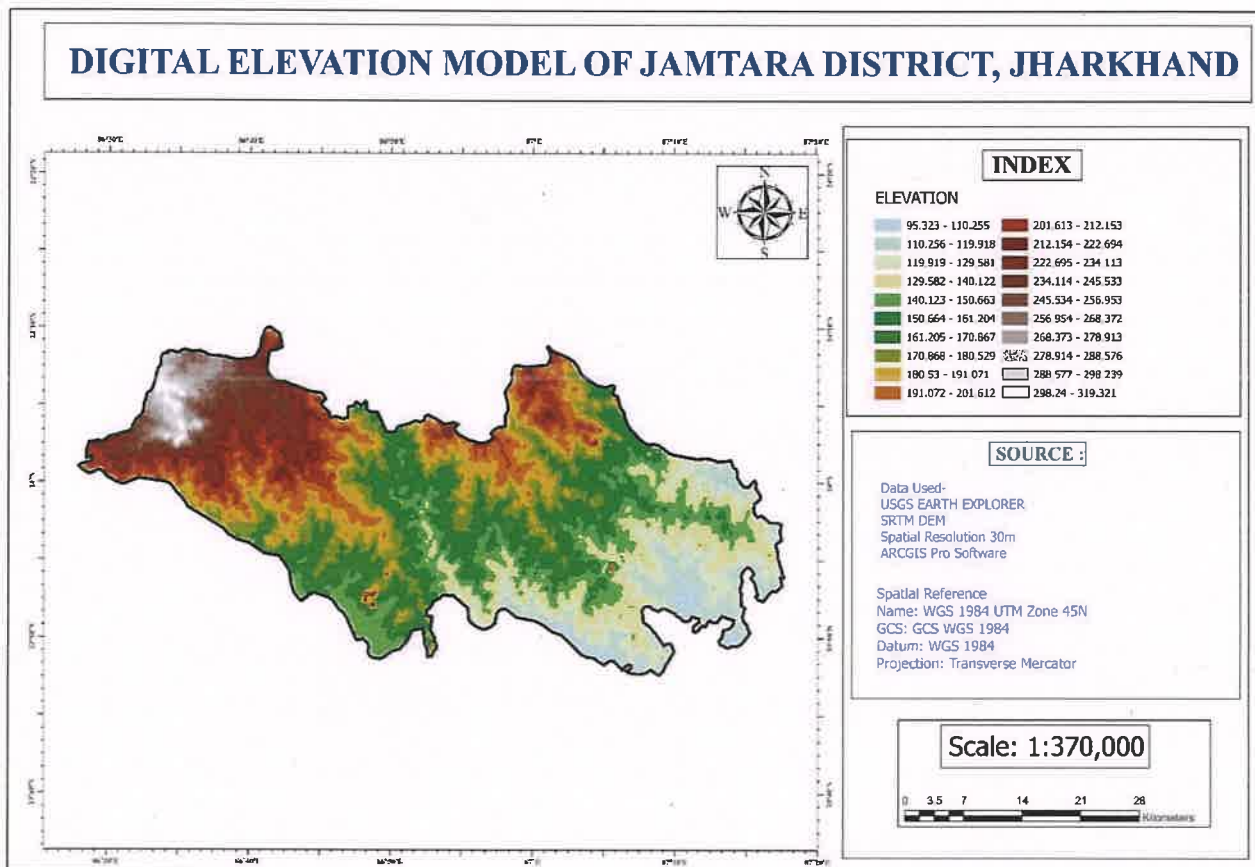


Fig. 3.3: DEM of Jamtara District

(Source: USGS Earth Explorer, SRTM DEM Spatial Resolution 30m)



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### 3.5 Demography:

An official Census 2011 detail of Jamtara, a district of Jharkhand has been released by Directorate of Census Operations in Jharkhand. Enumeration of key persons was also done by census officials in Jamtara District of Jharkhand. In 2011, Jamtara had population of 791,042 of which male and female were 404,830 and 386,212 respectively. In 2001 census, Jamtara had a population of 653,081 of which males were 333,514 and remaining 319,567 were females. Jamtara District population in 2023 is 1,099,549 (estimates as per aadhar uidai.gov.in Dec 2023 data). As per 2011 census of India, Jamtara District has a population of 791,042 in 2011 out of which 404,830 are male and 386,212 are female. Population of Jamtara in 2022 is estimated to be 1,044,176 inhabitants. Literate people are 426,312 out of 258,260 are male and 168,052 are female. People living in Jamtara District depend on multiple skills, total workers are 326,631 out of which men are 214,740 and women are 111,891. Total 42,802 Cultivators are depended on agriculture farming out of 33,437 are cultivated by men and 9,365 are women. 26,814 people works in agricultural land as labor, men are 19,440 and 7,374 are women. Jamtara District sex ratio is 954 females per 1000 of males.

Table 3.4: Jamtara District Blocks Population (2011 Census of India)

Blocks	Population 2011	Male	Female	Households
Narayanpur	163,966	83,977	79,989	28,942
Karmatarn Vidyasagar	115,266	58,937	56,329	20,572
Jamtara	202,478	104,162	98,316	39,653
Nala	134,780	68,771	66,009	28,218
Fatehpur	89,645	45,546	44,099	18,358
Kundhit	84,907	43,437	41,470	19,532



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DISTRICT CENSUS HANDBOOK : JAMTARA

DISTRICT PRIMARY

Industrial category

Locatio n code number	District/ CD Block/ Town	Total/ Rural/ Urban	Total workers			Main workers			Cultivators		
			Persons	Males	Females	Persons	Males	Females	Persons	Males	Females
1	2	3	21	22	23	24	25	26	27	28	29
363	Jamtara - District	Total	326,631	214,740	111,891	122,434	96,117	26,317	42,802	33,437	9,365
		Rural	303,407	195,029	108,378	105,063	80,870	24,193	42,521	33,184	9,337
		Urban	23,224	19,711	3,513	17,371	15,247	2,124	281	253	28
0182	Narayanpur	Total	64,378	41,334	23,044	17,098	13,696	3,402	6,856	5,599	1,257
		Rural	64,378	41,334	23,044	17,098	13,696	3,402	6,856	5,599	1,257
		Urban	-	-	-	-	-	-	-	-	-
0183	Karma Tanr Vidyasagar*	Total	48,098	29,735	18,363	9,567	7,886	1,681	2,069	1,692	377
		Rural	46,340	28,226	18,114	8,673	7,045	1,628	2,028	1,658	370
		Urban	1,758	1,509	249	894	841	53	41	34	7
372617	Karma Tanr (CT)	Urban	1,758	1,509	249	894	841	53	41	34	7
0184	Jamtara	Total	55,215	36,495	18,720	19,907	15,382	4,525	5,398	4,094	1,304
		Rural	55,215	36,495	18,720	19,907	15,382	4,525	5,398	4,094	1,304
		Urban	-	-	-	-	-	-	-	-	-
0185	Nala	Total	53,890	37,954	15,936	23,318	18,003	5,315	10,508	8,234	2,274
		Rural	53,890	37,954	15,936	23,318	18,003	5,315	10,508	8,234	2,274
		Urban	-	-	-	-	-	-	-	-	-
0186	Fatehpur	Total	44,563	25,994	18,569	16,761	11,858	4,903	9,724	6,886	2,838
		Rural	44,563	25,994	18,569	16,761	11,858	4,903	9,724	6,886	2,838
		Urban	-	-	-	-	-	-	-	-	-
0187	Kundhit	Total	39,021	25,026	13,995	19,306	14,886	4,420	8,007	6,713	1,294
		Rural	39,021	25,026	13,995	19,306	14,886	4,420	8,007	6,713	1,294
		Urban	-	-	-	-	-	-	-	-	-
<b>URBAN</b>											
372617	Karma Tanr (CT)	Urban	1,758	1,509	249	894	841	53	41	34	7
801792	Jamtara (NP)	Urban	9,027	7,796	1,231	7,669	6,697	972	102	95	7
801793	Mihijam (NP)	Urban	12,439	10,406	2,033	8,808	7,709	1,099	138	124	14

(SOURCE: DISTRICT CENSUS HANDBOOK, JAMTARA-2011)



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The last census of Jamtara was done in 2011 and next census of 2021 has been postponed or cancelled. But projection of future Jamtara 2023 Population on the basis likely Population Growth Rate.

YEAR	PROJECTED POPULATION	
2011	7,91,042	7.91 Lakhs
2021	9,33,000	9.33 Lakhs
2022	9,47,300	9.47 Lakhs
2023	9,59,600	9.60 Lakhs
2024	9,70,100	9.70 Lakhs
2025	9,79,200	9.79 Lakhs
2026	9,87,000	9.87 Lakhs
2027	9,93,700	9.94 Lakhs
2028	9,99,400	9.99 Lakhs
2029	10,04,300	10.04 Lakhs
2030	10,08,500	10.09 Lakhs
2031	10,12,100	10.12 Lakhs

### 3.6 Connectivity in Jamtara District:

#### Railways

Jamtara is on the main line of the Eastern Railway from Howrah to Delhi and there are two more Railway Station in Jamtara District, one is Chittaranjan and another one is Karmatanr Vidyasagar.

#### Roads in the district:

- Jamtara – Ranchi – Road - The total straight-line distance between Jamtara and Ranchi is 167 KM (kilometers) and 800 meters. The miles-based distance from Jamtara to Ranchi is 104.3 miles. This is a straight-line distance and so most of the time the actual travel distance between Jamtara and Ranchi may be higher or vary due to curvature of the road. The driving distance or the travel distance between Jamtara to Ranchi is 244 KM and 936 meters. The mile based, road distance between these two-travel point is 152.2 miles.
- Jamtara - Patna– Road- Distance between Patna to jamtara is 331 kms
- Jamtara – Hawra- Road- Distance beteewnJamtara to Hawra is 241 kms
- Jamtara- Chitranjan- Road- Distance between Jamtara to Chitranjan is 14 kms



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DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" IN JAMTARA DISTRICT OF JHARKHAND

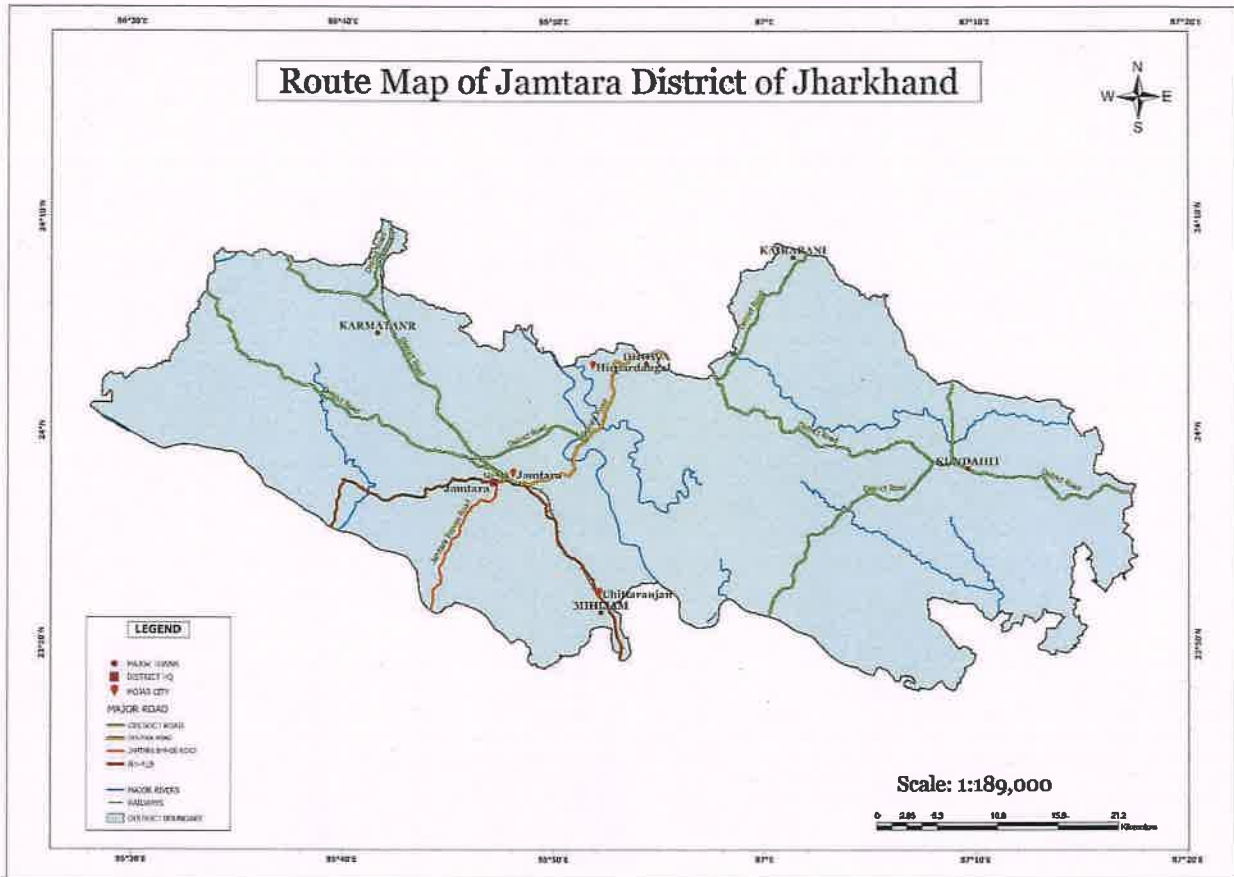


Fig. 3.4: Route Map of Jamtara district



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### 3.7. Flora and Fauna:-

#### Flora of the District:-

#### PLANT DIVERSITY IN STUDY AREAS

Botanical Name	Local name	Habit
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#### ACANTHACEAE

<i>Andrographis echinoides</i> (L.) Nees	Kalmegh	Herb
<i>Andrographis paniculata</i> (Burm.f.) Wall. ex Nees	Kalmegh	Herb
<i>Barleria prionitis</i> L.	Jhinti	Shrub
<i>Hygrophila auriculata</i> (Schumach.) Heine	Kulekhara	Herb
<i>Ruellia tuberosa</i> L.	NIL	Herb
<i>Rungia pectinata</i> (L.) Nees	Krebuchi	Herb

#### AIZOACEAE

<i>Trianthema portulacastrum</i> L.	Godabani	Herb
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#### AMARANTHACEAE

<i>Achyranthes aspera</i> L.	Apamarg	Herb
<i>Alternanthera sessilis</i> (L.) DC.	Garundi	Herb
<i>Amaranthus caudatus</i> L.	Chauli	Shrub
<i>Amaranthus spinosus</i> L.	Kanta chauli	Herb
<i>Amaranthus viridis</i> L.	Jangli chauli	Shrub
<i>Celosia argentea</i> L.	Sirguti	Shrub
<i>Chenopodium album</i> L.	Bathuwa	Herb
<i>Gomphrena celosioides</i> Mart.	Gul-e-makhmal	Herb
<i>Oureta lanata</i> (L.) Kuntze	Chhaya	Herb

#### ANACARDIACEAE

<i>Anacardium occidentale</i> L.	Kaju	Tree
<i>Buchanania lanzan</i> Spreng.	Tarab	Tree
<i>Lanea coromandelica</i> (Houtt.) Merr.	Mohin/ Doka	Tree
<i>Mangifera indica</i> L.	Aam	Tree
<i>Semecarpus anacardium</i> L.f.	Bhelwa	Tree
<i>Spondias pinnata</i> (L.f.) Kurz	Amda	Tree



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**ANNONACEAE**

<i>Annona squamosa</i> L.	Sitaphal	Tree
<i>Polyalthia suberosa</i> (Roxb.) Thwaites	Cham-khinni	Tree

**APIACEAE**

<i>Centella asiatica</i> (L.) Urb.	Brahmi/ Rote	Herb
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**APOCYNACEAE**

<i>Alstonia scholaris</i> (L.) R.Br.	Chhatni	Tree
<i>Calotropis gigantea</i> (L.) W.T.Aiton	Akana	Shrub
<i>Calotropis procera</i> (Aiton) W.T.Aiton	Akana	Shrub
<i>Carissa spinarum</i> L.	Jungli Karonda	Shrub
<i>Cascabela thevetia</i> (L.) Lippold	Kaner	Small tree
<i>Catharanthus roseus</i> (L.) G.Don	Sadabahar	Herb
<i>Cryptolepis buchananii</i> R.Br. ex Roem. & Schult.	Dudhi	Climber
<i>Gymnema sylvestre</i> (Retz.) R.Br. ex Sm.	Gurmar	Climber
<i>Hemidesmus indicus</i> (L.) R.Br.	Anantamul	Climber
<i>Holarrhena pubescens</i> Wall. ex G.Don	Karva	Tree
<i>Ichnocarpus frutescens</i> (L.) W.T.Aiton	Syamlata	Climber
<i>Pergularia daemia</i> (Forssk.) Chiov.	Jutak	Climber
<i>Plumeria alba</i> L.	Champa	Tree
<i>Plumeria pudica</i> Jacq.	Nil	Small tree
<i>Stephanotis volubilis</i> (L.f.) S.Reuss, Liede & Meve	Dundhi nadi	Climber
<i>Wrightia arborea</i> (Dennst.) Mabb.	Daira	Tree

**ARACEAE**

<i>Alocasia macrorrhizos</i> (L.) G.Don	Taro	Shrub
<i>Amorphophallus bulbifer</i> (Schott) Blume	Oal	Shrub
<i>Amorphophallus paeoniifolius</i> (Dennst.)	Oal	Shrub
<i>Colocasia esculenta</i> (L.) Schott	Taro	Shrub



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**ARECACEAE**

<i>Borassus flabellifer</i> L.	Tad	Palm
<i>Phoenix sylvestris</i> (L.) Roxb.	Khajur	Palm

**ARISTOLOCHIACEAE**

<i>Aristolochia indica</i> L.	Kiramar	Climber
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**ASPARAGACEAE**

<i>Asparagus racemosus</i> Willd.	Satmul	Climber
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**ASTERACEAE**

<i>Acanthospermum hispidum</i> DC.	Kaanthi	Herb
<i>Ageratum conyzoides</i> L.	Gha buti	Shrub
<i>Chromolaena odorata</i> (L.) R.M.King & H.Rob.	Gha buti	Shrub
<i>Cyanthillium cinereum</i> (L.) H.Rob.	Sahadebi	Herb
<i>Echinops echinatus</i> Roxb.	Gokhru	Herb
<i>Eclipta prostrata</i> (L.) L.	Bhringraj	Herb
<i>Elephantopus scaber</i> L.	Hasti pada	Herb
<i>Emilia sonchifolia</i> (L.) DC.	Hirankuri	Herb
<i>Enydra fluctuans</i> Lour.	Hencha	Herb
<i>Grangea maderaspatana</i> (L.) Poir.	Namuti	Herb
<i>Mikania micrantha</i> Kunth	Nil	Climber
<i>Parthenium hysterophorus</i> L.	Gajar ghas	Shrub
<i>Sphaeranthus indicus</i> L.	Gorakhmundi	Herb
<i>Synedrella nodiflora</i> (L.) Gaertn.	Hare jhar	Herb
<i>Tridax procumbens</i> L.	Ghaburi	Herb
<i>Xanthium strumarium</i> L.	Chota gokhru	Shrub

**BIGNONIACEAE**

<i>Oroxylum indicum</i> (L.) Kurz	Sonachhal	Tree
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**BORAGINACEAE**

<i>Coldenia procumbens</i> L.	Tripungkee	Herb
<i>Cordia dichotoma</i> G.Forst.	Vuch letha	Tree
<i>Euploca marifolia</i> (J.Koenig ex Retz.) Ancy & P.Javad	Hathjodi	Herb
<i>Euploca strigosa</i> (Willd.) Diane & Hilger	Chiti phul	Herb
<i>Heliotropium indicum</i> L.	Hatisura	Herb

**CACTACEAE**

<i>Opuntia ficus-indica</i> (L.) Mill.	Katedar naspati	Herb
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**CAMPANULACEAE**

<i>Wahlenbergia marginata</i> (Thunb.) A.DC.	Nil	Herb
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**CANNABACEAE**

<i>Trema orientale</i> (L.) Blume	Jivan	Tree
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**CANNACEAE**

<i>Canna indica</i> L.	Rookhraj	Shrub
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**CELASTRACEAE**

<i>Celastrus paniculatus</i> Willd.	Kujri	Climber
<i>Gymnosporia emarginata</i> (Willd.) Thwaites	Nil	Shrub

**CLEOMACEAE**

<i>Cleome rutidosperma</i> DC.	Ujla Hulhul	Herb
<i>Cleome viscosa</i> L.	Hulhul	Herb

**COMBRETACEAE**

<i>Combretum roxburghii</i> Spreng.	Paibal	Climber
<i>Terminalia arjuna</i> (Roxb. ex DC.) Wight & Arn.	Arjun	Tree
<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Bahara	Tree
<i>Terminalia chebula</i> Retz.	Harda	Tree

**COLCHICACEAE**

<i>Gloriosa superba</i> L.	Kalihari	Climber
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**COMMELINACEAE**

<i>Commelina benghalensis</i> L.	Kaana saag	Herb
<i>Commelina erecta</i> L.	Kaana	Herb
<i>Commelina longifolia</i> Lam.	Jalpipari	Herb
<i>Cyanotis axillaris</i> (L.) D.Don ex Sweet	Kana	Herb
<i>Cyanotis cristata</i> (L.) D.Don	Kana	Herb
<i>Cyanotis tuberosa</i> (Roxb.) Schult. & Schult.f.	Jaintia	Herb
<i>Murdannia nudiflora</i> (L.) Brenan	Kansura	Herb
<i>Murdannia spirata</i> (L.) G.Brückn.	Kansura	Herb



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**CONVOLVULACEAE**

<i>Argyreia daltonii</i> C.B.Clarke	Nil	Climber
<i>Argyreia nervosa</i> (Burm.f.) Bojer	Vidhara	Climber
<i>Cuscuta reflexa</i> Roxb.	Amar bel	Climber
<i>Evolvulus alsinoides</i> (L.) L.	Sankhaholi	Herb
<i>Evolvulus nummularius</i> (L.) L.	Musakarni	Herb
<i>Ipomoea aquatica</i> Forssk.	Basak ala	Climber
<i>Ipomoea carnea</i> Jacq.	Behaya	Climber
<i>Ipomoea nil</i> (L.) Roth	Krushna beej	Climber
<i>Ipomoea obscura</i> (L.) Ker Gawl.	Pan bel	Climber
<i>Ipomoea pes-tigridis</i> L.	Pachpatia	Climber
<i>Ipomoea quamoclit</i> L.	Kamlata	Climber
<i>Xenostegia tridentata</i> (L.) D.F.Austin & Staples	Holud kolmi	Climber

**CORNACEAE**

<i>Alangium salviifolium</i> (L.f.) Wangerin	Dhela	Tree
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**COSTACEAE**

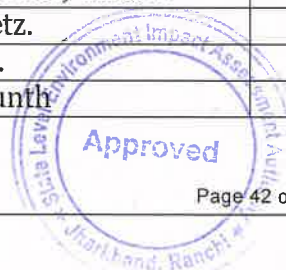
<i>Cheilocostus speciosus</i> (J.Koenig) C.D.Specht	Keukand	Shrub
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**CUCURBITACEAE**

<i>Coccinia grandis</i> (L.) Voigt	Kundru	Climber
<i>Cucumis melo</i> L.	Gudni	Climber
<i>Cucumis trigonus</i> Roxb.	Jungle kachri	Climber
<i>Luffa aegyptiaca</i> Mill.	Ghia torai	Climber
<i>Momordica charantia</i> L.	Karela	Climber
<i>Solena amplexicaulis</i> (Lam.) Gandhi	Bhimraj	Climber
<i>Trichosanthes cucumerina</i> L.	Chachinda	Climber
<i>Trichosanthes tricuspidata</i> Lour.	Mahakal	Climber

**CYPERACEAE**

<i>Abildgaardia ovata</i> (Burm.f.) Kral	Marmari	Herb
<i>Actinoscirpus grossus</i> (L.f.) Goetgh. & D.A.Simpson	Kasheruka	Herb
<i>Bulbostylis barbata</i> (Rottb.) C.B.Clarke	Nil	Herb
<i>Cyperus articulatus</i> L.	Motha	Herb
<i>Cyperus brevifolius</i> (Rottb.) Hassk.	Morphula	Herb
<i>Cyperus compactus</i> Retz.	Dila	Herb
<i>Cyperus compressus</i> L.	Chancha	Herb
<i>Cyperus cuspidatus</i> Kunth	Nil	Herb



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<i>Cyperus difformis</i> L.	Behua	Herb
<i>Cyperus diffusus</i> Vahl	Chota motha	Herb
<i>Cyperus distans</i> L.f.	Korehi jhar	Herb
<i>Cyperus hamulosus</i> M.Bieb.	Nil	Herb
<i>Cyperus imbricatus</i> Retz.	Nil	Herb
<i>Cyperus iria</i> L.	Burachucha	Herb
<i>Cyperus mindorensis</i> (Steud.) Huygh	Nirvishi	Herb
<i>Cyperus neochinensis</i> (Tang & F.T.Wang)	Nil	Herb
<i>Cyperus paniceus</i> (Rottb.) Boeckeler	Bara nagar motha	Herb
<i>Cyperus pilosus</i> Vahl	Nil	Herb
<i>Cyperus polystachyos</i> Rottb.	Nil	Herb
<i>Cyperus rotundus</i> L.	Motha	Herb
<i>Cyperus squarrosus</i> L.	Nil	Herb
<i>Eleocharis dulcis</i> (Burm.f.) Trin. ex Hensch.	Chadchadi	Herb
<i>Fimbristylis acuminata</i> Vahl	Nil	Herb
<i>Fimbristylis aestivalis</i> (Retz.) Vahl	Nil	Herb
<i>Fimbristylis argentea</i> (Rottb.) Vahl	Nil	Herb
<i>Fimbristylis dichotoma</i> (L.) Vahl	Bara nirbishi	Herb
<i>Fimbristylis miliacea</i> (L.) Vahl	Bara javaani	Herb
<i>Fimbristylis schoenoides</i> (Retz.) Vahl	Kesari malang	Herb
<i>Fuirena ciliaris</i> (L.) Roxb.	Nil	Herb
<i>Fuirena umbellata</i> Rottb.	Nil	Herb
<i>Kyllinga triceps</i> Rottb.	Mustaa	Herb
<i>Schoenoplectiella lateriflora</i> (J.F.Gmel.) Lye	Nil	Herb
<i>Scleria terrestris</i> (L.) Fassett	Churia	Herb

#### DIOSCOREACEAE

<i>Dioscorea alata</i> L.	Kham alu	Climber
<i>Dioscorea bulbifera</i> L.	Varahi Kand	Climber
<i>Dioscorea esculenta</i> (Lour.) Burkill	Ban alu	Climber
<i>Dioscorea hispida</i> Dennst.	Susni	Climber
<i>Dioscorea oppositifolia</i> L.	Pani alu	Climber
<i>Dioscorea pentaphylla</i> L.	Panchapati Varahi kand	Climber
<i>Dioscorea pubera</i> Blume	Kukei sanga	Climber
<i>Dioscorea wallichii</i> Hook.f.	Akhir	Climber

#### DIPTEROCARPACEAE

<i>Shorea robusta</i> C.F.Gaertn.	Sakhua	Tree
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#### EBENACEAE

<i>Diospyros melanoxylon</i> Roxb.	Tiril	Tree
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<i>Diospyros montana</i> Roxb.	Tiril	Tree
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#### ELATINACEAE

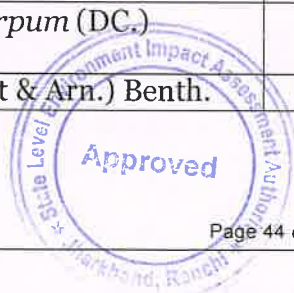
<i>Bergia ammannioides</i> Roxb.	Nil	Herb
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#### EUPHORBIACEAE

<i>Acalypha indica</i> L.	Khokli	Herb
<i>Croton bonplandianus</i> Baill.	Ban tushi	Herb
<i>Euphorbia heterophylla</i> L.	Titli phul	Herb
<i>Euphorbia hirta</i> L.	Badi dudhi	Herb
<i>Jatropha curcas</i> L.	Ratanjot	Shrub
<i>Jatropha gossypifolia</i> L.	Ratanjoti	Shrub
<i>Micrococca mercurialis</i> (L.) Benth.	Nil	Herb
<i>Microstachys chamaelea</i> (L.) Müll.Arg.	Nil	Herb
<i>Ricinus communis</i> L.	Arandi	Small tree
<i>Tragia involucrata</i> L.	Pitparni	Herb
<i>Baliospermum solanifolium</i> (Burm.) Suresh	Nil	Herb

#### FABACEAE

<i>Acacia auriculiformis</i> A.Cunn. ex Benth.	Acacia	Tree
<i>Aeschynomene americana</i> L.	Soli	Herb
<i>Aeschynomene aspera</i> L.	Soli	Herb
<i>Alysicarpus vaginalis</i> (L.) DC.	Chauli sauri	Herb
<i>Bauhinia acuminata</i> L.	Safed kachnar	Herb
<i>Butea monosperma</i> (Lam.) Kuntze	Palash	Tree
<i>Butea superba</i> Roxb. ex Willd.	Lata palash	Climber
<i>Cajanus scarabaeoides</i> (L.) Thouars	Ban kulthi	Climber
<i>Cassia fistula</i> L.	Amaltas	Tree
<i>Chamaecrista mimosoides</i> (L.) Greene	Patwa ghas	Herb
<i>Chamaecrista pumila</i> (Lam.) V.Singh	Sarmal	Herb
<i>Clitoria ternatea</i> L.	Aprajita	Climber
<i>Crotalaria pallida</i> Aiton	Jhunjhuna	Shrub
<i>Crotalaria verrucosa</i> L.	Jhunjhunia	Herb
<i>Dalbergia latifolia</i> Roxb.	Kala sisam	Tree
<i>Dalbergia sissoo</i> Roxb. ex DC.	Sisam	Tree
<i>Grona triflora</i> (L.) H.Ohashi & K.Ohashi	Motha	Herb
<i>Indigofera linifolia</i> (L.f.) Retz.	Torki	Herb
<i>Indigofera tsiangiana</i> Metcalf	Nil	Herb
<i>Mucuna pruriens</i> (L.) DC.	Kaunch	Climber
<i>Peltophorum pterocarpum</i> (DC.) Backer ex K.Heyne	Peela gulmohar	Tree
<i>Phanera vahlii</i> (Wight & Arn.) Benth.	Chihur lata	Climber



<i>Pithecellobium dulce</i> (Roxb.) Benth.	Jungle jalebi	Tree
<i>Pleurolobus gangeticus</i> (L.) J.St.-Hil. ex H.Ohashi & K.Ohashi	Pivari / Salparni	Shrub
<i>Pongamia pinnata</i> (L.) Pierre	Karanj	Tree
<i>Senegalia pennata</i> (L.) Maslin	Kantar	Climber
<i>Senna alata</i> (L.) Roxb.	Dadmari	Shrub
<i>Senna occidentalis</i> (L.) Link	Kasunda	Shrub
<i>Senna siamea</i> (Lam.) H.S.Irwin & Barneby	Kassod	Tree
<i>Senna tora</i> (L.) Roxb.	Chakunda	Herb
<i>Tamarindus indica</i> L.	Imli / Jaja	Tree
<i>Tephrosia purpurea</i> (L.) Pers.	Bannil gach	Herb
<i>Tephrosia strigosa</i> (Dalzell) Santapau & Maheshw.	Nil	Herb
<i>Vachellia nilotica</i> (L.) P.J.H.Hurter & Mabb.	Babul	Tree
<i>Zornia gibbosa</i> Span.	Nil	Herb

#### HYDROCHARITACEEA

<i>Hydrilla verticillata</i> (L.f.) Royle	Jhangi	Herb
<i>Najas minor</i>	Nil	Herb
<i>Vallisneria natans</i> (Lour.) H.Hara	Jallil	Herb

#### HYPOXIDACEAE

<i>Curculigo orchioides</i> Gaertn.	Kali musli	Herb
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#### LAMIACEAE

<i>Anisomeles indica</i> (L.) Kuntze	Kala Bhangra	Shrub
<i>Clerodendrum infortunatum</i> L.	Barni	Shrub
<i>Gmelina arborea</i> Roxb. ex Sm.	Gambhar	Tree
<i>Leonotis nepetifolia</i> (L.) R.Br.	Bhutabhairaba	Shrub
<i>Leucas aspera</i> (Willd.) Link	Gophaa	Herb
<i>Leucas cephalotes</i> (Roth) Spreng.	Gophaa	Herb
<i>Mesosphaerum suaveolens</i> (L.) Kuntze	Vilaiti Tulsi	Shrub
<i>Ocimum basilicum</i> L.	Ram tulsi	Herb
<i>Ocimum gratissimum</i> L.	Ban tulsi	Herb
<i>Ocimum tenuiflorum</i> L.	Tulsi	Herb
<i>Orthosiphon thymiflorus</i> (Roth) Sleesen	Nil	Herb
<i>Pogostemon benghalensis</i> (Burm.f.) Kuntze	Ishwar jata	Shrub
<i>Rothea serrata</i> (L.) Steane & Mabb.	Nil	Shrub
<i>Tectona grandis</i> L.f.	Saguan	Tree
<i>Vitex negundo</i> L.	Nirgundi	Small tree



**LAURACEAE**

<i>Cassytha filiformis</i> L.	Amar bel	Climber
<i>Litsea glutinosa</i> (Lour.) C.B.Rob.	Maida lakdi	Tree

**LINDERNIACEAE**

<i>Bonnaya antipoda</i> (L.) Druce	Zai ghas	Herb
<i>Bonnaya ciliata</i> (Colsm.) Spreng.	Nil	Herb
<i>Bonnaya oppositifolia</i> (Retz.) Spreng.	Nil	Herb
<i>Lindernia dubia</i> (L.) Pennell	Nil	Herb
<i>Lindernia parviflora</i> (Roxb.) Haines	Nil	Herb
<i>Torenia anagallis</i> (Burm.f.) Wannan, W.R.Barker & Y.S.Liang	Nil	Herb
<i>Torenia crustacea</i> (L.) Cham. & Schtdl.	Nil	Herb
<i>Yamazakia pusilla</i> (Willd.) W.R.Barker, Y.S.Liang & Wannan	Nil	Herb

**LORANTHACEAE**

<i>Dendrophthoe falcata</i> (L.f.) Ettingsh.	Banda	Shrub
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**LYTHRACEAE**

<i>Lawsonia inermis</i> L.	Mehendi	Small tree
<i>Rotala rotundifolia</i> (Buch.-Ham. ex Roxb.)	Nil	Herb
<i>Woodfordia fruticosa</i> (L.) Kurz	Dhatki	Shrub

**MALVACEAE**

<i>Abutilon indicum</i> (L.) Sweet	Miru baha	Shrub
<i>Ceiba pentandra</i> (L.) Gaertn.	Kath semal	Tree
<i>Corchorus aestuans</i> L.	Chonch	Herb
<i>Grewia serrulata</i> DC.	Panisanara	Small tree
<i>Helicteres isora</i> L.	Mavhda	Shrub
<i>Hibiscus lobatus</i> (Murray) Kuntze	Nil	Herb
<i>Hibiscus rosa-sinensis</i> L.	Gudhal	Shrub
<i>Hibiscus sabdariffa</i> L.	Kudrum	Shrub
<i>Melochia corchorifolia</i> L.	Chitrabeez	Herb
<i>Pentapetes phoenicea</i> L.	Dupahariya	Shrub
<i>Pterospermum acerifolium</i> (L.) Willd.	Kanak champa	Tree
<i>Pterospermum xylocarpum</i> (Gaertn.) Oken	Nil	Tree
<i>Sida acuta</i> Burm.f.	Kamraj	Herb
<i>Sida cordata</i> (Burm.f.) Borss. Waalk.	Bananiyar	Herb



<i>Sida cordifolia</i> L.	Kamraj coi	Herb
<i>Sida rhombifolia</i> L.	Sahadev	Herb
<i>Sterculia urens</i> Roxb.	Makda	Tree
<i>Thespesia populnea</i> (L.) Sol. ex Corrêa	Paras pipal	Small tree
<i>Triumfetta pentandra</i> A.Rich.	Chikti	Herb
<i>Urena lobata</i> L.	Vilaiti san	Herb
<i>Urena lobata</i> subsp. <i>sinuata</i> (L.)	Vilaiti	Herb
<i>Waltheria indica</i> L.	Nil	Herb

#### MALPIGHIACEAE

<i>Hiptage benghalensis</i> (L.) Kurz	Madhavi Lata	Climber
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#### MARTYNIACEAE

<i>Martynia annua</i> L.	Kada	Shrub
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#### MAZACEAE

<i>Mazus pumilus</i> (Burm.f.) Steenis	Nil	Herb
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#### MELIACEAE

<i>Azadirachta indica</i> A.Juss.	Neem	Tree
<i>Cipadessa baccifera</i> (Roxb. ex Roth) Miq.	Nal bila	Shrub
<i>Melia azedarach</i> L.	Maha neem	Tree

#### MENISPERMACEAE

<i>Cissampelos pareira</i> L.	Kidoo	Climber
<i>Cocculus hirsutus</i> (L.) W.Theob.	Huyer	Climber
<i>Tinospora cordifolia</i> (Willd.) Hook.f. & Thomson	Giloy	Climber

#### MENYANTHACEAE

<i>Nymphoides hydrophylla</i> (Lour.) Kuntze	Kumudini	Herb
<i>Nymphoides indica</i> (L.) Kuntze	Chandmala	Herb

#### MOLLUGINACEAE

<i>Glinus oppositifolius</i> (L.) Aug.DC.	Jima	Herb
<i>Trigastrotheca pentaphylla</i> (L.) Thulin	Khet papra	Herb



DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" IN JAMTARA DISTRICT OF JHARKHAND



**MORACEAE**

<i>Artocarpus heterophyllus</i> Lam.	Kathal	Tree
<i>Ficus benghalensis</i> L.	Bargad	Tree
<i>Ficus hispida</i> L.f.	Kath gular	Tree
<i>Ficus racemosa</i> L.	Goolar	Tree
<i>Ficus religiosa</i> L.	Hesa	Tree
<i>Streblus asper</i> Lour.	Siora	Tree

**MORINGACEAE**

<i>Moringa oleifera</i> Lam.	Mungdo	Tree
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**MYRTACEAE**

<i>Psidium guajava</i> L.	Amrood / Peyara	Tree
<i>Syzygium cumini</i> (L.) Skeels	Jadre	Tree

**NELUMBONACEAE**

<i>Nelumbo nucifera</i> Gaertn.	Kamal	Herb
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**NYCTAGINACEAE**

<i>Boerhavia diffusa</i> L.	Satha	Herb
<i>Mirabilis jalapa</i> L.	Sandhya malati	Shrub

**OCHNACEAE**

<i>Ochna obtusata</i> DC.	Ramdhan champa	Tree
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**OLACACEAE**

<i>Olax scandens</i> Roxb.	Dheniani	Small tree
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**OLEACEAE**

<i>Nyctanthes arbor-tristis</i> L.	Parijat	Tree
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**ONAGRACEAE**



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<i>Ludwigia adscendens</i> (L.) H.Hara	Kessara	Herb
<i>Ludwigia perennis</i> L.	Keshardam	Herb

#### ORCHIDACEAE

<i>Crepidium mackinnonii</i> (Duthie) Szlach.	Nil	Herb
<i>Geodorum densiflorum</i> (Lam.) Schltr.	Haryakand	Herb
<i>Geodorum laxiflorum</i> Griff.	Nil	Herb
<i>Habenaria marginata</i> Colebr.	Nil	Herb
<i>Habenaria plantaginea</i> Lindl.	Nil	Herb
<i>Habenaria reniformis</i> (D.Don) Hook.f.	Nil	Herb
<i>Liparis odorata</i> (Willd.) Lindl.	Nil	Herb

#### OROBANCHACEAE

<i>Lindenbergia muraria</i> (Roxb. ex D.Don) Brühl	Patha chatti	Herb
<i>Striga densiflora</i> (Benth.) Benth.	Nil	Herb

#### OXALIDACEAE

<i>Biophytum sensitivum</i> (L.) DC.	Lajalu	Herb
<i>Oxalis corniculata</i> L.	Teen patia	Herb

#### PAPAVERACEAE

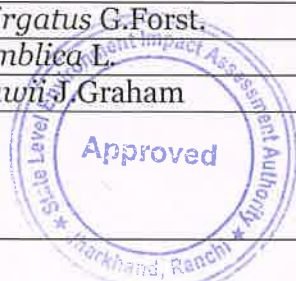
<i>Argemone mexicana</i> L.	Satyanasi	Herb
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#### PASSIFLORACEAE

<i>Passiflora foetida</i> L.	Jhumka lata	Climber
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#### PHYLLANTHACEAE

<i>Breynia retusa</i> (Dennst.) Alston	Bahu pushp	Shub
<i>Breynia vitis-idaea</i> (Burm.f.) C.E.C.Fisch.	Merle	Shrub
<i>Bridelia montana</i> (Roxb.) Willd.	Nil	Shrub
<i>Bridelia retusa</i> (L.) A.Juss.	Kadru	Tree
<i>Glochidion ellipticum</i> Wight	Nil	Tree
<i>Phyllanthus urinaria</i> L.	Bhuin amla	Herb
<i>Phyllanthus virgatus</i> G.Forst.	Bhuin amla	Herb
<i>Phyllanthus emblica</i> L.	Amla	Tree
<i>Phyllanthus lawii</i> J.Graham	Nil	Shrub



**PIPERACEAE**

<i>Peperomia pellucida</i> (L.) Kunth	Bhuin amla	Herb
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**PLANTAGINACEAE**

<i>Mecardonia procumbens</i> (Mill.) Small	Nil	Herb
<i>Scoparia dulcis</i> L.	Mithi patti	Herb

**PLUMBAGINACEAE**

<i>Plumbago zeylanica</i> L.	Baing baha	Shrub
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**POACEAE**

<i>Alloteropsis cimicina</i> (L.) Stapf	Nil	Grass
<i>Aristida setacea</i> Retz.	Bhalki	Grass
<i>Bambusa bambos</i> (L.) Voss	Kanta bans	Grass
<i>Bambusa tulda</i> Roxb.	Bans	Grass
<i>Bothriochloa bladhii</i> (Retz.) S.T.Blake	Gandha garuna	Grass
<i>Bothriochloa pertusa</i> (L.) A.Camus	Sandhur	Grass
<i>Cenchrus pedicellatus</i> (Trin.) Morrone	Nil	Grass
<i>Chloris barbata</i> Sw.	Jargi gandi	Grass
<i>Chrysopogon aciculatus</i> (Retz.) Trin.	Jhar gunda	Grass
<i>Chrysopogon zizanioides</i> (L.) Roberty	Balah	Grass
<i>Coix lacryma-jobi</i> L.	Jargadi	Grass
<i>Cynodon barberi</i> Rang. & Tadul.	Nil	Grass
<i>Cynodon dactylon</i> (L.) Pers.	Dub ghas	Grass
<i>Cyrtococcum trigonum</i> (Retz.) A.Camus	Nil	Grass
<i>Dactyloctenium aegyptium</i> (L.) Willd.	Makri	Grass
<i>Dendrocalamus strictus</i> (Roxb.) Nees	Pahadi bans	Grass
<i>Digitaria abludens</i> (Roem. & Schult.) Veldkamp	Chiri-chira	Grass
<i>Digitaria ciliaris</i> (Retz.) Koeler	Makur jali	Grass
<i>Digitaria longiflora</i> (Retz.) Pers.	Kanka jariya	Grass
<i>Dinebra chinensis</i> (L.) P.M.Peterson & N.Snow	Chanhel	Grass
<i>Echinochloa colonum</i> (L.) Link	Shama	Grass
<i>Echinochloa stagnina</i> (Retz.) P.Beauv.	Dul	Grass
<i>Eleusine indica</i> (L.) Gaertn.	Mandla	Grass
<i>Elytrophorus spicatus</i> (Willd.) A.Camus	Nil	Grass
<i>Eragrostis ciliaris</i> (L.) R.Br.	Nil	Grass
<i>Eragrostis ciliata</i> (Roxb.) Nees	Nil	Grass
<i>Eragrostis japonica</i> (Thunb.) Trin.	Bharbhusi	Grass
<i>Eragrostis pilosa</i> (L.) P.Beauv.	Nil	Grass



<i>Eragrostis uniolooides</i> (Retz.) Nees ex Steud.	Koni	Grass
<i>Eriochloa procera</i> (Retz.) C.E.Hubb.	Khara ghas	Grass
<i>Hackelochloa granularis</i> (L.) Kuntze	Kangni	Grass
<i>Hemarthria compressa</i> (L.f.) R.Br.	Biksa	Grass
<i>Heteropogon contortus</i> (L.) P.Beauv. ex Roem. & Schult.	Kher	Grass
<i>Hygroryza aristata</i> (Retz.) Nees ex Wight & Arn.	Uridhan	Grass
<i>Hymenachne amplexicaulis</i> (Rudge) Nees	Nil	Grass
<i>Imperata cylindrica</i> (L.) Raeusch.	Ulu	Grass
<i>Ischaemum rugosum</i> Salisb.	Moraro	Grass
<i>Leersia hexandra</i> Sw.	Nil	Grass
<i>Louisiella paludosa</i> (Roxb.) Landge	Borati	Grass
<i>Microchloa indica</i> (L.f.) P.Beauv.	Nil	Grass
<i>Mnesithea laevis</i> (Retz.) Kunth	Kurio	Grass
<i>Oplismenus burmanni</i> (Retz.) P.Beauv.	Nini	Grass
<i>Oplismenus compositus</i> (L.) P.Beauv.	Nini	Grass
<i>Oropetium thomaeum</i> (L.f.) Trin.	Nil	Grass
<i>Oryza sativa</i> L.	Dhan	Grass
<i>Panicum brevifolium</i> L.	Nil	Grass
<i>Panicum notatum</i> Retz.	Nil	Grass
<i>Panicum repens</i> L.	Sanka	Grass
<i>Panicum sumatrense</i> Roth	Nil	Grass
<i>Paspalidium flavidum</i> (Retz.) A.Camus	Nil	Grass
<i>Paspalidium geminatum</i> (Forssk.) Stapf	Nil	Grass
<i>Paspalum scrobiculatum</i> L.	Kodaka	Grass
<i>Pennisetum pedicellatum</i> Trin.	Nil	Grass
<i>Perotis indica</i> (L.) Kuntze	Nil	Grass
<i>Polytrias indica</i> (Houtt.) Veldkamp	Nil	Grass
<i>Rottboellia cochinchinensis</i> (Lour.) Clayton	Bara swati	Grass
<i>Saccharum spontaneum</i> L.	Kans phul	Grass
<i>Sacciolepis indica</i> (L.) Chase	Nil	Grass
<i>Sacciolepis interrupta</i> (Willd.) Stapf	Nadula	Grass
<i>Setaria pumila</i> (Poir.) Roem. & Schult.	Bandra	Grass
<i>Setaria verticillata</i> (L.) P.Beauv.	Siallanja	Grass
<i>Sporobolus indicus</i> (L.) R.Br.	Bena joni	Grass
<i>Urochloa distachyos</i> (L.) T.Q.Nguyen	Nil	Grass
<i>Urochloa mutica</i> (Forssk.) T.Q.Nguyen	Nardul	Grass
<i>Urochloa panicoides</i> P.Beauv.	Jalganthi	Grass
<i>Urochloa ramosa</i> (L.) T.Q.Nguyen	Banspalli	Grass
<i>Zea mays</i> L.	Makei	Grass

#### POLYGALACEAE

<i>Polygala arvensis</i> Willd.	Mirdoi	Herb
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<i>Polygala crotalarioides</i> Buch.-Ham. ex DC.	Nilkanth	Herb
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#### POLYGONACEAE

<i>Persicaria barbata</i> (L.) H.Hara	Bekh-unjubaz	Herb
<i>Persicaria glabra</i> (Willd.) M.Gómez	Bihagni	Herb
<i>Persicaria hydropiper</i> (L.) Delarbre	Nil	Herb
<i>Polygonum plebeium</i> R.Br.	Mui ala	Herb
<i>Polygonum pulchellum</i> Loisel.	Nil	Herb

#### PONTENDRIACEAE

<i>Pontederia crassipes</i> Mart.	Jal kumbhi	Herb
<i>Pontederia vaginalis</i> Burm.f.	Pani kachu	Herb

#### PORTULACACEAE

<i>Portulaca oleracea</i> L.	Lunia	Herb
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#### POTAMOGETONACEAE

<i>Potamogeton natans</i> L.	Nil	Herb
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#### PTERIDACEAE

<i>Adiantum philippense</i> L.	Nil	Herb
<i>Ceratopteris thalictroides</i> (L.) Brongn.	Shabd Khoj	Herb

#### RHAMNACEAE

<i>Gouania leptostachya</i> DC.	Batbasi	Climber
<i>Ventilago denticulata</i> Willd.	Lal beli	Scandent
<i>Ziziphus mauritiana</i> Lam.	Janum	Tree
<i>Ziziphus oenopolia</i> (L.) Mill.	Kuni rama	Small tree

#### RUBIACEAE

<i>Adina cordifolia</i> (Roxb.) Brandis	Karam	Tree
<i>Benkara malabarica</i> (Lam.) Tirveng.	Kaare	Small tree
<i>Debia ovatifolia</i> (Cav.) Neupane & N.Wikstr.	Nil	Herb
<i>Gardenia latifolia</i> Aiton	Papda	Tree



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<i>Ixora pavetta</i> Andrews	Nil	Tree
<i>Meyna spinosa</i> Roxb. ex Link	Chatai ala	Small tree
<i>Mitracarpus hirtus</i> (L.) DC.	Nil	Herb
<i>Mitragyna parvifolia</i> (Roxb.) Korth.	Gulikadam	Tree
<i>Morinda citrifolia</i> L.	Nuni	Tree
<i>Neolamarckia cadamba</i> (Roxb.) Bosser	Kadamb	Tree
<i>Oldenlandia corymbosa</i> L.	Pitpapra	Herb
<i>Richardia scabra</i> L.	Nil	Herb
<i>Spermacoce alata</i> Aubl.	Nil	Herb
<i>Spermacoce articularis</i> L.f.	Guthari	Herb
<i>Spermacoce latifolia</i> Aubl.	Madanghanta	Herb

#### RUTACEAE

<i>Aegle marmelos</i> (L.) Corrêa	Sinjo	Tree
<i>Atalantia monophylla</i> DC.	Nil	Small tree
<i>Citrus × limon</i> (L.) Osbeck	Kaji nimbu	Small tree
<i>Murraya paniculata</i> (L.) Jack	Kamini	Small tree

#### SALICACEAE

<i>Flacourtia indica</i> (Burm.f.) Merr.	Pada	Tree
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#### SAPOTACEAE

<i>Madhuca longifolia</i> (L.) J.F. Macbr.	Kundih	Tree
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#### SCHIZAEACEAE

<i>Lygodium flexuosum</i> (L.) Sw.	Kala mahajal	Climber
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#### SIMAROUBACEAE

<i>Ailanthus excelsa</i> Roxb.	Maha neem	Tree
<i>Simarouba glauca</i> DC.	Laxmi taru	Tree

#### SMILACACEAE

<i>Smilax zeylanica</i> L.	Repan	Climber
<i>Smilax perfoliata</i> Lour.	Bada repan	Climber

#### SOLANACEAE



DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" IN JAMTARA DISTRICT OF JHARKHAND



<i>Datura stramonium</i> L.	Datura	Shrub
<i>Physalis angulata</i> L.	Popti	Herb
<i>Solanum nigrum</i> L.	Gurukami	Shrub
<i>Solanum sisymbriifolium</i> Lam.	Sada kantikari	Shrub
<i>Solanum torvum</i> Sw.	Bhurat	Shrub
<i>Solanum virginianum</i> L.	katrenia	Herb

**TYPHACEAE**

<i>Typha angustifolia</i> L.	Pater	Herb
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**ULMACEAE**

<i>Holoptelea integrifolia</i> (Roxb.) Planch.	Chilbil	Tree
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**URTICACEAE**

<i>Pilea picta</i> Herzog	Nil	Herb
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**VERBENACEAE**

<i>Lantana camara</i> L.	Putus	Shrub
<i>Lippia javanica</i> (Burm.f.) Spreng.	Nil	Shrub
<i>Phyla nodiflora</i> (L.) Greene	Jal pipli	Herb
<i>Stachytarpheta jamaicensis</i> (L.) Vahl	Jarbo	Shrub

**VIOLACEAE**

<i>Pigea enneasperma</i> (L.) P.I.Forst.	Munbora	Herb
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**VITACEAE**

<i>Ampelocissus latifolia</i> (Roxb.) Planch.	Ban angur	Climber
<i>Causonis trifolia</i> (L.) Mabb. & J.Wen	Amal lata	Climber

**ZINGIBERACEAE**

<i>Curcuma longa</i> L.	Haldi	Herb
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## Fauna of the District:-

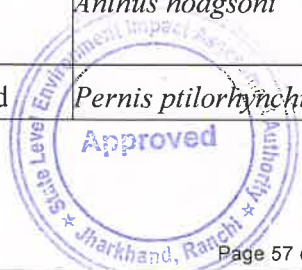
**Table: Bird Diversity in Ladna- Guvakola- Chandradipa- Nildaha Hills Area**

Common name	Scientific name	Santhali name	Status
Alexandrine Parakeet	<i>Psittacula eupatria</i>	Bhanda Miru	NT
Ashy Drongo	<i>Dicrurus leucophaeus</i>	Toroch Dipchuya	LC
Asian Koel	<i>Eudynamys scolopaceus</i>	Kohli	LC
Asian Openbill	<i>Anastomus oscitans</i>	Thonta Padak Sunkhal	LC
Asian Palm-Swift	<i>Cypsiurus balasiensis</i>	Tale Sakam Pipid Piyo	LC
Asian Pied Starling	<i>Acridotheres ginginianus</i>	Charech Kisni	LC
Bank Myna	<i>Acridotheres ginginianus</i>	Tandi Kisni	LC
Bar – Headed Goose	<i>Anser indicus</i>	Bar-Dag Bohok Gede	LC
Barn Swallow	<i>Hirundo rustica</i>	Kharay Pipid Piyo	LC
Black Kite	<i>Milvus migrans</i>	Kundit	LC
Black Redstart	<i>Phoenicurus ochruros</i>	Hinde Arak Chedebede	LC
Black- Winged Kite	<i>Elanus caeruleus</i>	Titmil	LC
Black-headed Ibis	<i>Threskiornis melanocephalus</i>	Hende Bohak Pond Tarjuba	NT
Black-Hooded Oriole	<i>Oriolus xanthornus</i>	Hende Bohok Sasad Piyo	LC
Black-Naped Oriole	<i>Oriolus chinensis</i>	Hende-Totka Sasad Piyo	LC
Black-Winged Stilt	<i>Himantopus himantopus</i>	Tangkataku Kata Tititegonj	LC
Blue Rock Thrush	<i>Monticola solitarius</i>	Sherma Chapachudi	LC
Brahminy Starling	<i>Sturnia pagodarum</i>	Lubuk Kisni	LC
Bronze-Winged Jacana	<i>Metopidius indicus</i>	Kasa Fankdank Dak	LC
Brown Hawk-Owl	<i>Ninox scutulata</i>	Padak Lekan Hasa Dundu	LC
Brown Shrike	<i>Lanius cristatus</i>	Badge Kerketa	LC

Brown-Headed Gull	<i>Chroicocephalus brunnicephalus</i>	Hasa Bohok Mach Renta	LC
Cattle Egret	<i>Bubulcus ibis</i>	Tandi Konk	LC
Chestnut-Tailed Starling	<i>Sturnia malabarica</i>	Chirhud Kisni	LC
Citrine Wagtail	<i>Motacilla citreola</i>	Kabji chanchir	LC
Common Cuckoo	<i>Cuculus conorus</i>	Kakuk Kohli	LC
Common Greenshank	<i>Tringa nebularia</i>	Hariyad Tanmatakur	LC
Common Kingfisher	<i>Alcedo atthis</i>	Duyunch Kikar	LC
Common Myna	<i>Acridotheres tristis</i>	Kisni	LC
Common Pochard	<i>Aythya ferina</i>	Arak Bohok Jiling Gede	VU
Common Quail	<i>Coturnix coturnix</i>	Bayhad Gundri	LC
Common Sandpiper	<i>Actitis hypoleucos</i>	Tibtib	LC
Common Snipe	<i>Gallinago gallinago</i>	Bata	LC
Common Tailorbird	<i>Orthotomus sutorius</i>	Phuchi	LC
Common Woodshrike	<i>Tephrodornis pondicerianus</i>	Matagajad Kerketa	LC
Coppersmith Barber	<i>Psilopogon haemacephalus</i>	Puk	LC
Cotton Pygmy-Goose	<i>Nettapus coromandelianus</i>	Tulam Dupka Gede	LC
Crested Lark	<i>Galerida cristata</i>	Dhuchut Chanchir	LC
Eurasian Collared-Dove	<i>Streptopelia decaocto</i>	Mala Potam	LC
Eurasian Hoopoe	<i>Upupa epops</i>	Dabla Kutam	LC
Eurasian Kestrel	<i>Falco tinnunculus</i>	Richi	LC
Eurasian Moorhen	<i>Gallinula chloropus</i>	So Dak Sim	LC
Eurasian Wigeon	<i>Mareca penelope</i>	Rupa Hodmo Gede	LC
Eurasian Wryneck	<i>Jynx torquilla</i>	Mochdab Hotok Dare Japank	LC
Gadwall	<i>Maraca strepera</i>	Dehak Gede	LC
Great Cormorant	<i>Phalacrocorax carbo</i>	Ltu Dak Kanhu	LC
Great Crested Grebe	<i>Podiceps cristatus</i>	Dhuchut Latu Raykhudi	LC
Great Egret	<i>Ardea alba</i>	Gada Layad Konk	LC
Greater Coucal	<i>Centropus sinensis</i>	Mahkal	LC
Greater Painted-Snipe	<i>Rostratula benghalensis</i>	Pund-Chasma Bata	LC



Green Bee-Eater	<i>Merops orientalis</i>	Tiram	LC
Green Sandpiper	<i>Tringa ochropus</i>	Hariyaf Kata Tibtib	LC
Grey Heron	<i>Ardea cinerea</i>	Toroch Latu Konk	LC
Grey-headed Lapwing	<i>Vanellus cinereus</i>	Titi Tengoch	LC
Grey-headed Swamphen	<i>Porphyrio poliocephalus</i>	Solekan Dak Sim	LC
Hose Sparrow	<i>Passer domesticus</i>	Ghadwa	LC
House Crow	<i>Corvus splendens</i>	Kanhu	LC
Hume's Warbler	<i>Phylloscopus humei</i>	Hanriyad Chidiyad	LC
Indian Cormorant	<i>Phalacrocorax fuscicollis</i>	Dak Kanhu	LC
Indian Golfen Oriole	<i>Oriolus kundoo</i>	Sasad Piyo	LC
Indian Nightjar	<i>Caprimulgus asiaticus</i>	Haput	LC
Indian Pond-Heron	<i>Ardeola grayii</i>	Lubuk Konk	LC
Indian River Tern	<i>Sterna aurantia</i>	Gada Mach Renta	VU
Indian Robin	<i>Copsychus fulicatus</i>	Udinch	LC
Indian Roller	<i>Coracias benghalensis</i>	Toya	LC
Intermediate Egret	<i>Ardea intermedia</i>	Lumung Pond Konk	LC
Jungle Babbler	<i>Argya striata</i>	Jinhu	LC
Jungle Owlet	<i>Glaucidium radiatum</i>	Bir Kokor	LC
Jungle-Bush Quail	<i>Perdica asiatica</i>	Khadad Gundri	LC
Lasser Whistling Duck	<i>Dendrocygna javanica</i>	Jidijhing Gede	LC
Laughing Dove	<i>Streptopelia senegalensis</i>	Oot Potam	LC
Little Cormorant	<i>Microcarbo niger</i>	Katich Dak Kanhu	LC
Little Egret	<i>Egretta garzetta</i>	Pond Kank	LC
Little Grebe	<i>Tachybaptus ruficollis</i>	Katich Raykhudi	LC
Little Ringed Plover	<i>Charadrius dubius</i>	Tilbich Bata	LC
Little Swift	<i>Apus affinis</i>	Katich Pipid Piyo	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	Latto Janga Pajhad	LC
Long-Tailed Shrike	<i>Lanius Schach</i>	Jhal Chupi Kerketo	LC
Northern Pintail	<i>Anas acuta</i>	Sui Chupi Gede	LC
Olive-Backed Pipit	<i>Anthus hodgsoni</i>	Siyalom Deya Chanchir	LC
Oriental Honey Buzzard	<i>Pernis ptilorhynchus</i>	Dumur Jom Pajhar	LC



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Oriental Magpie-Robin	<i>Copsychus saularis</i>	Hathi Undich	LC
Pacific Golden Plover	<i>Pluvialis fulva</i>	Sona Bata	LC
Paddyfield Pipit	<i>Anthus rufulus</i>	Hudu Khet Chanchir	LC
Pheasany-Tailed Jacana	<i>Hydrophasianus chirurgus</i>	Dak Sim Sandi	LC
Pied Crested Cuckoo	<i>Clamator jacobinus</i>	Dak Daram	LC
Pied Kingfisher	<i>Ceryle rudis</i>	Kabra Kikar	LC
Plain Prinia	<i>Prinia inornate</i>	Ruguy Ruguy	LC
Purple Heron	<i>Ardea purpurea</i>	Araktoch Latu Konk	LC
Purple-Rumped Sunbird	<i>Leptocoma zeylanica</i>	Sasad Hende Sugi	LC
Red-Crested Pochard	<i>Netta rufina</i>	Arak Joreng Gede	LC
Red-Rumped Swallow	<i>Cecropsis daurica</i>	Arak Chupi Bhilaba	LC
Red-Vented Bulbul	<i>Pycnonotus cafer</i>	Tik Todak	LC
Red-Wattled Lapwing	<i>Vanellus indicus</i>	Titi Tengoch	LC
Red-Whiskered Bulbul	<i>Pycnonotus jocosus</i>	Arak Jilpi Tik Todok	LC
Rock Pigeon	<i>Columba livia</i>	Pawara	LC
Ruddy Shelduck	<i>Tadorna ferruginea</i>	Arak Joreng Gede	LC
Rufous Treepie	<i>Dendrocitta vagabunda</i>	Boroding	LC
Savanna Nightjar	<i>Caprimulgus affinis</i>	Bhonda Haput	LC
Scaly-Breasted Munia	<i>Lonchura punctulata</i>	Haku Chungak Katis Chede	LC
Shikra	<i>Accipiter badius</i>	Tirmuti	LC
Siberian Stonechat	<i>Saxicola maurus</i>	Disom chetechete	NE
Spotted Dove	<i>Streptopelia chinensis</i>	Bagde Potam	LC
Spotted Owlet	<i>Athene brama</i>	Kokor	LC
Sykes's Warbler	<i>Iduna rama</i>	Thench	LC
Taiga Flycatcher	<i>Ficedula albicilla</i>	Arak Hotok Chedebede	LC
Temminck's Stint	<i>Calidris temminckii</i>	Pund-Lach Tibtib	LC
Tickell's Leaf Warbler	<i>Phylloscopus affinis</i>	Sasad Ment Kuti Chidiyad	LC



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Tricolored Munia	<i>Lonchura malacca</i>	Pe Rong Kutis Chede	LC
Tufted Duck	<i>Aythya fuligula</i>	Tuila Gede	LC
White- Breasted Waterhen	<i>Amaurornis phoenicurus</i>	Dak	LC
White Wagtail	<i>Motacilla alba</i>	Gada Chanchir	LC
White-Bellied Drongo	<i>Dicrurus caerulescens</i>	Pond Lach Dhipchuya	LC
White-Throated Kingfisher	<i>Halcyon smyrnensis</i>	Duyunch Kikar	LC
Woolly-necked Stork	<i>Ciconia episcopus</i>	Kaskom Hotok Sukhal	NT
Yellow Wagtail	<i>Motacilla flava</i>	Sasad Chanchir	LC
Yellow-Footed Green- Pigeon	<i>Treron Phoenicopterus</i>	Huhand Pawara	LC
Yellow-Wattled Lapwing	<i>Vanellus malabaricus</i>	Titi Tengoch	LC
Zitting Cisticola	<i>Cisticola juncidis</i>	Gah Gender Ruguy Ruguy	LC

(LC: Least Concern; NT: Near Threatened; VU: Vulnerable)



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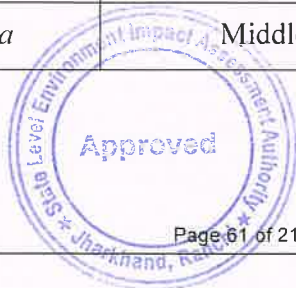
**Table: Some Common Moth in Ladna- Guvakola- Chandradipa- Nildaha Hills Area**

<b>Scientific name</b>	<b>Common name</b>	<b>Family</b>
<i>Achaea janata</i>	Castor semi-looper	Erebidae
<i>Agrius convolvuli</i>	Convolvulus hawk-moth	Sphingidae
<i>Agrotis segetum</i>	Turnip moth	Erebidae
<i>Aloa lactinea</i>	Red costate tiger moth	Erebidae
<i>Anisephyra ocularia</i>	Nil	Geometridae
<i>Anomis flava</i>	Cotton looper moth	Erebidae
<i>Antheraea mylitta</i>	Tropical tasar silkmoth	Eupterotidae
<i>Antheua servula</i>	Nil	Notodontidae
<i>Argina astrea</i>	Crotalaria pod borer	Erebidae
<i>Artena dotata</i>	Nil	Erebidae
<i>Asota caricae</i>	Tropical tiger moth	Erebidae
<i>Bastilla arcuata</i>	Nil	Erebidae
<i>Bastilla crameri</i>	Nil	Erebidae
<i>Bastilla joviana</i>	Nil	Erebidae
<i>Biston suppressaria</i>	Tea looper	Geometridae
<i>Botyodes asialis</i>	Nil	Crambidae
<i>Botyodes caldusalis</i>	Nil	Crambidae



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<i>Brunia antica</i>	Nil	Erebidae
<i>Carea angulata</i>	Nil	Nolidae
<i>Ceryx diptera</i>	Nil	Erebidae
<i>Chalciope mygdon</i>	Triangular-striped moth	Noctuidae
<i>Chlorissa distinctaria</i>	Nil	Geometridae
<i>Cydalima laticostalis</i>	Pearl moth	Crambidae
<i>Diaphania indica</i>	Cucumber moth	Crambidae
<i>Episteme adulatrix</i>	Day flying moth	Noctuidae
<i>Erebus macrops</i>	Common owl-moth	Erebidae
<i>Eudocima materna</i>	Dot underwing moth	Erebidae
<i>Gastropacha pardale nandina</i>	Brown lapped moth	Lasiocampidae
<i>Gesonia obeditalis</i>	Nil	Noctuidae
<i>Glyphodes bicolor</i>	Bicoloured pearl	Crambidae
<i>Glyphodes stolalis</i>	Nil	Crambidae
<i>Maruca vitrata</i>	Maruca pod borer	Crambidae
<i>Micronia aculeata</i>	Grey swallowtail moth	Uraniidae
<i>Nausinoe perspectata</i>	Nil	Crambidae
<i>Pingasa chlora</i>	White looper moth	Geometridae
<i>Pingasa ruginaria</i>	Bordered duster moth	Geometridae
<i>Polyphagozerra coffeae</i>	Red coffee borer	Cossidae
<i>Problepsis deliaria</i>	Eye looper moth	Geometridae
<i>Problepsis vulgaris</i>	Nil	Geometridae
<i>Pygospila tyres</i>	Spotted grass moth	Crambidae
<i>Pyrausta signatalis</i>	Raspberry pyrausta moth	Crambidae
<i>Scopula decorata</i>	Middle lace border	Geometridae



<i>Spirama helicina</i>	Nil	Erebidae
<i>Spirama retorta</i>	Indian owlet-moth	Erebidae
<i>Spoladea recurvalis</i>	Beet webworm moth	Crambidae
<i>Teldenia vestigiata</i>	Nil	Drepanidae
<i>Terastia meticulosalis</i>	Erythrina borer	Crambidae
<i>Thalassodes quadraria</i>	Grey greenish looper	Geometridae
<i>Trabala vishnou</i>	Rose-myrtle lappet moth	Lasiocampidae
<i>Trigonodes hyppasia</i>	Semi-looper	Erebidae



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**Table: Some Common Butterflies in Ladna- Guvakola- Chandradipa- Nildaha Hills Area**

Common name	Scientific name
Autumn leaf	<i>Doleschallia bisaltide</i>
Baronet	<i>Euthalia nais</i>
Brown awl	<i>Badamia exclamationis</i>
Chestnut bob	<i>Iambrix salsala</i>
Chocolate pansy	<i>Junonia iphita</i>
Commander	<i>Moduza procris</i>
Common awl	<i>Hasora badra</i>
Common crow	<i>Euploea core</i>
Common emigrant	<i>Catopsilia pomona</i>
Common grass dart	<i>Taractrocera maevius</i>
Common jay	<i>Graphium doson</i>
Common jezebel	<i>Delias eucharis</i>
Common lascar	<i>Pantoporia hordonia</i>
Common lime butterfly	<i>Papilio demoleus</i>
Common mime	<i>Chilasa clytia</i>
Common mormon	<i>Papilio polytes</i>
Common nawab	<i>Polyura athamas</i>
Common pierrot	<i>Castalius rosimon</i>
Common rose	<i>Pachliopta aristolochiae</i>
Common sailer	<i>Neptis hylas</i>
Common silverline	<i>Cigaritis vulcanus</i>
Common treebrown	<i>Lethe rohria</i>
Common wanderer	<i>Pareronia valeria</i>
Common yellow-breasted flat	<i>Gerosis bhagava</i>

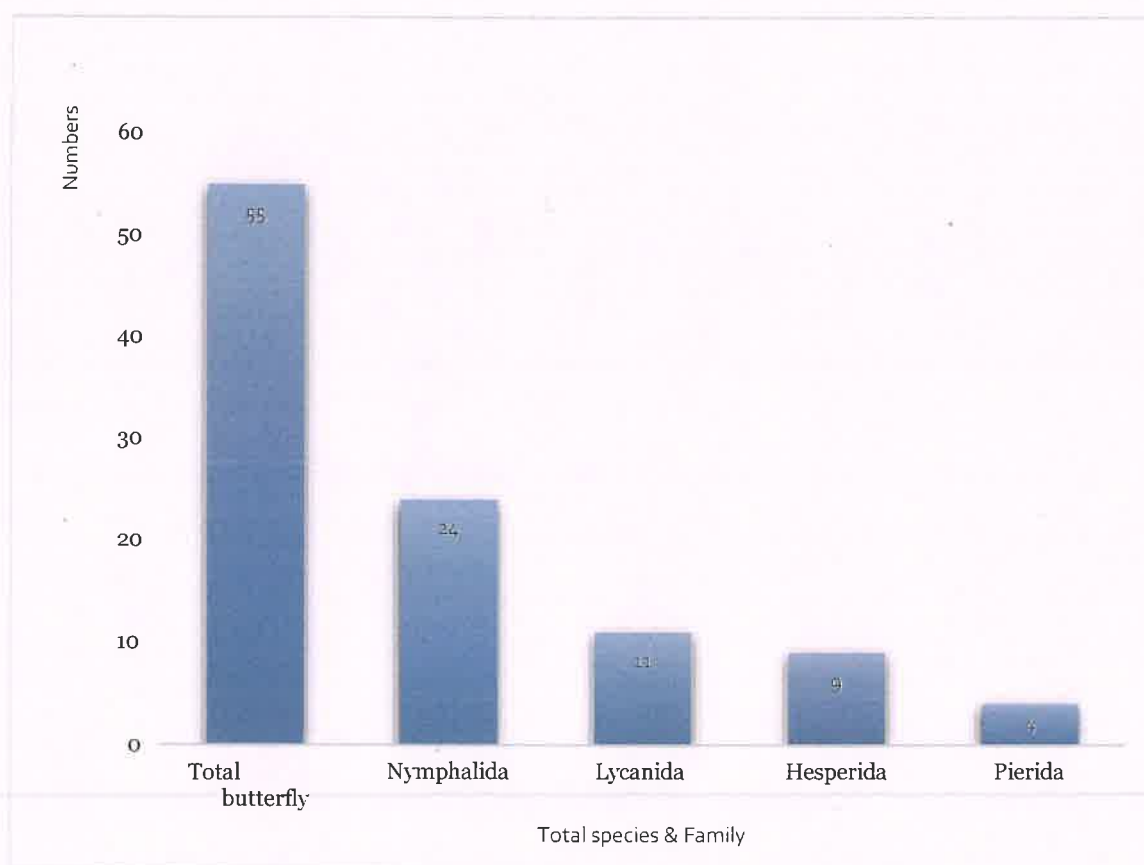


Crimson rose	<i>Pachliopta hector</i>
Danaid eggfly	<i>Hypolimnas misippus</i>
Dark blue tiger	<i>Tirumala septentrionis</i>
Forget-me-not	<i>Catochrysops strabo</i>
Great eggfly	<i>Hypolimnas bolina</i>
Grey count	<i>Tanaecia lepidea</i>
Grey pansy	<i>Junonia allites</i>
Indian oakblue	<i>Arhopala atrax</i>
Indian sunbeam	<i>Curetis thetis</i>
Large branded swift	<i>Pelopidas subochracea</i>
Lemon pansy	<i>Junonia lemonias</i>
Lesser three-ring	<i>Ypthima inica</i>
Oriental grass jewel	<i>Freyeria putli</i>
Painted courtesan	<i>Euripus consimilis</i>
Painted jezebel	<i>Delias hyparete</i>
Peacock pansy	<i>Junonia almana</i>
Plain hedge blue	<i>Celastrina lavendularis</i>
Plain tiger	<i>Danaus chrysippus</i>
Plains cupid	<i>Luthrodes pandava</i>
Plumbeous silverline	<i>Cigaritis schistacea</i>
Rice swift	<i>Borbo cinnara</i>
Small branded swift	<i>Pelopidas mathias</i>
Small leopard	<i>Phalanta alcippe</i>
Spot swordtail	<i>Graphium nomius</i>
Straight swift	<i>Parnara guttatus</i>
Striped pierrot	<i>Tarucus nara</i>



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Striped tiger	<i>Danaus genutia</i>
Tailed palmfly	<i>Elymnias caudata</i>
Tawny coster	<i>Acraea terpsicore</i>
Yellow pansy	<i>Junonia hierta</i>
Zebra blue	<i>Leptotes plinius</i>



### Butterfly diversity in Ladna- Guvakola- Chandradipa- Nildaha Hills



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**Table: Fish diversity in Ladhna Dam**

<b>Family</b>	<b>Scientific name</b>	<b>Local name</b>
Amblycipitidae	<i>Amblyceps mangois</i>	Billi
Anabantidae	<i>Anabas testudineus</i>	Koi
Anguillidae	<i>Anguilla bengalensis</i>	Bao, baim
Bagridae	<i>Mystus tengara</i>	Tengara
	<i>Mystus vittatus</i>	Tengara
	<i>Channa marulius</i>	Sol



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Channidae	<i>Channa punctatus</i>	Girai
	<i>Channa striatus</i>	Shol
	<i>Channa gachua</i>	Chanaga
Cobitidae	<i>Lepidocephalichthys guntea</i>	Gutum, Nakati
Cyprinidae	<i>Salmostoma bacaila</i>	Chela, Chalhawa
	<i>Puntius stigma</i>	Pothi
	<i>Labeo bata</i>	Bata
	<i>Labeo calbasu</i>	Kalbasu
	<i>Labeo rohita</i>	Rohu, Ruee
	<i>Laubuka laubuca</i>	Dankena
	<i>Cirrhinus mrigala</i>	Mrigal
	<i>Esomus danrica</i>	Darika
	<i>Garra lamta</i>	Chaoksi
	<i>Barilius bendelisis</i>	Calha
	<i>Catla catla</i>	Katla
Gobiidae	<i>Glossogobius giurus</i>	Balia
Heteropneustidae	<i>Heteropneustes fossilis</i>	Singee, Singhi
Mastacembelidae	<i>Macrognathus albus</i>	Bomboie
Notopteridae	<i>Notopterus chitala</i>	Chithal, Moya
	<i>Notopterus notopterus</i>	Pholui, Patola
Pangasiidae	<i>Pangasius pangasius</i>	Pangas
Siluridae	<i>Wallago attu</i>	Koyali, Boal
Sisoridae	<i>Glyptothorax telchitta</i>	Telchitta
Synbranchidae	<i>Monopterusuchia</i>	Kuchia
Tetraodontidae	<i>Leiodon cutcutia</i>	Ballon mach
Zenarchopteridae	<i>Dermogenys pusilla</i>	Gania



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**Table: Snake Diversity in Ladna- Guvakola- Chandradipa- Nildaha Hills Area**

Scientific Name	Common Name	Family	Local Hindi Name	Toxicity	Source	Conservation Status
<i>Bungarus fasciatus</i>	Banded Krait	Elapidae	Dharidar Karait	Venomous	From local people	LC
<i>Amphiesma stolata</i>	Buff-striped Keelback	Colubridae	Hurhurwa	Non-venomous	Direct sighting	LC

<i>Xenochrophis piscator</i>	Checked Keelback	Colubridae	Dhond	Non-venomous	Direct sighting	LC
<i>Bungarus caeruleus</i>	Common Krait	Elapidae	Karait	Venomous	Direct sighting	DD
<i>Eryx conicus</i>	Common Sandboa	Boidae	Domuha Saap	Non-venomous	From local people	NT
<i>Ahaetulla nasuta</i>	Green Vine Snake	Colubridae	Hara Saap	Mild Venomous	From local people	LC
<i>Ptyas mucosus</i>	Indian Rat snake	Colubridae	Dhaman	Non-venomous	Direct sighting	CITES Appendix II
<i>Python molurus</i>	Indian Rock Python	Pythonidae	Azgar	Non-venomous	From local people	NT
<i>Naja kaouthia</i>	Monocled Cobra	Elapidae	Nag, Kaala Nag	Venomous	From local people	LC
<i>Daboia russelii</i>	Russells Viper	Viperidae	Pahad Chitti	Venomous	From local people	LC
<i>Naja naja</i>	Spectacled Cobra	Elapidae	Nag, Gehuan Saap	Venomous	Direct sighting	LC
<i>Oligodon taeniolatus</i>	Streaked Kukri Snake	Colubridae	Kukri Saap	Non-venomous	Direct sighting	LC

(LC: Least Concern; NT: Near Threatened; SCH: Schedule; DD: Data deficient)



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**Table: Diversity of Mammals in Ladna- Guvakola- Chandradipa- Nildaha Hills Area**

Common Name	Scientific Name
Asian Elephant	<i>Elephas maximus</i>
Indian Fruit Bat	<i>Pteropus giganteus</i>
Grey Wolf	<i>Canis lupus</i>
Indian Hare	<i>Lepus nigricollis</i>
Indian Jackal	<i>Canis aureus indicus</i>
Jungle Cat	<i>Felis chaus</i>
Indian Palm Squirrel	<i>Funambulus palmarum</i>
Indian Crested Porcupine	<i>Hystrix indica</i>
Wild Boar	<i>Sus scrofa</i>

Sources:- BIODIVERSITY IN LADNA-GUVAKOLA-CHANDRADIPA-NILDAHA HILLS,  
Divisional Forest Officer, Jamtara Forest Division,  
Jamtara, Jharkhand  
Ambika Prasad Research Foundation  
Cuttack, Odisha



  
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### 3.8 General Landforms:

Jamtara district is situated in the north-eastern part of Jharkhand State. The district is situated in the northern plain of India and eastern plateau and hill region. It is a part of Hazaribag plateau. It has been divided into four sub-micro regions, viz., Dumka-Godda uplands, Deoghar uplands, Rajmahal Hills and Pakur uplands on the basis of geological factors like relief, soil, climate, geology and natural vegetation.

Geomorphologically, the district can broadly be divided into three well defined physiographic units (a) Hilly area (b) Rolling Valleys and (c) Pediplain flat country. The general elevation of the area ranges between 150 m–640 m above MSL. The general slope of the district is from north to south-east. Major soil types are Alfisols amongst which Red Sandy soils are common and Ultisols of which red and yellow soils are common.

The area is characterized by undulating topography with hills and plain. The district is located in Rajmahal highland. It consists of rolling open land surface with long ridges and intervening depressions. The highest and lowest elevation identified in north western and south eastern part of the district. The area having a relief of above + 354 amsl constitutes scattered hill features of pre-cambrian rocks. In central part of the district near ajay river basin elevation range occurs between 97-156 above MSL. Eastern zone of the district is mostly low land area whereas western part of the district is generally upland area. The digital elevation model of Jamtara district has been prepared and shown in figure –

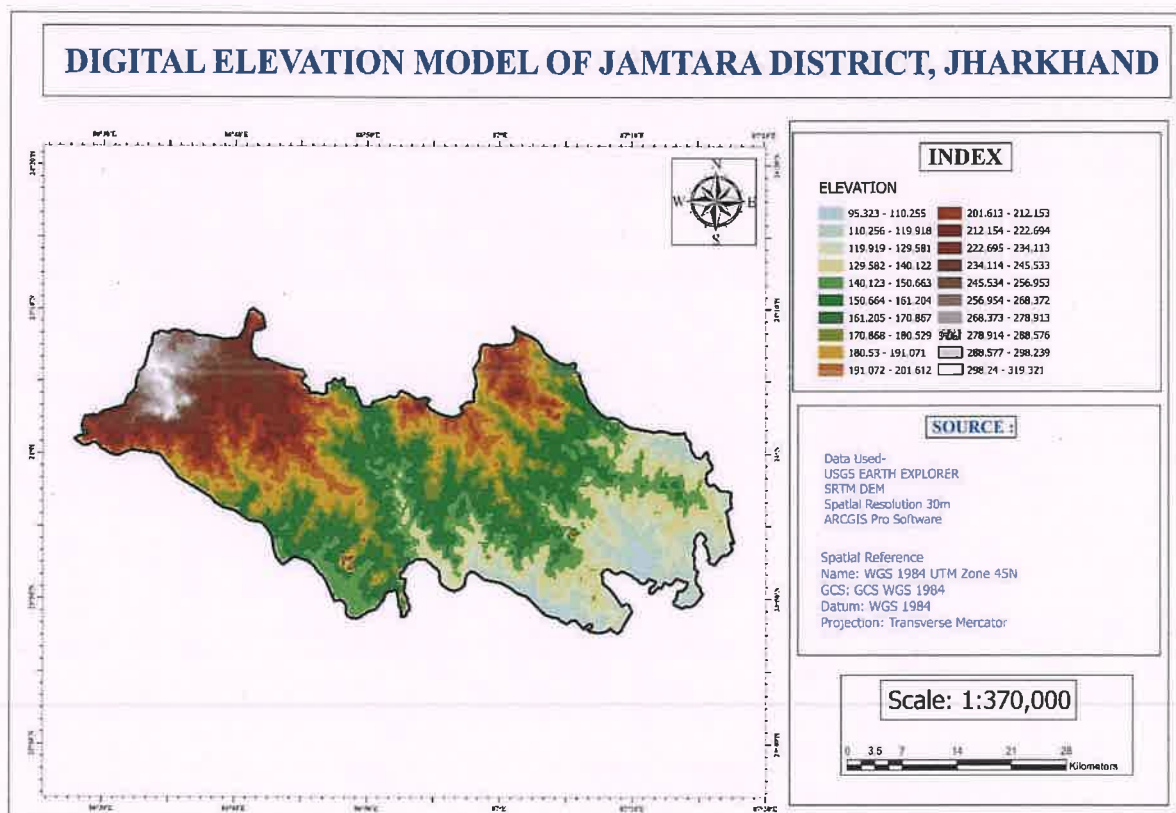


Fig. 3.5: Elevation Map of Jamtara district



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### 3.9 Soil:

The Soil map of the total area of Jamtara district indicates that 41.87 km<sup>2</sup> is covered by townships, water bodies, mines, Gullied land etc. A major area of 1641.41 km<sup>2</sup> of the district is covered by metamorphic soils while the very small area of the district i.e., 0.10 km<sup>2</sup> is covered by Rajmahal trappean soils. An area of 110.03 km<sup>2</sup> is covered by Gondwanas soils. The metamorphic soils cover area lying in all part of the district except few patches on NE side. Similarly, the Gondwanas soils are exposed in central and NE part of district. Some sporadic patches are also occurring on SW part of the district. The trappean soils covers a small area in central part of district.

#### Soil–Landform relationship

The Soil units have good correlation with physiographical units. The mapping unit number 1, 2, and 14 lie on hills and ridges covering an area of 17.48 km<sup>2</sup>. These soils are severely eroded since the slope is > 15%. These Soils are mostly covered by forest cover and are well drained. While mapping unit 4, 5, 6, and 11 lie on upper Pediplain covering an area of 441.40 km<sup>2</sup>, These Soils are moderately eroded with slopes less than 3%. The land use on the Soil is forest and open scrubs.

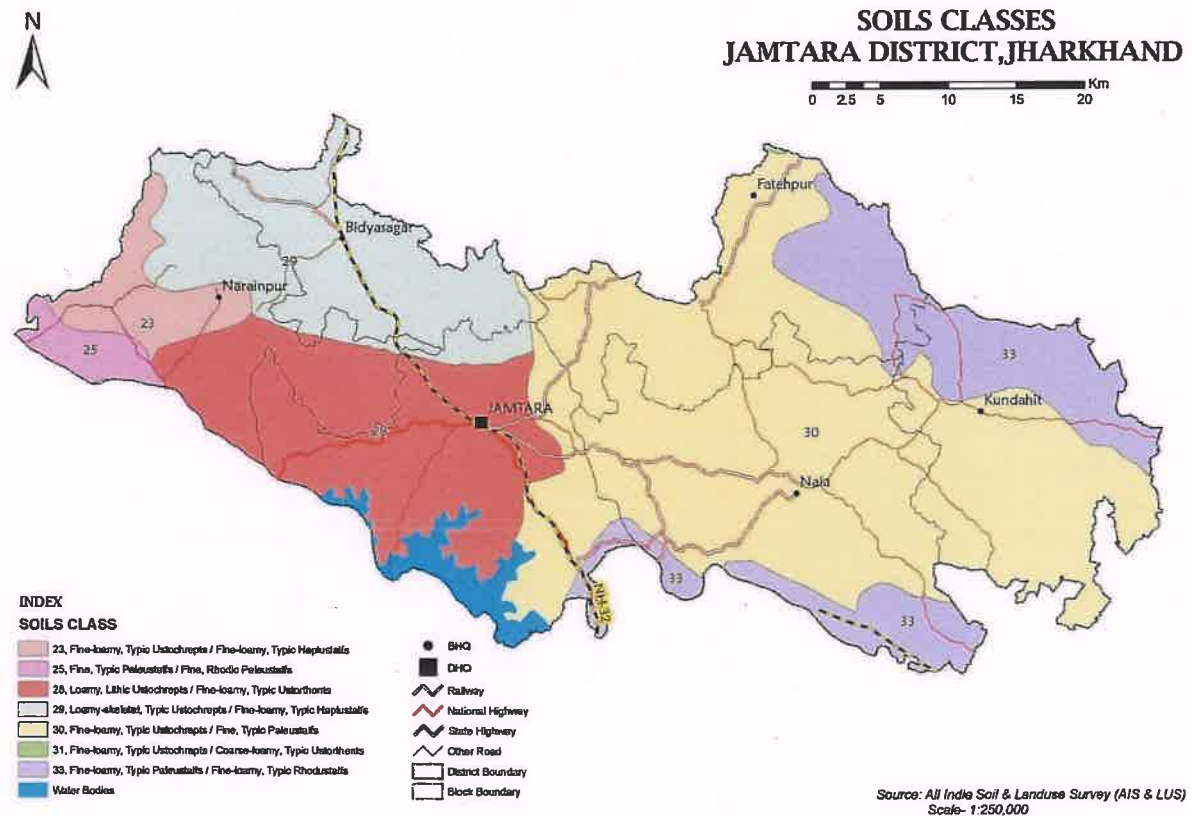


Figure 3.6: Soil Map of Jamtara



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### 3.10 Geomorphology

Geomorphologically, the district can broadly be divided into three well defined physiographic units (a) Hilly area (b) Rolling Valleys and (c) Pediplain flat country. The general elevation of the area ranges between 150 m–640 m above MSL. The general slope of the district is from north to south-east.

Jamtara district is predominantly a hilly district with certain pockets of plain land. The hilly part covers an area of 17.48 km<sup>2</sup> area. The district is located in Rajmahal highland. It consists of rolling open land surface with long ridges and intervening depressions. Average elevation of the district ranges between 150 to 300 metres. Geologically, the area is comprised with Basaltic trap and Sedimentary beds. Quartz and Gneiss are found at some places.

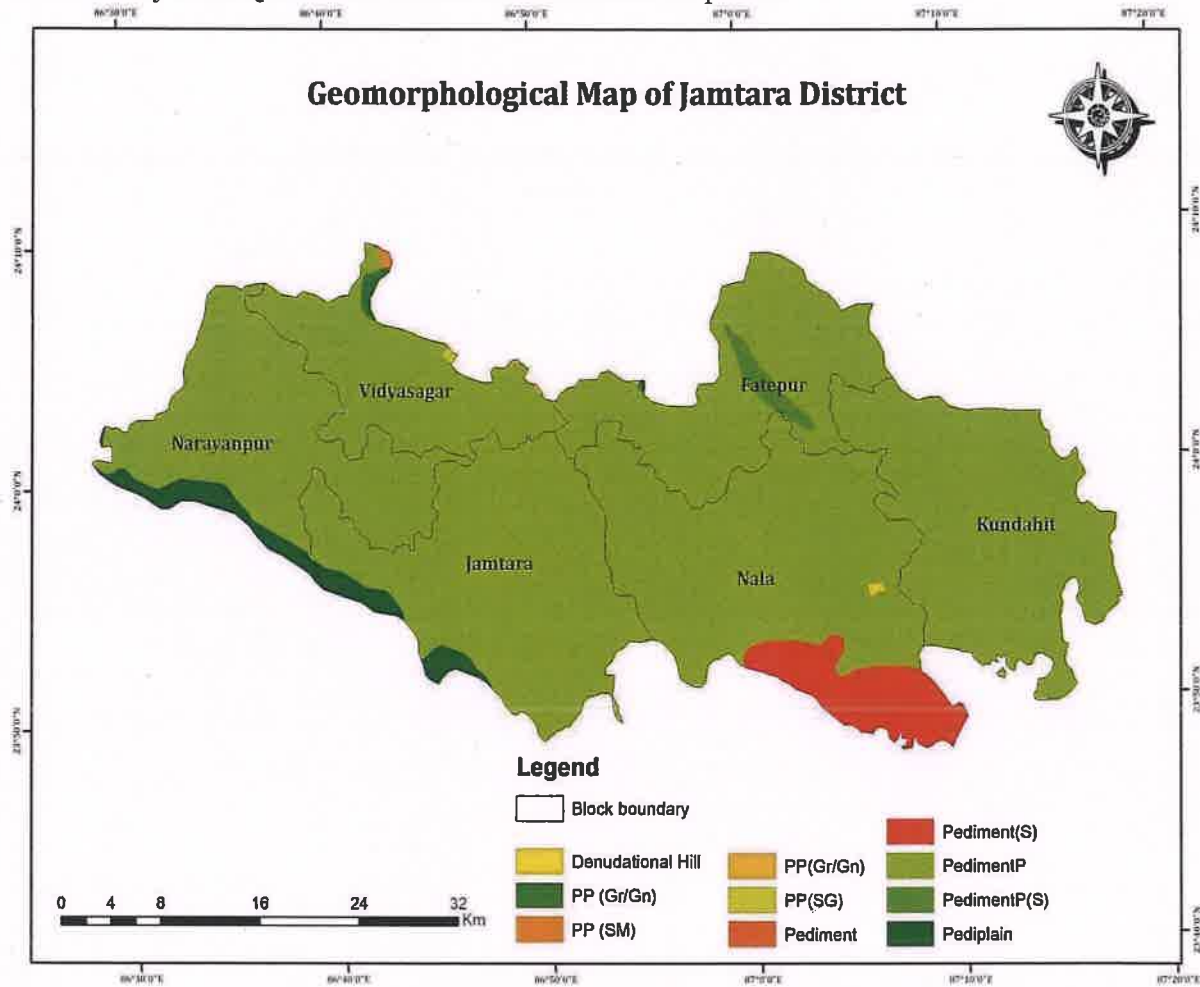


Figure 3.7: Geomorphological Map of Jamtara district

(Source - Aquifer Maps and Ground Water Management Plan of Jamtara district (2018-19))



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## 4. GEOLOGY & MINERAL WEALTH OF THE DISTRICT

### 4.1 Geology:

Geologically, Jamtara district is represented by Chhotanagpur Granite-Gneiss of Archaean age to Proterozoic, which are overlain by Gondwana Super Group, Rajmahal Basaltic lava flows (Upper Jurassic to lower Cretaceous age) with intra-trappean beds and at places Laterites and Alluvium (as per GSI).

The Chhotanagpur Gneissic Complex is largely represented lithological unit in the area and covers the major part of the district uninterrupted. They form more or less gently undulating plains and high grounds pediments and buried pediments, seldom giving rise to small hillocks mounds. They are mostly biotite gneisses and granite gneisses and in general coarse grained with porphyroblastic texture and traversed by Pegmatite and Quartz vein of various dimensions. It contains enclave of Amphibolites and Mica Schists. The Precambrian formations are overlain by Gondwana formations. Gondwanas are represented mainly by Barakar and Talchir formation in the form of a strip running roughly in the NW-SE direction. However, an isolated patch of this formation is also found to occur in the central part of the district. A Talchir formation consists of Sandstone and Shale. Barakar formation consists of white to fawn coloured coarse grained Sandstone, Grits with occasional Conglomerates and Carbonaceous Shales, thin lenticles and streaks of Coal are found in this formation. Common plant fossils occurring in Barakar Shales include Gangomopteris, Cyclopteris, Glossopteris Indica and Vertebraria Indica.

The pre-cambrian formations/Gondwana formation are further overlapped by Rajmahal Traps consists of Basaltic lava flows with sedimentary intra-trappeans. The basaltic rocks are hard and fine to medium grained. Some of the lava flows are vesicular and cavities being filled by Calcite and Chalcedony. The non-vesicular lava flows are hard, tough, compact and fine to medium grained in nature. The vesicular types are comparatively soft and breaks easily. They are greenish to dark in colour with number of flows not clearly delineated in this district. In general, the Rajmahal traps show vertical to horizontal joints trending E-W and N-S. Typical columnar joints are also common. These rocks are weathered with characteristic spherical exfoliation which gives rise to large rounded boulders as the out crops. It has been proved that Basalts too are productive when either weathered or fractured.

The Laterites are found in patches over Rajmahal traps at few locations. The Alluvium patches are generally seen along major streams. Narrow, discontinuous patches of Alluvium particularly in granitic country are identified. They comprise medium to coarse grained Sand associated with Silt and Clay. Occasionally calcareous nodules are also found to occur. They are light grey to brownish colour. The thickness of the Alluvium varies from place to place and is largely controlled by topography of the basement crystallines.

In the district, the rocks are highly deformed and metamorphosed. The exposure of Granite and other associated rocks show intricate folding. Based on morphotectonic analysis, the area has undergone several phases of tectonic deformations which leads to various sets of fractures, fissures, faults etc. which leads to lineaments. Based on lineament study of the area, various sets of fractures have been identified.

The general geological succession as encountered in Jamtara district (As per GSI) is given below



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DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" IN JAMTARA DISTRICT OF JHARKHAND



Table 4.1: Geological Succession of Jamtara district

Lithology	Formation	Age
Alluvium	Quaternary	Recent
Rajmahal Basalt & Intertrapeans	Rajmahal Trap	Middle Jurassic to Cretaceous
Silt stone, sandstone and shale with Coal seams	Barakar	Lower Gondwana (Carboniferous to Permian)
Shale, sandstones and Conglomerate	Talchir	
.....Unconformity.....		
Granite gneiss, biotite-Gneiss, schists, amphibolites, Hornblend schist, pegmatite, quartz veins	Chotanagpur Granite-Gneissic Complex & Unclassified metamorphics	Archean to proterozoic

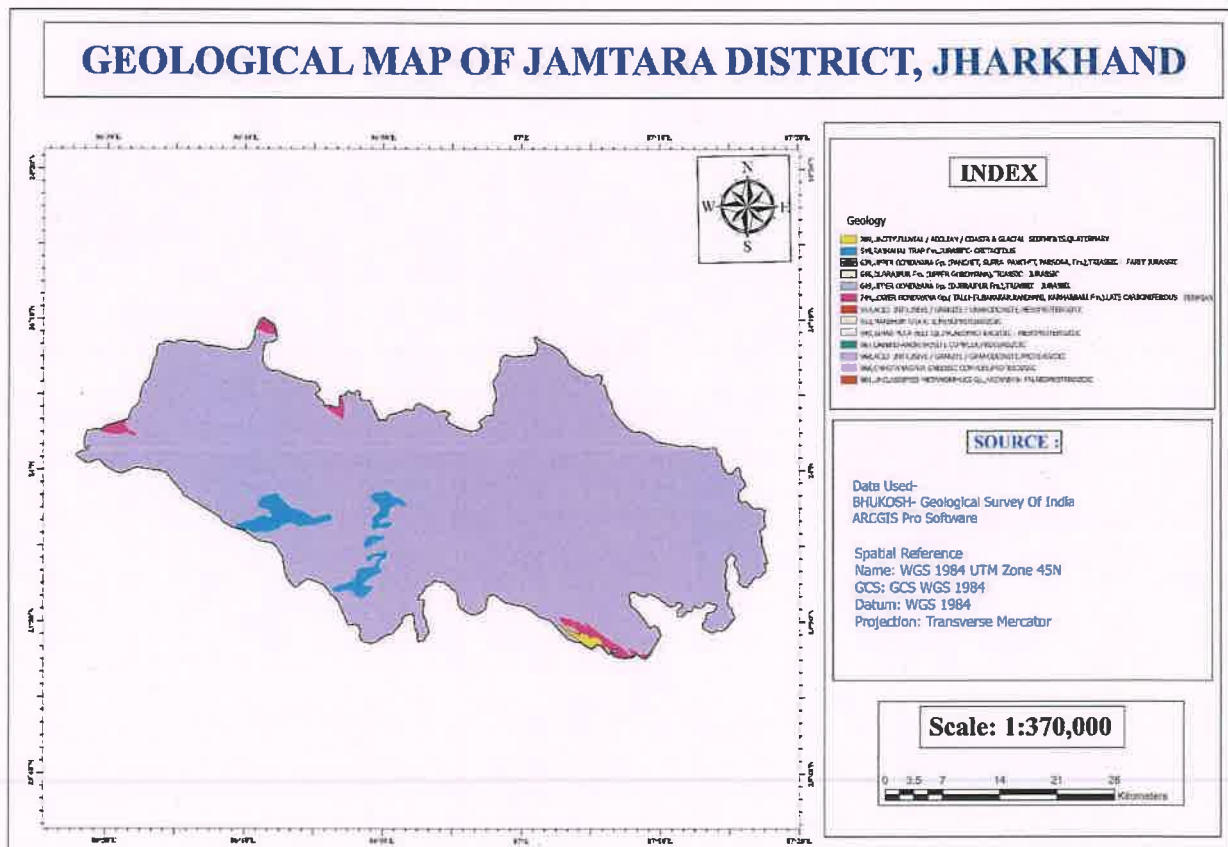


Fig. 4.1: Geological map of Jamtara District



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### 4.2 Overview of Mineral Resources:

As Stated earlier, the geology of the area is mainly comprised of Chhotanagpur Gneissic Complex which cover the most part of the Jamtara district, it is quite monotonous consisting of Granitic Gneiss rocks in most of the areas. These basement rocks are traversed by Dolerite dyke and Pegmatites, therefore most of the mining activity revolve around Stone and Quartz mining. Jamtara district is rich in many Minor minerals Such as Granite Gneiss, Dolerite and Quartz/ Feldspar etc. Coal (Major mineral) was also reported from some areas in Nala CD Block and Fatehpur CD Block of the district. Sand mining also prevalent in many River channels of the district.

Mainly three types of Minor minerals constituents such as Sand, Stone and Bajri are required for any type of construction apart from other material like cement and steel. In the earlier time, the mud houses/buildings were constructed with the use of mud. However, with the passage of time, new techniques of development activities were started. As such the demand of Minor mineral started on an increasing trend. In order to meet the requirement of raw material for construction, the local residents used to lift sand etc. from the river beds to meet out their bonafide requirement. However, after coming into being "The Jharkhand Minor Mineral Rules 2017", the mining is regulated in accordance with the rules. Jamtara is rich in minerals such as Sand, Stone, Quartz, Feldspar, Granite gneiss. Sand mining is mainly practiced in Ajay, Barakar, Hingla, Kuruli, Shiddheshwari River of Jamtara district.

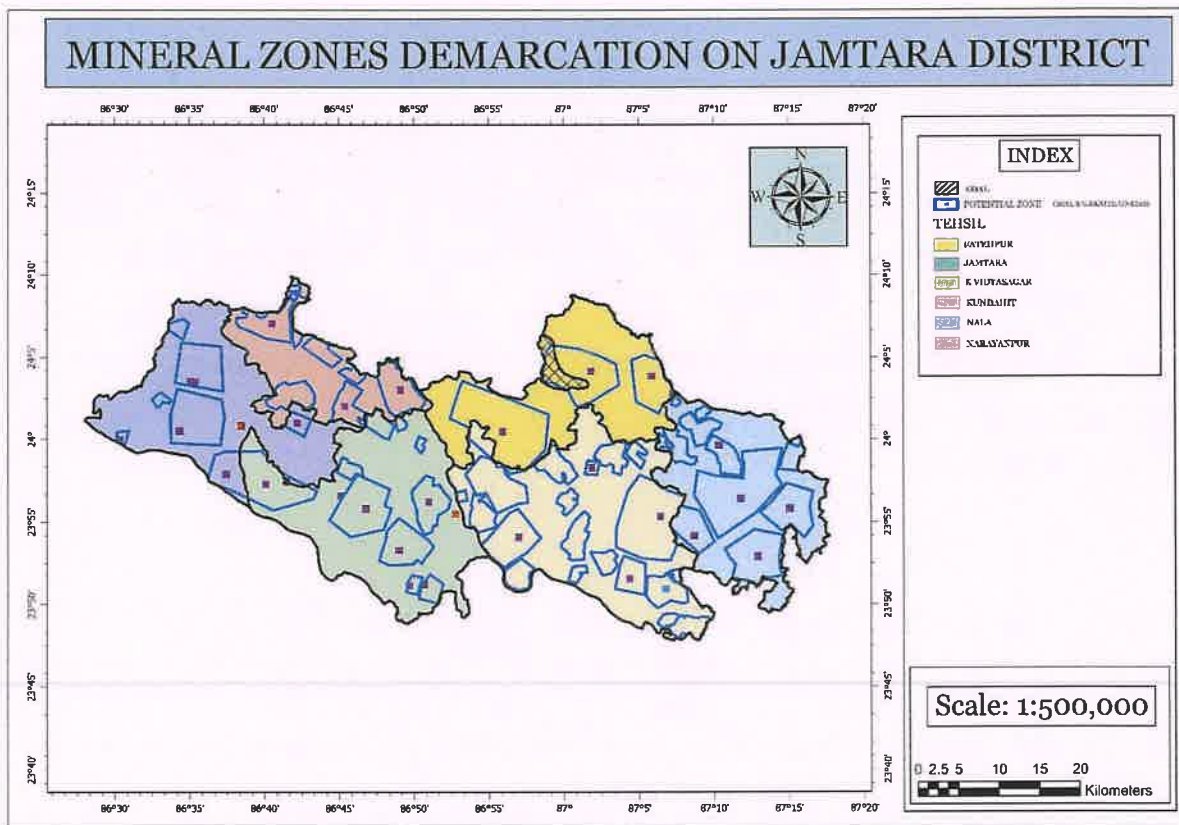


Fig. 4.2: Mineral Map of Jamtara District



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## 5. DRAINAGE SYSTEM & IRRIGATION PATTERN

### 5.1 Drainage System:

The district is mainly drained by the Rivers Barakar, Rajiya Joriya, Ajay, Sheela (Shidheshwari), Kurli, Hingli Brahmani, Mayurakshi and their tributaries. The drainage is mainly controlled by South easterly flowing Ajay River and Southerly flowing Barakar River and their tributaries. The drainage pattern is mostly dendritic and drainage density is moderate. Ajay and Barakar Rivers are the highest order stream in the area. The drainage of the area is controlled by these two rivers and their tributaries. Ajay River flows from North-West to South-East, while Barakar River flows from North to South. Ajay River originates from Saran (24°29'00" N; 86°18'00" E) in the south eastern part of Chakai Plateau and flows eastward into Bhagirathi catchments. It enters the district area with a large meandering loop and then follows the straight course and exits near Debkunda in a meandering fashion. Barakar is also a long-distance river, originating at the Koderma plateau, and occupies the south-western part of the district. Maithon Reservoir is constructed over Barakar River. The streams are mostly ephemeral and are active during the rainy season. The drainage pattern is dendritic to sub-dendritic with medium drainage density. Most of the first and second order streams are cultivated. A large number of man-made lakes/ponds are abundant in the area. Near to the mining area, most of the streams are high polluted.

### 5.2 Drainage system with description of main River:

Sl. No.	Name of the River	Area Drained (km <sup>2</sup> )	% Area Drained in the District
1	Ajay	17.71	0.97%
2	Barakar	7.34	0.40%
3	Hingla Nadi	1.36	0.07%
4	Kuruli Nadi	2.41	0.13%
5	Shiddheshwari Nadi	4.29	0.24%

### 5.3 Salient features of Important Rivers and Streams:

Sl. No.	Name of the River/Stream	Total Length in the District (in km)	Place of Origin	Altitude at Origin
1	Ajay	50.6	Tilabani	157 m
2	Barakar	27.2	Karmatanr	192 m
3	Hingla Nadi	19.4	Panjanian	142 m
4	Kuruli Nadi	30.1	Semuldubi	174 m
5	Shiddheshwari Nadi	42.9	Chak Majhaldih	182 m



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Name of Drainage	Location on District	Flowing from
Beri Nadi	West	North to West
Ajay River	Centre	North to South
Rajyoga Nadi	SW	North to South
Bansjuria Nadi	SE	North to South
Siddheshwari Nadi	NE	NW-SE
Kuruli Nadi	SE	NW-SE

Table 5.1: Salient features of River/Stream flowing in Jamtara District

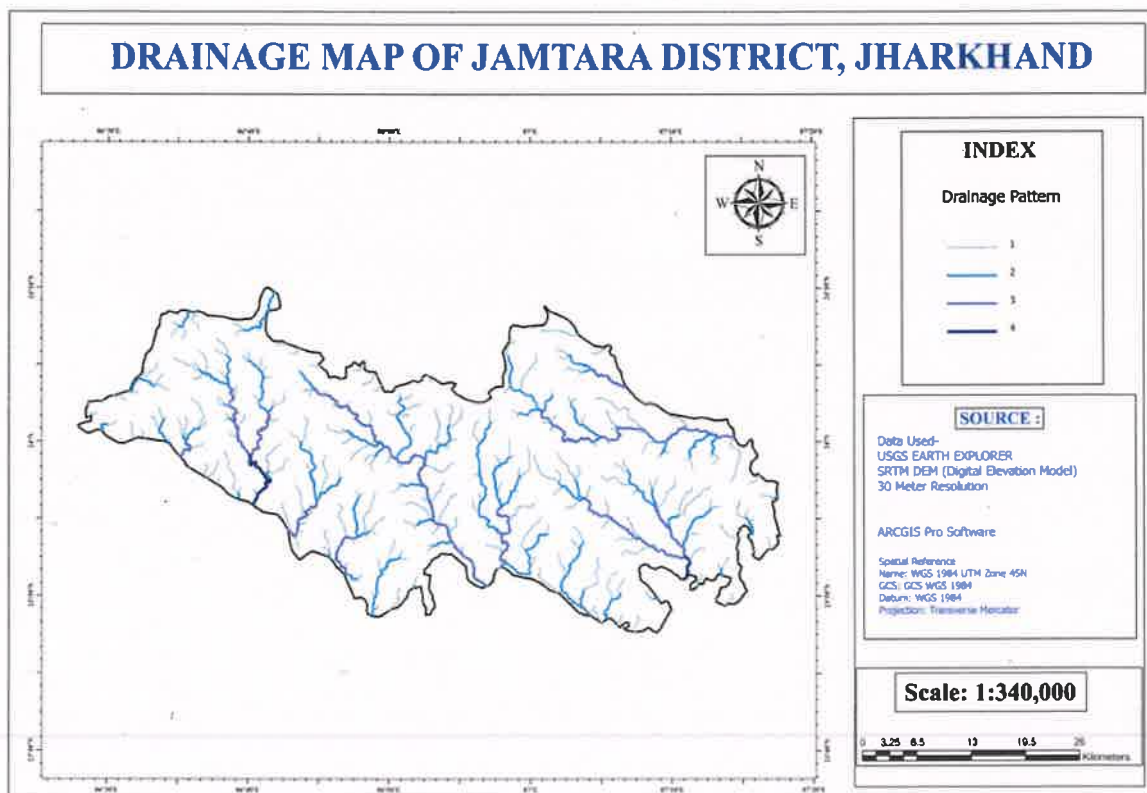


Fig. 5.1: Drainage map of Jamtara district



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### 5.4 Irrigation Pattern:

The planning commission, Govt. of India, has divided the whole country into 15 Agro-climatic Zones. Jharkhand State falls under VII<sup>th</sup> Agro-climatic Zone. This State is also divided into three Agro-climatic regions i.e. IV<sup>th</sup>, V<sup>th</sup> and VI<sup>th</sup>. Among the three, Jamtara district comes under the IV<sup>th</sup> {Central 3<sup>rd</sup> North Eastern plateau region} Agro climatic irrigation and cropping pattern, Jamtara district has been divided into four Agro Ecological Situation (AESS) for the purpose of SREP preparation. One representative village of each AES was selected for participatory data collection through multidisciplinary AES teams. All the villages selected are located 15 to 50 km from the district headquarters, Jamtara.

Block-wise surface water and ground water based irrigation practices is given in table.

Blocks	Number of Structures			Unit Draft of GW Structures for Irrigation						Surface Water Scheme		SW Irrigation
				DW		STW		DTW				
	DW	STW	DTW	Mo n	N M	Mo n	N M	Mo n	N M	Sflow	Slift	
Fatepur	488	122	8	0.08	0.3	0.3	1.2	4	16	281	469	647
Jamtara	434	12	0	0.08	0.3	0.3	1.2	4	16	395	44	171
Kundahit	556	29	0	0.08	0.3	0.3	1.2	4	16	351	69	188
Nala	561	37	0	0.08	0.3	0.3	1.2	4	16	466	576	831
Narayanpur	1619	8	1	0.08	0.3	0.3	1.2	4	16	555	179	381
Vidyasagar	431	38	1	0.08	0.3	0.3	1.2	4	16	177	72	140

### 5.5. FLOOD RISK AND MANAGEMENT IN THE DISTRICT

Parameters used to calculate Flood Susceptibility mapping:

- Topographic Wetness Index (TWI)
- Elevation
- Slope
- Rainfall
- Landuse Landcover (LULC)
- Normalized Difference Vegetation Index (NDVI)
- Distance from River
- Distance from Road
- Drainage

#### Topographic Wetness Index (TWI)

The topographic wetness index is defined as, where is the local upslope area draining through a certain point per unit contour length and. is the local slope in radians. The TWI has been used to study spatial scale effects on hydrological processes.



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The index is a function of both the slope and the upstream contributing area. TWI indicators range from -3 to 30. Cells with a lower index value represent areas with steepest slope and tend to be ridges or crests present on the landscape. TWI can provide valuable information for farmers to optimise drainage, irrigation, crop selection, and conservation management practices, which can help to improve agricultural productivity and sustainability.

TWI is one of the parameters obtained from the secondary derivative of DEM and defines the hydrological settings of the region. TWI is a widely used parameter for determining the location and size of water-saturated regions. Topography is a key parameter on the spatial distribution of water on the surface and underground, so the parameter is generally calculated to measure the topographical effect on water processes.

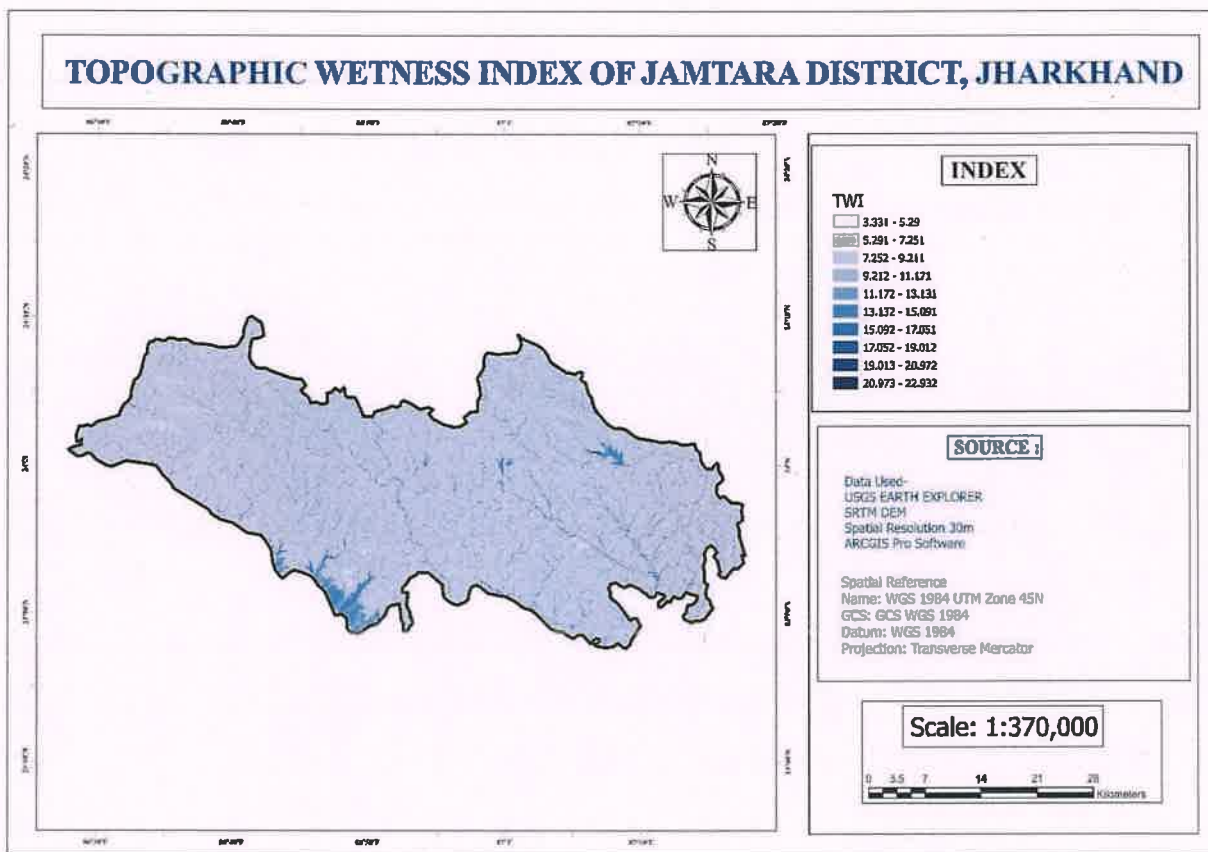
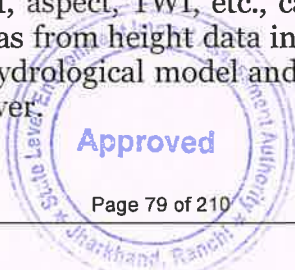


Fig. 5.2: Topographic Wetness Index map of Jamtara district

**ELEVATION:**

Elevations, in general, are a critical factor in determining which areas are at risk of flooding. Flooding is proportional to elevation in an inverse manner. The higher the elevation, the less likely flooding will occur; conversely, the lower the elevation, the greater the likelihood of flooding.

Topographical data like slope, SPI, aspect, TWI, etc., can be derived from DEM. Elevation can be derived from DEM as well as from height data in DEM. The data are effective factors both in the establishment of the hydrological model and in the strength and development of floods and their impact on land cover.



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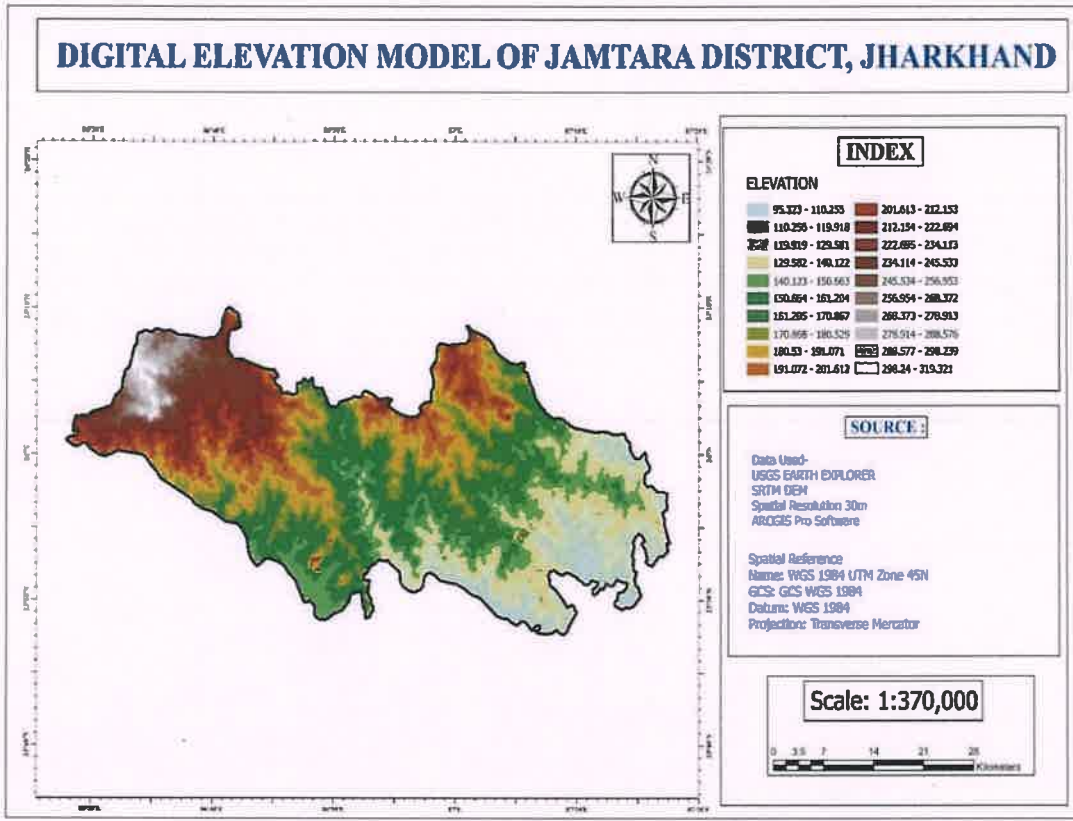


Fig. 5.3: Digital Elevation Model map of Jamtara district

**SLOPE:**

the slope is very important because the speed of flowing water and the amount of water that can get into the ground is controlled by the area's slope. This parameter has a significant impact on flood formation and distribution. It is an indicator describing the sensitivity of the region to flooding Areas with a high slope are less exposed to flooding than areas with low slopes.



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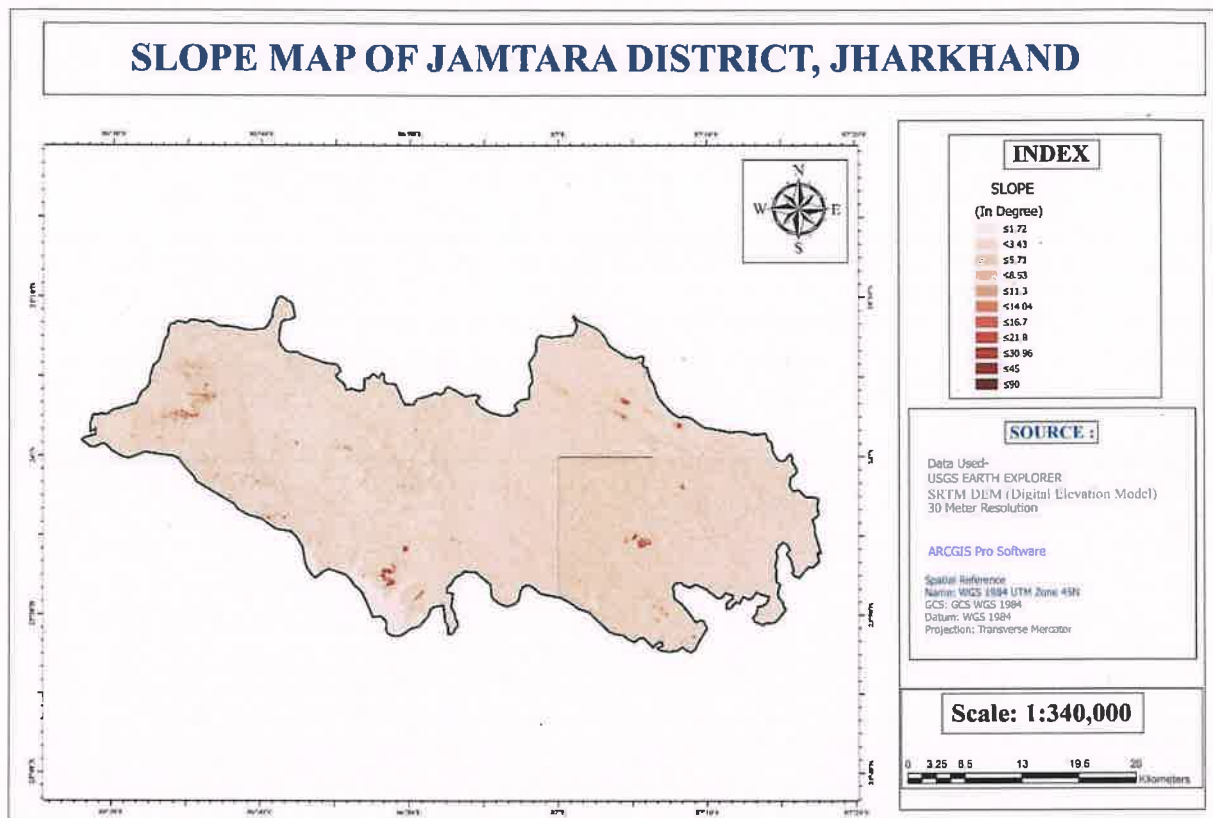


Fig. 5.4: Slope map of Jamtara district

**RAINFALL INTENCITY / PRECIPITATION:**

The most important parameter in the occurrence of floods is rainfall. The intensity and duration of the precipitation, as well as the amount of precipitation, are also effective for the development of the flood and flood duration, its area of influence, and possible damages to occur in the region. RI is a critical factor because it significantly affects the spatio temporal flood magnitude. The Modified Fourier Index (MFI) methodology was used to calculate RI, and the thematic map was created in ArcGIS 10.4 using the inverse distance weighted (IDW) method. Therefore, higher rainfall intensity means high susceptibility to flood.



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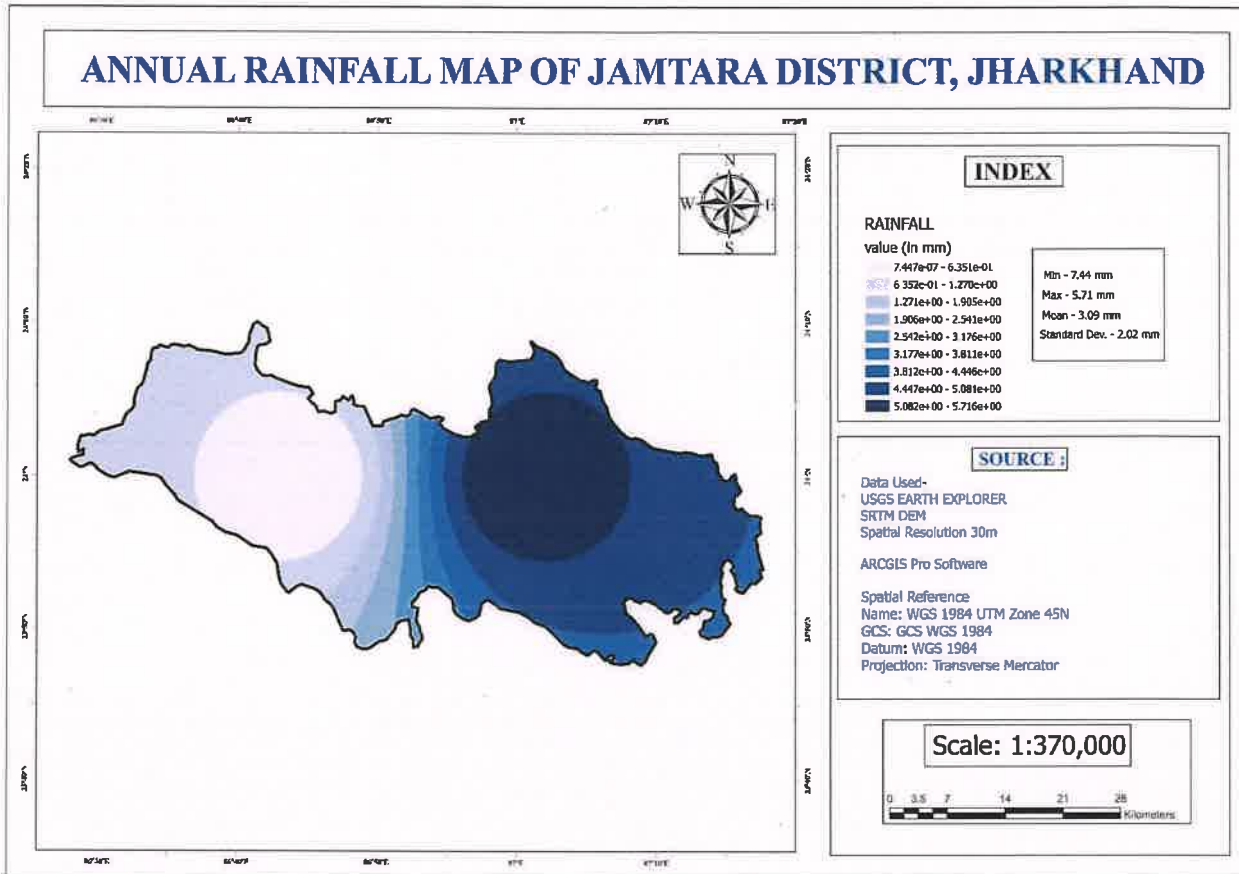


Fig. 5-5: Annual rainfall map of Jamtara district

**LANDUSE LANDCOVER:**

Since this parameter is effective on physiological and hydrological processes in flood modeling studies, it is very important in the susceptibility maps. Although the land cover and land use are used interchangeably. Land use refers to the use of the basin, such as settlement, industry, and agriculture, which are shaped by socioeconomic activities. Land cover expresses the physical and biological conditions (forests, arid areas, water bodies, etc.) that make up the nature of the basin. LULC data cover the environmental impacts of anthropogenic activities and the full distribution of natural cover.



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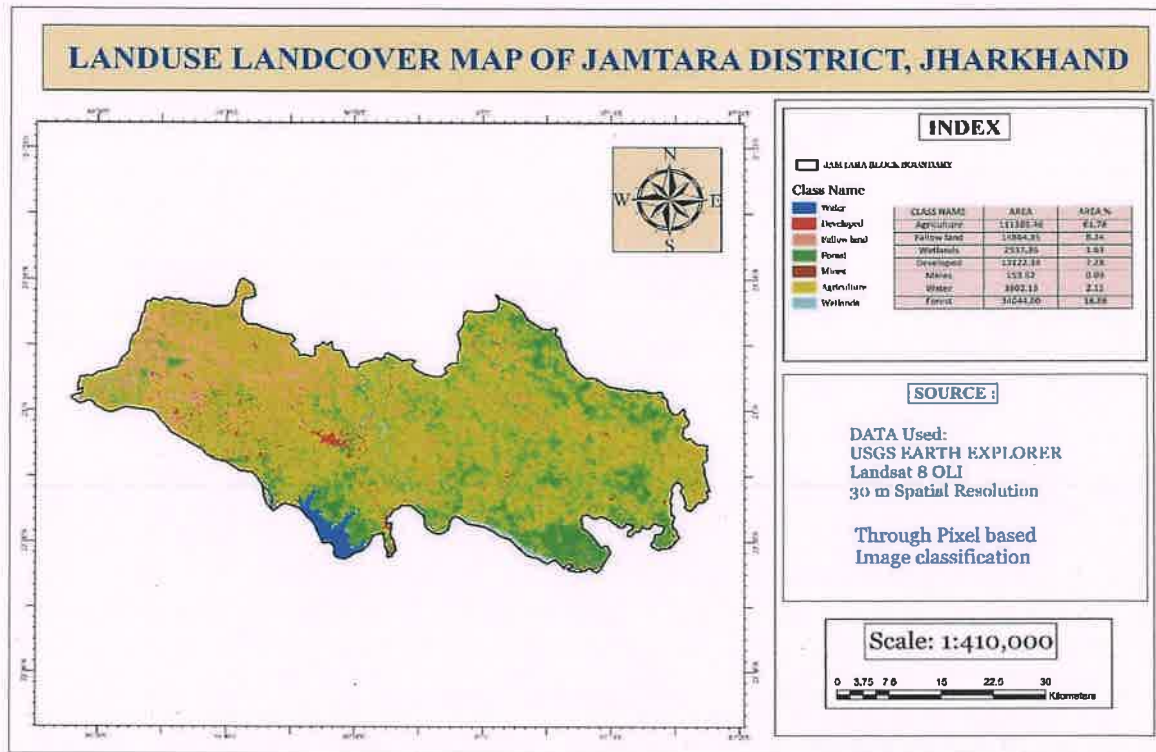


Fig. 5.6: Landuse Landcover map of Jamtara district

**NDVI:**

NDVI measures the area's vegetation density. Flooding affects regions with low vegetation density more because it influences soil infiltration strongly. It provides crucial information about the quality and amount of vegetation cover in a particular are

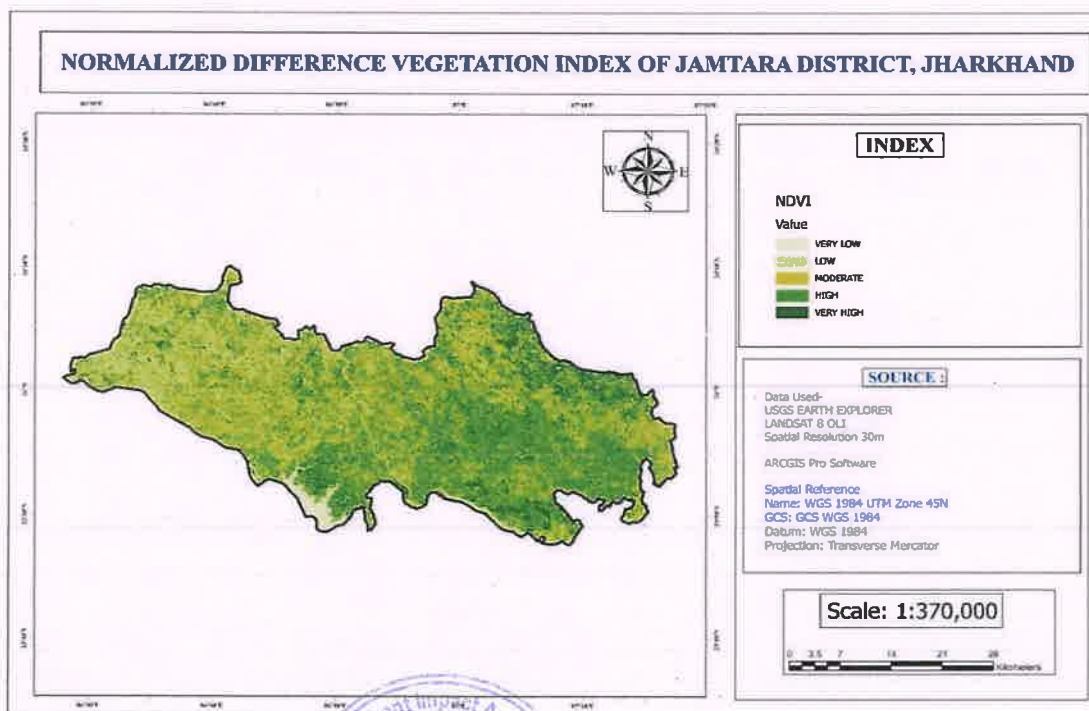


Fig. 5.7: Normalized Difference Vegetation Index map of Jamtara district



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**DISTANCE FROM RIVER:**

The distance from the rivers is critical in determining the flood risk zone. Flood hazard has a greater impact in areas adjacent to the river network, while its effect diminishes gradually as one moves away from the river. We have used the Euclidean distance method in ArcGIS 10.4 to produce the thematic map of distance to the river. As a result, areas near the main river are more vulnerable to flooding.

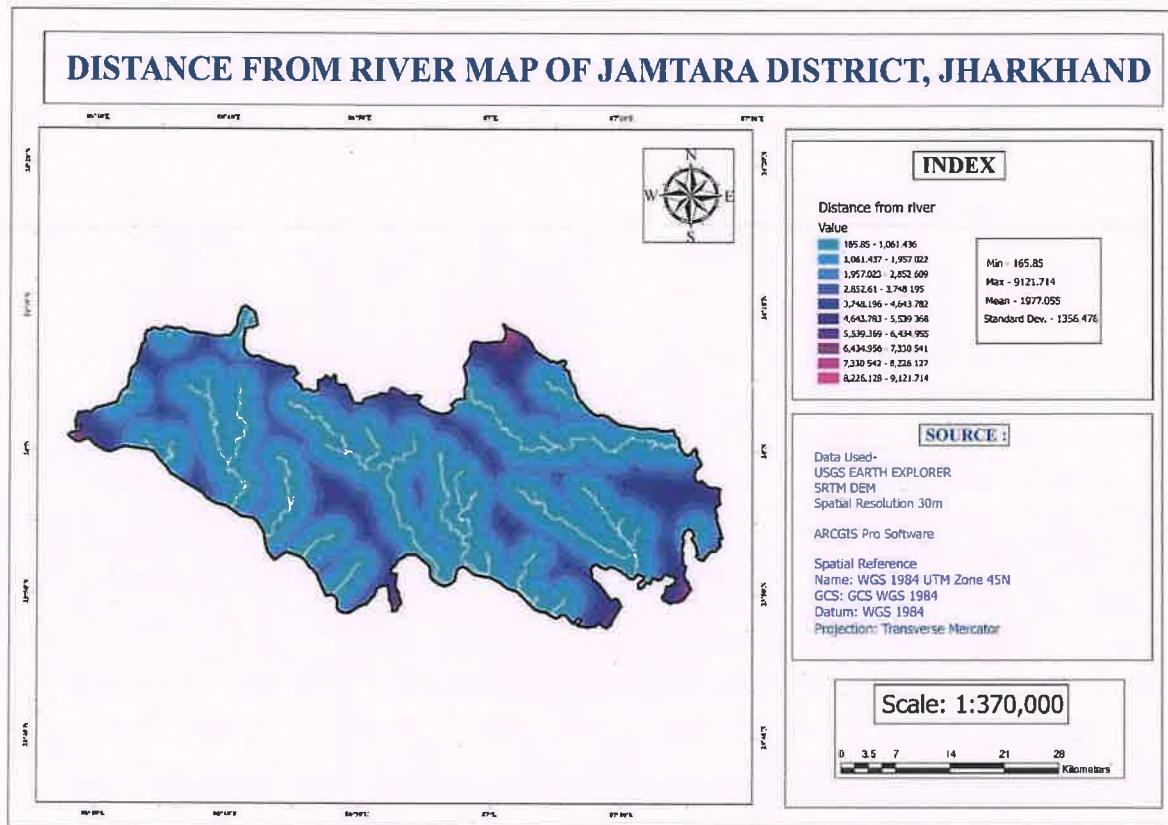
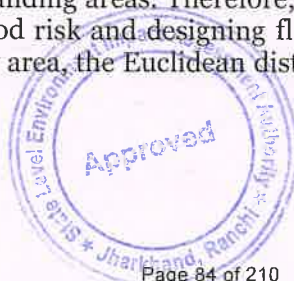


Fig. 5.8: Distance from river map of Jamtara district

**DISTANCE FROM ROAD:**

The distance of an area from roads is a commonly used factor in flood modelling because it can influence the distribution of runoff and flooding. Roads can significantly affect water flow during floods, because they can act as barriers or can direct water into concentrated channels, thus increasing the risk of flooding in specific areas. useful in identifying areas that are the most vulnerable to flooding, thus facilitating the development of flood mitigation strategies and emergency preparedness plans. The distance of an area from roads can also provide insights into the effects of urbanisation and changes in land use on flood risk, because the proximity of roads to water sources can increase with development and infrastructure expansion, potentially exacerbating flood risk in surrounding areas. Therefore, the distance from roads is a critical factor to consider when evaluating flood risk and designing flood management strategies. To model the distance from roads in the study area, the Euclidean distance method was employed in ArcGIS Pro 3.0.



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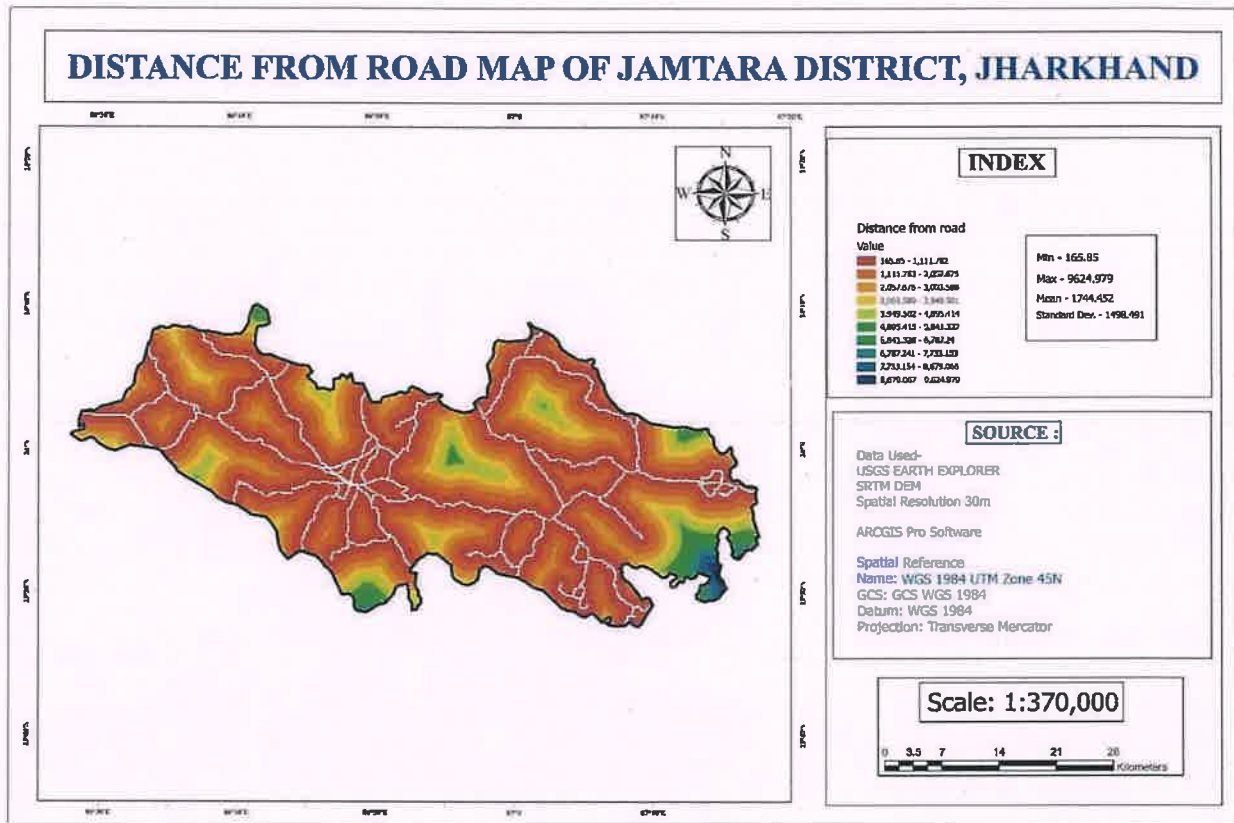


Fig. 5.9: Distance from road map of Jamtara district

**DRAINAGE DENSITY:**

Drainage density is a significant factor in the occurrence of floods. When drainage density is high, runoff occurs at a significant rate. As a result, the likelihood of flooding increases. As a result, areas with the highest Dare disproportionately affected by flooding.



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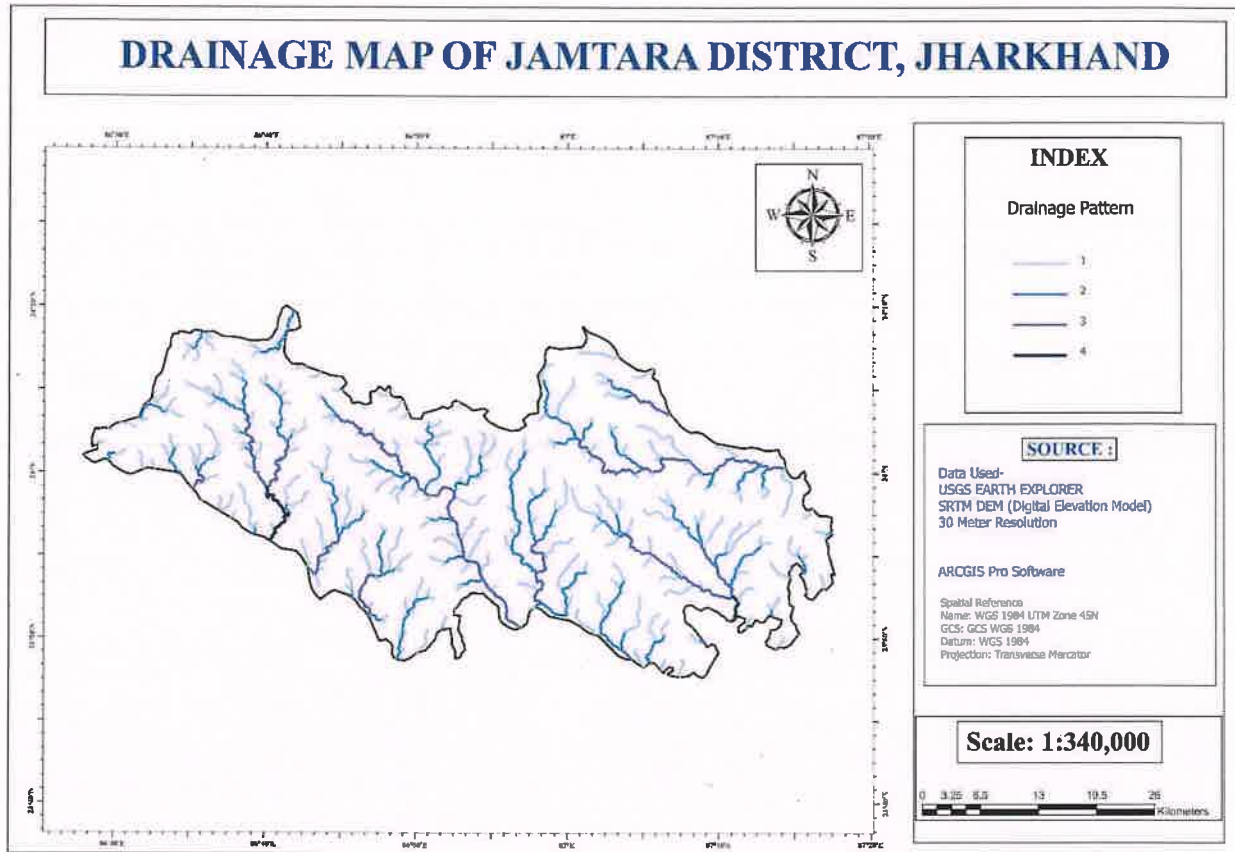


Fig. 5.10: Drainage map of Jamtara district

Flood susceptibility mapping and assessment is an important element of flood prevention and mitigation strategies because it identifies the most vulnerable areas based on physical characteristics that determine the propensity for flooding.

As a means of emergency response after a flooding event or inland inundation, flood mapping helps to estimate the extent of the flood on a large scale. It is a basis of coordinating appropriate recovery activities, rehabilitation and prevention measures for possible upcoming events.

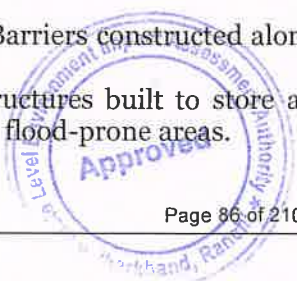
**Importance:**

Flood susceptibility mapping plays a crucial role in flood risk assessment and management. Accurate identification of areas prone to flooding is essential for implementing effective mitigation measures and informing decision-making processes. It helps minimise the loss and damage caused by floods. If we know which areas have high exposure to flood risk we can choose not to build important infrastructure, like hospitals, schools, etc. there.

Flood mitigation measures are strategies and actions designed to reduce the impact of flooding and manage the risk associated with it. They can be broadly categorized into structural, non-structural, and natural approaches:

**Structural Measures**

1. **Levees and Flood Walls:** Barriers constructed along rivers or around flood-prone areas to keep floodwaters out.
2. **Dams and Reservoirs:** Structures built to store and regulate the flow of water, reducing the volume of water that reaches flood-prone areas.



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3. **Flood Gates and Barrages:** Movable barriers that can be adjusted to control water flow and prevent flooding in specific areas.
4. **Improved Drainage Systems:** Enhancements to urban drainage systems to better manage stormwater and reduce the risk of surface flooding.

**Non-Structural Measures**

1. **Land Use Planning and Zoning:** Regulations to prevent construction in high-risk flood zones and encourage development in safer areas.
2. **Floodplain Management:** Strategies to manage and restore floodplains to allow for natural water storage and flow.
3. **Early Warning Systems:** Technology and systems to provide timely alerts to communities about impending floods, allowing for evacuation and preparation.
4. **Public Education and Awareness:** Programs to inform communities about flood risks and preparedness measures, such as emergency plans and evacuation routes.

**Natural Measures**

1. **Wetlands Restoration:** Rehabilitating wetlands to enhance their ability to absorb and store floodwater.
  2. **Floodplain Reconnection:** Allowing rivers to overflow into their natural floodplains, which can help mitigate downstream flooding.
  3. **Reforestation and Afforestation:** Planting trees to increase soil absorption and reduce runoff.
- Green Infrastructure:** Implementing solutions like green roofs, permeable pavements, and rain gardens to manage stormwater and reduce runoff.

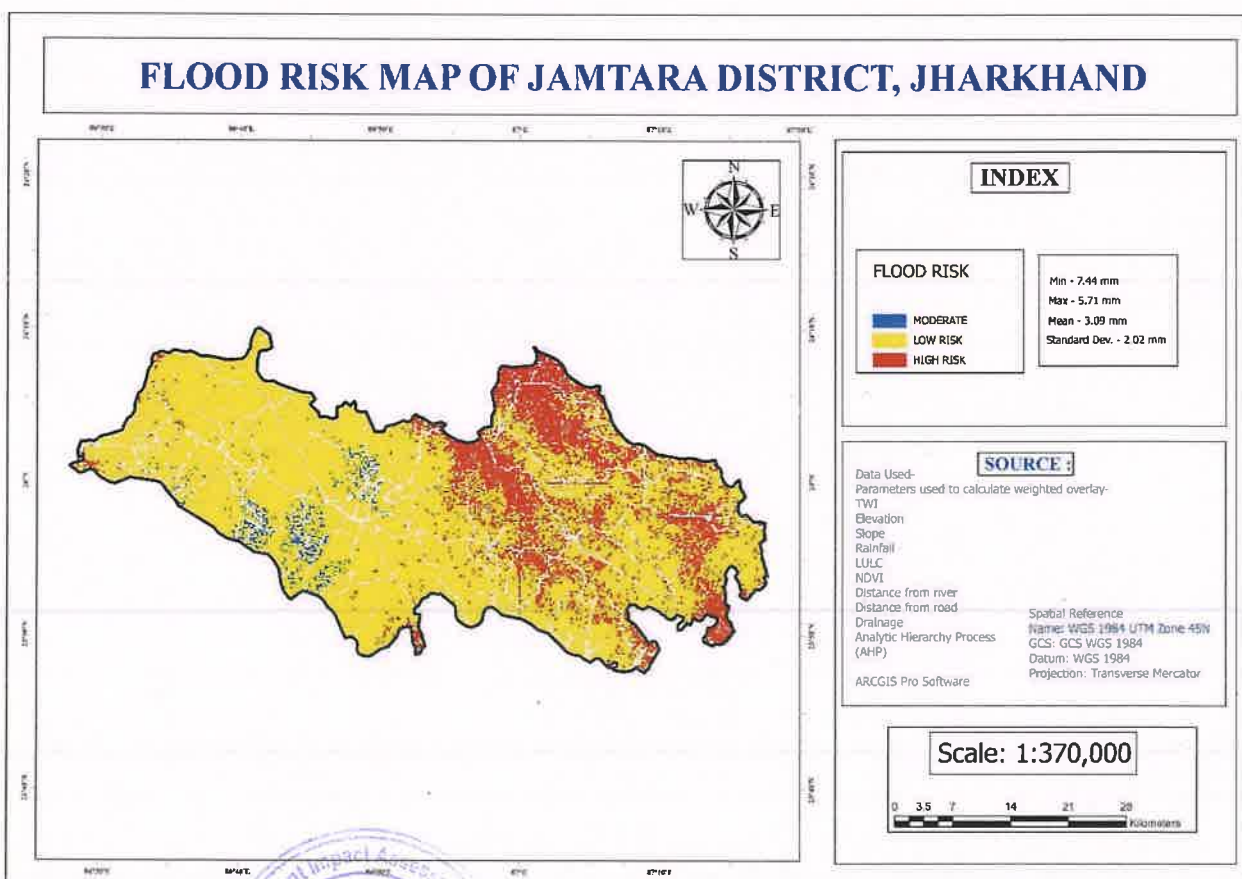


Fig. 5.11: Flood risk map of Jamtara district

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**DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" IN JAMTARA DISTRICT OF JHARKHAND**



The Analytic Hierarchy Process (AHP) is a structured technique used in decision-making and prioritization, which can be particularly useful in flood susceptibility mapping. The AHP is a MCDM (multi-criteria decision-making technique) for hazard susceptibility analysis and is employed. Because the produced thematic layers are thought to be key elements impacting the occurrence of floods in the research region, this method was utilized to integrate them. Each layer, however, had a different effect. As a result, each thematic layer was assigned a relative weight of 1–9 using the scale.

Intensity of relative importance	Definition	Explanation
1	Equal importance	Two activities contribute equally to 1
3	Moderate importance	Experience and judge slightly favor one activity over another activity
5	Strong or essential importance	Experience and judge strongly favor one activity over another activity
7	Very strong importance	An activity is strongly favored, and its dominance is exhibited in practice
9	Extreme importance	The evidence of favoring one activity over another is of highest possible order of affirmation
2, 4, 6, 8	Intermediate	Applied when comparison is required
Reciprocals	Inverse comparison	Applied in inverse comparison

To evaluate the weight of each layer, a pair-wise comparison matrix is constructed, as shown. Each sub-class of each thematic layer was given a relative rank from 0–9 on the basis of their relative impact on flooding, and the pairwise comparison matrices for the sub-classes within each parameter are shown.

Matrix											normalized principal Eigenvector
	TWI	Elevation	Slope	Precipitation	LULC	NDVI	Distance from river	Distance from road	Drainage density	Soil type	
TWI	1	1	1	1	3	5	1	3	1	1	13.68%
Elevation	1	1	1	1	3	3	1	3	1	1	12.52%
Slope	1	1	1	1	3	5	1/3	1	1	1	11.89%
Precipitation	1	1	1	1	3	2	1	3	1	1	11.93%
LULC	1/3	1/3	1/3	1/3	1	1	1/2	3	1	1	6.47%
NDVI	1/5	1/3	1/5	1/2	1	1	1/2	3	1	1	6.34%
Distance from river	1	1	3	1	2	2	1	3	1	1	13.53%
Distance from road	1/3	1/3	1	1/3	1/3	1/3	1/3	1	1	1	5.24%
Drainage density	1	1	1	1	1	1	1	1	1	1	9.20%
Soil type	1	1	1	1	1	1	1	1	1	1	9.20%



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## 6. LAND UTILIZATION PATTERN OF THE DISTRICT

### 6.1 Land Utilization Pattern:

Land is an important resource available to the mankind. Proper planning and utilization of land is important not only in the betterment of an individual, but also contributes to the development of a nation. Land use planning depends on several factors: climate, soil character, ground water level, water availability, rainfall and terrain condition. The analysis of land use in the present study is based on district statistical magazine, data available at block level and revenue office.

Following categories of land use have been recognized in the study area.

1. **Agriculture, Cropland, Plantation:** Agriculture is the main land use in the area. Most of the first and second order streams in the area are cultivated. Most of the cultivated lands are located towards the central part of the study area. Rice is the principle crop grown in these areas. Other crops include paddy, maize, oilseeds, vegetables etc. These are the lands primarily used for farming and for production of food, fiber, and other commercial and horticultural crops. Cropland includes land under crops (irrigated and unirrigated, fallow, plantations etc.). These are the areas with standing crop as on the date of satellite overpass. Cropped areas appear in bright red to red in color with varying shape and size in a contiguous to noncontiguous pattern. They are widely distributed in different terrains; prominently appear in the irrigated areas irrespective of the source of irrigation.
2. **Settlement/Build up-Urban:** Jamtara block is the largest urban settlement in the area. It is an area of human habitation developed due to non-agricultural use and that has a cover of buildings, transport and communication, utilities in association with water, vegetation and vacant lands.
3. **Barren/Wasteland, Barren Rocky:** Scattered patches of the areas with the bad land topography is also present in the area. Most of the barren land area is present near to the coal mines.
4. **Mining:** Abandoned coal mining activities is observed in the southern part of the study area. Presently working quarries are opencast mechanised projects. These open cast mining is mostly restricted to the Barakar Formation, towards the southern part of the area.
5. **Rural:** Large numbers of small and big rural area are widespread in the district. All the agricultural villages covering 5 Hectares area and more are included in this category. These are the built-up areas, smaller in size, mainly associated with agriculture and allied sectors and non-commercial activities with population size less than 5000, generally lack supporting facilities that are unique to urban areas like hospitals, industries (large and medium scale), institutional etc. They appear in dark bluish green in the core built-up area and bluish in the periphery; the size varies from small to big; irregular and discontinuous in appearance; can be seen in clusters contiguous or scattered.
6. **Forest:** Dense to open mixed jungles are present the study area, especially around the Maithon reservoir. These forested areas usually occupy the high topographic contours. Lodwa forest ( $\Delta 326$ ) is an open mixed forest. Durgapur ( $\Delta 360$ ) is an example of dense mixed forest.
7. **Open Scrub:** open scrubs are wide spread towards the south of the Ajay river. They mostly occupy flat to gently undulating area.



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LANDUSE LANDCOVER MAP OF JAMTARA DISTRICT, JHARKHAND

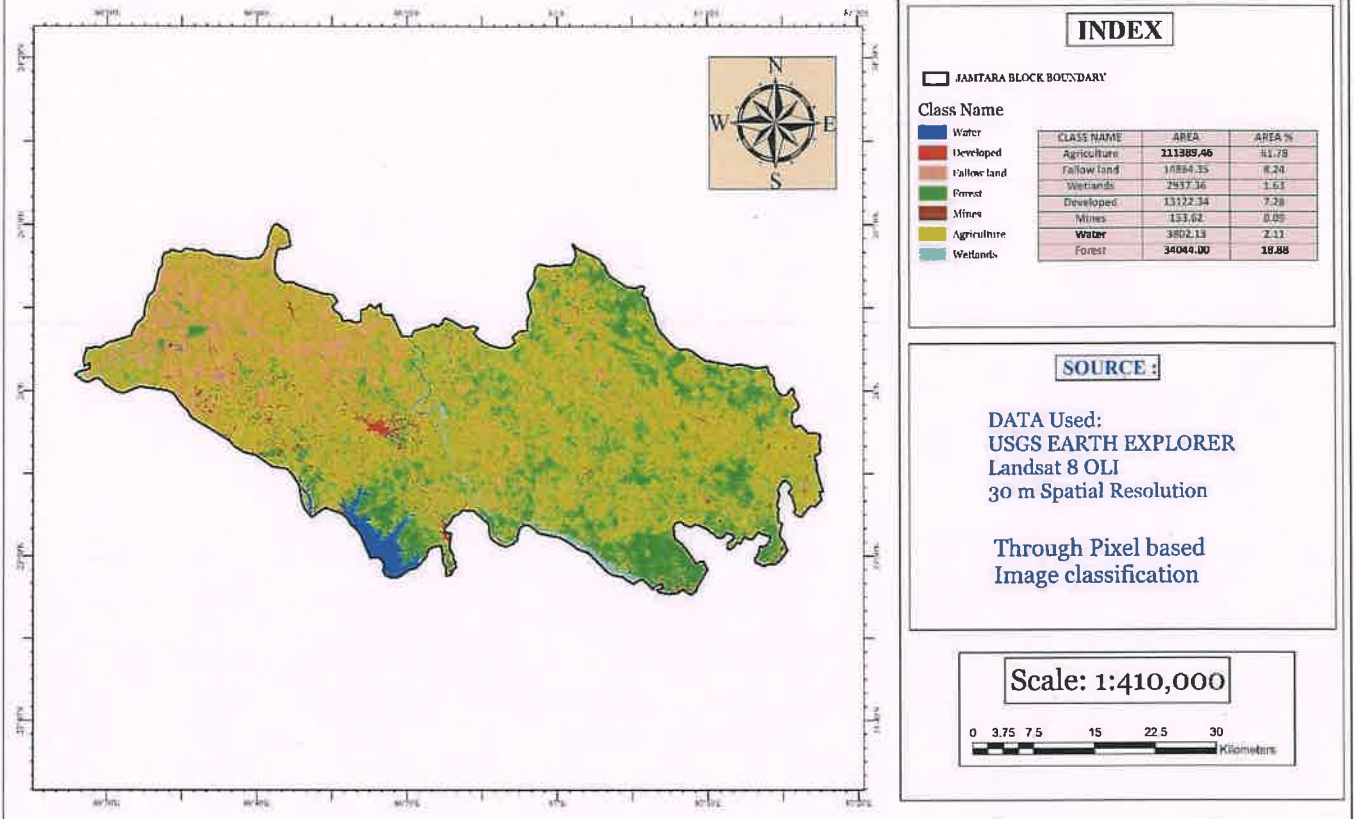


Figure 6.1: Land Use Land Cover Map of Jamtara district



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## 6.2 Forest:

Out of total geographical area of 1811 km<sup>2</sup>, forest area covers nearly 106.02 km<sup>2</sup>. The tribal economy revolves around using forest products, by products and minor products. Kendu leaves, Bamboo and its manufactured products, Mahua, fruits, leaves Lac etc. play a role in the economic activity of the people. People also hunt animals for food and ‘Jani shikar’ festival is related to this hunting habit.

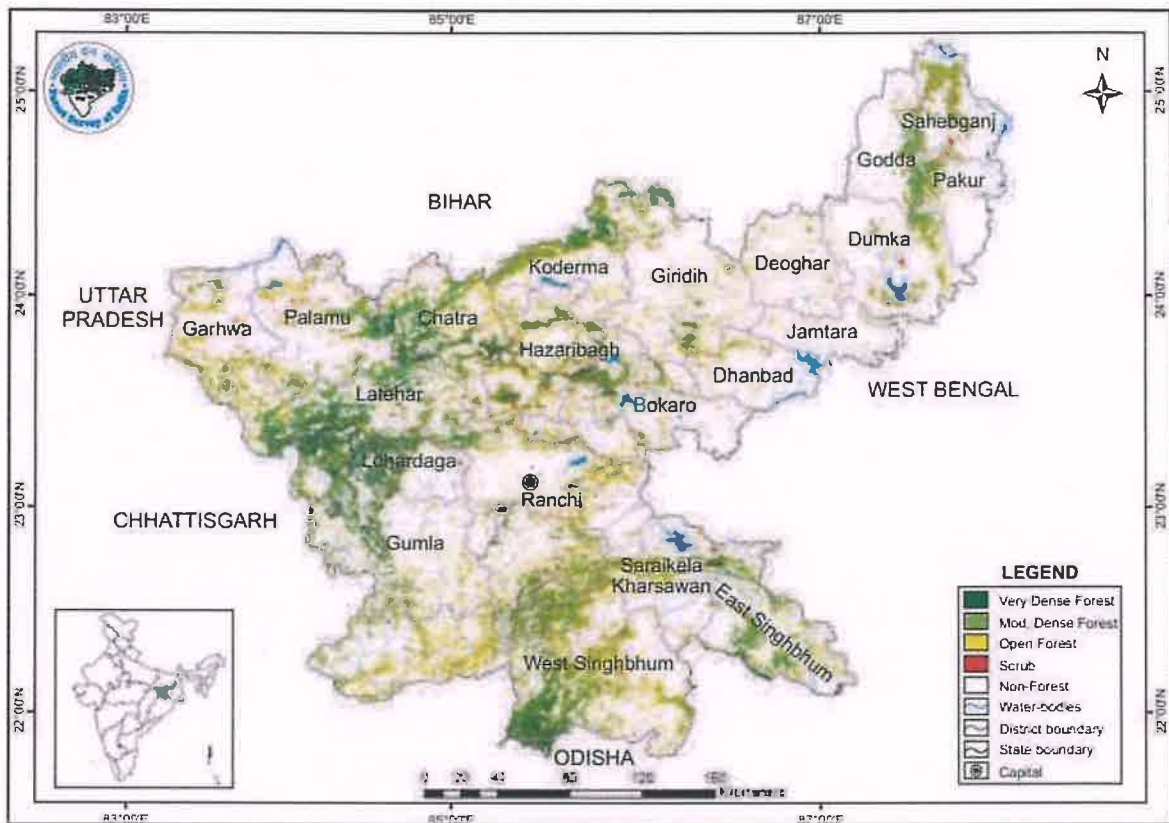


Fig. 6.2: Forest Cover Map of Jharkhand

(Source: India Survey of Forest Report, 2021)

The Jamtara district is with good area covered under the Forest. Forest is mostly present on the east-west part of the district. Because of the human intervention forest has not been spared even on hills. There are a few reserves forest situated in Jamtara district. The vegetations generally traced in Jamtara district are timber species like Sheesham, Teak, Gamhar.

Common Trees in Jamtara district –

Sal – *Shorea robusta*

Mahua – *Madhuca longifolia*

Arjun – *Terminalia arjuna*

Asana – *Pterocarpus marsupium*

Mango – *Mangifera indica*,

Neem – *Azadirachta indica*,

Tamarind – *Tamarindus indica*



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Table 6.1: District wise Forest Cover Area in Jharkhand (Area in Km<sup>2</sup>)

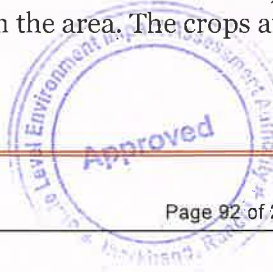
District	Geo-geographical Area (GA)	2021 Assessment				%of GA	Change wrt 2019 assessment	Scrub
		Very Dense Forest	Mod. Dense Forest	Open Forest	Total			
Bokaro	2,883	60.99	231.94	283.07	576.00	19.98	2.45	37.95
Chatra	3,718	244.28	871.73	666.08	1,782.09	47.93	4.74	23.57
Deoghar <sup>1</sup>	2,477	0.00	14.30	191.50	205.80	8.31	2.09	14.04
Dhanbad	2,040	0.00	44.00	174.18	218.18	10.70	4.67	16.05
Dumka <sup>†</sup>	3,761	0.00	259.40	318.23	577.63	15.36	0.32	44.55
East Singhbhum <sup>†</sup>	3,562	54.81	591.69	434.19	1,080.69	30.34	1.31	20.91
Garhwa <sup>†</sup>	4,093	125.14	415.60	890.98	1,431.72	34.98	40.13	44.32
Giridih	4,962	77.16	338.56	490.19	905.91	18.26	4.67	28.92
Godda <sup>†</sup>	2,266	12.81	271.88	138.66	423.35	18.68	0.00	14.27
Gumla <sup>†</sup>	5,360	304.69	585.81	552.65	1,443.15	26.92	0.89	8.25
Hazaribagh	3,555	230.11	348.54	784.54	1,363.19	38.35	10.42	15.99
Jamtara <sup>†</sup>	1,811	0.00	20.84	85.18	106.02	5.85	5.38	5.32
Khunti <sup>†</sup>	2,535	72.97	344.59	496.18	913.74	36.04	8.25	3.11
Koderma	2,540	80.80	494.43	447.82	1,023.05	40.28	-0.42	6.37
Latehar <sup>†</sup>	4,291	480.36	1,308.93	613.75	2,403.04	56.00	-3.30	9.30
Lohardaga <sup>†</sup>	1,502	174.03	218.40	111.99	504.42	33.58	-0.20	7.66
Pakur <sup>†</sup>	1,811	2.96	172.40	111.64	287.00	15.85	-0.13	20.06
Palamu <sup>†</sup>	4,393	62.82	512.73	640.18	1,215.73	27.67	14.95	84.23
Ramgarh	1,341	30.96	109.32	190.98	331.26	24.70	2.26	14.49
Ranchi <sup>†</sup>	5,097	62.89	363.91	741.98	1,168.78	22.93	4.29	27.98
Sahibganj <sup>†</sup>	2,063	17.74	258.73	297.48	573.95	27.82	1.60	47.53
Saraikela-Kharsawan <sup>†</sup>	2,657	22.03	213.84	338.73	574.60	21.63	0.56	21.87
Simdega <sup>†</sup>	3,774	21.97	343.54	877.89	1,243.40	32.95	2.48	20.28
West Singhbhum <sup>†</sup>	7,224	461.53	1,353.80	1,553.11	3,368.44	46.63	2.32	47.18
<b>Grand Total</b>	<b>79,716</b>	<b>2,601.05</b>	<b>9,688.91</b>	<b>11,431.18</b>	<b>23,721.14</b>	<b>29.76</b>	<b>109.73</b>	<b>584.20</b>

(Source: India Survey of Forest Report 2021 - Jharkhand)

### 6.3 Agriculture & Irrigation:

Agriculture is the main land use in the area. Most of the first and second order streams in the area are cultivated. Most of the cultivated lands are located towards the central part of the study area. Rice is the principle crop grown in these areas. Other crops include paddy, maize, oilseeds, vegetables etc. These are the lands primarily used for farming and for production of food, fiber, and other commercial and horticultural crops. Cropland includes land under crops (irrigated and unirrigated, fallow, plantations etc.). These are the areas with standing crop as on the date of satellite overpass. Cropped areas appear in bright red to red in color with varying shape and size in a contiguous to non-contiguous pattern. They are widely distributed in different terrains; prominently appear in the irrigated areas irrespective of the source of irrigation.

Rice is the principal crop grown in the area. Wheat, Barley, Maize, Gram, Mustard, Tur, Sugarcane Potato are the other crops in the area. The crops are mainly monsoon dependent.



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## 7. SURFACE WATER & GROUND WATER SCENARIO OF THE DISTRICT

### 7.1 Hydrogeology:

The district is underlain by the Precambrian crystalline metamorphic rocks, intrusive, Gondwana sedimentaries and recent to sub-recent alluvium occurring as thin and discontinuous patches on a limited scale along prominent drainage channels.

The hard crystallines of the Precambrian age occupy 90% of the total geographical area of the district. The semi-consolidated rocks of the Gondwana formation occur in pockets. The Precambrians are hard and compact and do not possess primary porosity, though secondary porosity is produced in these rocks due to weathering, jointing, fracturing etc. Ground water occurrence and movement in these rocks are manifested through the secondary porosity and permeability introduced in them due to their weathering and fracturing.

Ground water occurs under unconfined conditions in the weathered mantle and under semi-confined to confined conditions in the fractured rocks below.

The major hydrogeological units in the district can be subdivided into two broad groups.

- i) Areas underlain by fractured, fissured and consolidated formations
- ii) Areas underlain by the semi-consolidated (Gondwana) formation.

#### **Consolidated Formation**

Granites and Gneisses are the most predominant rock types among all other rocks falling under the consolidated unit. Weathering in granitic rocks is pronounced and fissures and joints etc. are also well developed. These rocks are traversed by numerous veins of quartz and pegmatite. Weathered zones of granites and gneisses are the most productive zone for ground water development. The depth of weathering varies from place to place, which influences the aquifer characteristics. The drinking water and sanitation department has drilled a number of tube wells in Jamtara district having a yield of approximately 80 liters per minute. The dug wells in this formation have a depth to water range from 4 m to 9 m bgl and the wells can sustain 2 hours of pumping with a yield range of 4000 to 8000 liters per hour. These aquifers are mainly unconfined to semi-confined in nature. Dug wells within the hard, fractured granites cannot sustain long durations of pumping. Fracture porosity plays an important role but with varying degree, in different parts of the area depending upon the pattern and intensity of joints and fractures. The potentiality and yielding property of these aquifers vary considerably. Bore wells can be constructed tapping the deep-seated fractures and joints.

#### **Semi-Consolidated Formation**

The areas underlain by the semi-consolidated (Gondwana) formation occur in isolated pockets in the northern part of the district. The rocks are mainly sandstones and shales belonging to the Barakar and Talchir formation. Barakar sandstones are coarse to medium grained, weathered in nature and may be a productive zone for ground water development. Exploration work has to be taken up for knowing detail aquifer characteristics of Gondwana formation. The yield of wells in this formation is less than 10 m<sup>3</sup>/hr. Wells constructed in sandstone yield better than those in shale. Depth of open wells in this formation ranges from 5 to 12 m bgl. Dug wells can sustain pumping of 1 m<sup>3</sup> of water per hour with a moderate recuperation rate.



  
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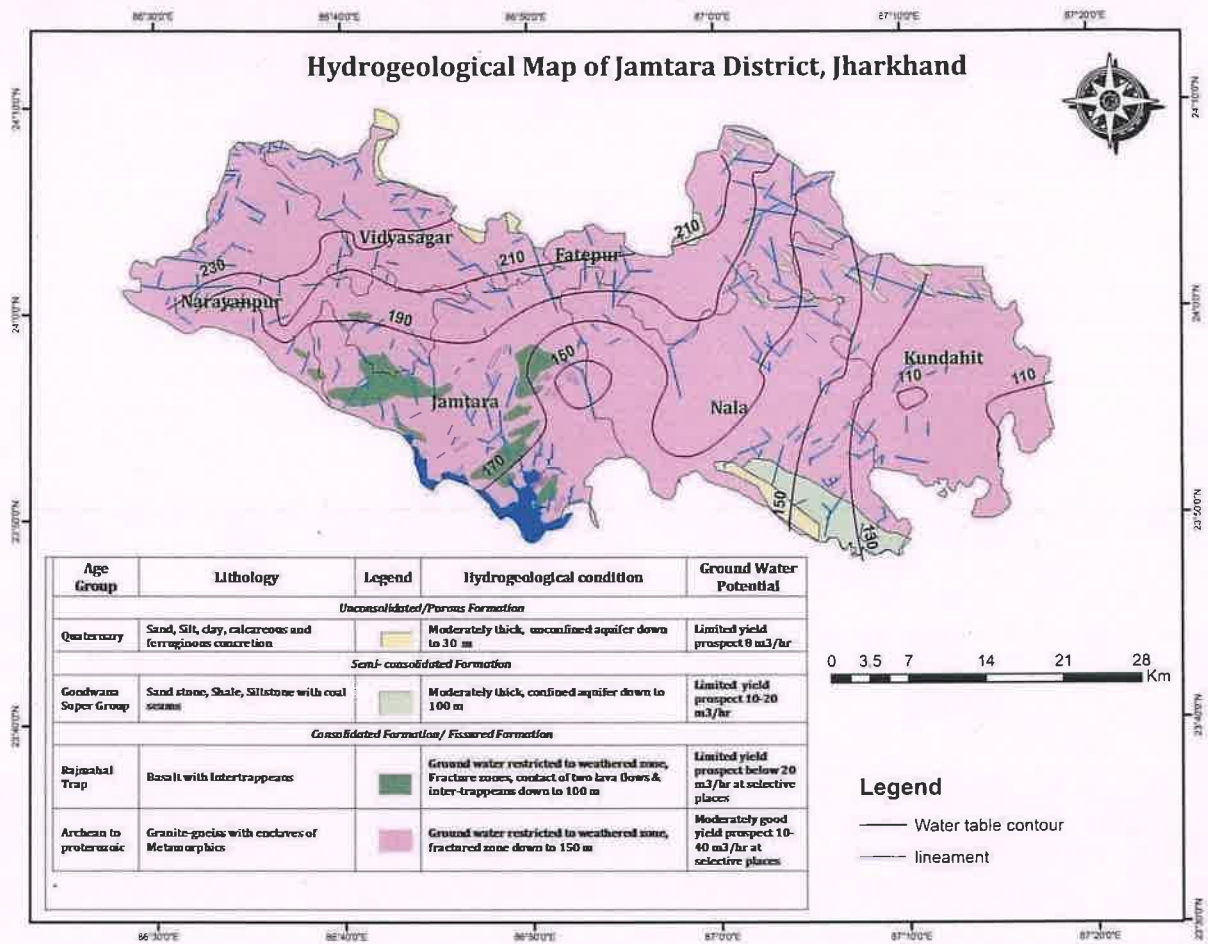


Figure 7.1: Hydrogeological Map of Jamtara district, Jharkhand  
(Source: Central Ground Water Board 2013)

**Depth to Water level**

During May 2012, the depth to water levels in HNS wells tapping shallow aquifer ranged from 30 to 80m bgl. Depth to ground water levels during the post monsoon (November 2012) varied between 30 and 80 m bgl. Categorization of depth to water level of pre-monsoon period (May 2012) for HNS in Jamtara district is presented below in table below: -

**Ground Water InAquifer-I (Weathered Granite-Gneiss/Weathered Basalt):**

Ground water occurs under phreatic/ unconfined to semi-confined conditions in Aquifer-I which is represented by weathered granite and Weathered Basalt. Ground water occurs in unconfined state in shallow Aquifer-I tapped by alluvium, laterites, weathered granite and weathered basalt ( Upto 30 m depth) , however in some cases depth varies from more than 30m.

**Ground Water In Aquifer-II (Fractured Granite-Gneiss/Fractured Basalt/Sandstone):**

Ground water occurs under Semi-confined to confined condition in Aquifer-II represented by Fractured/Jointed granite-gneiss, Fractured Basalt and Sandstones upto the explored depth of 200 mtr depth. Generally extent of Aquifer-II in Precambrian formation ranges from 30-140m. Granites and Gneisses are the most predominant rock types among all other rocks falling under the consolidated unit.



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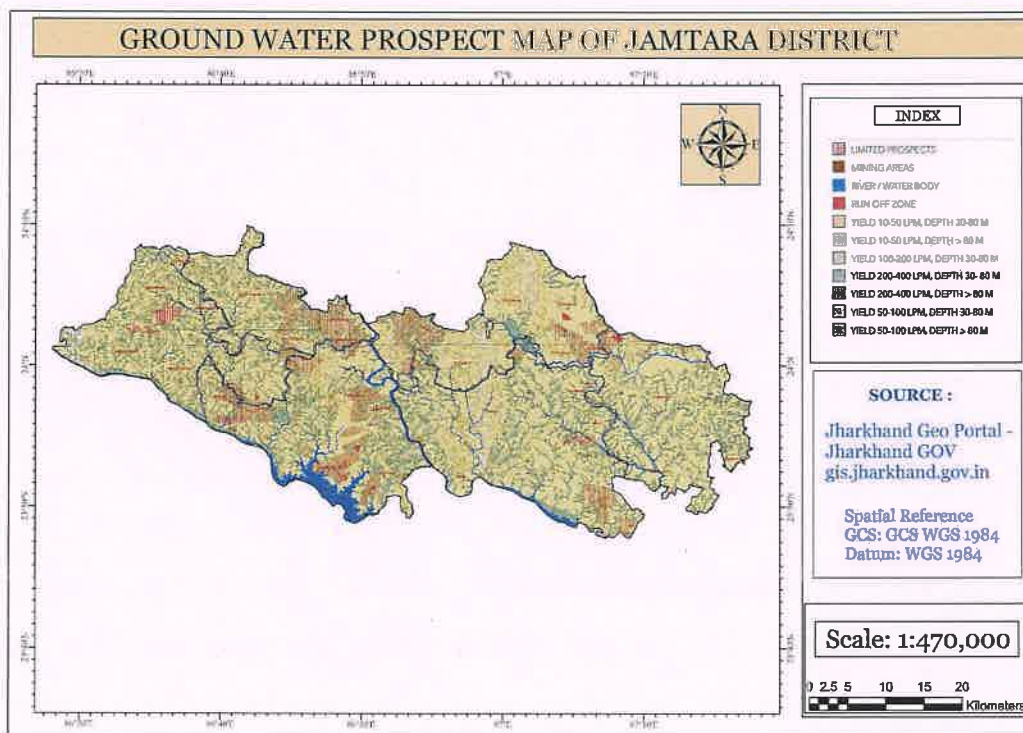


Fig. 7.2: Ground Water Prospect map of Jamtara District



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**Potential Fractures in Aquifer-II:-**

Number of boreholes has been constructed by CGWB in the district under groundwater exploration programme upto maximum depth of 200 m. The borehole data reveals that, in general potential fractures are encountered between 30-140 m. The other fractures have also of good potential. Shows the Potential Fracture encountered during Ground Water Exploration in jamtara district

Potential Fractures encountered during ground water Exploration in Jamtara district, Jharkhand

Block	Depth Drilled (m)	Major Lithology Encountered	Depth Casing (m)	Potential Fracture Zone (m bgl)	Static Water Level (m bgl)	Discharge (lps)
Kundahit	138.5	Granite Gneiss	9.58	12.04-013.00, 073.00-74.62, 098.48-099.48, 105.10-106.10, 125.34-126.34, 133.96-135.58	8.16	7.2
Jamtara	200	Granite Gneiss	29.9	71.50 - 72.00, 127.00 - 127.80, 140.10 - 140.80 -	8.66	12.3
Narayan pur & K Vidiyasagar	153.6	Granite Gneiss	24.5	31.50, 77.20, 138.20	11.2	3
Nala	123.3 2	Granite Gneiss	21.5	48-49 , 59-60, 69-70	12.89	12
Fathepur	153.8	Granite Gneiss	12.8	123-124, 127-128	6.10	5.7

(Source: Central Ground Water Board)



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### Aquifer Parameters

A total of 02 exploratory wells and 01 observations well have been drilled down to depth of 198.46 m in hard rock formation to decipher the potential fracture zones. The exploratory data reveals presence of maximum of 6 sets of potential fractures between 12m and 136 m depth. The yield of the wells has been found between 0.9 and 26.1 m<sup>3</sup>/hr.

### Ground Water Quality

Ground water in the phreatic aquifers in Jamtara district has been found to be colourless, odourless and slightly alkaline in nature. The specific electrical conductance of ground water in phreatic zone during May 2011 was 200  $\mu$ S/cm at 25°C. The suitability of ground water for drinking purpose has been evaluated on the basis of pH, Total hardness (T.H), Ca, Cl, F and NO<sub>3</sub>. The chemical concentration of these constituents, when compared with the drinking water specification recommended by IS: 10500, 1991 as presented in table, indicates that none of the samples exceed the permissible limit set for drinking use.

Table 7.1: Number of samples exceeding permissible limit in the district

Quality	IS:10500, 1991		No. of samples in the district exceeding permissible limit
	Desirable limit	Permissible limit	
pH	7.42	No relaxation	0
T.H	75	600	0
Ca	16	200	0
Cl	18	1000	0
F	-	1.5	0
NO <sub>3</sub>	-	100	0

### 7.2 Status of Ground Water Development:

In the rural areas the entire water supply is dependent on ground water. Ground water development is mainly carried out in the district through dug wells and Hand pumps. Dug wells are in general of 2 m diameter and between 8 to 15 m depth, depending on the thickness of the weathered zone, tapping the shallow ground water in the weathered zone and uppermost slice of the basement. Large number of dug wells used for drinking water is under private ownership for which there is no reliable data. Over the years Mark II/Mark III hand pumps are being drilled in



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large numbers for ground water development. These hand pumps have the following two major advantages -

- i) are less susceptible to contamination from surface sources and
- ii) they tap fractures between 20-60m depth which have been found to be less affected by seasonal water level fluctuation and thus have lesser chances of failure even during extreme summer. In rural areas of Jamtara district the number of hand pumps drilled by PHED is 9561 of which 6815 are under working condition.

In the urban areas ground water plays a supplementary role in water supply, the major supply being made through dams, reservoirs or weirs across rivers or streams. No authentic data is available on the number of ground water structures catering the urban water supply. For Jamtara urban area, the dependence on ground water has been considered as 15%.

As per the latest resource estimation carried out following GEC 97 methodology, the overall stage of ground water development in Jamtara district is 22.94% indicating sufficient scope of development.

Table 7.2: The Ground Water Resource of Jamtara District

Sl. No.	Assessment unit	Net Ground Water Availability (Ha-m)	Existing Ground Water Draft For Irrigation (Ha-m)	Existing Ground Water Draft For Domestic And Industrial Water Supply (Ha-m)	Existing Ground Water Draft For All Uses (Ha-m)	Allocation For Domestic And Industrial Requirement Supply (Ha-m)	Net Ground Water Availability For Future Irrigation (Ha-m)	Stage of Ground Water Development (%)	Category of blocks
1	JAMTARA	4874.73	778.48	339.76	1118.23	416.45	3679.80	22.94	SAFE
2	Kundhit	4176.73	417.25	190.37	607.62	233.34	3526.14	14.55	SAFE
3	Nala	3411.50	423.17	259.30	682.47	317.84	2670.50	20.00	SAFE
4	Narayanpur	2440.16	1317.53	265.20	1582.73	325.07	797.57	64.86	SAFE
<b>Total</b>		<b>14903.13</b>	<b>2936.42</b>	<b>1054.63</b>	<b>3991.05</b>	<b>1292.69</b>	<b>10674.01</b>	<b>26.77</b>	<b>SAFE</b>

(Source: Central Ground Water Board)



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## 8. RAINFALL AND CLIMATE OF THE DISTRICT

### 8.1 Climatic Condition:

Owing to its position near West Bengal and hilly landscape of the region climatic condition is slightly different from the rest of the State. The district receives an annual rainfall of 1500 mm. and most of the rainfall occurs during the rainy season. During winter season the temperature varies between 10°C to 16°C and during summer season it varies between 22°C to 40°C.

(Source – jamtara.nic.in)

#### Temperature

The summer season starts from the month of March with warm and humid conditions and ends in June. The maximum highest temperature varies from 46°C in the month of May and June while minimum temperature varies from 4°C to 7°C during December and January. Table below mentions the temperature variation throughout the year -

Table 8.1: Monthly average temperature distribution of Jamtara District (in °C)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Nov	Oct	Dec	Year
Record high °C (°F)	31.0(87.8)	36.0(9)	40.0(1)	45.0(1)	47.0(1)	44.0(1)	48.0(1)	37.0(98.6)	35.0(95.0)	36.0(9)	33.0(9)	31.0(8)	37.0(1)
Average high °C (°F)	25.0(78.1)	29.0(85.3)	34.7(94.5)	38.0(1)	40.1(104.3)	37.9(100.3)	34.2(93.6)	33.2(91.8)	32.4(90.3)	31.0(87.8)	30.1(86.2)	26.2(79.2)	32.8(91.1)
Daily mean °C (°F)	22.23(72.0)	26.27(79.2)	31.81(89.2)	35.54(95.9)	36.88(98.3)	35.57(96.0)	32.2(89.9)	31.31(88.3)	30.2(86.3)	28.63(83.5)	27.07(80.7)	22.97(73.3)	30.06(86.1)
Average low °C (°F)	16.59(61.8)	19.91(67.8)	24.56(76.2)	27.66(81.7)	29.29(84.7)	29.97(85.9)	27.76(81.9)	27.2(80.9)	26.21(79.1)	23.88(74.9)	21.39(70.5)	17.26(63.0)	24.31(75.7)
Record low °C (°F)	13.0(55.4)	15.0(59.0)	16.0(60.8)	19.0(66.2)	18.0(64.4)	23.0(73.4)	23.0(73.4)	25.0(77.0)	20.0(68.0)	19.0(66.2)	18.0(64.4)	11.0(51.8)	11.0(51.8)
Average precipitation mm (inches)	1.95(0.08)	8.0(0.32)	6.0(0.24)	18.9(0.75)	24.78(0.98)	38.15(1.5)	117.49(4.63)	101.79(4.0)	102.0(4.0)	42.26(1.66)	0.11(0.0)	5.0(0.2)	39.8(1.57)
Average precipitation on days (≥ 1.0 mm)	0.36	1.0	1.27	2.45	2.27	4.55	7.0	7.73	6.09	3.09	0.0	0.55	3.03
Average relative humidity (%)	41.86	37.39	29.55	38.07	44.19	52.32	67.88	73.88	75.43	65.99	47.32	41.98	51.32
Mean monthly sunshine hours	8.49	8.49	10.78	12.68	13.22	12.99	11.55	11.42	9.44	10.28	10.16	8.48	10.66

(Source: World Weather Online)



*[Signature]*  
District Mining Officer  
Jamtara

DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" IN JAMTARA DISTRICT OF JHARKHAND

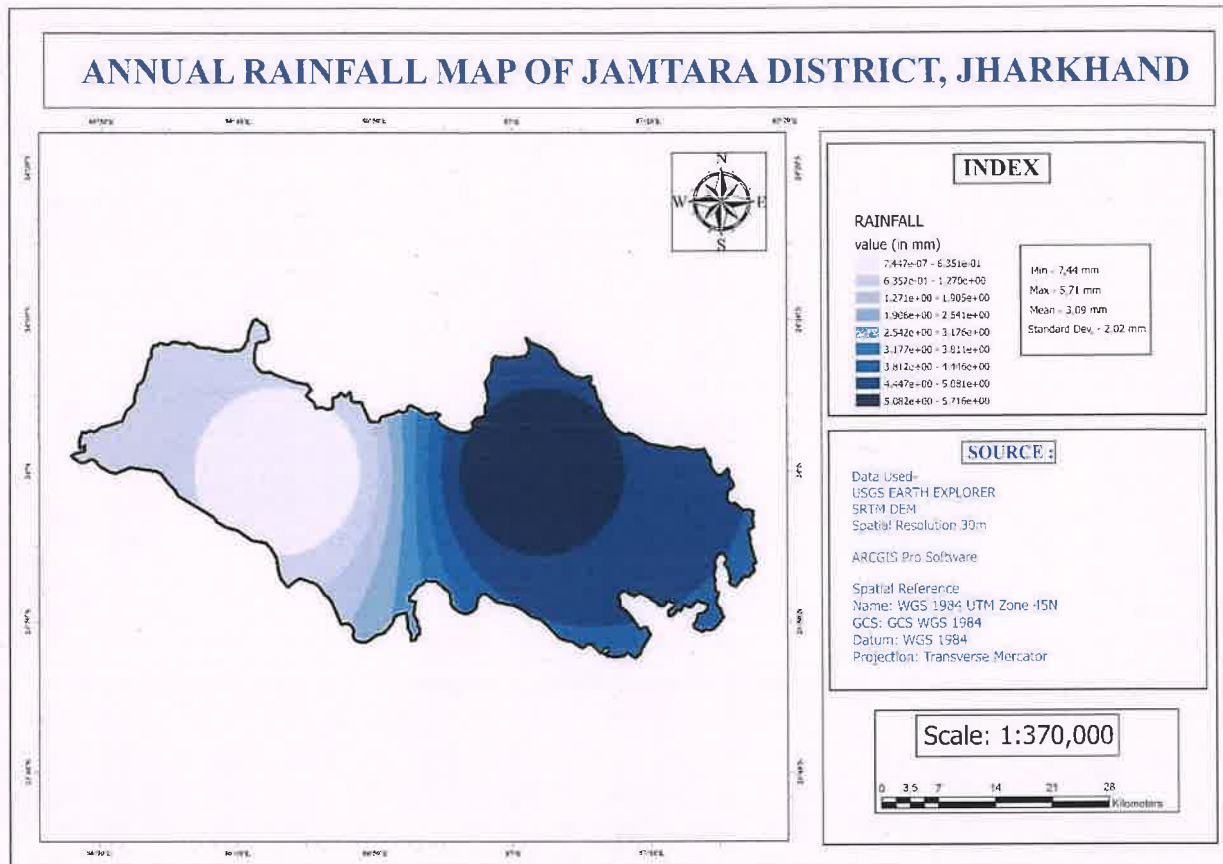


Fig. 8.1: Annual rainfall map of Jamtara District

Table 10.2: Rainfall Data of Jamtara from 2014-23

Year	Jan.	Feb.	Mar ch	Apri ll	May	Jun e	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
	R/F	R/F	R/F	R/F	R/ F	R/F	R/F	R/F	R/ F	R/F	R/F	R/F	R/F
2014	9.1	42	20.8	9.3	87.3	166.5	279.1	220	159	11.3	0.0	0.0	1004.4
2015	18	5.7	56.3	42.1	31.1	213.9	578.2	335	87.3	7.3	0.0	0.0	1374.9
2016	13	7.3	5.2	0.8	122	234.3	360.7	342	280	39.3	0.0	0.0	1404.6
2017	0.0	0.0	0.0	0.0	74.2	139.1	455	174	151	227	0.0	0.0	1220.3
2018	0.0	0.0	0.0	129.4	50.5	202.5	266.7	184	177	19	0.0	10	1039.1
2019	0.0	1.01	0.33	0.99	3.10	3.12	9.53	7.11	9.79	5.08	0.0	0.09	40.19
2020	0.59	0.17	2.02	1.31	4.76	9.40	11.41	10.18	5.32	0.36	0.05	0.00	45.62
2021	0.0	0.00	0.22	0.51	5.84	11.26	12.27	7.93	9.65	4.73	0.79	0.39	53.65
2022	0.52	2.23	0.0	0.12	4.02	2.50	3.44	8.29	7.65	5.36	0.0	0.06	34.20
2023	0.0	0.0	2.31	0.76	2.25	7.10	3.45	6.12	9.01	4.17	0.0	1.23	36.43



*D.M.O.*  
District Mining Officer  
Jamtara



**Relative Humidity, Wind Speed & Wind Direction:**

The entire district experiences a high relative humidity that is spread uniformly. Generally, the humidity ranging from 61% to 81% during the monsoon and the relative humidity generally decreases in drier months of March and April are less humid with the relative humidity ranging between 25% - 35%.

The winds over the district are high during monsoon, the average wind speed in monsoon seasons varies from 7 mph to 9 mph, and occasionally the wind speed goes over the 18 mph due to depression and local storm. The wind direction in the monsoon season is South-West wind



*[Signature]*  
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Jamtara

DISTRICT SURVEY REPORT OF 'MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER BED MINING' IN JAMTARA DISTRICT OF JHARKHAND



9. DETAILS OF EXISTING MINING LEASES OF MINOR MINERALS [STONE & BRICKS] IN THE DISTRICT

Sl. No.	Name of the Mineral	Name of the Lessee	Address & Contact No. of Lessee	Mining Lease Grant Order No. & Date	Area of Mining Lease (Ha)	Period of Mining Lease	Period of Mining Lease (1st/2nd/renewal)	Date of Commencement of Operation	Status (Working/Non-working/Temp. Working for dispatch)	Captive/Non-Captive	Obtained Environmental Clearance (Yes/No). If Yes, Letter No. with date of grant of EC	Address of the Mining Lease	Coordinates of the Mining Lease (UTM/Easting)	Method of Mining (Opencast/Underground)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
1	Stone	Shri Sigit Kumar Yadav	Village - Bandarpahar Dist - Jamtara	134/M Date - 21.02.2016	1918	21.02.2016	20.02.2026	N.A.	N.A.	19-07-2022	Non Working	Non-Captive	EC Letter No. - 2015/16/1988/2015/233 Date - 30.12.2015	Mouza - Bandarpahar Block - Fatehpur P. S. - Bandarpahar P. O. - Tilaki Dist. - Jamtara	A - 24°01'54.7" N 86°57'59.8" E B - 24°02'08.41" N 86°57'02.27" E C - 24°01'43.03" N 86°57'54.98" E D - 24°01'43.03" N 86°57'54.98" E	Opencast
2	Stone	Shri Kamal Bhushan	At Dehwanan Bhawan Madhulam Batu Road P.O. - Heha P.S. - Sukhdevnagar Dist. - Ranchi	136/M Date - 24.02.2016	4-450	08.03.2016	07.03.2026	N.A.	N.A.	23-01-2021	Working	Non-Captive	EC Letter No. - 2015/16/1527/01.015/2668 Date - 30.12.2015	Mouza - Golpahari Block - Jamtara Panchayat - Sukhpiria P. S. - Jamtara P. O. - Gumbahar Dist. - Jamtara	A - 23°56'08.66" N 86°40'07.11" E B - 23°56'14.24" N 86°39'58.10" E	Opencast
3	Stone	M/s Maa Durga Enterprises	At Dombahi Hazar P.S. - Barabani Dist. - Paschim Bardhaman (W. Bengal)	740/M Date - 26.08.2017	1950	18.08.2017	21.08.2027	N.A.	N.A.	29-09-2018	Working	Non-Captive	EC Letter No. - 2015/16/1527/01.015/2668 Date - 04.02.2017	Mouza - Papatada Block - Narayanpur P. S. - Narayanpur P. O. - Narayanpur Dist. - Jamtara	A - 24°00'52.50" N 86°41'42.70" E B - 24°00'58.20" N 86°41'48.10" E C - 24°00'52.50" N 86°41'42.70" E D - 24°00'49.70" N 86°41'53.05" E	Opencast
4	Stone	M/s Max Alert System	At + P.O. - Court Road P.S. - Jamtara Dist. - Jamtara	987/M Date - 03.11.2017	3-43	25.10.2017	24.10.2027	N.A.	N.A.	02-02-2018	Working	Non-Captive	EC Letter No. - 35/DEIAA Date - 17.08.2017	Mouza - Sawalapur Block - Narayanpur P. S. - Narayanpur P. O. - Sawalapur Dist. - Jamtara	A - 24°01'16.30" N 86°42'22.43" E	Opencast
5	Stone	M/s Rah Agro Technocrats Pvt. Ltd.	At Kenduataad Block - Narayanpur Dist. - Jamtara	821/M/JAMTARA Date - 15.09.2018	1730	28.11.2018	27.11.2028	N.A.	N.A.	11-04-2019	Working	Non-Captive	EC Letter No. - 08/DEIAA Date - 04.12.2017	Mouza - Kenduataad Block - Narayanpur P. S. - Narayanpur P. O. - Narayanpur Dist. - Jamtara	A - 24°00'25.70" N 86°42'22.35" E B - 24°00'24.20" N 86°42'22.20" E C - 24°00'24.05" N 86°42'20.41" E D - 24°00'23.17" N 86°42'25.17" E	Opencast
6	Stone	Shri Amit Kumar Pandey	At - Golpahari P.O. - Gumbahar P.S. - Dist. - Jamtara	737/M Date - 29.08.2015	4-465	29.08.2015	28.08.2025	N.A.	N.A.	08-04-2017	Working	Non-Captive	EC Letter No. - EC/SEIAA/2015-16/755/2015/1120, Date - 22.07.2015	Mouza - Golpahari Block - Jamtara P. S. - Jamtara P. O. - Dhooba Dist. - Jamtara	A - 23°59'01.07" N 86°40'01.13" E B - 23°58'42.62" N 86°40'11.68" E	Opencast
7	Stone	Shri Nityanand Yadav	Village - Salptra P. O. - Tilaki Thana - Bindapathar Dist. - Jamtara	934/M Date - 14.11.2015	1699	05.02.2014	04.02.2024	N.A.	N.A.		Non Working	Non-Captive	EC Letter No. - EC/SEIAA/2014-15/467/2014/1198 Date - 24.07.2015	Mouza - Salptra Block - Fatehpur P. S. - Bandarpahar P. O. - Tilaki Dist. - Jamtara	A - 24°00'25.00" N 86°57'41.80" E B - 24°00'22.50" N 86°57'50.50" E C - 24°00'21.00" N 86°57'40.00" E D - 24°00'21.00" N 86°57'41.80" E E - 24°00'27.00" N 86°57'38.00" E F - 24°00'27.00" N 86°57'39.00" E G - 24°00'26.5" N 86°57'41.80" E	Opencast
8	Stone	Md. Azaz Ansari & Md. Saddam Ansari	Village - Dhekpara Block - Mithiam Dist. - Jamtara	914M Date - 05.11.2019	0.488	05.02.2014	04.02.2024	N.A.	N.A.		Non Working	Non-Captive	EC Letter No. - EC/SEIAA/2014-15/667/2015/1095 Date - 08 Jul 2015	Mouza - Kelaha Block - Jamtara Panchayat - Pysaboka P. S. - Mithiam P. O. - Kelaha Dist. - Jamtara	A - 23°51'14.11" N 86°50'36.04" E B - 23°51'14.93" N 86°50'36.35" E	Opencast



*[Signature]*  
District Mining Officer  
Jamtara

9	Stone	Shri Binayaj Bharti S/o Late Ravindranath Bharti	R/o Arvapuri, Ratu Road P.S. - Subhadrnagar Dist - Ranchi	137/M Date - 24.02.2015	11.000	08.03.2016	05.03.2025	N.A.	N.A.	Non Working	Non-Captive	EC/SEIAA/2015- 16/1528/2267 Date - 30.12.2015	Mouza - Golpahari Block - Narayanpur P.S. - Narayanpur P.O. - Golpahari District - Jamtara	A - 23°59'00.00" N 86°40'02.48" E B - 23°50'01.71" N 86°40'02.97" E	Opencast
10	Stone	M/s Maa Shakti Corporation	M LRD Chowk Shahtri nagar West Dhanbad P.O. - Dhanbad Thana - Bank More Dist. - Dhanbad	147/M Date - 03.03.2015	2.428	29.02.2016	28.02.2026	N.A.	N.A.	Working	Non-Captive	EC/SE/2015- 16/1835/2015/2579 Date - 31.12.2015	Mouza - Nayadih Block - Narayanpur P.S. - Narayanpur P.O. - Gokula District - Jamtara	A - 23°51'12.4" N 86°50'36.98" E B - 23°51'11.03" N 86°50'39.26" E C - 23°51'14.11" N 86°50'39.35" E D - 23°51'14.11" N 86°50'37.34" E	Opencast
11	Stone	M/s Sanjeev Hembram Mangana Partner Shri Amrendra Tiwari	Near SBI Bunk, Mihijam Dist - Jamtara	729/M Date - 21.08.2017	5.000	18.08.2017	17.08.2027	N.A.	N.A.	Non Working	Non-Captive	EC Letter No - 47/DEIAA Date - 26.11.2016	Mouza - Chandredipa Block - Jamtara P.S. - Mihijam P.O. - Mihijam District - Jamtara	A - 23°54'01.1" N 86°49'42.5" E B - 23°53'54.8" N 86°49'39.6" E	Opencast
12	Stone	M/s Shv Durga Mining Project	M Karon Road Karamatnir P.O. + P.S. - Karamatnir Dist - Jamtara	825/M Date - 30.09.2015	2.43	07.10.2015	06.10.2025	N.A.	N.A.	Non Working	Non-Captive	EC/SEIAA/2015- 16/811/2015/1315 Date - 17.08.2015	Mouza - Teiyadih Block - Karamatnir P.S. - Karamatnir P.O. - Karamatnir District - Jamtara	A - 24°03'38.6" N 86°44'43.7" E B - 24°03'56.7" N 86°44'44" E	Opencast
13	Stone	Shri Uttam Kumar Mahto S/o Guruhari Mahato	Village - Nagar (Kvari) Barbudda Dist - Dhanbad		6.47	28.11.2018	27.11.2028	N.A.	N.A.	Non Working	Non-Captive		Mouza - Sahajpur Block - Karamatnir P.S. - Karamatnir District - Jamtara	A - 24°07'44.33" N 86°41'20.07" E B - 24°07'52.27" N 86°41'20.35" E	Opencast
14	Bricks	M/s M M G Bricks Proprietor Shri Sadamaj Mandal S/o Shri Haradhan Mandal	Village - Debalkunda P.O. - Sagoriya P.S. - Nala Dist - Jamtara		2.20			N.A.	N.A.		Non-Captive		Mouza - Debalkunda P.O. - Sagoriya P.S. - Nala Dist - Jamtara	A - 24°51'5.65" N 86°59'17.7" E B - 24°51'5.56" N 86°59'9.61" E C - 24°51'55.04" N 86°59'9.67" E D - 24°51'53.68" N 86°59'9.46" E	Opencast
15	Bricks	M/s A M G Bricks Proprietor Shri Nitramay Ghosh S/o Shri Babulal Ghosh	Village - Debalkunda P.O. - Sagoriya P.S. - Nala Dist - Jamtara		0.54			N.A.	N.A.		Non-Captive		Mouza - Debalkunda P.O. - Sagoriya P.S. - Nala Dist - Jamtara	A - 24°51'51.91" N 86°59'08.16" E B - 24°51'51.91" N 86°59'08.17" E	Opencast
16	Bricks	M/s J M T Bricks Proprietor Shri Sampada Maji S/o Shri Narayan Chandra Maji	Al - Maheshmunda-47 Suguria, Nala Dist - Jamtara		1.465			N.A.	N.A.		Non-Captive		Mouza - Maheshmunda- Suguria Block - Nala Dist - Jamtara	A - 23°51'48.15" N 87°00'01.48" E B - 23°51'46.82" N 87°00'08.04" E C - 23°51'44.03" N 87°00'01.35" E D - 23°51'44.31" N 86°59'58.27" E	Opencast
17	Bricks	M/s Shival Ray Proprietor Shri Shival Ray S/o Late Ranglal Ray	Village - Gopalpur P.O. - Guhiyadih P.S. + Dist - Jamtara		1.00			N.A.	N.A.		Non-Captive		Village - Gopalpur P.O. - Guhiyadih P.S. + Dist - Jamtara	A - 23°58'29.51" N 86°51'44.64" E B - 23°58'28.38" N 86°51'47.7" E C - 23°58'25.00" N 86°51'47.13" E D - 23°58'23.01" N 86°51'43.78" E E - 23°58'20.48" N 86°51'42.41" E	Opencast

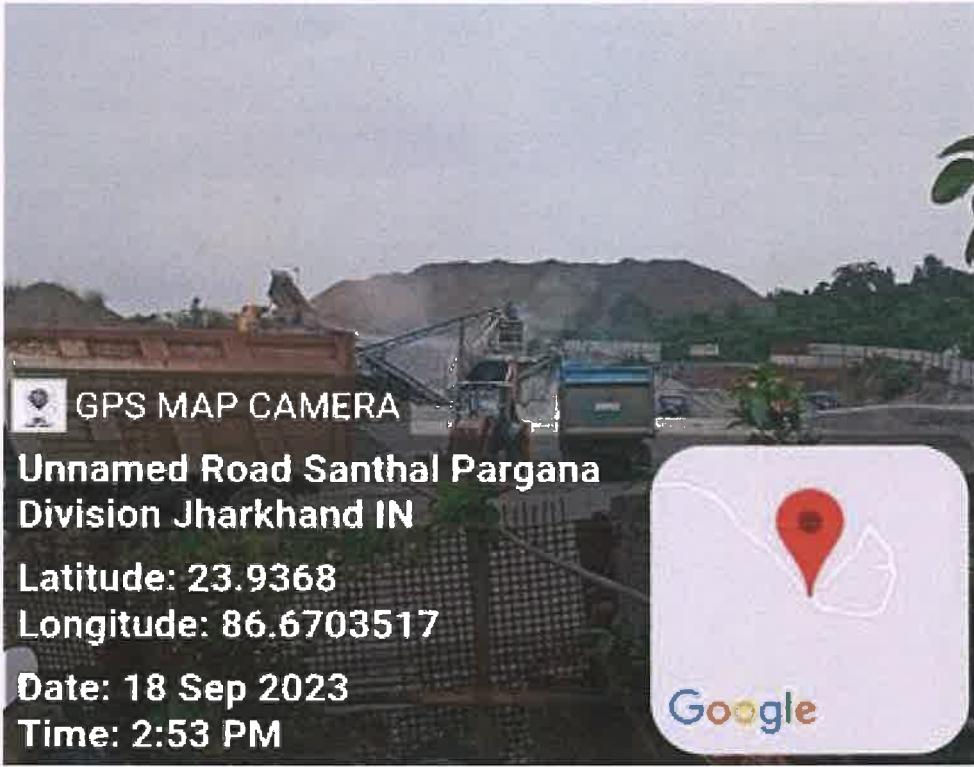


*[Signature]*  
District Mining Officer  
Jamtara





**Photographs showing Existing Mining Leases in the District**



Approved  
Authority  
State Level Enviro  
Jharkhand, India

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District Mining Officer  
Jamtara

DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" IN JAMTARA DISTRICT OF JHARKHAND



GPS MAP CAMERA

Unnamed Road Santhal Pargana  
Division Jharkhand IN

Latitude: 23.9368

Longitude: 86.6703517

Date: 18 Sep 2023

Time: 2:57 PM



GPS MAP CAMERA

Unnamed Road Santhal Pargana  
Division Jharkhand IN

Latitude: 23.9368

Longitude: 86.6703517

Date: 18 Sep 2023

Time: 2:58 PM



*[Signature]*  
District Mining Officer  
Jamtara

DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" IN JAMTARA DISTRICT OF JHARKHAND



GPS MAP CAMERA

Unnamed Road Santhal Pargana  
Division Jharkhand IN

Latitude: 23.9368

Longitude: 86.6703517

Date: 18 Sep 2023

Time: 2:58 PM



GPS MAP CAMERA

Unnamed Road Santhal Pargana  
Division Jharkhand IN

Latitude: 23.9368

Longitude: 86.6703517

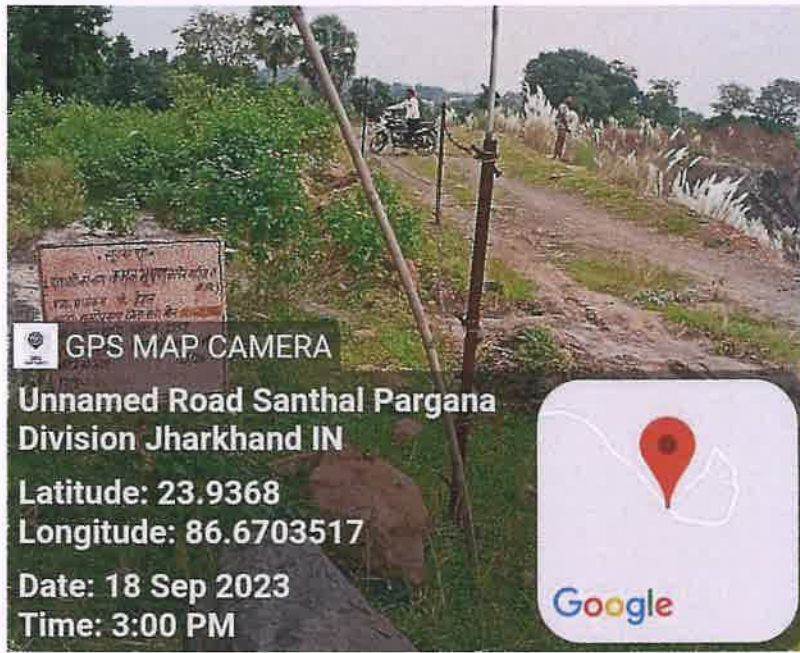
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Time: 2:59 PM



*[Signature]*  
District Mining Officer  
Jamtara

DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" IN JAMTARA DISTRICT OF JHARKHAND



GPS MAP CAMERA  
Unnamed Road Santhal Pargana  
Division Jharkhand IN  
Latitude: 23.9368  
Longitude: 86.6703517  
Date: 18 Sep 2023  
Time: 3:00 PM



GPS MAP CAMERA  
Unnamed Road Santhal Pargana  
Division Jharkhand IN  
Latitude: 23.9368  
Longitude: 86.6703517  
Date: 18 Sep 2023  
Time: 3:01 PM



*[Signature]*  
District Mining Officer  
Jamtara

DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" IN JAMTARA DISTRICT OF JHARKHAND



GPS MAP CAMERA

Unnamed Road Santhal Pargana  
Division Jharkhand IN

Latitude: 23.9368

Longitude: 86.6703517

Date: 18 Sep 2023

Time: 3:03 PM



GPS MAP CAMERA

Unnamed Road Santhal Pargana  
Division Jharkhand IN

Latitude: 23.9368

Longitude: 86.6703517

Date: 18 Sep 2023

Time: 3:03 PM



*[Signature]*  
District Mining Officer  
Jamtara

DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" IN JAMTARA DISTRICT OF JHARKHAND



GPS MAP CAMERA

Unnamed Road Santhal Pargana  
Division Jharkhand IN

Latitude: 23.9368

Longitude: 86.6703517

Date: 18 Sep 2023

Time: 3:04 PM



GPS MAP CAMERA

Unnamed Road Santhal Pargana  
Division Jharkhand IN

Latitude: 23.9368

Longitude: 86.6703517

Date: 18 Sep 2023

Time: 3:05 PM



*[Signature]*  
District Mining Officer  
Jamtara



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

Sl. No.	Financial Year	Royalty Collected(INR)
1	2020-21	32762604
2	2021-22	37704320
3	2022-23	60433355



*[Signature]*  
District Mining Officer  
Jamtara



**11. DETAILS OF PRODUCTION OF MINOR MINERAL (STONE) IN LAST THREE YEARS**

10.

Sl. No.	Year	Production (in ft <sup>3</sup> )	Dispatch (in ft <sup>3</sup> )
1	2021-22	6378950	5641383
2	2022-23	12152700	8316375
3	2023-24	4368850	2960200



**District Mining Officer  
Jamtara**



## 12. MINERAL MAP OF THE DISTRICT

### Mineral Wealth:

As Stated earlier, the geology of the area is mainly comprised of Chhotanagpur Gneissic Complex which cover the most part of the Jamtara district, it is quite monotonous consisting of Granitic Gneiss rocks in most of the areas. These basement rocks are traversed by Dolerite dyke and Pegmatites, therefore most of the mining activity revolve around Stone and Quartz mining. Jamtara district is rich in many minor minerals Such as Granite Gneiss, Dolerite and Quartz/ Feldspar etc. Coal (Major mineral) was also reported from some areas in Nala CD Block and Fatehpur CD Block of the district. Sand mining also prevalent in many River channels of the district.

Mainly three types of Minor minerals constituents such as Sand, Stone and Bajri are required for any type of construction apart from other material like cement and steel. In the earlier time, the mud houses/buildings were constructed with the use of mud. However, with the passage of time, new techniques of development activities were started. As such the demand of Minor mineral started on an increasing trend. In order to meet the requirement of raw material for construction, the local residents used to lift sand etc. from the river beds to meet out their bonafide requirement. However, after coming into being "The Jharkhand Minor Mineral Rules 2017", the mining is regulated in accordance with the rules. Jamtara is rich in minerals such as Sand, Stone, Quartz, Feldspar, Granite gneiss. Sand mining is mainly practiced in Ajay, Barakar, Hingla, Kuruli, Shiddheshwari River of Jamtara district.

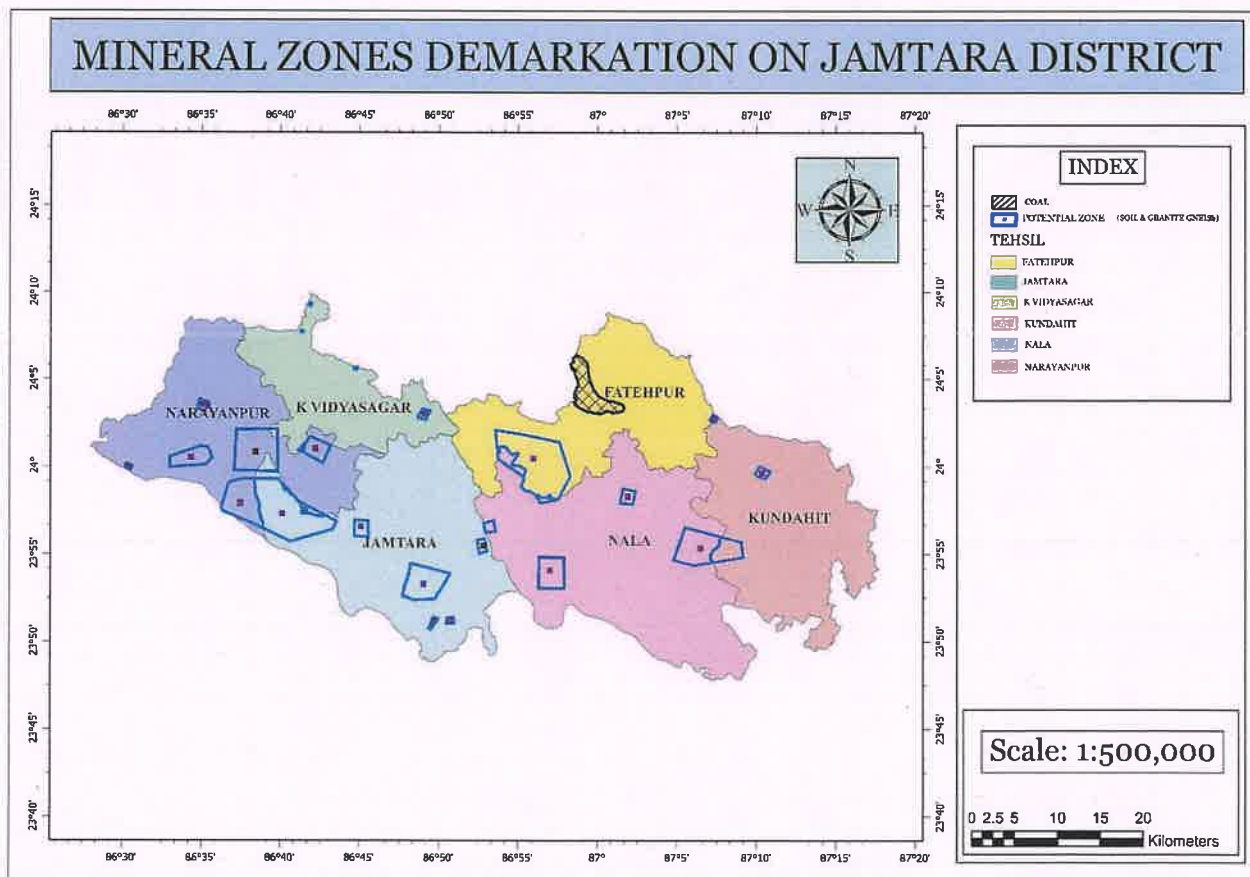


Fig. 12.1: Mineral Map of Jamtara District



*[Signature]*  
District Mining Officer  
Jamtara



DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" IN JAMTARA DISTRICT OF JHARKHAND

**13. LIST OF LETTER OF INTENT HOLDERS IN THE DISTRICT**

Sl. No.	Name of the Mineral	Name of the Lessee	Address & Contact No. of Letter of Intent Holder	Letter of Intent Order No. & Date	Area of Mining Lease to be allotted (Ha)	Validity of LoI	Use (Captive/ Non-Captive)	Address of the Mining Lease	Location of the Mining Lease (Coordinates)
1	Stone	M/s Mishra Stone Mines Proprietor: Shri Hari Mohan Mishra S/o Late Madhu Mangal Mishra	Village - Narayandham Court Road, Jamtara P.S. + P.O. - Jamtara Dist. - Jamtara	122/M, Jamtara Dated - 24-02-2020	2.74	N.A.	Non-Captive	Mouza - Banspahari Daag No. - 522, 524/A, 526, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539 and 540	24°02'27"N 87°07'02"N
2	Stone	M/s Mishra Stone Mines Proprietor: Shri Hari Mohan Mishra S/o Late Madhu Mangal Mishra	Village - Narayandham Court Road, Jamtara P.S. + P.O. - Jamtara Dist. - Jamtara	828/M, Jamtara Dated - 04-10-2019	1.85	N.A.	Non-Captive	Mouza - Piplatanr Daag No. - 1180, 1181, 1184, 1185, 1187, 1198, 1199, 1201 and 1202	24°60'52"N 86°42'05"N
3	Stone	M/s Mishra Mines Proprietor: Smt. Madhu Mishra W/o - Shri Hari Mohan Mishra	Village - Narayandham Court Road, Jamtara P.S. + P.O. - Jamtara Dist. - Jamtara	827/M, Jamtara Dated - 04-10-2019	1.38	N.A.	Non-Captive	Mouza - Piplatanr Daag No. - 251, 252, 253, 254, 255, 256, 257 and 258 & Mouza - Banspahari Daag No. - 162 to 165, 166/P, 167/P, 168/P and 165/1532	24°00'51"N 86°41'46"N
4	Stone	A & S Minerals Proprietor: Shri Arun Kumar Singh S/o Late Bacchu Prasad Singh Shri Sudhir Kumar Singh S/o Ram Pawan Singh	Village- Nagar, P.O+P.S- Hunterganj, Dist- Chatra Village- Harmu, Dorando, Ranchi	504/M, Jamtara Dated- 15-07-2024	2.50	N.A.	Non-Captive	प्रखण्ड :- नाला मौजा- खरीकाबाद प्लॉट नं०- 144 / पी० 145 / पी०, 146 / पी०, 148, 149 72	





DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" IN JAMTARA DISTRICT OF JHARKHAND

Sl. No.	Name of the Mineral	Name of the Lessee	Address & Contact No. of Letter of Intent Holder	Letter of Intent Order No. & Date	Area of Mining Lease to be allotted (Ha)	Validity of LoI	Use (Captive/ Non-Captive)	Address of the Mining Lease	Location of the Mining Lease (Coordinates)
5	Stone	Proprietor: • Shri Ranjit Kumar Singh S/o Late Pradip Singh • Ibrahim Ansari S/o Janu Miyan • Ashiq Ansari S/o Md. Hussain Ansari • Gulshan Bibi W/o Ali Mohammad • Roshan Ali S/o Late Hikmat Miyan	Village- Khareek, P.O- Tapez, P.S+ Dist- Chatra Village- Chandradipa, P.O- Chandradipa, P.S- Mihijam, Dist- Jamtara	203/M, Jamtara Dated- 28-02-2024	2.16	N.A	Non-Captive	प्रखण्ड :- जामताड़ा मौजा:- चन्द्रदीपा प्लॉट नं०- 1193, 1163/ती०	
6	Stone	Proprietor: • Azad Ansari S/o late Mustakim Ansari Shri Krishna Kumar Mandal, S/o Shankar Mandal, • Shri Vibhishan Murmu, S/o-Haradhan Murmu, • Shri Mastan Marandi, S/o Ramsai Marandi, • Shri Anil Tudu, S/o Anta Tudu, • Atika Marandi, D/o- Budhan Marandi, • Jyotin Marandi, S/o Diwakar Marandi • Sunil Marandi, S/o late Mano Marandi • Sankirtan Marandi, S/o Mihir Marandi,	Village- Khadakabad, P.O- Barba, East, P.S- Govindpur, Dist- Dhanbad Village- Phuljori P.O- Chalna P.S+Dist- Jamtara	545/M, Jamtara Dated- 29-07-2024	2.10	N.A	Non-Captive	प्रखण्ड :- जामताड़ा मौजा:- फुलजोरी प्लॉट नं०- 1806, 1810, 1812, 1813, 1814, 1815, 1816, 1817, 1818, 1819, 1827, 1828, 1830, 1831 एवं 1832	





DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" IN JAMTARA DISTRICT OF JHARKHAND

7	Stone	Universal Mining Management, Proprietor: • Niaz Ahmad, S/o- Md. Alauddin, Farhan Nadeem Khan, S/o- Khalid Nadeem Khan, • Shri Manas, S/o- Dr. Hemant Kumar Pandey, • Shri Muralidhar Singh, S/o Late Ganpat Singh, • Smt. Shakri Devi, W/o- Nathan Rawani,	Village- Ghatiyaari, P.O+P.S- Chandrapura, District- Bokaro. Marafari Colony, Bokaro P.O+ P.S-Sector 12, District- Bokaro P.S- Gonda, District- Ranchi, Village- Rampur, Sarkil Pabiya, P.S- Narayanpur, District- Jamtara Village- Rampur, Sarkil Pabiya, P.S- Narayanpur, District- Jamtara	213/M, Jamtara Dated- 02/03/24	1.80	N.A	Non- Captive	प्रखण्ड :- नारायणपुर मौजा- रामपुर ब्लॉक नं०- 642, 643, 647, 666, 667, 668,
8	Stone	Shri Balaji Minerals Corporation Proprietor- • Shri Anant Prasad, S/o late Arjun Prasad • Shri Ramesh Pandit, S/o- Sukhdev Pandit, • Shri Mangal Hembram, S/o- Kali Hembram, • Shri Kalipada Marandi, S/o- Late Saheb Lal Marandi, • Shri Sudhir Pandit, S/o late Kinu Pandit, • Kartik Pandit, S/o late Bahadur Pandit,	Village- Singhani, P.O- Pathalgarh, District - Chatra Village- Phuljori, P.O- Chalna Dhobna, District - Jamtara	66/M, Jamtara Dated- 25/03/2024	1.27	N.A	Non- Captive	Vill-Fuljori, Khata No.52, Plot No.1859,1873,1874,18 75,1876,1877,1878,18 79,1881
9	Stone	Shri Sai Enterprises Proprietor: Shri Mukesh Singh Chaudhary, S/O Shri Subhash Singh Chaudhary	Near District Council Office Park Market Hirapur, Dhanbad.	748/M, Dated- 11/10/2023	2.90	N.A	Non- Captive	प्रखण्ड :- जामताड़ा मौजा :- चन्द्रदीपा ब्लॉक नं० :- 636, 637, 638, 639, 640, 641, 1147, 1148, 1149, 1151/थी०, 1152/थी०, 1153/थी० एवं 1154/थी०

11/10/2023



  
District Mining Officer  
Jamtara



DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING  
OR RIVER-BED MINING" IN JAMTARA DISTRICT OF JHARKHAND

10	Stone	Koleshwari Minerals Pvt. Ltd. Proprietor – Mr. Ashutosh Kumar Singh, S/O Mr. Arun Kumar Singh • Mr. Mishir Murmu, S/O Jitan Murmu, • Mr. Kalipad Marandi S/O late Saheblal Marandi, • Shri Jyotin Marandi, S/O late Diwakar Marandi, • Shri Naresh Murmu, S/O late Ishwar Murmu, • Shri Arun Marandi, S/O late Mangal Marandi, • Shri Kishun Marandi, S/O Late Khilu Marandi • Shri Hopna Murmu, S/O of late Somlal Murmu, • Shri Uttam Murmu, S/O of late Gomeshwar Murmu, • Shri Manager Marandi, S/O of late Badan Marandi, • Shri Vishan Murmu, S/O of late Kalo Murmu	Village- Nagar, P.O + P.S Hunterganj, District – Chatra Village-Phujori, P.O - Chalna (Dhobna) P.S + District- Jamtara	505/M Dated - 15/07/2024	2.81	N.A	Non- Captive	प्रखण्ड :- जामताड़ा मौजा :- फुलजोरी प्लॉट नं० :- 2075/पी०, 2078, 2079/पी०, 2080, 2097/पी०, 2098/पी०, 2099, 2100, 2101/पी०, 2102/पी०, 2107, 2108/पी०, 2109/पी०, 2110/पी०, 2111, 2112, 2113, 2117/पी०
11	Stone	A & S Minerals Proprietor – Shri Arun Kumar Singh, S/O late Bacchu Prasad Singh, Shri Sudhir Kumar Singh S/O Ram Pawan Singh	Village- Nagar, P.O- Hunterganj, P.S- Hunterganj, District- Chatra Harmu Doranda, Ranchi, District - Ranchi	503/M, Jamtara Dated- 15/07/2024	2.03	N.A	Non- Captive	प्रखण्ड :- नाला मौजा- जामकनाली एवं खरीकाबाद प्लॉट नं०- 516/पी० 514/2163, 59, 60/पी० 62/पी० 64, 65, 66, 68



14/07/2024





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

The geology of the area is mainly comprised of Chhotanagpur Gneissic Complex which cover the most part of the Jamtara district, it is quite monotonous consisting of Granitic Gneiss rocks in most of the areas. These basement rocks are traversed by Dolerite dyke and Pegmatites, therefore most of the mining activity revolve around Stone and Quartz mining. Jamtara district is rich in many Minor minerals such as Granite Gneiss, Dolerite and Quartz/Feldspar etc. Coal (Major mineral) was also reported from some areas in Nala CD Block and Fatehpur CD Block of the district. Sand mining also prevalent in many River channels of the district.

Mainly three types of Minor minerals constituents such as Sand, Stone and Bajri are required for any type of construction apart from other material like cement and steel. In the earlier time, the mud houses/buildings were constructed with the use of mud. However, with the passage of time, new techniques of development activities were started. As such the demand of Minor mineral started on an increasing trend. In order to meet the requirement of raw material for construction, the local residents used to lift sand etc. from the river beds to meet out their bonafide requirement. However, after coming into being "The Jharkhand Minor Mineral Rules 2017", the mining is regulated in accordance with the rules. Jamtara is rich in minerals such as Sand, Stone, Quartz, Feldspar, Granite Gneiss.

At present, based on existing running mining leases of Stone and available Mining Plans (13 registered mining leases), mining operations is being carrying out to produce a total 7778283.5 m<sup>3</sup>/21001365 Tonnes of Stone in the Jamtara district. The Letter of Intent (LoI) have been issued to 3 Nos. of applicant for Stone mining in the district. However, there are 132 Nos. of potential Stone deposits have been identified in Jamtara district.



*[Signature]*  
District Mining Officer  
Jamtara

**MINEABLE RESERVE IN EXISTING MINING LEASES OF MINOR MINERALS 'STONE, QUARTZ & FELDSPAR'**

Sl. No.	Name of the Mineral	Name of the Lessee	Address & Contact No. of Lessee	Letter of Intent Grant Order No. & Date	Area of Mining Lease to be allotted (Ha.)	Validity of LoI	Use Captive/Non-Captive	Address of the Mining Lease	Location of Mining lease (Latitude & Longitude)	Mineable Reserve (in m <sup>2</sup> )
1	2	3	4	5	6	7	8	9	10	
1	Stone	Shri Sujit Kumar Yadav	Village - Bandarpahari Dist. - Jamtara	134/M Date - 21.02.2016	0.77		Non-Captive	Mouza - Bandarpahari Block - Fatehpur P. S. - Bindapathar P. O. - Tilaki District - Jamtara	A - 24°0'36.47"N 86°57'17.98"E B - 24°0'38.49"N 86°57'19.27"E C - 24°0'43.93"N 86°57'9.26"E D - 24°0'43.19"N 86°57'8.70"E	78050
2	Stone	Shri Kamal Bhushan	At Bishwanath Bhawan Madhukam Ratu Road P.O. - Hehal P.S. - Sukhdevnagar Dist. - Ranchi	136/M Date - 24.02.2016	1.8		Non-Captive	Mouza - Golpahari Block - Jamtara Panchayat - Sukhjora P. S. - Jamtara P. O. - Gundlipahari District - Jamtara	A - 23°56'8.81"N 86°40'07.11"E B - 23°56'1.82"N 86°39'38.67"E	1194073
3	Stone	M/s Maa Durga Enterprises	At Domohani Bazar P.S. - Barabani Dist. - Paschimim Burdwan (W. Bengal)	740/M Date - 26.08.2017	0.79		Non-Captive	Mouza - Pipalatanr Block - Narayanpur P. S. - Narayanpur P. O. - Narayanpur District - Jamtara	A - 24°00'57.50"N 86°41'47.70"E B - 24°00'58.20"N 86°41'48.10"E C - 24°00'52.57"N 86°41'57.57"E D - 24°00'49.76"N 86°41'53.95"E	240712
4	Stone	M/s Max Alert System	At + P.O. - Court Road P.S. - Jamtara Dist. - Jamtara	987/M Date - 03.11.2017	1.79		Non-Captive	Mouza - Sawalapur Block - Narayanpur P. S. - Narayanpur P. O. - Sawalapur District - Jamtara	A - 24°16'30"N 86°42'22.43"E	540745
5	Stone	M/s Rah Agro Technocrats Pvt. Ltd.	At Kenduatand Block - Narayanpur Dist. - Jamtara	821/M/JAMTARA Date - 15.09.2018	0.7		Non-Captive	Mouza - Kenduatand Block - Narayanpur P. S. - Narayanpur P. O. - Narayanpur District - Jamtara	A - 24°00'25.78"N 86°42'22.75"E B - 24°00'24.26"N 86°42'22.20"E C - 24°00'24.95"N 86°42'29.43"E D - 24°00'23.93"N 86°42'29.32"E	356012
6	Stone	Shri Amit Kumar Pandey	At - Golpahari P.O. - Gundalipahari P.S.+ Dist. - Jamtara	737/M Date - 29.08.2015	1.8		Non-Captive	Mouza - Golpahari Block - Jamtara P. S. - Jamtara P. O. - Dhubna District - Jamtara	A - 23°56'03.07"N 86°40'0.13"E B - 23°56'2.62"N 86°40'1.66"E	1599775

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7	Stone	Shri Nityanand Yadav	Village - Salptra P. o. - Tilaki Thana - Bindapathar Dist. - Jamtara	934/M Date - 14.11.2015	0.66	Non-Captive	Mouza - Salptra Block - Fatehpur P. S. - Bindapathar P. O. - Tilaki District - Jamtara	A - 24°00'25.00"N 86°57'44.80"E B - 24°00'22.50"N 86°57'50.50"E C - 24°00'21.00"N 86°57'49.00"E D - 24°00'23.60"N 86°57'44.80"E E - 24°00'27.00"N 86°57'38.80"E F - 24°00'27.90"N 86°57'39.00"E G - 24°00'26.0"N 86°57'42.80"E	127700
8	Stone	Md. Azaz Ansari & Md. Saddam Ansari	Village - Dhekipara Block - Mihijam Dist. - Jamtara	914M Date - 05.11.2019	0.19	Non-Captive	Mouza - Kelahi Block - Jamtara Panchyat - Piyalsola P. S. - Mihijam P. O. - Kelahi District - Jamtara	A - 23°51'14.11"N 86°50'36.98"E B - 23°51'11.93"N 86°50'39.35"E	26190
9	Stone	Shri Binanjay Bharti S/o Late Ravindranath Bharti	R/o Aryapuri, Ratu Road P.S. - Sukhdevnagar Dist. - Ranchi	137/M Date - 24.02.2016	4.450	Non-Captive	Mouza - Golpahari Block - Narayanpur P. S. - Narayanpur P. O. - Golpahari District - Jamtara	A - 23°56'00.66"N 86°40'02.48"E B - 23°56'01.71"N 86°40'02.97"E	1929013
10	Stone	M/s Maa Shakti Corporation	At LRD Chowk Shahtri nagar West Dhanbad P.O. - Dhanbad Thana - Bank More Dist. - Dhanband	147/M Date - 02.03.2016	0.98	Non-Captive	Mouza - Nayadih Block - Narayanpur P. S. - Narayanpur P. O. - Gokula District - Jamtara	A - 23°51'12.4"N 86°50'36.98"E B - 23°51'11.93"N 86°50'39.26"E C - 23°51'14.11"N 86°50'39.35"E D - 23°51'14.11"N 86°50'37.34"E	328311
11	Stone	Shri Sanjeet Hembrom	Near SBI Bank, Mihijam Dist. - Jamtara	729/M Date - 21.08.2017	2.020	Non-Captive	Mouza - Chandradipa Block - Jamtara P. S. - Mihijam P. O. - Mihijam District - Jamtara	A - 23°54'01.1"N 86°49'42.5"E B - 23°53'54.8"N 86°49'36.6"E	86950.5
12	Stone	M/s Shiv Durga Mining Project	At Karon Koad Karamatanr P.O. + P.S. - Karamatanr Dist. - Jamtara	825/M Date - 30.09.2015	0.98	Non-Captive	Mouza - Teliyadih Block - Karmatanr P. S. - Karmatanr P. O. - Karmatanr District - Jamtara	A - 24°05'38.6"N 86°44'43.7"E B - 24°05'36.7"N 86°44'44"E	204120
13	Stone	Shri Uttam Kumar Mahto S/o Girdhari Mahato	Village - Nagar Kiyari Barbadda Dist. - Dhanbad		2.62	Non-Captive	Mouza - Sahajpur Block - Karmatanr P. S. - Karmatanr District - Jamtara	A - 24°07'44.33"N 86°41'20.07"E B - 24°07'52.27"N 86°41'26.35"E	1066662



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**DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SANDMINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND**



**LETTER OF INTENT (LoI HOLDERS)**

Sl. No.	Name of the Mineral	Name of the Lessee	Address / Contact No. of Lessee	Area of Mining Lease (Ha.)	Address of the Mining Lease	Location of the Mining lease (Latitude & Longitude)	Mineable Reserve (in m <sup>3</sup> )
1	2	3	4	5	6	7	8
1	Stone	M/s Mishra Stone Mines Proprietor: Shri Hari Mohan Mishra S/o Late Madhu Mangal Mishra	Village - Narayandham Court Road, Jamtara P.S. + P.O. - Jamtara Dist. - Jamtara	2.74	Mouza - Baspahari Daag No. - 522, 524/A, 526, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539 and 540	24°02'27"N 87°07'02"E	1096000
2	Stone	M/s Mishra Stone Mines Proprietor: Shri Hari Mohan Mishra S/o Late Madhu Mangal Mishra	Village - Narayandham Court Road, Jamtara P.S. + P.O. - Jamtara Dist. - Jamtara	1.85	Mouza - Piplatand Daag No. - 1180, 1181, 1184, 1185, 1187, 1198, 1199, 1201 and 1202	24°60'52"N 86°42'05"E	740000
3	Stone	M/s Mishra Mines Proprietor: Smt. Madhu Mishra W/o - Shri Harimohan Mishra	Village - Narayandham Court Road, Jamtara P.S. + P.O. - Jamtara Dist. - Jamtara	1.37	Mouza - Piplatand Daag No. - 251, 252, 253, 254, 255, 256, 257 and 258 & Mouza - Baspahari Daag No. - 162 to 165, 166/P, 167/P, 168/P and 165/1532	24°00'51"N 86°41'46"E	548000



DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



MINEABLE RESERVE IN IDENTIFIED POTENTIAL DEPOSITS OF MINOR MINERAL 'STONE'			
Sl. No.	Area of Mining Lease (Ha)	Address of the Mining Lease	Mineable Reserve (in m <sup>3</sup> )
1	2	3	4
1	3.64	Mouza - Bhalsunda Plot No. - 1721 Block - Jamtara	1456000
2	1.62	Mouza - Putuljora Khesra No. - 1791 Block - Fatehpur	648000
3	0.89	Mouza - Kalajhariya Plot No. - 100 Block - Nala	267000
4	3.64	Mouza - Bhalsunda Plot No. - 172/Ansh Block - Jamtara	1456000
5	3.34	Mouza - Sawalapur Plot No. - 421 Block - Narayanpur	1336000
6	1.32	Mouza - Piplatanr Plot No. - 251 to 260 and 283, 284 Block - Narayanpur	528000
7	1.85	Mouza - Piplatanr Plot No. - 180, 181, 184, 185, 187, 198, 199, 201, 202 Block - Narayanpur	740000
8	0.82	Mouza - Banspahari Plot No. - 162 to 168 Block - Narayanpur	249000
9	0.83	Mouza - Ladhna Plot No. - 1455, 1461, 1471 Block - Jamtara	249000
10	1.38	Mouza - Piplatanr Plot No. - 251 to 253 Block - Narayanpur	548000
11	1.38	Mouza - Banspahari Plot No. - 162 to 168 and 165/1532 Block - Narayanpur	548000



*[Signature]*  
District Mining Officer  
Jamtara

DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



12	4.14	Mouza - Piplatanr Plot No. - 673, 680, 681, 682, 768, 767, 764, 765, 766, 763, 750, 751, 752, 749 Block - Narayanpur	1656000
13	1.74	Mouza - Banspahari Plot No. - 380, 385, 384, 515, 517, 516, 520, 521 Block - Narayanpur	696000
14	0.83	Mouza - Piplatanr Plot No. - 251 to 258 Area - 1.36 Acres and Mouza - Baspahadi Plot No. - 162 to 166 and 165/1532 Area - 0.68 Acres Block - Narayanpur	246000
15	1.85	Mouza - Piplatanr Plot No. - 1180, 1181, 1184, 1185, 1187, 1198, 1199, 1201 and 1202 Block - Narayanpur	736000
16	2.13	Mouza - Piplatanr Plot No. - 56, 57, 58, 60, 61, 62, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82 Block - Narayanpur	852000
17	2.02	Mouza - Piplatanr Plot No. - 1884, 1885, 1198, 1199, 1201, 1202, 1205, 1206, 1207, 1180 Part 1181, 1187 Block - Narayanpur	808000
18	1.27	Mouza - Phuljori Plot No. - 1859, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1881 Block - Jamtara	508000
19	2.74	Mouza - Banspahari Plot No. - 522, 5241, 528, 527, 529 to 540 Block - Fatehpur	1096000
20	1.13	Mouza - Banspahari Plot No. - 522, 530, 531, 533, 534, 535, 536, 537, 538, 539 Block - Fatehpur	452000



*[Signature]*  
District Mining Officer  
Jamtara

DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



21	2.73	Mouza - Rampur Plot No. - 714, 715, 716, 717, 792, 793, 794 Block - Nala	1092000
22	1.74	Mouza - Banspahari Plot No. - 380, 385, 384, 515, 517, 516, 520, 521 Block - Fatehpur	696000
23	1.27	Mouza - Phuljori Plot No. - 1859, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1881 Block - Jamtara	508000
24	2.67	Mouza - Piplatanr Plot No. - 768, 767, 764, 765, 766, 763, 750, 751, 752 and 749 Block - Jamtara	1068000
25		Mouza - Piplatanr Plot No. - 763, 767, 769, 749, 750, 751, 752, 765, 764, 766 Block - Jamtara	
26	2.91	Mouza - Chandradipa Plot No. - 641, 1148, 1149, 1151/P, 649, 636, 637, 638, 1147, 640, 1154/P, 1152/P and 1153/PBlock - Jamtara	1164000
27	1.91	Mouza - Banspahari Plot No. - 530, 533, 534, 535, 536, 537, 538, 540, 542(P) 531, 522 Block - Fatehpur	764000
28	0.45	Mouza - MahajoriPlot No. - 766 Block - Nala	132000
29	6.07	Mouza - Kelahi Plot No. - 5288/PartBlock - Jamtara	2428000
30	0.61	Mouza - Purnanagar Plot No. - 114/Part Block - Narayanpur	183000
31	1.21	Mouza - KhamarbadPlot No. - 86 Block - Nala	484000
32	1.62	Mouza - Golpahari Plot No. - 2357/PartBlock - Jamtara	648000
33	0.61	Mouza - BardehiPlot No. - 354 Block - Nala	183000

Approved  
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Jamtara

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DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



34	0.61	Mouza - Bardehi Plot No. - 354/Part Block - Nala	183000
35	0.53	Mouza - Bardehi Plot No. - 693/PartBlock - Nala	159000
36	0.36	Mouza - HathiyapatharPlot No. - 661 Block - Nala	108000
37	0.67	Mouza - Nawaikol Plot No. - 1035 Block - Jamtara	201000
38	1.01	Mouza - Muram Plot No. - 597/Part Block - Nala	404000
39	1.62	Mouza - Nildaha Plot No. - 2259PartBlock - Jamtara	648000
40	0.48	Mouza - Nawadih Plot No. - 785 Block - Narayanpur	144000
41	4.86	Mouza - Nildaha Plot No. - 2259/P,2296/A Block - Jamtara	1940000
42	6.07	Mouza - Karmoi Plot No. - 1306 Block - Narayanpur	3035000
43	0.81	Mouza - Putuljore Plot No. - 2/7, 2/12,2/13, 8/18 Block - Fatehpur	243000
44	1.01	Mouza - KarmatanrPlot No. - 504/PartBlock - Karmatanr	404000
45	0.40	Mouza - Nayadih Plot No. - 3234/PartBlock - Narayanpur	120000
46	1.46	Mouza - Putuljore Plot No. - 1791/PartBlock - Fatehpur	584000
47	0.40	Mouza - Hariharpur Plot No. - 32/225 Block - Narayanpur	120000
48	1.62	Mouza - MurgatonaPlot No. - 2182/PartBlock - Jamtara	648000
49	0.81	Mouza - KuchakuriPlot No. - 197/PartBlock - Nala	243000



*[Signature]*  
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DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



50	0.38	Mouza - Fofnad Plot No. - 169, 170, 171 Block - Karmatanr	114000
51	0.40	Mouza - Fansidangal Plot No. - 3 & 7 Block - Fatehpur	120000
52	0.67	Mouza - Bolborai Plot No. - 883 to 887 Block - Nala	201000
53	0.21	Mouza - Nawaikol Plot No. - 401 Block - Jamtara	63000
54	6.00	Mouza - Kichakuri Plot No. - 197/Part Block - Nala	972000
55	2.43	Mouza - Gundlipahari Plot No. - 700, 704 Block - Jamtara	1372000
56	0.81	Mouza - Bhandarkol Plot No. - 384/Part Block - Nala	243000
57	4.05	Mouza - Chandradipa Plot No. - 3238/Part Block - Jamtara	1620000
58	0.37	Mouza - Salpatra Plot No. - 48/B Block - Fatehpur	111000
59	3.84	Mouza - Bhalsunda Plot No. - 1721 Block - Jamtara	1536000
60	2.02	Mouza - Chandradipa Plot No. - 843/Part Block - Jamtara	808000
61	0.40	Mouza - Fofnad Plot No. - 2121 Block - Karmatanr	120000
62	0.65	Mouza - Chapati Plot No. - 718 Block - Karmatanr	195000
63	2.02	Mouza - Kelahi Plot No. - 5288/Part Block - Jamtara	808000
64	3.64	Mouza - Ghatiyari Plot No. - 1085 Block - Narayanpur	1456000
65	2.11	Mouza - Gundlipahari Plot No. - 693, 694, 695 Block - Jamtara	844000
66	2.02	Mouza - Jurgudih Plot No. - 323 Block - Jamtara	808000



*[Signature]*  
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DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



67	4.05	Mouza - Golpahari Plot No. - 2357 Block - Jamtara	1620000
68	18.21	Mouza - Golpahari Plot No. - 2652, 553 to 565 Block - Jamtara	9105000
69	18.21	Mouza - Bhandaro Plot No. - 1291, 1288, 948 Block - Jamtara	9105000
70	2.71	Mouza - Dhobna Plot No. - 2513/Part Block - Jamtara	1084000
71	2.02	Mouza - Salpatra Plot No. - 48/Part Block - Fatehpur	808000
72	2.02	Mouza - Bandarpahari Plot No. - 90/Part Block - Fatehpur	808000
73	0.76	Mouza - Kalipahari Plot No. - 367 Block - Fatehpur	228000
74	2.02	Mouza - Ladna Plot No. - 4253/Part Block - Jamtara	808000
75	3.04	Mouza - Sabanpur Plot No. - 467/Part, 466 & 2476 Block - Narayanpur	1212000
76	4.74	Mouza - Sabanpur Plot No. - 467 Block - Narayanpur	1896000
77	1.46	Mouza - Dhobna (urf- Kalajharia) Plot No. - 100/Part Block - Nala	584000
78	4.05	Mouza - Chandradipa Plot No. - 624/Part & 569 Block - Jamtara	1620000
79	4.86	Mouza - Chandradipa Plot No. - 843/Part Block - Jamtara	1944000
80	1.56	Mouza - Bandarpahari Plot No. - 90/Part Block - Fatehpur	624000
81	3.24	Mouza - Chandradipa Plot No. - 625 Block - Jamtara	1296000
82	4.03	Mouza - Gondlipahari Plot No. - 700/B, 706, 701, 702, 703, 704 Block - Jamtara	1612000



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DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



83	9.31	Mouza - Tarni Plot No. - 619 Block - Narayanpur	4655000
84	5.26	Mouza - Phuljori Plot No. - 2217 Block - Jamtara	2630000
85	6.27	Mouza - Nildaha Plot No. - 2259/Part Block - Jamtara	3135000
86	3.64	Mouza - Bhalsunda Plot No. - 1721/Part Block - Jamtara	1456000
87		Mouza - Ladna Plot No. - 1473/Part Block - Jamtara	
88	4.85	Mouza - Bhandaro Plot No. - 1291/Part Block - Jamtara	1944000
89	0.81	Mouza - Kichakuri Plot No. - 223/Part Block - Nala	243000
90	3.64	Mouza - Nayadih Plot No. - 210/Part Block - Narayanpur	1456000
91	4.86	Mouza - Nayadih Plot No. - 210/Part Block - Narayanpur	1944000
92	2.43	Mouza - Gundlipahari Plot No. - 700/Part Block - Jamtara	972000
93	2.83	Mouza - Behrakuri Plot No. - 1895/Part Block - Jamtara	1132000
94	2.63	Mouza - Behrakuri Plot No. - 1803/Part Block - Jamtara	1052000
95	1.21	Mouza - Behrakuri Plot No. - 1895/Part Block - Jamtara	484000
96	4.05	Mouza - Jurgudih Plot No. - 323 Block - Jamtara	1620000
97	2.23	Mouza - Nayadih Plot No. - 21/Part Block - Narayanpur	892000
98	4.05	Mouza - Goakola Plot No. - 220 Block - Jamtara	1620000
99	4.86	Mouza - Chandradipa Plot No. - 3238/Part Block - Jamtara	1944000



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DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



100	2.43	Mouza - Bhandaro Plot No. - 1291/Part Block - Jamtara	972000
101	0.99	Mouza - Piplatanr Plot No. - 1131/PartBlock - Narayanpur	297000
102	4.05	Mouza - Nildaha Plot No. - 3170/PartBlock - Jamtara	1620000
103	2.18	Mouza - Banspahari Plot No. - 693/PartBlock - Narayanpur	872000
104	2.02	Mouza - Kelahi Plot No. - 5288/PartBlock - Jamtara	808000
105	4.45	Mouza - Phuljori Plot No. - 1908/PartBlock - Jamtara	1780000
106	1.62	Mouza - Phuljharia & Murlipahari Plot No. - 160 & 5/ABlock - Narayanpur	648000
107	1.42	Mouza - Muram Plot No. - 597/PartBlock - Nala	568000
108	0.56	Mouza - Sawlapur Plot No. - 601 Block - Narayanpur	168000
109	0.53	Mouza - Sawlapur Plot No. - 601/Part Block - Narayanpur	159000
110	2.39	Mouza - JamkanaliPlot No. - 1379 Block - Nala	952000
111	4.55	Mouza - SawlapurPlot No. - 421 Block - Narayanpur	1820000
112	2.79	Mouza - MadhopurPlot No. - 849 Block - Nala	1116000
113	4.86	Mouza - ChandradipaPlot No. - 845/Part Block - Jamtara	1944000
114	2.38	Mouza - Piplatand Plot No. - 261 to 282 & 258 Block - Narayanpur	952000
115	1.21	Mouza - Kelahi Plot No. - 5288/PartBlock - Jamtara	484000



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DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



116	4.25	Mouza - Jurgudih Plot No. - 323 Block - Jamtara	1700000
117	1.87	Mouza - Salpatra Plot No. - 48 Block - Fatehpur	744000
118	0.56	Mouza - Lataiya Plot No. - 08 Block - Narayanpur	168000
119	2.17	Mouza - Chandradipa Plot No. - 76 Block - Jamtara	868000
120	1.76	Mouza - Rampur Plot No. - 642, 643, 644, 647, 655, 667, 640, 641 Block - Narayanpur	704000
121	0.81	Mouza - Haripur Plot No. - 245, 246, 248, (P), 250, 251, 252, 256, 257(P), 269(P), 253 Block - Fatehpur	243000
122	2.28	Mouza - Piplatanr No. -17 Plot No. - 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 88 Block - Narayanpur	912000
123	2.82	Mouza - Piplatanr Plot No. - 763, 767, 749, 750, 751, 752, 765, 766, 764	1128000
124	0.81	Mouza - Muram Plot No. - 597/Part	243000
125	2.21	Mouza - Muram Plot No. - 20/Part	884000
126	2.17	Mouza - Muram Plot No. - 1893, 1163	868000
127	1.93	Mouza - Nildaha Plot No. - 3200, 3201, 3202, 3203, 3204, 3205, 3206, 3207, 3208, 3209, 3210, 3211, 3212, 3213, 3214, 3215, 3216, 3217, 3219, 3220, 3221, 3222, 3223	772000
128	0.70	Mouza - Nildaha Plot No. - 3175	207000
129	1.27	Mouza - Phuljori	508000



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		Plot No. – 1859, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1881	
130	2.02	Mouza – Piplatanr Plot No. – 1184, 1185, 1198, 1199, 1201, 1202, 1205, 1206, 1207, 1180/Ansh, 1181, 1187	808000
131	1.13	Mouza – Banspahari Plot No. – 522, 530, 531, 533, 534, 535, 536, 537, 538, 539, 540	452000
132	2.83	Mouza – Muram Plot No. – 597/Ansh	1132000
<b>TOTAL</b>			<b>127734000</b>

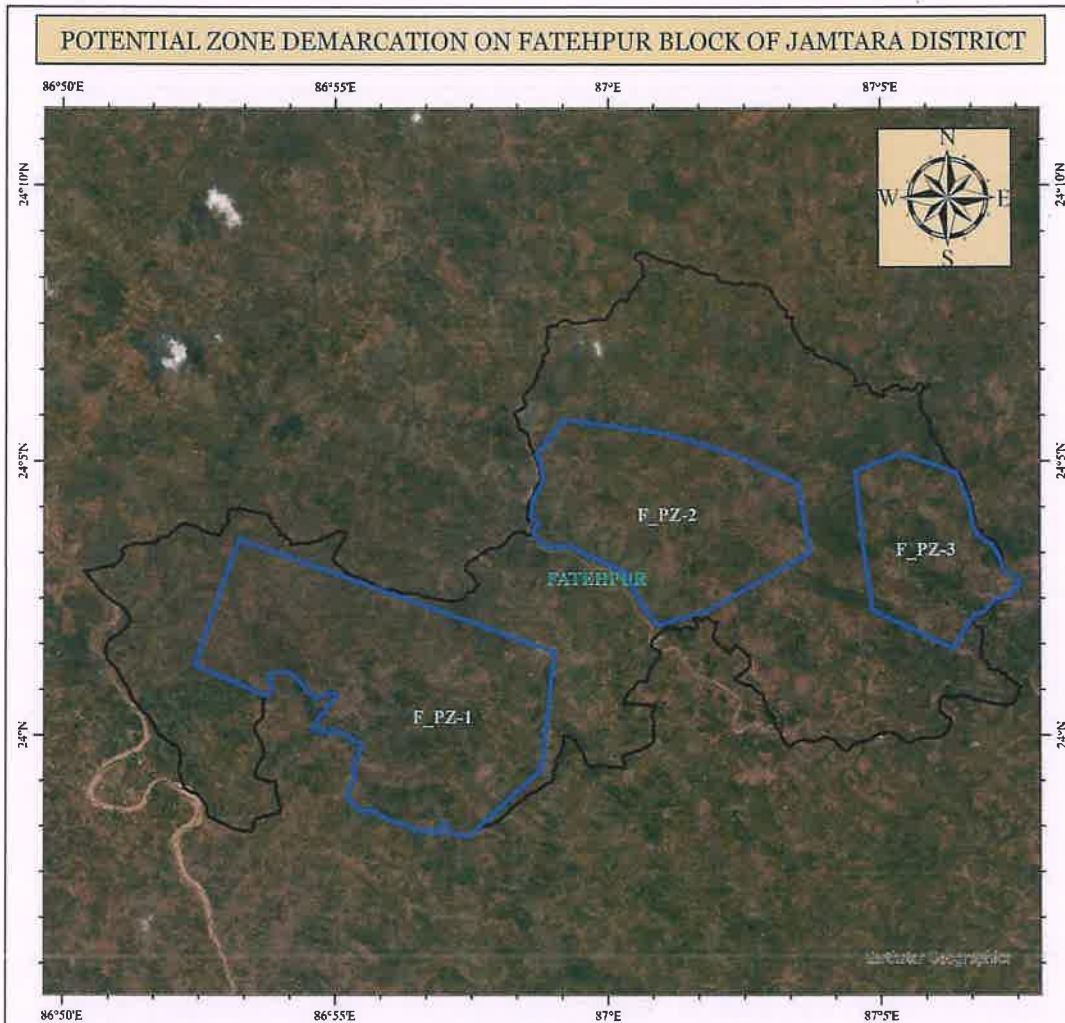


*[Signature]*  
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DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND





**BLOCK WISE MAPS OF IDENTIFIED POTENTIAL DEPOSIT ZONES**



ZONE_CODE	AREA	Max_Longitude	Min_Longitude	Max_Latitude	Min_Latitude
F_PZ-2	3874.396955	087° 03' 41.56680384" E	086° 58' 35.44513772" E	24° 05' 45.60314737" N	24° 02' 00.41887944" N
F_PZ-1	6055.016686	086° 59' 00.71465435" E	086° 52' 25.03059793" E	24° 03' 34.28083211" N	23° 58' 09.70691417" N
F_PZ-3	2083.588615	087° 07' 32.87605273" E	087° 04' 31.75259231" E	24° 05' 08.91029103" N	24° 01' 34.84647258" N

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Scale: 1:180,000

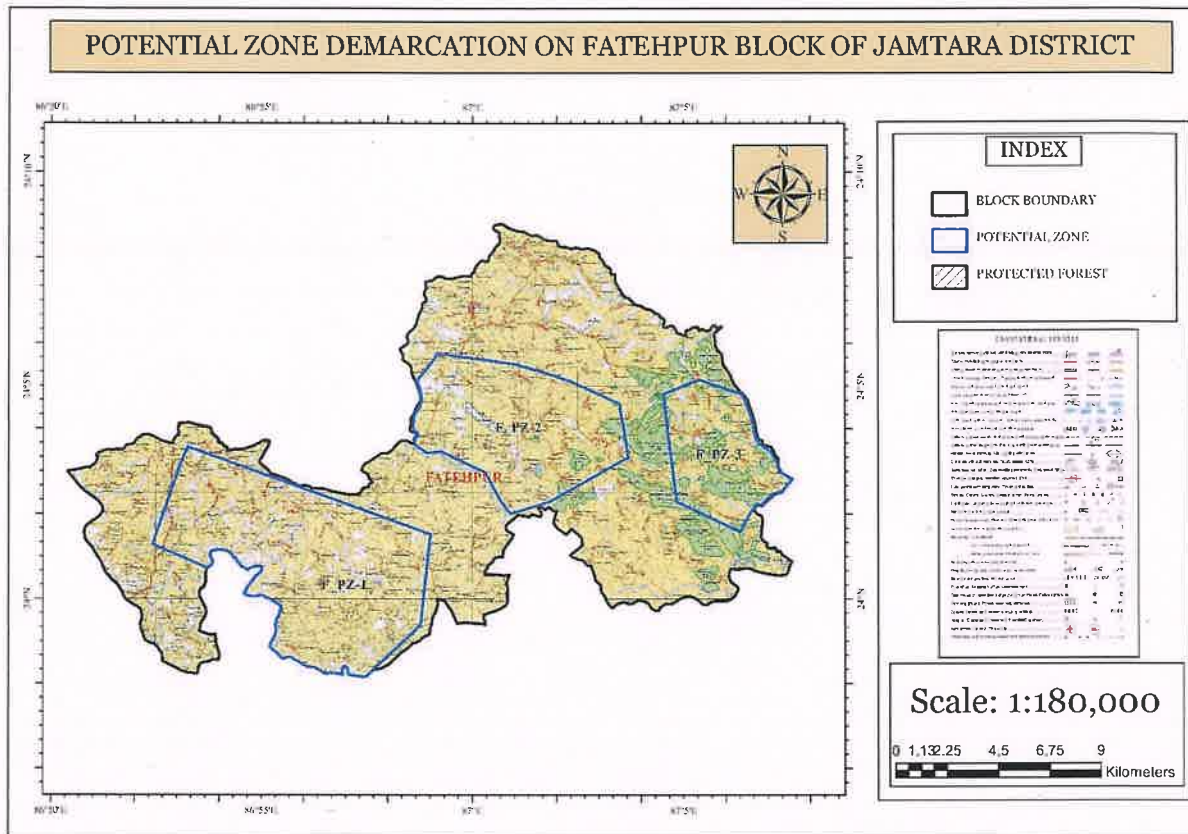


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DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



POTENTIAL ZONE DEMARCATION ON FATEHPUR BLOCK OF JAMTARA DISTRICT



Villages falls under Potential Zone

FATEHPUR				
MURGABANI	KHIJURIA	DOMOHANI	GUHIAJORI	RADHAMATH
MAJHILACHALA	MURIDI	JAGATDI	BARDAHI	DHAKODIH
CHAR KADAH	SENJURIA	BARABAD	PARJAPATIYA	CHAUKUNDA
PAHRUDI	SIMALADANGAL	BHATUDI	BINDAPATHAR	LOHAGARA
CHAPRIA	BATALKUNDI	GONDUDI	PUTALJOR	POKHARIA
DIGHRIA	KEOTA	DHASUNIA	LAKHIABAD	TARABAD
BARATANR	MAJHLADI	PATHRABAD	KARMACHAK	KHAIRBANI
HARIPUR	CHAK MAJHALDI	CHHOTADI	BANDARPAHARI	BHURUNDIA
JANUMDI	JORDIHA	CHHOTA RAIDI	GHAGHAR	PANCH KATIA
BAMAN KANALI	BELBORORI	KASAI	PAHARPUR	PAHARIDI
KHASTIPUR	JAMBAD UPARBANDI	KALUDI	KHAMARBAD	ARAIN
MAJHILADI URF	TALPOKHARIA	PHULSAHRI	BELIAPUR	SARASBAD
SIMALBARI	MADHOPUR	AMSAHRI	TILAKI	BHURISIMAL
HARNADAH	MAHESHPUR	SUSNIBAD	KALIPAHARI	KHAIRBANI CHAK
LALUDI	MODIANDI	UTTAMDI	SALPATRA	JAMJURI
SUGNIBASA	LAKARTANGA	KHOTJORI	MOHANABANK	TARAPATIYA
PALJORI	DIGALGRAM	JHINAKI	JALAIN	BHELADANGAL
DHASNIA	ASANBERIA	AMGACHHI	DIPAYA	BABUDI
HATHDHARA	ANDHARO	BINDABANI	DHOBNA	LAKRA KUNDA
TOR	BARMASIVA	NILKANTHAPUR	MURABAHAL	GULUDUMARIA

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DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



POTENTIAL ZONE DEMARCATION ON JAMTARA BLOCK OF JAMTARA DISTRICT



ZONE_CODE	AREA	Max. Longitude	Min. Longitude	Max. Latitude	Min. Latitude
J_PZ-1	601.657393	086° 48' 41.72000907" E	086° 46' 48.71691440" E	24° 01' 51.06347656" N	24° 00' 01.99160320" N
J_PZ-2	141.236005	086° 49' 31.95550288" E	086° 48' 46.26988302" E	24° 01' 22.86972252" N	24° 00' 30.54814435" N
J_PZ-5	1702.825295	086° 52' 29.30041082" E	086° 49' 51.79789966" E	23° 57' 46.44017131" N	23° 54' 14.33425532" N
J_PZ-7	3131.362045	086° 48' 30.24186744" E	086° 44' 21.80924990" E	23° 57' 52.07157174" N	23° 54' 05.60201938" N
J_PZ-3	123.709303	086° 50' 49.16007533" E	086° 50' 05.47239425" E	24° 00' 11.53547929" N	23° 59' 10.98315778" N
J_PZ-4	407.878364	086° 46' 35.86169267" E	086° 44' 50.79765418" E	23° 58' 55.00379781" N	23° 57' 32.67290154" N
J_PZ-9	255.525642	086° 50' 33.37567798" E	086° 49' 31.62985662" E	23° 51' 46.74220871" N	23° 50' 36.14761356" N
J_PZ-10	574.142611	086° 51' 57.48737682" E	086° 50' 20.25287392" E	23° 51' 48.74241385" N	23° 50' 04.41244195" N
J_PZ-8	2058.717239	086° 51' 21.03526728" E	086° 47' 41.52032796" E	23° 55' 14.70750688" N	23° 52' 23.08121623" N
J_PZ-6	3086.087567	086° 43' 31.76831347" E	086° 38' 21.92767394" E	23° 59' 17.35834682" N	23° 59' 42.67369220" N

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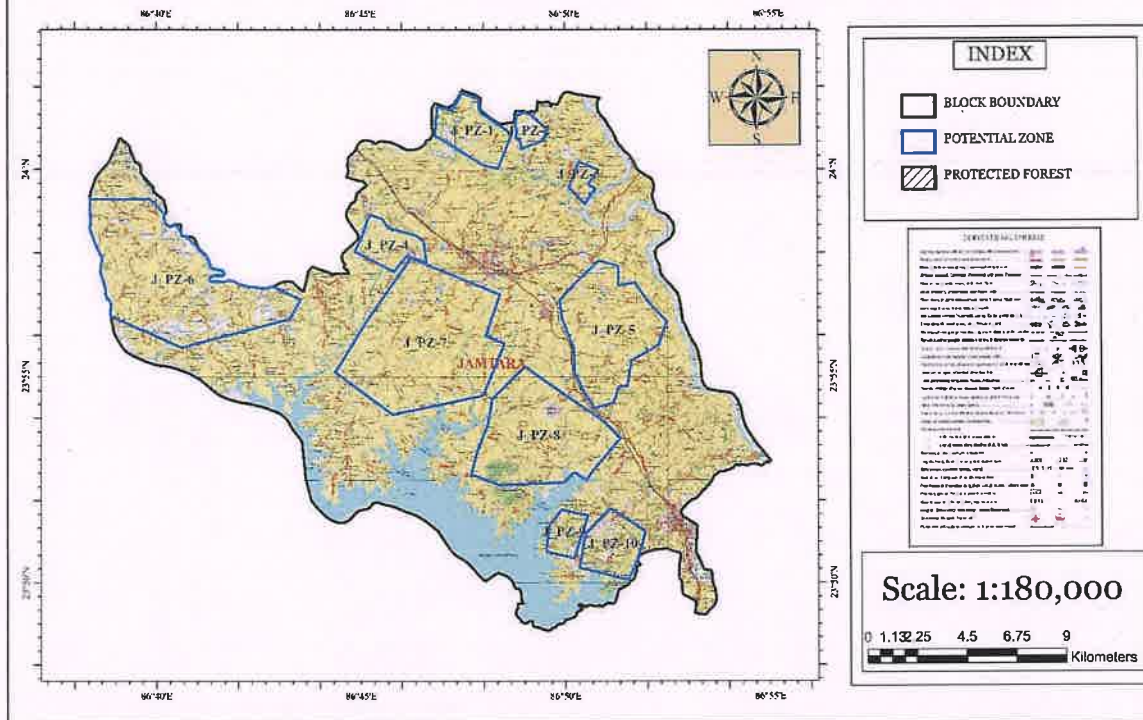


*[Signature]*  
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DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



POTENTIAL ZONE DEMARCATION ON JAMTARA BLOCK OF JAMTARA DISTRICT



Villages falls under Potential Zone

JAMTARA				
GIDHNIPAHARI	BANDAJORI	CHAK JORABANDH	GARAPATHAR	RASIABHITHA
JAMUNIABAD	NAOWADIH	DUDH KAURA	TARNI	BUDHUDIH
MURULIDI	CHIRUNBAND	UDALBANI	RANIDIH	NAUADIH
BANDAJORI	MUCHIADI	AMALCHATAR	PARBATPUR	PAGRADIH
JORBHITHA	MOHARA	ASANCHUA	GUNDLIPAHARI	DULADIH
MUCHIADI	PASAI	BARJORA	SUKHJORO	RANIGANJ
BAGHDHARA	RASIABHITHA	CHAK DUMURTALA	GOLPAHARI	CHAK GOBINDDI
KANSJOR	NARADIH	DHANBAD	BHALSUNDA	RUPAIDI
KIUUKKA	BUDHUDIH	BURIPORA	BHANDARO	JAMTARA
BODHBANDH	SONBAD	LOKDI	JARGUDI	KISMTARAYDIH
CHILABASA	NAUADIH	BODMA	HARCHANDDIH	RANIGANJ
DAKHINBAHAL	BODMA	BEOA	PHULJORI	MAJURA
HANSIPAHARI	PIPLA	SAHARDAL	DHOBNA	SEKRAYDI
KEOTJOTI	JITPUR	KUSHIARA	CHALNA	MEJHIA
KUSHIARA	NILDAHA	MURGATONA	KINUDI	KITAJHOR
SIULIBARI	CHANDRADHIPA	KELAHI	LADHINA	KHEROA
GUAKOLA	PIALSOLA	SAHARDAL		

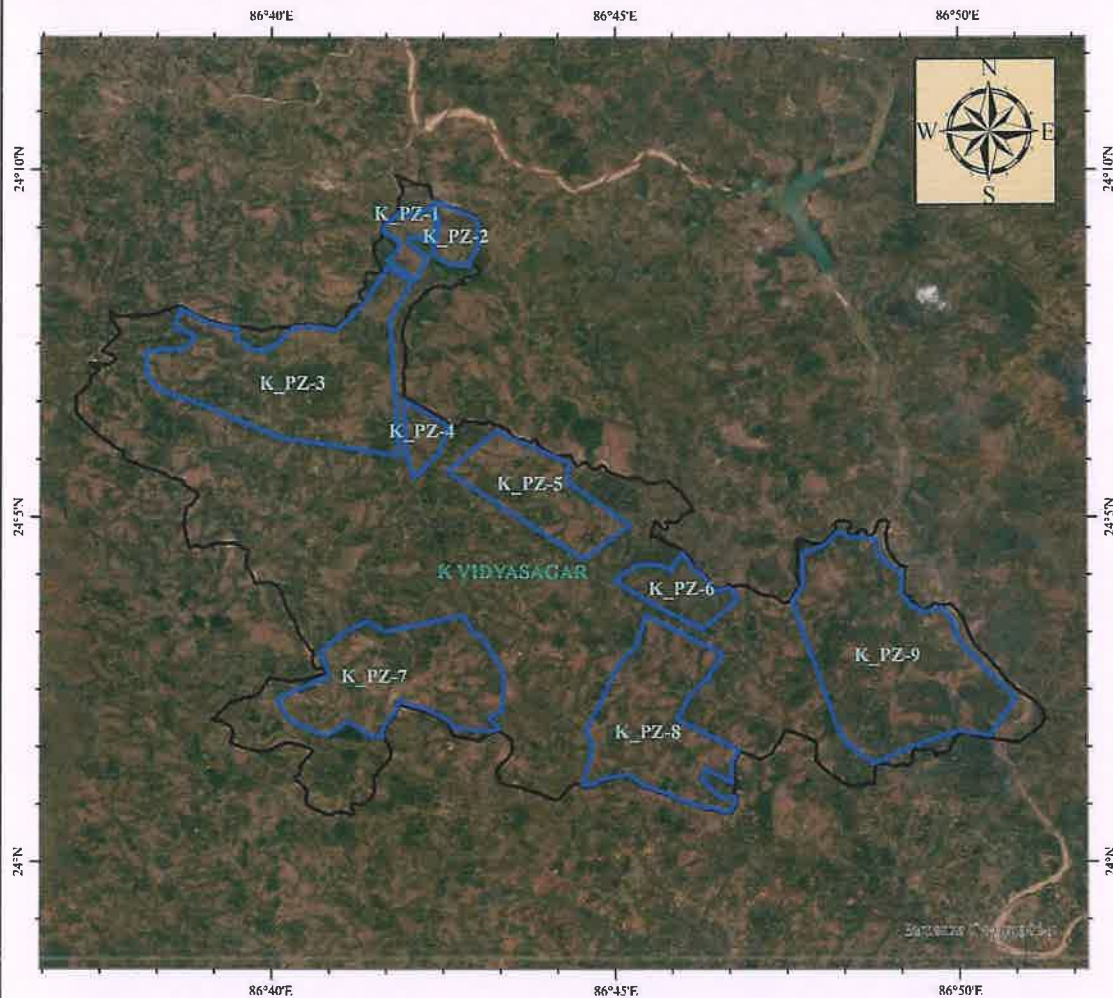
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DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND





POTENTIAL ZONE DEMARCATION ON K VIDYASAGAR BLOCK OF JAMTARA DISTRICT



ZONE_CODE	AREA	Max_Longitude	Min_Longitude	Max_Latitude	Min_Latitude
K_PZ-1	135.21684	086° 42' 23.22708609" E	086° 41' 37.34977037" E	24° 09' 28.30952831" N	24° 08' 26.02459698" N
K_PZ-2	139.742772	086° 43' 01.60571927" E	086° 42' 20.56176638" E	24° 09' 33.75897643" N	24° 08' 37.64961592" N
K_PZ-9	1886.670921	086° 50' 49.46124196" E	086° 47' 34.30679169" E	24° 04' 47.45729859" N	24° 01' 25.66171873" N
K_PZ-6	288.52105	086° 46' 45.80458292" E	086° 44' 58.78965725" E	24° 04' 28.89048599" N	24° 03' 23.06202166" N
K_PZ-3	1649.066662	086° 42' 03.03537536" E	086° 38' 10.06473138" E	24° 08' 35.68971798" N	24° 05' 53.88512477" N
K_PZ-8	1127.814549	086° 46' 48.22433865" E	086° 44' 31.05343903" E	24° 03' 34.83117229" N	24° 00' 43.17897172" N
K_PZ-7	1193.842231	086° 43' 22.41136395" E	086° 40' 04.31139435" E	24° 03' 34.39412823" N	24° 01' 48.83919018" N
K_PZ-4	131.607674	086° 42' 34.60186005" E	086° 41' 55.46759377" E	24° 06' 41.42848727" N	24° 05' 34.36676032" N
K_PZ-5	656.758064	086° 45' 13.25863059" E	086° 42' 33.32039558" E	24° 06' 14.62509004" N	24° 04' 24.12130264" N

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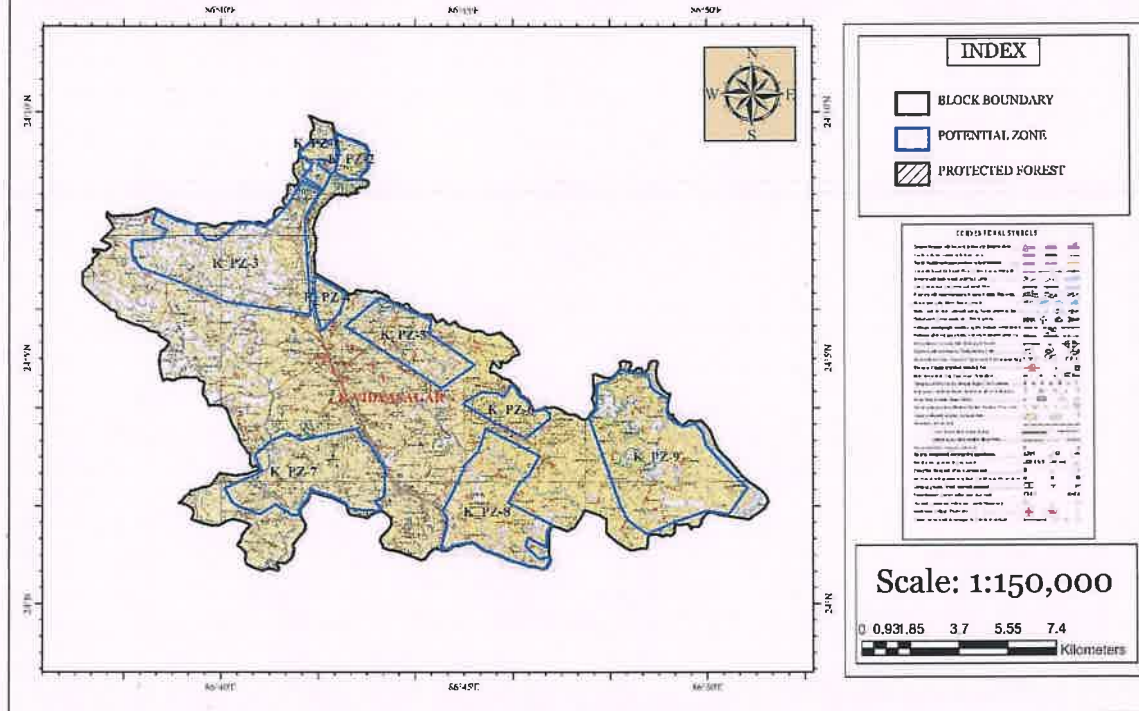


*[Signature]*  
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DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



POTENTIAL ZONE DEMARCATION ON K VIDYASAGAR BLOCK OF JAMTARA DISTRICT



Villages falls under Potential Zone

K VIDYASAGAR				
KALAJHARIYA	KALAJHARIYA	ALAGCHUYA	RAMPUR BHITRA	HATYAPATHAR
BHARKATA	SAHARJORI	BANKATI	THANDARDIH	MOHANPUR
PITHIDIH	SAKALPUR	SITALPUR	SAHAJPUR	NADIA CHAK
SAHAJPUR	NAWADIH DURGAPUR	BHAGWANPUR	BISHUNPUR	SEKHPURA
JAGNNATHPUR	TELKIYARI	HETBHITRA	BAGHBER	DURDALAI
KADRUDI	JERO PAHARI	UPAR BHITRA	SALAIYA	NAUAIKOLA
KURUA	BARA SUNSUNDABRA	DEODI	KALAJHARIA	PATAJORI
TARKOJORI	CHHOTA SUNSUNDABRA	RAMPUR BHITRA	LAKHANPUR	TILABANI
GOPALPUR	TELIADI	THANDARDIH	BARMASIA	CHAPATI
RANITANR	DASRATHPUR	NAUADI	SAMUKPOKHAR	BARATANR
PIPRASOL	TELKIYARI	TARABAHAL	MURGABANI	JAMUYA
HATHBANDHA	DHARUWADIH	CHARKI PAHARI	BARADAHA	NIJKAJRA
KABRI	TETULBANDHA	JARIDIH	NAUADI	MAHULIDI
UDAIPUR	PHAPHNAD	SIKARPASNI	BHUNA KAJRA	SOBHABANK
SAHARJORI	ALAGCHUYA	SIYANTANR	JHAGRAHI	THAKURCHAPATI
SAKALPUR	RATANIYA	BIRAJPUR	DEBIPUR	RAGHUNATHPUR
SIMLA	SATUATANR	MATANR	TETULBANDHA	KENDUATANR
GADI KAJRA	HIRAPUR	AMDIHA	GOBRA	KHAIRBANA
MATTANR	SUGIPAHARI	BARAPAHARI	GANGAPUR	PADMANDI
SUGAPAHARI	DEOLBARI	JASADIH	KAMARDIHA	PADMANDI CHHIT



*District Mining Officer  
Jamtara*

DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



POTENTIAL ZONE DEMARCATION ON KUNDAHIT BLOCK OF JAMTARA DISTRICT



ZONE_CODE	AREA	Max_Longitude	Min_Longitude	Max_Latitude	Min_Latitude
K_PZ-4	140.619581	087° 07' 01.42913546" E	087° 06' 09.35092747" E	24° 00' 22.33073990" N	23° 59' 21.64852310" N
K_PZ-5	713.772272	087° 08' 52.20414336" E	087° 06' 39.87711684" E	24° 00' 40.15211411" N	23° 58' 28.09814848" N
K_PZ-8	585.523841	087° 16' 04.28072126" E	087° 14' 22.82857611" E	23° 59' 46.63647890" N	23° 58' 04.77854366" N
K_PZ-11	2177.124966	087° 16' 37.55668255" E	087° 13' 06.44169914" E	23° 57' 20.19508288" N	23° 54' 02.92528800" N
K_PZ-7	5499.989299	087° 14' 34.08414066" E	087° 08' 41.20763475" E	23° 59' 27.75485081" N	23° 53' 59.05443561" N
K_PZ-10	2820.606546	087° 14' 37.59652612" E	087° 10' 44.51038431" E	23° 54' 32.43303036" N	23° 51' 06.61085551" N
K_PZ-2	174.690572	087° 09' 54.19452602" E	087° 08' 44.82895446" E	24° 02' 02.58431231" N	24° 01' 10.09898037" N
K_PZ-3	862.218076	087° 10' 32.40397906" E	087° 07' 43.92535205" E	24° 01' 39.60524072" N	23° 59' 34.60403546" N
K_PZ-9	1506.311615	087° 10' 02.59783463" E	087° 07' 04.89119025" E	23° 55' 58.14384281" N	23° 53' 05.32375143" N
K_PZ-6	982.61652	087° 11' 52.58067280" E	087° 09' 27.72338560" E	24° 00' 15.66866122" N	23° 57' 47.71867059" N
K_PZ-1	88.621616	087° 07' 50.63755483" E	087° 07' 10.69549031" E	24° 02' 48.61548634" N	24° 01' 59.88602891" N

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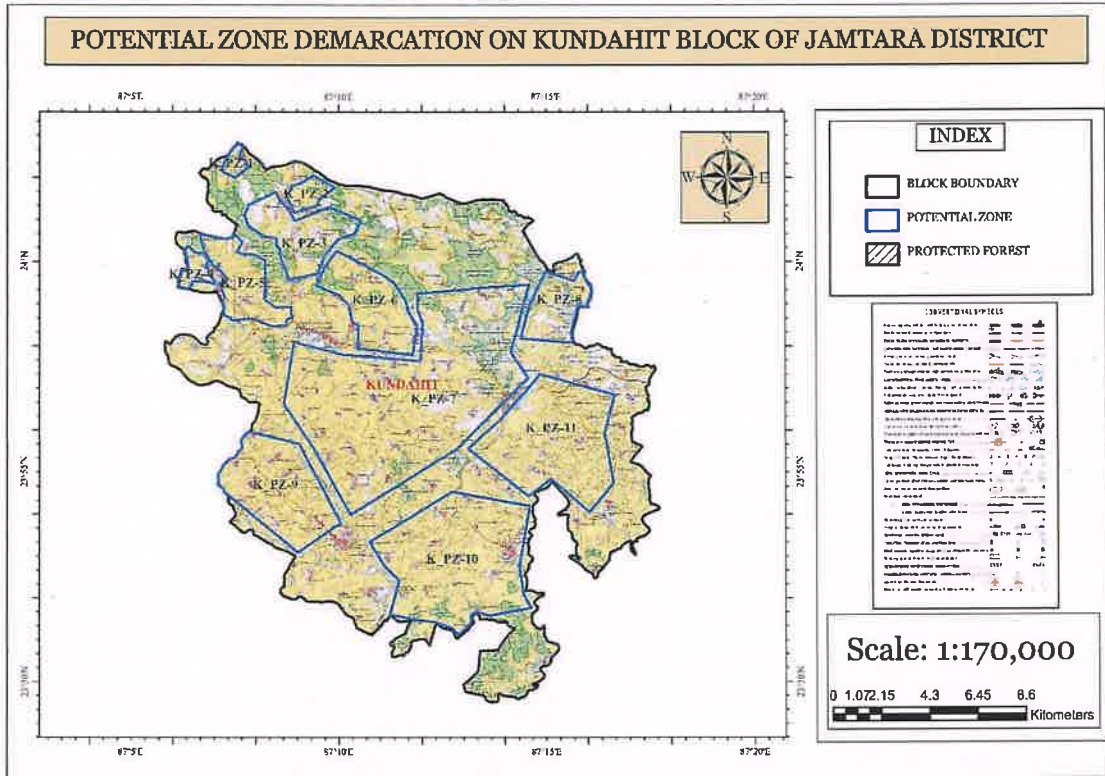
- BLOCK BOUNDARY
- POTENTIAL ZONE

Scale: 1:170,000



*[Signature]*  
District Mining Officer  
Jamtara

DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



**Villages falls under Potential Zone**

KUNDAHIT						
PATHARCHUR	HALDIDIH	SIULIBONA	RAMPUR	GOBINDPUR	JHAPDAHA	SIKANDARPUR
BANSPAHARI	RANCHAPAR	BARAMASIA	KANAKEND	TILABAD	MANGRAHDIH	AMBA MADAL EHAKKHECHRAHDI
SARAKI	BABUPUR	DHABNA	DURGAPUR	MAHULA	DALABAR	JORBAHINGA OR BAHINGA
JADUDIH	SONAHARA	GAISARA	PURUSHOTTAMBATI	KALKAPUR	PHARA KUSUM	NAMO MANDHARA
KALIPATHAR	DEOLI	MAHULA	MAHESHPUR	KANAIPUR	GOBINDPUR	JAGANNATHPUR
DHABNA	KAMALYA	DOLANCHAK	GARJURI	KANAKEND	KALKAPUR	AMBA (PATANPUR)
AGAIA	KADMA	NAGARI	SANKARPUR	KALOJORA	SAGUNIBASA	SHYAMBATHAN
BHANGAHIR	KHAJURI	BELIASOLI	BANKATI	GARJURI	BAGDAHARI	AMBA (PATANPUR)
PALAJURI	GAIPATHAR	SIBRAM	BHELWA	DUDHAPANI	AMDUBI	BALINARAINPUR
CHANDURDI		INAITPUR	CHARAKMARA	PRASADPUR	JANARDANPUR	HARANANDPUR
KHAIRBANI	DALUCHAK	KATHIJORIA	HARIALMATI	JITURHIR	NAIKAPUR	BALDATANR URF GUNDLIDI
BAMUNBHUIIN	SALUKA	KALIPATHAR	BARA GOBINDPUR	BAGHASOLA	NIJ MANDHARA	CHHOT GOBINDPUR
BURADI	BIJAIPUR	MAHIJOR	LATULTALA	ALIPUR	BHURSA KURI	AMTABAD CHAK
ASANLIA	JALALPUR	SAGUNA	BENIADANGAL	BAGHPANJA	CHHOLA BERIA	GHAT PURULIYA
TULSI CHAK	BIJAIPUR CHHIT	RAMPUR	SALUKA	LAHAT	BHELADI	JOKPAHARI
SAPSAPIA	BENIGANJ	THALPOTA	GOALDANGA	KUNDAHIT	JAMBAD	CHARSOLA
HARIALMATI	GARSIMLA	BIKRAMPUR	KHAJURI	RUPNARAYANPUR	BARA AKNA	CHAK BAKSIPUR
BARA GOBINDPUR	SARASBAD	RASUNPUR	CHARKADI	HATIMARA	PANCHMAHLI	CHAKALTHATHAL
SIMA	MADHUPUR	CHAYANPUR	NADIHA	BHALKO	SINGARPUR	MURGAPATHAR
PUTALBANA	SARASBAD	MAJHGARIA	AMDUBI			

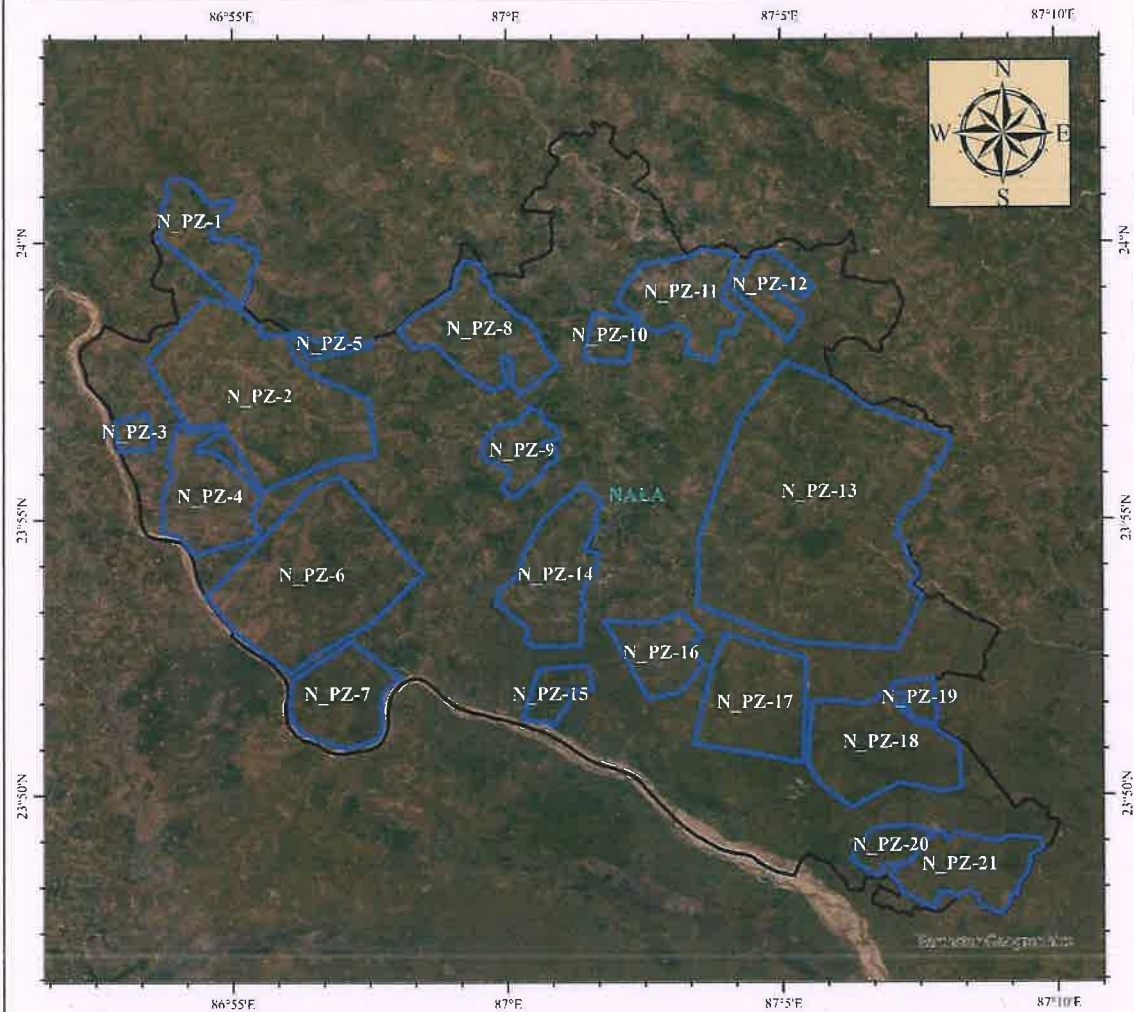
Level Environmental Impact Assessment Authority  
**Approved**

*[Signature]*  
**District Mining Officer  
Jamtara**

DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



POTENTIAL ZONE DEMARCATION ON NALA BLOCK OF JAMTARA DISTRICT



ZONE_CODE	AREA	Max. Longitude	Min. Longitude	Max. Latitude	Min. Latitude
N_PZ-4	872.729136	086° 55' 32.13457673" E	086° 53' 41.213923110" E	23° 58' 44.571547007" N	23° 54' 22.403160747" N
N_PZ-6	2350.024036	086° 58' 28.65234200" E	086° 54' 29.71987353" E	23° 55' 48.38106888" N	23° 52' 13.43107333" N
N_PZ-16	536.341863	087° 03' 33.97197379" E	087° 01' 45.77831780" E	23° 53' 19.38611911" N	23° 51' 45.48921137" N
N_PZ-17	1112.948206	087° 05' 25.44140262" E	087° 03' 23.36165406" E	23° 52' 58.80205880" N	23° 50' 35.15235568" N
N_PZ-12	354.758272	087° 05' 25.0648284" E	087° 04' 08.05766785" E	23° 50' 50.82754901" N	23° 58' 13.73005348" N
N_PZ-8	1020.899404	087° 00' 56.88858149" E	086° 58' 01.65423682" E	23° 59' 40.85140458" N	23° 57' 16.33659399" N
N_PZ-9	397.808094	087° 00' 58.31894901" E	086° 59' 32.25796541" E	23° 57' 03.12672985" N	23° 55' 24.61045726" N
N_PZ-19	131.357412	087° 07' 50.35064626" E	087° 06' 57.97859702" E	23° 52' 07.49116256" N	23° 51' 15.05500494" N
N_PZ-21	798.828228	087° 09' 44.18496627" E	087° 06' 57.06653309" E	23° 49' 19.5013520" N	23° 47' 50.18832933" N
N_PZ-15	254.134892	087° 01' 33.07152736" E	087° 00' 17.10788250" E	23° 52' 21.89274572" N	23° 51' 15.62941211" N
N_PZ-7	792.762121	086° 58' 03.62451520" E	086° 56' 02.21015744" E	23° 52' 47.90249215" N	23° 50' 51.79614388" N
N_PZ-14	1011.339177	087° 01' 44.49217504" E	086° 59' 47.73737355" E	23° 55' 39.58870442" N	23° 52' 42.08763448" N
N_PZ-2	2398.621174	086° 57' 36.72531048" E	086° 53' 26.23703501" E	23° 54' 59.50943491" N	23° 55' 31.47046999" N
N_PZ-11	848.335194	087° 04' 18.52818699" E	087° 02' 00.87329216" E	23° 58' 53.46008810" N	23° 57' 51.68005474" N
N_PZ-20	251.432337	087° 07' 41.88322495" E	087° 06' 14.07959935" E	23° 49' 26.40136401" N	23° 48' 31.85177916" N
N_PZ-18	1242.465443	087° 08' 15.31715312" E	087° 05' 27.83794825" E	23° 51' 53.88857894" N	23° 49' 46.44079877" N
N_PZ-3	116.434742	086° 53' 33.76539835" E	086° 52' 50.00891689" E	23° 56' 55.96921069" N	23° 56' 14.84957790" N
N_PZ-13	5136.406181	087° 08' 04.04215165" E	087° 07' 27.32852992" E	23° 57' 51.27227223" N	23° 52' 39.99679384" N
N_PZ-5	95.044878	086° 57' 34.50787029" E	086° 56' 04.96354408" E	23° 58' 24.17952359" N	23° 57' 54.73965866" N
N_PZ-10	198.419254	087° 02' 22.19100016" E	087° 01' 24.63094688" E	23° 58' 44.92267137" N	23° 57' 51.47158748" N
N_PZ-1	638.325762	086° 55' 28.66834646" E	086° 53' 37.26226494" E	24° 01' 09.09538274" N	23° 58' 51.53910285" N

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- BLOCK BOUNDARY
- POTENTIAL ZONE

Scale: 1:190,000

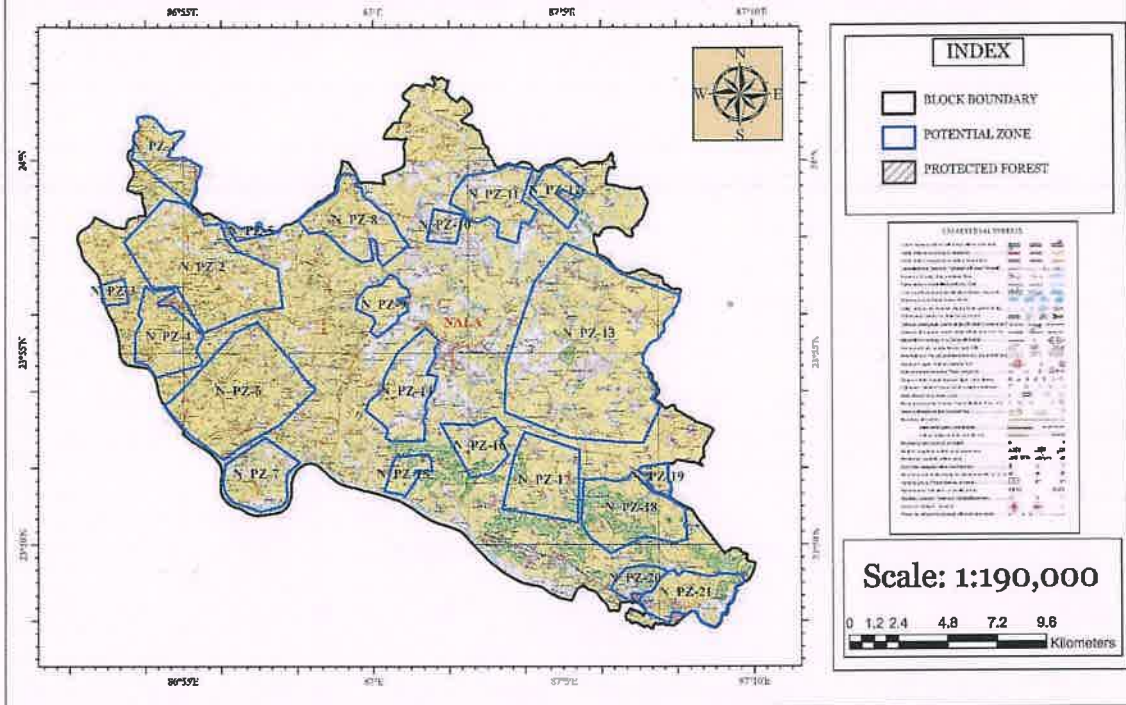


*[Signature]*  
District Mining Officer  
Jamtara

DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



POTENTIAL ZONE DEMARCATION ON NALA BLOCK OF JAMTARA DISTRICT



*[Signature]*  
District Mining Officer  
Jamtara

DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



Villages falls under Potential Zone

NALA							
MURAAM	SIMLA	RANIDI	JABARDAHA	PHASIADANGAL	BADALPUR	SALDAHI	DHOBNA URF KALAJHARIA
RATNI CHAK	BANDO	CHIHUTIA	KUSUMDAHA	JHALDUMARIA	HABUCHAK	BENAGARIA	RAGHUNATH CHAK
MAHULBANA	PHUTABANDH	SANTALDIH	SALKUNDA	NALA	KALIPATHAR	NILURIA	CHAK NAYAPARA
DARAR	PIARSOLA	EKLBPUR	MARALAI	LAKHIABAD	TESJORIA	PANJANIA	JADUNANDANPUR
DHAOYATANR	BHOGIKATA	PAHARGARA	MOHANPUR	BANDARDIHA	INDKURI	BARAGHOLJOR	BARDHANDANGAL
SURIYAPANI	KAMRAJPAHARI	KARRABAD	KHARBERIYA	PATHARJORIA	DUMARIA	CHHOTAGHOLJOR	JAGANNATHPUR
BEHRAKUNDI	SRIPUR	BARMASIA	BANBERIYA	LACHHURAYDI	AMLAJURI	PALAN	MAJHLADIH
BHANDARKOLA	PAGLA	MAHIDNAGAR	PANCHMOHALI	DAINGHATI	DEOLI	SANGAJURI	KENDUYATANR
KEBALJORIYA	GERIA	GOPALPUR	BADURMARA	DUMDUMI	BHERO	HESALTANR	KENDUYATANR CHHIT
MALDIHA	GHORADAHA	PIARSOLA	AGAIYA	SIMA	KULDANGAL	PAKURIA	KAREYACHAK BAGHMARA
KURALJORIA	KHAIRA	GHORMARA	KHARUBAZAR	SITAMURI	TESJORIA	HATHIYA PATHAR	GARAJURIYA URF BHELADIH
BHULI	HIDALJORI	JAMBAD	TARRA	SUKA	CHUNKUDAR	SUNDARBARI	CHITAL KANALI
JAIPUR	PUNASIA	LAKHANPUR	HIJAJURI	BARGHARIYA	PARADAL	SAHARJORIYA	PAKURMADHU URF GHUSRUKATA
MAGURA	PHUTABANDH	LACHHUMANPUR	BANKASEMAL	PATULIYA	BAMUNDI	GARDOARA	HIDALJORI
KHAIRBANI	HIDALJORI	KHARIKABAD	SHIBDANGAL	HARIPUR	RAKH	DALAIHITA	HARNANDANPUR
JAMBEDIA	PUNASIA	JAMKANALI	TARACHUTIA	MATHURA	BHANDARBERA	KENDUYA	BHALJURIYA
SAGJURIYA	BARALIA	KAMRAJPAHARI	MOHANPUR	BARATANR	MAHISAMURA	BAGHCHHERA	JAMBEDIA
TILABANI	KAPASDANGA	INDURHIR	KHARUBAZAR	INDKURI	PATUYASOL	KESIYA	KAMUBEDIYA
DEBJOR	MUKUNDADI	CHIHUTIA	KOLKUNDA	AMLAJURI	BANKHET	SARESKUNDA	KALIAPATHAR
DURGAPUR	BEGEJURI	KESORI	GHAT SAGARIYA	BRINDABONI	SIYAJURI	SARBEDIYA	PACHATALI
MATHURADIH	KRISNAPUR	GERIA	NOADIP CHAK	KUCHAKUNRI	BAGHATANA	JAMBEDIA	BAGHCHHERA
CHAKKANDARKURI	LAKHIYARA	LAKRAKONDA	RANGASOL	BALICHUR	BAHADURDI	KUMRACHAK	KESIYA
NARITHOL	DABAR	NIMBERA	GRAMDANGA	KALLATHOL	EKLBPUR	PACHATALI	BARALIA
		JABARDAHA				MATHURAKURI	KAPASDANGA

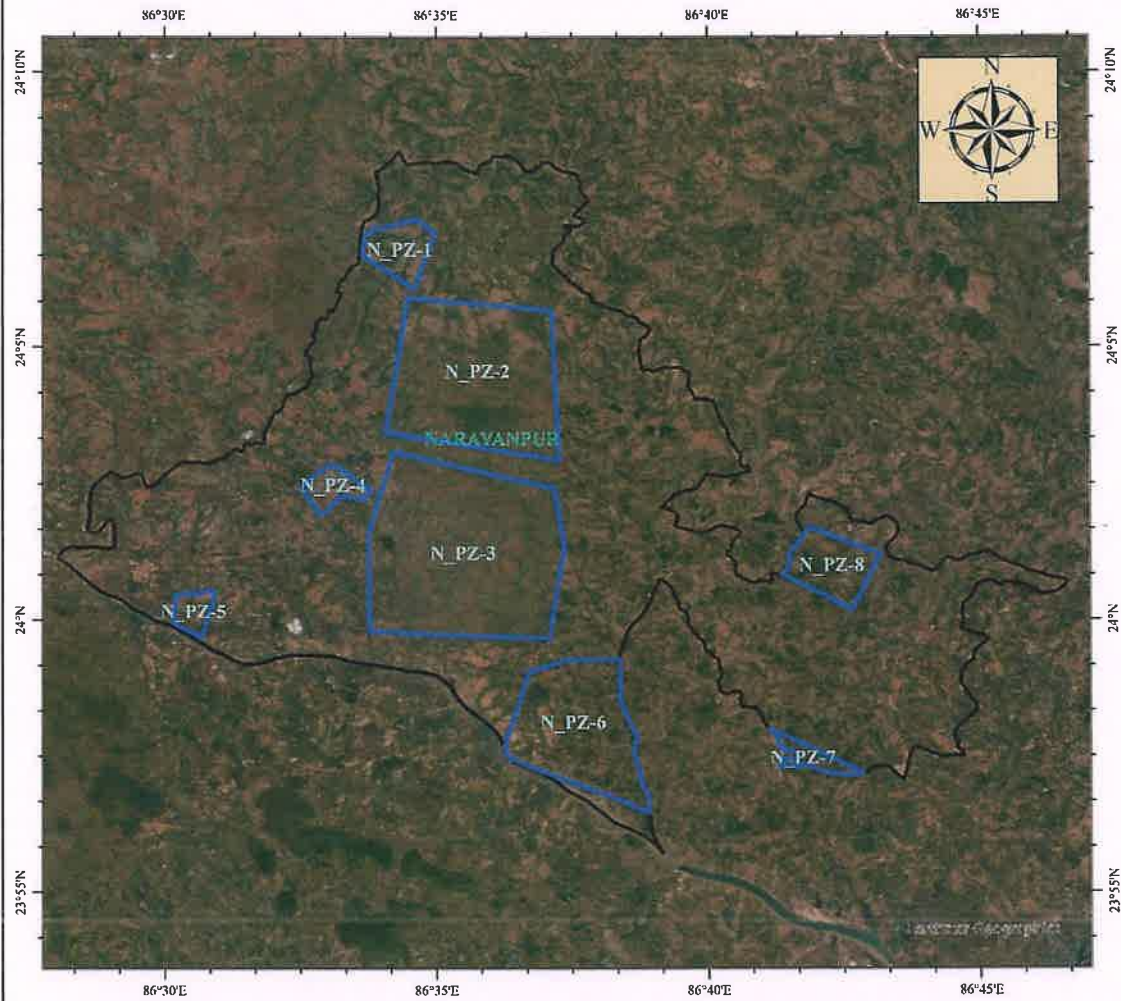


*[Signature]*  
District Mining Officer  
Jamtara

DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



POTENTIAL ZONE DEMARCATION ON NARAYANPUR BLOCK OF JAMTARA DISTRICT



ZONE_CODE	AREA	Max Longitude	Min Longitude	Max Latitude	Min Latitude
N_PZ-4	183.896826	086° 33' 48.29831824" E	086° 32' 31.75732822" E	24° 02' 51.75421753" N	24° 01' 57.67247826" N
N_PZ-1	319.785741	086° 34' 58.85530323" E	086° 33' 38.81304782" E	24° 07' 19.63374307" N	24° 06' 03.76666032" N
N_PZ-7	141.316075	086° 42' 51.11159796" E	086° 41' 08.09867502" E	23° 58' 00.22259235" N	23° 57' 08.48797536" N
N_PZ-6	1479.491175	086° 38' 54.12193744" E	086° 36' 14.34639935" E	23° 59' 16.64135825" N	23° 56' 27.67968589" N
N_PZ-5	139.118372	086° 30' 56.16868950" E	086° 30' 09.55848053" E	24° 00' 31.97328002" N	23° 59' 41.31657338" N
N_PZ-8	479.79197	086° 43' 09.98217127" E	086° 41' 20.72044522" E	24° 01' 41.62354087" N	24° 00' 11.43540731" N
N_PZ-3	3223.104923	086° 37' 21.19469185" E	086° 33' 44.56436750" E	24° 03' 05.11451594" N	23° 59' 40.25903817" N
N_PZ-2	2381.803146	086° 37' 15.60580455" E	086° 34' 03.46525931" E	24° 05' 53.62390999" N	24° 02' 56.05810802" N

INDEX

-  BLOCK BOUNDARY
-  POTENTIAL ZONE

Scale: 1:190,000

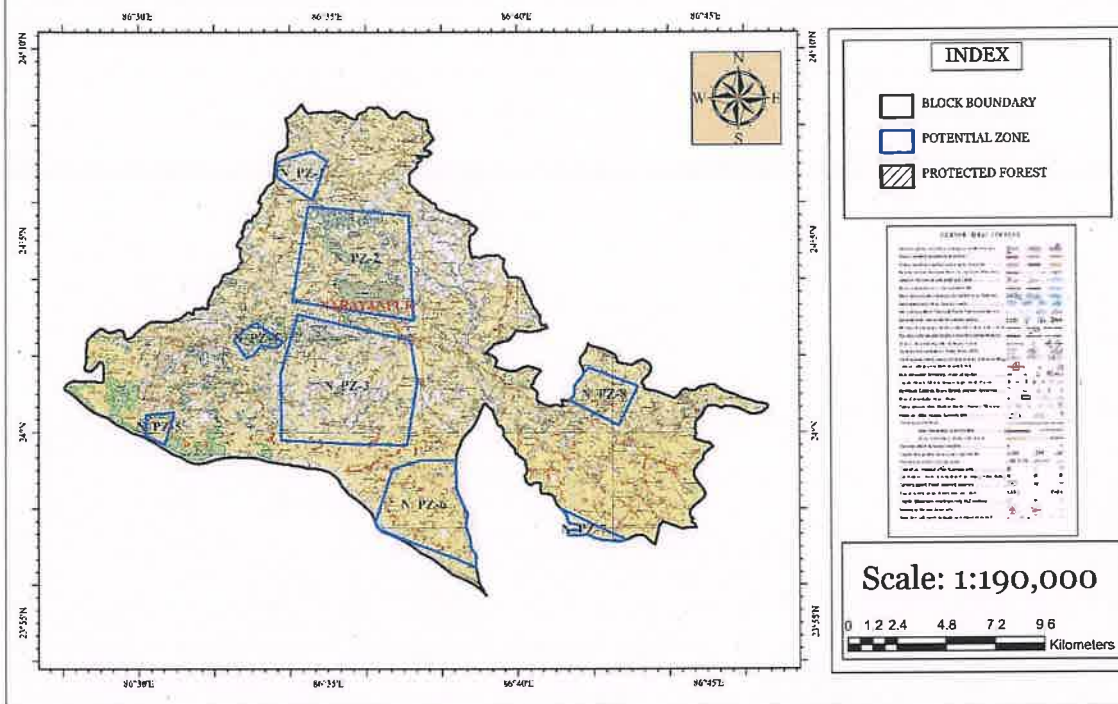


*(Signature)*  
District Mining Officer  
Jamtara

DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



POTENTIAL ZONE DEMARCATION ON NARAYANPUR BLOCK OF JAMTARA DISTRICT



Villages falls under Potential Zone

NARAYANPUR				
MIRGA	KOLHAIYACHHIT	KUMARGARIYA	BARAJPUR	PADAMPUR
DAKSHINDIH	PAHARPUR	GODITANR	NAYADI	AMJORA AND LENG RATANR
NAWADIH	ASHADIH	MAHUADABAR	NURGI	LACHHMIPUR CHHIT
TUMBADHA	BARATANR	MATUADI	THAKURADI	RAJWARDIH
MOJPUR	SAHARJORI	DEULBARI	JASPUR	CHANDARPUR URF SABDAHA
MOHANPUR	KHARITANR	MADHOPUR	HARIHARPUR	NAHATHIYA
PHULJHARIYA	AMJHOR	AHARDI	BHAGABANPUR	BANSINGA
DIGHARI	BOROTANR	SIMLA	BARA BEWA	BARA BAHAL
BAGTARPA	TILABANI	KALIPAHARI	CHHOTA BEWA	NAWATANR
MALAYA	NAWADIH	LACHHMIPUR	KARMAI	CHAMGARHA
PALTA	KAIDIHA	SAHARPUR	JAGADISPUR	BHOLGARA
DALDALA	KUMARPAHARI	KURTA	BHELATANR	AMBATANR
DUDHPANIA	CHARAKPANI	JADUDIH	BISTUPUR	PANREDIH
BUTBARIYA	JABARDAHA	CHIRUDIH	GOKULA	TETARIATANR
GHATIYARI	SABJAKANALI	PANDNI	KURTA	RAMNAGAR
JANGALPUR	LEDHARIYA	PALTA	MADHUBAN	BISHUNTANR
DULADIH	KENDUATANR	BAROWA	BHAGABANDH	JORADARI
BARA PAHARI	NARAYANPUR	SABANPUR	PURNIGHATI	CHITARPUR
ICHLIJHAR	NARODIH	BIRSINGHPUR	PHUTAHA	PURNA NAGAR
RAGHUNATHPUR	BHAIYADI	MARICHBAD	PAHARPUR	DHANJURI

DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



Block Name	Area in Ha.	Sq. m.	Avg. Depth (m)	Vol. (Cum)
NARAYANPUR	8348	83483082.28	30	2504492468
NALA	20561	205614068.1	35	7196492382
KUNDAHIT	15552	155520949	33	5132191318
K VIDYASAGAR	7209	72092407.63	37	2667419082
JAMTARA	12083	120831415.4	34	4108268125
FATEHPUR	12013	120130022.6	36	4324680812



  
District Mining Officer  
Jamtara

DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



## Blockwise Identified Potential Village list for Earthwork

JAMTARA VILLAGE LIST						
GUAKOLA	CHAK KHARNA KANALI	BHARCHANDI	BAGHDHARA	BURIPORA	BODMA	CHALNA
TALBERIA	CHAK BANRUKANALI	KHUNDUDI	KANSJOR	PASAI	PIPLA	KARMATANR
PHULBERIA	CHAK RAKASABAD	SANTALPIPRA	TETULIABHITA	RASIABHITHA	BEOA	SAHARJURI
DHANJORI	CHAK JORABANDH	KOSBEDIA	SUPAIDI	NARADIH	SILDHAWA	GOKHULADI
JHABUADIH	GIDHNIPAHARI	UPARBANDI	KANCHANBERA	BUDHUDIH	SHAMPUR	MAJURA
SAHARAJ	JAMUNIABAD	CHIRUNBAND	BANJHI KEND	SONBAD	GARAPATHAR	SEKRAYDI
KEOTJOTI	MURULIDI	MUCHIADI	BHALGARHA	CHENGAI	KHARNI	MEJHIA
KUSHIARA	BANDAJORI	BHARCHANDI	PHAGUDIH	JILIMTANR	TARNI	KITAJHOR
MURGATONA	JORBHITHA	TIKADI	GOVINDAPUR	NAUADIH	BIRAJPUR	KHEROA
SIULIBARI	RAGHUNATHPUR	KIUKKA	PAIKDI	PAGRADIH	RANIDIH	PANJANIA
KELAHI	SAHARPUR	BODHBANDH	DOMBAD	DULADIH	PARBATPUR	NITAI
PIALSOLA	RAMPUR CHAK	SATSAL	KATANKI	RANIGANJ	GUNDLIPAHARI	CHAK SURIBANDH
MIHIJAM	BENA	GOPALPUR	PATHARCHAPRA	CHAK GOBINDDI	SUKHJORO	JITPUR
SAHARDAL	BAMANDIHA	KALADABAR	DUDH KAURA	LOKNATHDASIPOA	GOLPAHARI	NILDAHA
GARAINALA	MOHARA	RAMBARI	UDALBANI	RUPAIDI	BHALSUNDA	CHANDRADHIPA
DALBERIA	MANIKPURA	CHILABASA	AMALCHATAR	JAMTARA	BHANDARO	KINUDI
JIAJURI	NAOWADIH	DAKHINBAHAL	ASANCHUA	CHAKRI	JARGUDI	BIRGAON
SAPDIHA	ASANHARIA	PHANSIABAD	BARJORA	KISMTARAYDIH	HARCHANDDIH	SHYAMPUR
BAGJURI	KUSMAPAHARI	HANSIPAHARI	CHAK DUMURTALA	RANIGANJ	PHULJORI	BADALPUR
BHAGA	GOUALPIPRA	SONATHAR	DHANBAD	LOKDI	DHOBNA	LADHNA
KUSBEDIA						



*[Signature]*  
District Mining Officer  
Jamtara

**DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND**



**NARAYANPUR VILLAGE LIST**

HARLATANR	BAROWA	KOLHAIYACHHIT	DHANJURI	JABARDAHA	IRKIA	CHANDARPUR URF SABDAHA
KALOHAR	SABANPUR	MOJPUR	MARICHBAD	SABJAKANALI	KENDUYA	AMJORA AND LENGATANR
RAYDI	MADHUBAN	MOHANPUR	RATANPUR	LACHHMIPUR	PETARI	LACHHMIPUR CHHIT
SIKDARDIH	BHAGABANDH	PHULJHARIYA	NAUDIHANI	PADAMPUR	KANADI	CHANDADI LAKHANPUR
DUKHANATNR	PURNIGHATI	DOBHAKEND	KUMARGARIYA	JADUDIH	MIRGA	BANJAMUNIYA CHHIT
UDAIPUR	PHUTAHA	LATAIYA	GODITANR	BARATANR	MAJLADIH	GAMBAHARIYATANR
PABIA	MARRO	KOLHARIYA	MAHUADABAR	RAJWARDIH	MADHOPUR	MAHADIH
BARGARHA	JANGALPUR	PAHARPUR	CHHATABAD	DULADIH	AHARDI	KUSHMAHA
KENDUATANR	NAOWATANR	SINDRI	JANGALPUR	KAMALDIH	SIMLA	SUBDIDIH
BAGRUIDI	PATARDIH	MURLIPAHARI	TALBERIYA	NAHATHIYA	MIRGA	PHIT KORIYA
BANKUDIHI	POKHARIYA	TOPATANR	CHAMPAPUR	JORUA	CHIHUTIA	AKURI
BARIARPUR	BARA PAHARI	JOGAYADIH	HARIHARPUR	PAHARUDIHI	BARAJPUR	DUMARDIHA
MOHANPUR	ICHLIJHAR	ASHADIH	SONABAD	HIRAPUR	NAYADI	PARTOL
BANSPAHR	PAHARPUR	LALCHAND DIH	DAKSHINBAHAL	KASITANR	NURGI	BISHUDIHI
BATHANTANR	RAGHUNATHPUR	DOKIDIH	BABADIH	PATIARDI	THAKURADI	RAJABHITHA
KHARKOKURI	BIRSINGHPUR	RUPTDIH	CHAYENPUR	JOBARDAHA	JASPUR	TUMBADHA
EKTARA	LEDHARIYA	SAHARJORI	BAGTARPA	JADUDI	HARIHARPUR	MUGIYAMARNI
EKTARA KHAS	KENDUATANR	KHARITANR	MALAYA	RANIDIH	BHAGABANPUR	KARMATANR
EKTARA	DALDALA	AMJHOR	MATUADI	DUDHANI	BARA BEWA	MANPUR
TARASITHA	THEKBAHIAR	BOROTANR	CHITAMI	JHILUA	CHHOTA BEWA	TONGODIH
JEROTANR	NARAYANPUR	TILABANI	KARMAI	SAOLAPUR	KARMAI	AMJORA AND LENGATANR CH
BANKA	KATDABAR	PHATEPUR	DUDHPANIA	PIPLATANR	JAGADISPUR	MODIDIH CHHIT
GANGUDI	KORIDI	DHABKO	BUTBARIYA	TETULIATANR	MIRJAPUR	KAMALPUR
CHIRUDIHI	MAKUNDPUR	TILOKI	GHTIYARI	DHARAMPUR	BHELATANR	NAWADIH CHHIT
DHWATANR	HETTOLA	BANJAMUNIYA	BIRAJPUR	MADNADI	BISTUPUR	NAWADIH
PATRUADIH	MAHTODI	BELATANR	JANADIH	AMRATANR	GOKULA	MODIDIH
CHIRUDI	BATHANBARI	DAKSHINDIH	NUTANDIH	MAJHLADIH	KALIPAHARI	KOLHAIYACHHIT
POSTA	SANKARPUR	NAWADIH	SAKALPUR	BARMASIYA	LACHHMIPUR	LAKHNUDIH
EKSINGHA	BHOJPUR	NAWADIH	NAOGHATA	MUCHIA	SAHARPUR	KORIDIH
BARMORIYA	RAMPUR	KAIDIHA	DEULBARI	LOKNIA	KURTA	MADHUSINGHA
PIYALPHER	SHIBPUR	KUMARPAHARI	NAYADI	KADMITANR	PHUKBANDI	NAYANAMARNI
KALIPUR	NARODIH	CHARAKPANI	DHOBNA	MAHULIDIH	CHIRUDIHI	LAKARGARHA
JAMANIYATANR	BHAIYADI	CHITARPUR	BISHUNTANR	RAMPUR	PANDNI	BIHAJORI
LACHHMIPUR	SAHARPUR	PURNA NAGAR	JORADARI	JAMNIA CHAK	PALTA	BANDARCHUYA
KHARIODIH	LATKHARI	AORATANR	BARA BAHAL	ANANDPUR	DUMARSINGHA	LAKHANPUR
MURGADIH	SIMLA	DUBEDI	NAWATANR	GANDRADI	DIGHARI	BANSINGA
ARJUNDI	BUDHUDI	MAJHILDIH	CHAMGARHA	PANREDIH	AMBATANR	BHOLGARA
LOHARANGI	CHAYANPUR	GORTARI	KODARKHOSO	RAMNAGAR	TETARIATANR	RAUTDIH
BADYANATHPUR	BANKHUNJU					



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DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



FATEHPUR VILLAGE LIST

AGOYASARMUNDI	LAKSA CHAK	CHHOTADI	PARJAPATIYA	DIGALGRAM
BANDARNACHA	BHURISIMAL	CHHOTA RAIDI	BINDAPATHAR	ASANBERIA
MIRGAPAHARI	HARIRAKHA	KASAI	PUTALJOR	MALBAHAL URF MALDIHA
ANGUTHIA	PARASI	KALUDI	LAKHIABAD	PARA BRINDABANI
FATEHPUR	AMBABANK	PHULSAHRI	KARMACHAK	JAMBAD UPARBANDI
KALIPATHAR	DANR PUJA	AMSAHRI	BANDARPAHARI	BHATUDI
KHIJURIA	DUMARIA	SUSNIBAD	GHAGHAR	GONDUDI
MURIDI	MURGABANI	UTTAMDI	PAHARPUR	DHASUNIA
SENJURIA	MAJHILACHALA	KHOTJORI	KHAMARBAD	PATHRABAD
SIMALADANGAL	DALBERIO	JHINAKI	BELIAPUR	DHUTLA
BARA ASNA	CHAR KADAH	AMGACHHI	TILAKI	TUMBABEL
BEJBINDHA	KALIHIR	KUSMA	KALIPAHARI	RAMPUR
KOILABHASA	PAHRUDI	MAKARANDA	SALPATRA	TARABAHAL
DINARI	CHAPRIA	KARJURI	MOHANABANK	NAUADI
CHITAKURI	PAHARGARA	JHILUA	KHAIRBANI CHAK	DUMARIA
BAMUNBANDHI	DIGHRIA	BANUDI	MADHUA CHAK	RUPDI
CHHOTA ASNA	DHAOYA	BINDABANI	JAMJURI	DHADKIA
BHIMPAHARI	BARATANR	KAIRABANI	PATANPUR	BARDAHI
TELIABANDI	HARIPUR	DUDHANI	DANR	BHURUNDIA
BATALKUNDI	JANUMDI	TURKA	BAROA	BOOTBARI
KEOTA	BAMAN KANALI	MANOHAR CHAK	CHARAKMARA	PANCH KATIA
DOMOHANI	KHASTIPUR	MAHISHAKHURA	KHAMARCHAK	PAHARIDI
JAGATDI	MAJHILADI URF	KHAIRBANI	SEMULDUBI	ARAIN
MAJHLADI	SIMALBARI	ANDHARO	UDALJURI	RANGACHORA CHAK
CHAK MAJHALDI	HARNADAH	RADHAMATH	NAMU JALAIN	SARASBAD
JORDIHA	LALUDI	DHAKODIH	SAHARBERIA	LAKARCHIPA
BELBORORI	LAIJURI	DUMA	KARMATANR	BABUDI
BARABAD	LAIBUNI	KENDUATANR	JALAIN	LAKRA KUNDA
TALPOKHARIA	SUGNIBASA	BAGHMARA	BAGHMARA	MAJHLADI
MADHOPUR	PALJORI	CHAUKUNDA	DUMDUMI	GULUDUMARIA
MAHESHPUR	DHASNIA	LOHAGARA	DIPAYA	MURABAHAL
MODIANDI	HATHDHARA	POKHARIA	DHOBNA	NILKANTHAPUR
DUMARIABANK	TAMAJOR	TARABAD	TARAPATIYA	BARMASIVA
LAKARTANGA	GUHAJORI	KHAIRBANI	BHELADANGAL	TOR



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DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



**K VIDYASAGAR VILLAGE LIST**

KALAJHARIYA	SUGIPAHARI	DHARUWADIH	MURGABANI
BHARKATA	DEOLBARI	CHARGHARA	BARADAHA
PITHIDIH	MATTANR	TETULBANDHA	NAUADI
SAHAJPUR	SUGAPAHARI	MAJHLADIH	BARIYARPUR
JAGNNATHPUR	BABUDI	BARMUNDI	HARIHARPUR
KADRUDIH	PINDARI	BARUWA	RATANIYA
SIMRABOJ	BANKATI	KHORASARO	HATIYAPATHAR
KURUA	GHASBAD	GUNIADIH	TARABAHAL
TARCOJORI	NAWADIH	KARMATANR	MOHANPUR
BAGRUDIH	LOHARBANDHA	MOHANPUR	NADIA CHAK
KENDUATANR	BANKATI	SITAKATA	SEKHPURA
GOPALPUR	SITALPUR	KASITANR	DURDALAI
RANITANR	BHAGWANPUR	MURLIDIH	NAUAIKOLA
RANGAMATIA	HETBHITRA	PHAPHNAD	PATAJORI
PIPRASOL	UPAR BHITRA	ALAGCHUYA	TILABANI
HATHBANDHA	DEODI	RATANIYA	CHAPATI
KATHBARARI	RAMPUR BHITRA	SATUATANR	BARATANR
KABRI	THANDARDIH	LAKARTANGA	JAMUYA
UDAIPUR	SAHAJPUR	SUIYA KANALI	NIJKAJRA
JARUA	BISHUNPUR	HIRAPUR	MAHULIDI
DUMARIA	KORBANDHA	KARNIYABAD	SOBHABANK
KHUTABANDH	BANKATI	KENDUATANR	THAKURCHAPATI
MANIKPUR	KHUTABANDH	DUMARIYA	HAMADANGAL
SIMLA	BAGHBER	SUNDARJORI	RAGHUNATHPUR
RINGO CHINGO	SALAIYA	NIMDI	KENDUATANR
RATANDIH	KALAJHARIA	CHANDRUDI	KHAIRBANA
SAHARJORI	JAINPUR	CHARKI PAHARI	PADMANDI
SAKALPUR	RAMPUR MADHOPUR	JARIDIH	PADMANDI CHHIT
NAWADIH DURGAPUR	LAKHANPUR	MAHESPUR	KAMARDIHA
JERO PAHARI	BARMASIA	SIKARPASNI	TETULBANDHA
BARA SUNSUNDABRA	SAMUKPOKHAR	SIYANTANR	GOBRA
CHHOTA SUNSUNDABRA	RAKHABAD	BIRAJPUR	GANGAPUR
TELIADI	SUIAPATAR	MATANR	SIMLA
DASRATHPUR	JIALJORI	AMDIHA	GADI KAJRA
TELKIYARI	SARODABARCHAK	BARAPAHARI	BHUNA KAJRA
DEBIPUR	JASAIDIH	JHAGRAHI	



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**DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND**



**NALA VILLAGE LIST**

MURAAM	RANIDI	SENDUR KHANIYA	SARESKUNDA	MOHANPUR	PAKURMADHU URF GHUSRUKATA	HIDALJORI
RATNI CHAK	JORASIMUL	ANK POKHARIYA	MALIPAHARI	MALDIHA	DHABNAND CHAK GETEAJURI	PUNASIA
MADHSA	CHUNKUDAR	RADHABALLAVPUR	SARBEDIYA	DUMDUMI	KHARIMALI RAMPUR	BAROAN
MAHULBANA	PARADAL	DEBALKUNDA	JAMBEDIA	SALUKA	KENDUYATANR CHHIT	CHAK KATORIA
AMJURIA	KOLIDI	TLABANI	KUMRACHAK	JASPUR	RAGHUNATHPUR	LAKHANPUR
SIMLA	LOKHIBAD	MAHISAMURA	PACHATALI	BANDLAKO	DHOBNA URF KALAJHARIA	BAGHAKURI
TINGHARA	SULANGA	PATUYASOL	MATHURAKURI	KHARBERIYA	KAREYACHAK BAGHMARA	BARMASIA
DIMJURI	KHURIANO	BANKHET	PARIHARPUR	BANBERIYA	LACHHUMANPUR	MAHIDNAGAR
BANDO	SALDAHI	SIYALJURI	CHHOTA RAMPUR	PANCHMOHALI	BHANDARKOLA	BAHADURDI
PHUTABANDH	BAMUNDI	BAGHATANA	CHHOTALIA	BADURMARA	KEBALJORIYA	ANDARSOLA
PIARSOLA	RAKH	GARDOARA	SURIYAPANI	AGAIYA	JADUNANDANPUR	AMLAJORA
BHOGIKATA	BHANDARBERA	KURTHIBHITA	KASTA	NISCHINTAPUR	KURALJORIA	SAGJURIYA
PAYRAKHOP	BENAGARIA	PATHARGHATA	PALASTHALI	PAKBARA	CHANDADHARA CHAK	NAUDIHA
KAMRAJPAHARI	MADHUBAN	MAHULBONA	CHICHURBIL	SIMA	GARAJURIYA URF BHELADIH	MOHANPUR
INDURHIR	NILJURIA	BABUDI	BADHANAGAR	SITAMURI	MAGURA	MALDIHA
CHIHUTIA	PANJANIA	PIPRA	JORKURI	KHARUBAZAR	KHAIRBANI	KHARIKABAD
SRIPUR	BARAGHOLJOR	MAHUJURI	BARKURICHAK	TARRA	BARATANR	JAMKANALI
PAGLA	CHHOTAGHOLJOR	HADALBANK	SULTANPUR	HIJALJURI	BHALJURIYA	PIARSOLA
PHASIADANGAL	PALAN	CHAK THARI	BARA RAMPUR	BANKASEMAL	JAMBEDIA	GHORMARA
JHALDUMARIA	SANGAJURI	DUDHANI	BARALIA	SHIBDANGAL	RAGHUNATH CHAK	JAMBAD
BEHRAKUNDI	FATEPUR	BAMUNDIHA	KAPASDANGA	TARACHUTIA	HARNANDANPUR	PAHARGARA
LAKHIABAD	HESALTANR	KUNJABANA	DURGAPUR	KHOLA KHAMAR	DEBJOR	KARRABAD
BANDARDIHA	PAKURIA	MANIHARI	MATHURADIH	PHUTBERIYA	KAMUBEDIYA	NAUADI
PINDARGARIA	HATHIYA PATHAR	RAGHUNATHPUR	CHAKKANDARKURI	KOLKUNDA	KALIAPATHAR	NUTANDIH
MATHURA	SUNDARBARI	SUNDARPUR	BANK	GHAT SAGARIYA	PACHATALI	KARMA CHAK
JAMJORIA	SAHARJORIYA	BADALPUR	GODOPIAL	NOADIP CHAK	DALAIBHITA	GRAMDANGA
KESORI	GHUTBANA	JARKURI	NEROSIBTALA	MATHURA	KENDUYA	MUKUNDADI
GERIA	SIYARKETIYA	SAHARPUR	DARAR	MURGABANI	BAGHCHHERA	MAJHLADIH
LAKRAKONDA	ROHARABANI	JAGANNATHPUR	DHAOYATANR	JURIDANGAL	KESIYA	KENDUYATANR
NIMBERA	CHAK KASITANR	HABUCHAK	SIMUL KONDA	RANGASOL	BHELABERIYA	BHERO
JABARDAHA	KALIPATHAR	KALIPATHAR	SALDAHA	JIBANPUR	PATHARJORIA	BHAGA
GHORADAHA	KUMIRDAHA	TESJORIA	BANKATA	UKHULGARA	LACHHURAYDI	KULDANGAL
KHAIRA	NALA	INDKURI	BEGEJURI	BARGHARIYA	DAINGHATI	AFZALPUR
JAMDAHI	CHITAL KANALI	DUMARIA	KRISNAPUR	PATULIYA	DAMODARGANJ	BARDHANDANGAL
KUSUMDAHA	NUTANDI	BHULI	LAKHIYARA	CHAK NAYAPARA	JAGANNATHPUR	EKLAPUR
SALKUNDA	NALHATI	AMLAJURI	DABAR	BAIRAGIDIH	SUKA	BELDANGA
TUSKUTHI	DALABAR	BRINDABONI	NARITHOL	HARIPUR	DUMARIYA	DABAR
MARALAI	JAIPUR	KUCHAKUNRI	BALICHUR	HIDALJORI	BABUPUR	DEOLI
PAHARPUR	LAKHIABAD	SANTALDIH	KALLATHOL	GOPALPUR	PAKARKURI	



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DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



KUNDAHIT VILLAGE LIST

MURABERIA	ASANLIA	BELDANGAL	BHURSA KURI	PURUSHOTTAMBATI
BAGDAHARI	TULSI CHAK	NAGARI	CHANDARPUR	MAHESHPUR
PATHARCHUR	SAPSAPIA	BELIASOLI	BARA AKNA	BARAMASIA
BAGAIARA	HARIALMATI	KHUDMALIKA	CHAKALTHATHAL	JORBAHINGA OR BAHINGA
BABUPUR CHHIT	BARA GOBINDPUR	KARANGAPARA	SIKANDARPUR	JANARDANPUR CHHIT
HALDIDIH	SIMA	RASUNPUR	KATHIJORIA	RUPNARAYANPUR
RANCHAPAR	PUTALBANA	CHAYANPUR	KALIPATHAR	HARINARAYANPUR
BABUPUR	KADMA	MAJHGARIA	SAGUNIBASA	BALDATANR URF GUNDLIDI
SONAHARA	KHAJURI	KALAJORA	JAGANNATHPUR	BALDATANR URF GUNDLIDI
INDPAHARI	AMTABAD CHAK	GARJURI	THALPOTA	SIKANDARPUR CHHIT
BHELADI	BENIGANJ	DUDHAPANI	DHATALA	CHAK KAMLASOLI
RAMPUR	CHARKADI	PRASADPUR	LATULTALA	CHHOLA BERIA
DEOLI	GHAT PURULIYA	SANKARPUR	BENIADANGAL	BHELADI
KAMALYA	JOKPAHARI	BANKATI	SALUKA	ASATGANJ
SIULIBONA	ALIPUR	JITURHIR	GOALDANGA	CHARAKMARA
DHANBHUSKA	PANCHMAHLI	BAGHASOLA	BIJAIPUR	PALAJURI
AMLADAHI	SINGARPUR	PATJOR	JALALPUR	CHANDURDI
SONA CHORA	CHAK BAKSISPUR	BAGHPANJA	SHYAMBATHAN	KHAIRBANI
MADHUADI	HATIMARA	LAHAT	CHHOT GOBINDPUR	BAMUNBHUIIN
BANSBANI	BHALKO	KUNDAHIT	MAHIJOR	BURADI
BERA	CHARSOLA	SIBRAM	SAGUNA	BANSPAHARI
MURGAPATHAR	CHARSOLA	INAITPUR	RAMPUR	BANKUNDI
KATNA	CHARSOLA	DHANUKDIH	BIJAIPUR CHHIT	KALIKASULI
JHAPDAHA	MARBHANGA	JAMBAD	BALINARAINPUR	JHATIMATH
MANGRADIH	NADIHA	KAIBAD	AMBA (PATANPUR)	KUNARPUR
DALABAR	AMDUBI	PAHARGORA	HARANANDPUR	GARSIMLA
PHARA KUSUM	JANARDANPUR	MAHULA	KALIGANJ	AMBA (PATANPUR)
GOBINDPUR	NAIKAPUR	DOLANCHAK	SALDAHA	SARASBAD
TILABAD	GAISARA	SARAKI	KRISNABANDI	KANAKEND
MAHULA	MADHUPUR	JADUDIH	BAGHASOL	DURGAPUR
KALKAPUR	KANKRASOLA	KALIPATHAR	SATKI	NIJ MANDHARA
DHABNA	GAIPATHAR	DHABNA	SIARSULI	DALUCHAK
KANAIPUR	NAMO MANDHARA	AGAIA	CHANDRABAD	BHANGAHIR
BIKRAMPUR	BHELWA			AMBA MADAL EHAKKHECHRAI



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## **15. QUALITY/GRADE OF MINERAL AVAILABLE IN THE DISTRICT**

### **> GRANITE GNEISS:**

Granite gneiss is a rock consisting of an orthogenesis or paragenesis having the composition of a granite. Gneiss is an old German word meaning bright or sparkling. It is a high grade metamorphic rock, meaning that it has been subjected to higher temperature and pressure than Schist. It is formed by the metamorphosis of Granite or sedimentary rock. Gneiss displays distinct foliation, representing alternating layers composed of different minerals. However, unlike Slate and Schist, Gneiss does not preferentially break along planes of foliation because less than 50% of the minerals formed during the metamorphism are aligned in thin layers. Because of the coarseness of the foliation, the layers are often subparallel, i.e. they do not have a constant thickness.

**Mineralogy** - The granite gneiss includes several varieties: banded Gneiss, Schistose Granite, porphyroblastic Gneissose Granite and Granodiorite.

**Grain size** - Medium to coarse grained; can see crystals with the naked eye.

**Hardness** - Hard.

The Granite Gneiss is full of mafic enclaves at places. The Gneiss is composed of Quartz, Microcline, Plagioclase ( $An_{20}-An_{44}$ ), Biotite, Hornblende and other accessory minerals but lacks in Muscovite. Felsic minerals such as Feldspar (Orthoclase, Plagioclase) and Quartz generally form the light coloured bands; mafic minerals such as Biotite, Pyroxene (Augite) and Amphibole (Hornblende) generally form the dark coloured bands.

**Texture** - Foliated, foliation on a scale of cm or more.

**Colour** - Variable - generally alternating lighter and darker sub-parallel discontinuous bands Garnet porphyroblasts common.

**Occurrence** - The Granite Gneiss complex is a composite mass consisting mainly of Granite Gneiss, Migmatites and massive Granite with enclaves of para and orthometamorphics, dykes of Dolerite and innumerable veins of Pegmatite; Apatite and Quartz. Because of repeated folding, high grade regional metamorphism and profuse granitic activities, the elucidation of the stratigraphic succession in the area poses a great problem.

### **> AMPHIBOLITE:**

Amphibolite is a grouping of rocks composed mainly of Amphibole and Plagioclase Feldspar with little or no Quartz. It is typically dark-colored and heavy, with a weakly foliated or schistose (flaky) structure. The small flakes of black and white in the rock often give it a salt-and-pepper appearance.

Amphibolites need not be derived from metamorphosed mafic rocks. Because metamorphism creates minerals entirely based upon the chemistry of the protolith, certain 'dirty marls' and volcanic sediments may actually metamorphose to an Amphibolite assemblage. Deposits containing Dolomite and Siderite also readily yield Amphibolites (Tremolite-Schists, Grunerite-Schists and others) especially where there has been a certain amount of contact metamorphism by adjacent Granitic masses. Metamorphosed Basalts create ortho-amphibolites and other chemically appropriate lithologies create para-amphibolites. Tremolite, while it is a metamorphic Amphibole, is derived most usually from highly metamorphosed ultramafic rocks, and thus Tremolite-Talc Schists are not generally considered as 'Amphibolites'. A holocrystalline plutonic igneous rock composed primarily of Hornblende Amphibole is called a Hornblendite, which is usually a crystal cumulate rock. Igneous rocks with >90% Amphiboles, which have a Feldspar groundmass, may be a Lamprophyre.



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**> RAJMAHAL TRAP- BASALT (RAJMAHAL FORMATION):**

By definition, Basalt is dark-coloured aphanitic (fine-grained) igneous rock with generally 45-53% Silica (SiO<sub>2</sub>) and less than 10% Feldspathoid by volume, and where at least 65% of the rock is Feldspar in the form of Plagioclase. This is as per definition of the International Union of Geological Sciences (IUGS) classification scheme. It most commonly forms as an extrusive rock, such as a lava flow, but can also form in small intrusive bodies, such as an igneous dyke or a thin sill.

**Mineralogy:**

Essential minerals are Augite, Calcic-Plagioclase and Iron oxide. Usually Olivine is also present. Labradorite Feldspar is the chief constituent of the groundmass where as more Calcic-Plagioclase (Bytownite or Anorthite) may occur as phenocrysts.

**Geological formation:**

The Rajmahal formation exposed in the Rajmahal area is represented by 450 to 550m thick predominantly basaltic lava flows (4-15 individual flows) intercalated with fresh-water sedimentary beds. This formation is well developed in the Rajmahal hills of Jharkhand, Bihar and West Bengal. It is made up of extensive lava flows of basic composition, called the Rajmahal Traps. The Basalts are intercalated with Claystone, Siltstone, some of which are silicified and porcellanoid. The Rajmahal formation can be divided into four units: lower lava flows with intercalated unfossiliferous sedimentary beds from the lowermost unit. The second unit comprises five to six lava flows with four to five sedimentary beds composed of Tuff, Claystone, Siltstone, etc. The fourth unit comprises series of Basalt flows with or without sedimentary beds. The radiometric dating of the Rajmahal traps has shown that they are of Albian age.

**> SANDSTONE, SHALE & CONGLOMERATE:**

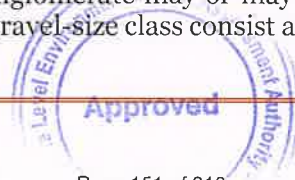
Sandstone is a clastic sedimentary rock composed mainly of sand-sized (0.0625 to 2 mm) mineral particles or rock fragments. It is clastic in origin (as opposed to either organic, like Chalk and Coal, or chemical, like Gypsum and Jasper). They are formed from cemented grains that may either be fragments of a pre-existing rock or be monomineralic crystals. The cements binding these grains together are typically Calcite, Clays, and Silica. Grain sizes in Sand are defined (in geology) within the range of 0.0625 mm to 2 mm (0.002–0.079 inches). Clays and sediments with smaller grain sizes not visible with the naked eye, including Siltstones and Shales, are typically called argillaceous sediments; rocks with larger grain sizes, including Breccias and Conglomerates, are termed rudaceous sediments.

**Mineralogy:**

The chemical compounds like Silicon dioxide or Silica, Calcium carbonate, and Iron dioxide act as natural cementing agents to hold together the Sand in the form of a rock that we know by the name of Sandstone. Chemically, Sandstone is an absolutely impervious and mono-mineralic rock that is primarily composed of Quartz.

Shale is a fine-grained, clastic sedimentary rock composed of mud that is a mix of flakes of Clay minerals and tiny fragments (silt-sized particles) of other minerals, especially Quartz and Calcite. Shale is characterized by breaks along thin laminae or parallel layering or bedding less than one centimeter in thickness, called fissility. It is the most common sedimentary rock.

Conglomerate is a coarse-grained clastic sedimentary rock that is composed of a substantial fraction of rounded to sub angular gravel-size clasts, e.g., granules, pebbles, cobbles, and boulders, larger than 2 mm (0.079 in) in diameter. Conglomerates form by the consolidation and lithification of Gravel. Conglomerates typically contain finer grained sediment, e.g., either Sand, Silt, Clay or combination of them, called matrix by geologists, filling their interstices and are often cemented by Calcium carbonate, Iron oxide, Silica, or hardened Clay. The size and composition of the gravel-size fraction of a Conglomerate may or may not vary in composition, sorting, and size. In some Conglomerates, the gravel-size class consist almost entirely of what were Clay clasts



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at the time of deposition. Conglomerates can be found in sedimentary rock sequences of all ages but probably make up less than 1 percent by weight of all sedimentary rocks. In terms of origin and depositional mechanisms, they are closely related to sandstones and exhibit many of the same types of sedimentary structures, e.g., tabular and trough cross-bedding and graded bedding.

**Properties:**

The key characteristic of Conglomerate is the presence of readily visible, rounded clasts bound within a matrix. The clasts tend to feel smooth to the touch, although the matrix can be either rough or smooth. The hardness and color of the rock is highly variable.

**> QUARTZITE AND QUARTZ SCHIST:**

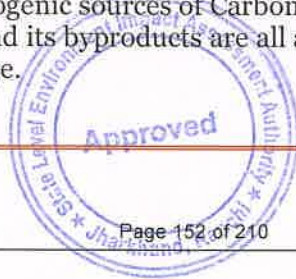
Quartzite is a hard, non-foliated metamorphic rock which was originally pure Quartz Sandstone. Sandstone is converted into Quartzite through heating and pressure usually related to tectonic compression within orogenic belts. Pure Quartzite is usually white to grey, though Quartzites often occur in various shades of pink and red due to varying amounts of iron oxide ( $Fe_2O_3$ ). Other colors, such as yellow, green, blue and orange, are due to other minerals. When Sandstone is cemented to Quartzite, the individual Quartz grains recrystallize along with the former cementing material to form an interlocking mosaic of Quartz crystals. Most or all of the original texture and sedimentary structures of the Sandstone are erased by the metamorphism. The grainy, sandpaper-like surface becomes glassy in appearance. Minor amount of former cementing materials, iron Oxide, Silica, Carbonate and Clay, often migrate during recrystallization and metamorphosis. This causes streaks and lenses to form within the quartzite. Ortho-Quartzite is a very pure Quartz Sandstone composed of usually well-rounded Quartz grains cemented by Silica. Ortho-Quartzite is often 99%  $SiO_2$  with only very minor amounts of Iron oxide and trace resistant minerals such as Zircon, Rutile and Magnetite. Although few fossils are normally present, the original texture and sedimentary structures are preserved. The term is also traditionally used for Quartz-cemented Quartz Arenites, and both usages are found in the literature. The typical distinction between the two (since each is a gradation into the other) is a metamorphic Quartzite is so highly cemented, diagenetically altered, and metamorphosed so that it will fracture and break across grain boundaries, not around them. Quartzite is very resistant to chemical weathering and often forms ridges and resistant hilltops. The nearly pure Silica content of the rock provides little for Soil; therefore, the Quartzite ridges are often bare or covered only with a very thin layer of Soil and (if any) little vegetation.

Quartz Schist is a metamorphosed schistose rock composed essentially of Quartz often with some mica or tourmaline or both. Schist is a medium-grade metamorphic rock. Quartz often occurs in drawn-out grains to such an extent that a particular form called Quartz schist is produced. Schist forms at a higher temperature and has larger grains than Phyllite.

**> COAL:**

Coal is a combustible black or brownish-black sedimentary rock usually occurring in rock strata in layers or veins called Coal beds or Coal seams. The harder forms, such as Anthracite Coal, can be regarded as metamorphic rock because of later exposure to elevated temperature and pressure. Coal is composed primarily of carbon, along with variable quantities of other elements, chiefly Hydrogen, Sulphur, Oxygen, and Nitrogen. Coal is a fossil fuel that forms when dead plant matter is converted into Peat, which in turn is converted into Lignite, then Sub-Bituminous Coal, after that Bituminous Coal, and lastly Anthracite. This involves biological and geological processes. The geological processes take place over millions of years.

Throughout human history, Coal has been used as an energy resource, primarily burned for the production of electricity and heat, and is also used for industrial purposes, such as refining metals. Coal is the largest source of energy for the generation of electricity worldwide, as well as one of the largest worldwide anthropogenic sources of Carbon-di-oxide releases. The extraction of Coal, its use in energy production and its byproducts are all associated with environmental and health effects including climate change.



*[Signature]*  
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#### Formation:

At various times in the geologic past, the Earth had dense forests in low-lying wetland areas. Due to natural processes such as flooding, these forests were buried underneath soil. As more and more soil deposited over them, they were compressed. The temperature also rose as they sank deeper and deeper. As the process continued the plant matter was protected from biodegradation and oxidation, usually by mud or acidic water. This trapped the Carbon in immense Peat bogs that were eventually covered and deeply buried by sediments. Under high pressure and high temperature, dead vegetation was slowly converted to Coal. As Coal contains mainly Carbon, the conversion of dead vegetation into Coal is called carbonization. The wide, shallow seas of the Carboniferous period provided ideal conditions for Coal formation, although Coal is known from most geological periods. The exception is the Coal gap in the Permian–Triassic extinction event, where Coal is rare. Coal is known from Precambrian strata, which predate land plants—this Coal is presumed to have originated from residues of algae.

#### Ranks:

As geological processes apply pressure to dead biotic material over time, under suitable conditions, its metamorphic grade increases successively into:

- Peat, considered to be a precursor of Coal, which has industrial importance as a fuel in some regions. In its dehydrated form, Peat is a highly effective absorbent for fuel and oil spills on land and water, and also used as a conditioner for soil to make it abler to retain and slowly release water.
- Lignite, or brown Coal, the lowest rank of Coal, used almost exclusively as fuel for electric power generation
- Jet, a compact form of Lignite, sometimes polished; used as an ornamental stone since the Upper Palaeo-lithic.
- Sub-Bituminous Coal, whose properties range between those of Lignite and those of Bituminous Coal (It is used primarily as fuel for steam-electric power generation and is also an important source of light aromatic hydrocarbons for the chemical synthesis industry.)
- Bituminous Coal, a dense sedimentary rock, usually black, but sometimes dark brown, often with well-defined bands of bright and dull material (It is used primarily as fuel in steam-electric power generation, with substantial quantities used for heat and power applications in manufacturing and to make Coke)
- Steam Coal, a grade between Bituminous Coal and Anthracite (It was once widely used as a fuel for steam locomotives.
- Anthracite, the highest rank of Coal (It is a harder, glossy black Coal used primarily for residential and commercial space heating; it may be divided further into metamorphically altered Bituminous Coal and "petrified oil", as from the deposits in Pennsylvania.)
- Graphite; It is one of the more difficult Coals to ignite and not commonly used as fuel; it is most used in pencils, or powdered for lubrication.)



  
District Mining Officer  
Jamtara



## 16. USE OF MINERAL

Stones form one of the most important building materials in civil engineering. Stones are derived from rocks, which form the earth's crust and have no definite shape or chemical combination but are mixtures of two or more minerals. The mineral is a substance which is formed by the natural inorganic process and possesses a definite chemical combination and molecular structure. They are strong, durable and descent in appearance.

Stone is an essential and more permanent building material in construction than other natural building materials. Based on the type, Stones can be used in buildings for flooring, roofing, masonry paving roads and also as aggregates foe concrete.

Most of the prehistoric monuments are built with natural stones as they remain stable with time. Before the advent of concrete Stones were highly preferred for heavy engineering works like bridge piers, harbour walls, sea side walls and for facing works.

Stones for construction purposes are obtained by quarrying from solid massive rocks. The Stone used for masonry construction should be hard, durable, tough and should be free from weathered soft patches of material, cracks and other defects that are responsible for the reduction of strength and durability.

Based on Geology, Stones or rocks are classified into three types:

- Igneous Rocks – Basalt, Trap, Andesite, Rhyolite, Diorite, Granite.
- Sedimentary Rocks – Limestone, Dolomite and Sandstone.
- Metamorphic Rocks – Gneiss, Quartzite, Marble, Slate.

### ➤ **GRANITE GNEISS, AUGEN GNEISS & MIGMATITE:**

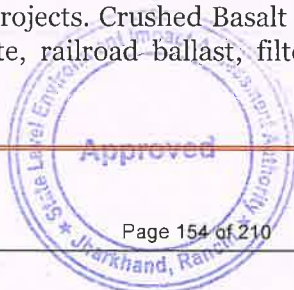
#### **Uses of Granitic rocks:**

- **Building Stone:-** Granitic rocks have been extensively used as a dimension stone and as flooring tiles in public and commercial buildings and monuments.
- **Sub base and base material in road and highway construction:** - Crushed stone has the most basic use of Granite. Crushed Granite is used as a sub base and base material in road and highway construction. It is used as crushed stone media in sewage system drain fields and as a base material for foundations and construction slabs. Crushed Granite in attractive colours is used as a landscape stone and in planters. It also makes great railroad ballast, and in larger sizes it makes good riprap.
- **Engineering:** - Engineers have traditionally used polished Granite surface plates to establish a plane of reference, since they are relatively impervious and inflexible. Sandblasted concrete with a heavy aggregate content has an appearance similar to rough Granite, and is often used as a substitute when use of real Granite is impractical. Granite block is usually processed into slabs, which can be cut and shaped by a cutting center. Granite tables are used extensively as bases for optical instruments because of Granite's rigidity, high dimensional stability, and excellent vibration characteristics.
- **Granite Paving Stone:** - Granite paving stones or "pavers" can make a colourful and interesting way of paving a driveway or patio. The beauty of natural stone combined with expert craftsmanship and design can produce a unique and lasting result. In the past, Granite blocks were often used to pave city streets.

### ➤ **RAJMAHAL TRAP- BASALT (RAJMAHAL FORMATION):**

#### **Uses of Basalt:**

- Basalt is used for a wide variety of purposes. It is most commonly crushed for use as an aggregate in construction projects. Crushed Basalt is used for road base, concrete aggregate, asphalt pavement aggregate, railroad ballast, filter stone in drain fields, and may other purposes.





- Basalt is also cut into dimension stone. Thin slabs of Basalt are cut and sometimes polished for use as floor tiles, building veneer, monuments, and other stone objects.

➤ **SANDSTONE:**

**Uses:**

- It has also been used for artistic purposes to create ornamental fountains and statues.
- Some Sandstones are resistant to weathering, yet are easy to work. This makes Sandstone a common building and paving material including in asphalt concrete.

➤ **SHALE:**

**Uses:**

- Shale is relatively fragile, as far as rock fragility goes, so it is rarely used for building materials or industrial uses in its raw form. When properly processed, it can be used as an additive in cement and art clay products.
- Shale uses in construction industry include Cement manufacture, Construction aggregate, for road aggregate, making natural cement, raw material for the manufacture of mortar.

➤ **CONGLOMERATE:**

**Uses:**

- When the matrix is soft, Conglomerate may be crushed for use as a fill material in the construction and transportation industries.
- Hard Conglomerate may be cut and polished to make dimension stone for interesting-looking walls and floors.

➤ **AMPHIBOLITE:**

**Uses:**

- It is crushed and used for highway construction and as railroad ballast.
- It is cut for use as dimension stone.
- The highest quality pieces are cut, polished, and sold under the name "Black Granite" for use as building facing, floor tiles, countertops, and other architectural uses.

➤ **QUARTZITE:**

**Uses:**

- Because of its hardness and angular shape, crushed Quartzite is often used as railway ballast.
- Quartzite is a decorative stone and may be used to cover walls, as roofing tiles, as flooring, and stair steps.
- Its use for countertops in kitchens is expanding rapidly. It is harder and more resistant to strains than Granite.
- Crushed Quartzite is sometimes used in road construction.
- High purity Quartzite is used to produce ferrosilicon, industrial Silica Sand, Silicon and Silicon carbide.

➤ **COAL:**

Different types of coal have different uses.

- Steam Coal - also known as thermal Coal - is mainly used in power generation.
- Coking Coal - also known as metallurgical Coal - is mainly used in steel production.
- Coal seams of **Jamtara** are suitable for Thermal Power Generation.



*[Signature]*  
District Mining Officer  
Jamtara



## **17. DEMAND AND SUPPLY OF THE MINERAL IN LAST THREE YEARS**

In the present scenario, the Stone boulders & chips have good market in all regions of the country for construction of buildings, roads, bridges, railway line and other constructional purposes. As such there are huge infrastructural activities such as road, building, railways are coming up by Govt. of India & PSUs under "Make in India" programme. The production of Stone boulders & chips are the main raw minerals for the above activities and considering the last three years' actual production of Jamtara with respect to the requirement of the State has a huge gap. It is proposed to start the Stone production from larger areas to at least double the production of the district which will enhance the revenue of the district and also support the livelihood of the local people.

The mining project will also bring economic benefits to the State by the ways of royalty of Stone as well as benefit to the lessee. It will help in general of employment in rural areas in Jharkhand State where tribal people are starving due to unemployment. A single mining project shall be providing employment to approximately 25 to 30 people to the poorest section of the society and benefitting more than 50 to 60 people indirectly. Further, infrastructure development will help in development of nation. Socio-economic condition of the area will be improved as mining activity will create additional employment for the local habitants for raising their socio-economic status. Significant contribution will be made by lessee towards social development of the surrounding area in the form of CSR/CER fund.

There is a huge demand of Stone chips for domestic and infrastructure sector. Only a few Stone mines have environmental clearance for extraction of Stone. There is limited supply of Stone and there is huge gap. There are no statistical data, regarding demand and supply of minerals in Jamtara district. Due to construction of roads and public buildings for development works in the district a large number of Stone chips & boulders are required. This will meet only by granting new leases in the district.

Based on the revenue report for the financial year 2022-23, it can be observed that, the total collection in the financial year 2021-22, till March 2022 is Rs. 1672.25 Lakhs, however, the total collection in financial year 2022-23 is exceeding by Rs. 235.25 Lakhs. This implies the increasing demand of building material of around 116.37% in the district.

Apart from this, there has been "Bharatmala" project in progress in the district, for modernization of NH 143, which is emphasizing the demand of Stone boulder over the current supply capacity.

Currently there are 03 number of LoI holders for Stone mining project in the district. Soon after obtaining of Environmental Clearance of these projects, as well as the 132 Nos. of identified potential areas of Stone deposit, these will help the district to meet the gap between demand and supply of Stone boulders in the district.



*[Signature]*  
District Mining Officer  
Jamtara

DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



**जिला खनन कार्यालय, जामताड़ा**  
मासिक समाहरण प्रतिवेदन माह मार्च, 2023

(राशि लाख रुपये में)

क्रम	खनिज का नाम	पारित क्षेत्र का क्षेत्रफल		लक्ष्य		प्रतिवेदित माह का समाहरण			वित्तीय वर्ष 2022-23 के प्रतिवेदित माह के पूर्व का समाहरण			वित्तीय वर्ष 2022-23 माह मार्च, 2023 तक का प्रगतिशील समाहरण			वित्तीय वर्ष 2021-22 में प्रतिवेदित माह तक का समाहरण				
		पड़ोसी क्षेत्र (एकड़ में)	कुल क्षेत्र (एकड़ में)	वार्षिक	मासिक	बकाया मांग	चातू मांग	कुल	बकाया मांग	चातू मांग	कुल	बकाया मांग	चातू मांग	कुल	माह का समाहरण	माह के पूर्व का समाहरण	प्रगतिशील समाहरण		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
1	कोयला	1600.38	1600.38	1437.00	191.60	-	0.00	0.00	0.00	11.52	11.52	0.00	11.52	11.52	11.52	0.00	11.52		
2	फैल्सो/इस्पात	0	0			-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.48	11.48
3	ईट	-	-			-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	5.77
4	गुल्फर	87.08	87.08			0.00	89.13	89.13	0.00	527.83	527.83	0.00	616.96	616.96	114.32	293.05	407.37		
5	बालू	-	-			-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	गोबर/मिट्टी	-	-			-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	अन्य	-	-			-	1.83	1.83	0.00	34.11	34.11	0.00	35.94	35.94	1.84	22.34	24.18		
8	कार्य विभाग	-	-			-	379.46	379.46	0.00	620.22	620.22	0.00	999.68	999.68	383.13	456.15	839.28		
9	अनिलास-पत्रित बकाया	-	-			-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	निसामपत्रित बकाया	-	-			-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.60	1.60
11	मैनजमेट शुल्क	-	-			-	0.74	0.74	0.00	7.41	7.41	0.00	8.15	8.15	0.80	4.95	5.75		
	कुल	1687.46	1687.46		0.00	471.16	471.16	0.00	1201.09	1201.09	0.00	1672.25	1672.25	511.61	795.34	1306.95			

**राजस्व संग्रहण का प्रगति प्रतिवेदन**  
वित्तीय वर्ष-2022-23

जिला का नाम-जामताड़ा			प्रतिवेदित माह			विगत माह तक की	प्रतिवेदित माह तक की	माह- मार्च, 2023			अभ्युक्ति
क्रम	विभाग का नाम	वार्षिक लक्ष्य (लाख रु० में) संशोधित	प्रतिवेदित माह			उपलब्धि (लाख रुपये में)	उपलब्धि (लाख रुपये में)	प्रतिवेदित माह तक			
			का लक्ष्य (लाख रुपये में)	की उपलब्धि (लाख रुपये में)	की उपलब्धि का प्रतिशत (लाख रुपये में)			का लक्ष्य (लाख रुपये में)	की उपलब्धि का प्रतिशत	वार्षिक लक्ष्य के विरुद्ध चतुर्ती का प्रतिशत	
1	2	3	4	5	6	7	8	9	10	11	12
1	खान एवं बूतल विभाग, झारखण्ड जिला खनन कार्यालय, जामताड़ा।	1437.00	191.60	471.16	245.91%	1201.09	1672.25	1437.00	116.37%	116.37%	



*[Signature]*  
District Mining Officer  
Jamtara



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

As per record of Jamtara District Mining Office, 13 Nos. of Stone & 3 Nos. of Bricks mining leases are registered and are operational at current. The location of mining leases is given in Figure 20.1 & Table 20.1

Figure: 20.1: Location of Mining Lease in the Map of Jamtara district.

- Attached as **Annexure - II**

Table 20.1: Location of Existing Mining Lease in the Jamtara district

20.1: LOCATION OF EXISTING MINING LEASES OF MINOR MINERAL 'STONE & BRICKS' IN THE DISTRICT					
Sl. No.	Name of the Lessee	Address of the Lessee	Area of Mining Lease (Ha)	Address of the Mining Lease	Location of the Mining Lease (Coordinates)
1	2	3	4	5	6
1	Shri Sujit Kumar Yadav	Village - Bandarpahari Dist. - Jamtara	1.92	Mouza - Bandarpahari Block - Fatehpur P. S. - Bindapathar P. O. - Tilaki District - Jamtara	A - 24°0'36.47"N 86°57'17.98"E B - 24°0'38.49"N 86°57'19.27"E C - 24°0'43.93"N 86°57'9.26"E D - 24°0'43.19"N 86°57'8.70"E
2	Shri Kamal Bhushan	At Bishwanath Bhawan Madhukam, Ratu Road P.O. - Hehal P.S. - Sukhdevnagar Dist. - Ranchi	4.45	Mouza - Golpahari Block - Jamtara Panchyat - Sukhjora P. S. - Jamtara P. O. - Gundlipahari District - Jamtara	A - 23°56'8.81"N 86°40'07.11"E B - 23°56'1.82"N 86°39'58.67"E
3	M/s Maa Durga Enterprises	At Domohani Bazar P.S. - Barabani Dist. - Paschimi Burdwan (W. Bengal)	1.95	Mouza - Pipalatanr Block - Narayanpur P. S. - Narayanpur P. O. - Narayanpur District - Jamtara	A - 24°00'57.50"N 86°41'47.70"E B - 24°00'58.20"N 86°41'48.10"E C - 24°00'52.57"N 86°41'57.57"E D - 24°00'49.76"N 86°41'53.95"E
4	M/s Max Alert System	At + P.O. - Court Road P.S. - Jamtara Dist. - Jamtara	3.42	Mouza - Sawlapur Block - Narayanpur P. S. - Narayanpur P. O. - Sawlapur District - Jamtara	A - 24°1'6.30"N 86°42'22.43"E
5	M/s Rah Agro Technocrats Pvt. Ltd.	At Kenduatand Block - Narayanpur Dist. - Jamtara	1.74	Mouza - Kenduatand Block - Narayanpur P. S. - Narayanpur P. O. - Narayanpur District - Jamtara	A - 24°00'25.78"N 86°42'22.75"E B - 24°00'24.26"N 86°42'22.20"E C - 24°00'24.95"N 86°42'29.43"E D - 24°00'23.93"N 86°42'29.32"E
6	Shri Amit Kumar Pandey	At - Golpahari P.O. - Gundalipahari P.S.+ Dist. - Jamtara	4.45	Mouza - Golpahari Block - Jamtara P. S. - Jamtara P. O. - Dhobna District - Jamtara	A - 23°56'03.07"N 86°40'0.13"E B - 23°56'2.62"N 86°40'1.66"E



*APRIL*  
District Mining Officer  
Jamtara

**DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND**



7	Shri Nityanand Yadav	Village - Salpatra P. o. - Tilaki Thana - Bindapathar Dist. - Jamtara	1.64	Mouza - Salpatra Block- Fatehpur P. S. - Bindapathar P. O. - Tilaki District - Jamtara	A - 24°00'25.00"N 86°57'44.80"E B - 24°00'22.50"N 86°57'50.50"E C - 24°00'21.00"N 86°57'49.00"E D - 24°00'23.60"N 86°57'44.80"E E - 24°00'27.00"N 86°57'38.80"E F - 24°00'27.90"N 86°57'39.00"E G - 24°00'26.0"N 86°57'42.80"E
8	Md. Azaz Ansari & Md. Saddam Ansari	Village - Dhekipara Block- Mihijam Dist. - Jamtara	0.49	Mouza - Kelahi Block - Jamtara Panchyat - Piyalsola P. S. - Mihijam P. O. - Kelahi District - Jamtara	A - 23°51'14.11"N 86°50'36.98"E B - 23°51'11.93"N 86°50'39.35"E
9	Shri Binanjay Bharti S/o Late Ravindranath Bharti	R/o Aryapuri, Ratu Road P.S. - Sukhdevnagar Dist. - Ranchi	4.45	Mouza - Golpahari Block - Narayanpur P. S. - Narayanpur P. O. - Golpahari District - Jamtara	A - 23°56'00.66"N 86°40'02.48"E B - 23°56'01.71"N 86°40'02.97"E
10	M/s Maa Shakti Corporation	At LRD Chowk Shahtri nagar West Dhanbad P.O. - Dhanbad Thana - Bank More Dist. - Dhanband	2.43	Mouza - Nayadih Block - Narayanpur P. S. - Narayanpur P. O. - Gokula District - Jamtara	A - 23°51'12.4"N 86°50'36.98"E B - 23°51'11.93"N 86°50'39.26"E C - 23°51'14.11"N 86°50'39.35"E D - 23°51'14.11"N 86°50'37.34"E
11	Shri Sanjeet Hembrom <u>Managing Partner</u> : Shri Amrendra Tiwari	Near SBI Bank, Mihijam Dist. - Jamtara	0.93	Mouza - Chandradipa Block - Jamtara P. S. - Mihijam P. O. - Mihijam District - Jamtara	A - 23°54'01.1"N 86°49'42.5"E B - 23°53'54.8"N 86°49'36.6"E
12	M/s Shiv Durga Mining Project	At Karon Road Karamatanr P.O. + P.S. - Karamatanr Dist. - Jamtara	2.43	Mouza - Teliyadih Block - Karamatanr P. S. - Karamatanr P. O. - Karamatanr District - Jamtara	A - 24°05'38.6"N 86°44'43.7"E B - 24°05'36.7"N 86°44'44"E
13	Shri Uttam Kumar Mahto S/o Girdhari Mahato	Village - Nagar Kiyari Barbadda Dist. - Dhanbad	2.62	Mouza - Sahajpur Block - Karamatanr P. S. - Karamatanr District - Jamtara	A - 24°07'44.33"N 86°41'20.07"E B - 24°07'52.27"N 86°41'26.35"E
14	M/s M.M.G. Bricks <u>Proprietor</u> : Shri Sadamay Mandal S/o Shri Haradhan Mandal	Village - Tarachatiya P.O. - Sagjoriya P.S. - Nala Dist. - Jamtara	0.89	Mouza - Debalkunda P. O. - Sagjoriya P.S. - Nala Dist. - Jamtara	A - 23°51'5.65"N 86°59'9.17"E B - 23°51'5.56"N 86°59'9.61"E C - 23°51'55.04"N 86°59'9.67" D - 23°51'55.08"N 86°59'9.46"
15	M/s A.M.G. Bricks <u>Proprietor</u> : Shri Niramay Ghosh S/o Shri Babulal Ghosh	Village - Debalkunda P.O. - Sagjoriya P.S. - Nala Dist. - Jamtara	0.22	Mouza - Debalkunda P.O. - Sagjoriya P.S. - Nala Dist. - Jamtara	A - 32°51'5.91" to 32°51'5.61"N 86°59'08.16" to 86°59'08.17"E
16	M/s J.M.T Bricks <u>Proprietor</u> : Shri Sompada Maji S/o Shri Narayan Chandra Maji	At - Maheshmunda - 47 Sugjuria, Nala Dist. - Jamtara	0.59	Mouza - Maheshmunda- Sugjuria Block - Nala Dist. - Jamtara	A - 23°51'48.15" N 87°00'01.48" E B - 23°51'46.82" N 87°00'08.04" E C - 23°51'44.03" N 87°00'01.35" E D - 23°51'44.31"N



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					86°59'58.23" E
17	M/s Shival Ray Proprietor: Shri Shival Ray S/o Late Ranglal Ray	Village - Gopalpur P.O. - Guhiyadih P.S. + Dist. - Jamtara	0.40	Village - Gopalpur P.O. - Guhiyadih P.S. + Dist. - Jamtara	A - 23°58'29.51" N 86°51'44.64" E B - 23°58'28.38" N 86°51'47.47" E C - 23°58'25.00" N 86°51'47.33" E D - 23°58'23.61" N 86°51'43.78" E E - 23°58'26.48" N 86°51'42.41" E



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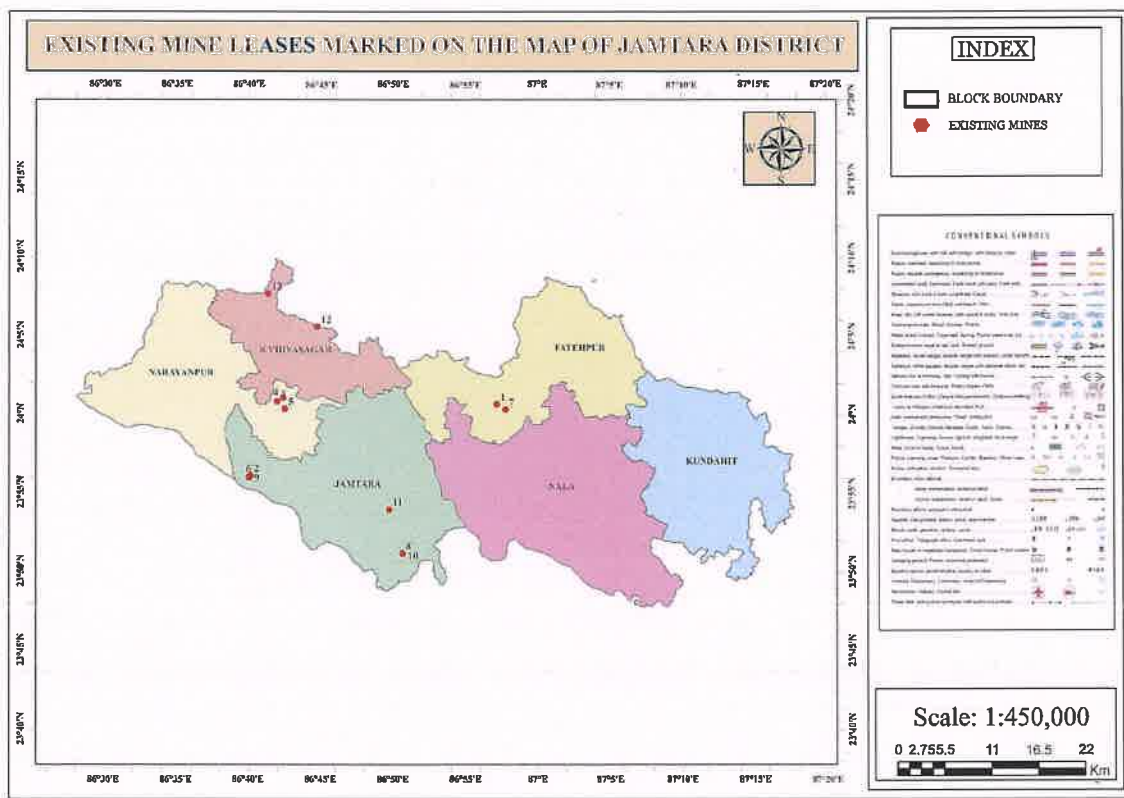


Fig. 18.1: Existing Mining Leases Marked on the map of Jamtara District



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## 19. DETAILS OF THE AREA OF WHERE THERE IS A CLUSTER OF MINING LEASES

A total 2 Nos. of Cluster have been formed in district as per point 6 of Appendix XI: S.O. – 141 (E) of MoEF & CC, dated 15/01/2016. However, it is proposed to consider the cluster of mining lease while planning for new lease area in coming years.

### 19.1: DETAILS OF CLUSTER IN THE DISTRICT

Sl. No.	Name of the Mineral	Name of the Lessee	Address of the Lessee	Area of Mining Lease (Ha)	Address of the Mining Lease	Location of the Mining Lease (Coordinates)
1	2	3	4	5	6	7
<b>CLUSTER IN CIRCLE - JAMTARA</b>						
1	Stone	Shri Kamal Bhushan	At Bishwanath Bhawan Madhukam, Ratu Road P.O. - Hehal P.S. - Sukhdevnagar Dist. - Ranchi	4.45	Mouza - Golpahari Block - Jamtara Panchyat - Sukhjora P. S. - Jamtara P. O. - Gundlipahari District - Jamtara	A - 23°56'8.81"N 86°40'07.11" E B - 23°56'1.82"N 86°39'58.67"E
2	Stone	Shri Amit Kumar Pandey	At - Golpahari P.O. - Gundalipahari P.S. + Dist. - Jamtara	4.45	Mouza - Golpahari Block - Jamtara P. S. - Jamtara P. O. - Dhobna District - Jamtara	A - 23°56'03.07"N 86°40'0.13" E B - 23°56'2.62"N 86°40'1.66"E
3	Stone	Shri Binanjay Bharti S/o Late Ravindranath Bharti	R\o Aryapuri, Ratu Road P.S. - Sukhdevnagar Dist. - Ranchi	4.45	Mouza - Golpahari Block - Narayanpur P. S. - Narayanpur P. O. - Golpahari District - Jamtara	A - 23°56'00.66"N 86°40'02.48" E B - 23°56'01.71"N 86°40'02.97"E
<b>CLUSTER IN CIRCLE - NARAYANPUR</b>						
1	Bricks	M/s M.M.G. Bricks Proprietor: Shri Sadamay Mandal S/o Shri Haradhan Mandal	Village - Tarachatiya P.O. - Sagjoriya P.S. - Nala Dist. - Jamtara	0.89	Mouza - Debalkunda P. O. - Sagjoriya P.S. - Nala Dist. - Jamtara	
2	Bricks	M/s A.M.G. Bricks Proprietor: Shri Niramay Ghosh S/o Shri Babul Ghosh	Village - Debalkunda P.O. - Sagjoriya P.S. - Nala Dist. - Jamtara	0.22	Mouza - Debalkunda P.O. - Sagjoriya P.S. - Nala Dist. - Jamtara	



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

There is no Eco-Sensitive area falls in Jamtara district.



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## 21. IMPACT ON THE ENVIRONMENT DUE TO MINING

**Impact on the Environment (Air, Water, Noise, Soil, Flora & Fauna, land use, agriculture, forest etc.) due to mining activity:**

AMBIENT AIR QUALITY	
IMPACT	MITIGATION MEASURES
<p>Typical impact on Air Quality due to mining activities are;</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Dust Generation due to                             <ul style="list-style-type: none"> <li>✓ Site Preparation</li> <li>✓ Drilling</li> <li>✓ Blasting</li> <li>✓ Crushing</li> <li>✓ Transportation on haul road or unpaved road</li> </ul> </li> <li><input type="checkbox"/> Emission of Noxious Gases                             <ul style="list-style-type: none"> <li>✓ Operation of mining equipment</li> <li>✓ Blasting</li> <li>✓ Transportation</li> </ul> </li> </ul>	<p>To mitigate the impact some suggestive measures are;</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Dust Generation                             <ul style="list-style-type: none"> <li>✓ Adopt a wet drilling system this will minimize dust generation during drilling process .</li> <li>✓ Practice controlled blasting to minimize generation of dust.</li> <li>✓ Regular water sprinkling on haul road.</li> <li>✓ Install wet dust suppression system in crushing and screening plant.</li> <li>✓ Regular water sprinkling on unpaved roads.</li> <li>✓ Dust generation from road also depends on speed of transport vehicles. There should be speed restriction of 20 KMPH on unpaved road</li> </ul> </li> <li><input type="checkbox"/> Emission of Noxious Gases                             <ul style="list-style-type: none"> <li>✓ Use of optimal quantity of explosive in blasting.</li> <li>✓ To ensure that transportation vehicles have "Pollution Under Control Certificate".</li> <li>✓ Regular repair and maintenance of mining equipment &amp; transportation vehicle.</li> <li>✓ Proper repair and maintenance of road.</li> </ul> </li> <li>❖ Raise Green Belt in safety zone.</li> <li>❖ Avenue plantation along a both sides of Link Road</li> </ul>



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<b>WATER QUALITY</b>	
<b>IMPACT</b>	<b>MITIGATION MEASURES</b>
<p>Typical impact on Water Quality due to mining activities are;</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Run-off of sediments due to                             <ul style="list-style-type: none"> <li>✓ Site Preparation</li> <li>✓ Dumping of OB</li> <li>✓ Crushing</li> <li>✓ Drilling</li> </ul> </li> <li><input type="checkbox"/> Contamination of oil or chemical in water (surface &amp; ground water) due to                             <ul style="list-style-type: none"> <li>✓ Dumping of OB</li> <li>✓ Drilling</li> <li>✓ Blasting</li> <li>✓ Spills due to transportation</li> </ul> </li> </ul>	<p>To mitigate the impact some suggestive measures are;</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Run-off                             <ul style="list-style-type: none"> <li>✓ Provide garland drains around quarry to intercept surface run-off from high elevation to quarry and divert it to collection cum desilting pond.</li> <li>✓ Provide foot drain along toe of external dump. Foot drain will collect run-off from external dump and divert to storage cum desilting pond for proper treatment</li> </ul> </li> <li><input type="checkbox"/> Water Contamination                             <ul style="list-style-type: none"> <li>✓ Water pump out from quarry will need to be diverted to storage cum desilting pond for treatment.</li> <li>✓ Proposed effluent treatment plant (ETP).</li> <li>✓ Regular repair &amp; maintenance of equipment &amp; vehicles.</li> <li>✓ Movement of heavy vehicles may be restricted to lease area and road so that leaking oil &amp; grease may not contaminate water quality.</li> </ul> </li> <li><input type="checkbox"/> PROMOTE ZERO LIQUID DISCHARGE (ZLD).</li> </ul>



  
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NOISE LEVEL	
IMPACT	MITIGATION MEASURES
Increase in noise level due to various mining activities such as operation of mining equipment, movement of vehicles, drilling, blasting & crushing.	<p>To mitigate the impact some suggestive measures are;</p> <ul style="list-style-type: none"> <li>✓ Mining operation to be confined to day shift only</li> <li>✓ At machineries to be repaired and maintained regularly.</li> <li>✓ Raise Green Belt in safety zone.</li> <li>✓ Avenue plantation along a both sides of Link Road</li> <li>✓ Regular repair and maintenance of mining equipment &amp; transportation vehicle.</li> <li>✓ Proper repair and maintenance of road.</li> <li>✓ Speed restriction of 20 KMPH on unpaved road.</li> <li>✓ Acoustic Barrier along the periphery of mining lease at critical points.</li> </ul>

SOIL QUALITY	
IMPACT	MITIGATION MEASURES
<p>Mining Activities are likely to impact on soil quality as;</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Loss of topsoil</li> <li><input type="checkbox"/> Productivity of Soil</li> <li><input type="checkbox"/> Contamination of oil or chemical in Soil</li> </ul>	<p>To mitigate the impact some suggestive measures are;</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Loss of topsoil <ul style="list-style-type: none"> <li>✓ Topsoil are to be removed &amp; stored in an identified area. In order to conserve the quality of topsoil, grass cover are to be developed on topsoil dumps, Such conserved topsoil may be used for land reclamation &amp; development of greenbelt.</li> </ul> </li> <li><input type="checkbox"/> Productivity of Soil <ul style="list-style-type: none"> <li>✓ Movement of heavy mining machineries on agriculture land and productive land should be restricted.</li> </ul> </li> <li><input type="checkbox"/> Contamination of oil or chemical in Soil <ul style="list-style-type: none"> <li>✓ Movement of heavy vehicles may be restricted to lease area and road so that leaking oil &amp; grease may not contaminate soil quality.</li> </ul> </li> </ul>



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BIO-DIVERSITY	
IMPACT	MITIGATION MEASURES
<p>Mining Activities are likely to impact on Bio-Diversity of the region as;</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Habitat Destruction</li> <li><input type="checkbox"/> Ecosystem Disruption</li> <li><input type="checkbox"/> Damaging</li> </ul>	<p>Considering importance of impact of environmental impact on eco-system in the study area, a series of mitigation measures are incorporated in planning of stone mine &amp; its operation such mitigation measures are given below;</p> <ul style="list-style-type: none"> <li>✓ Mine site are selected considering siting criteria prescribed by Government (JSEIAA / JSPCB / MOEF &amp; CC).</li> <li>✓ Avoid site which have tree cover.</li> <li>✓ Avoid site through which drainage channels passes through.</li> <li>✓ <b>Ecological Assessment:</b> Conduct a thorough ecological survey to identify species and habitats present.</li> <li>✓ <b>Buffer Zones:</b> Establish buffer zones around sensitive habitats to minimize disturbance.</li> <li>✓ <b>Minimize Habitat Destruction:</b> Plan site layout to avoid key habitats and minimize vegetation clearing.</li> <li>✓ <b>Translocation:</b> Consider translocating significant flora and fauna to safe areas.</li> <li>✓ <b>Restoration Plans:</b> Develop a habitat restoration plan for post-mining activities.</li> <li>✓ <b>Wildlife Corridors:</b> Ensure wildlife corridors are maintained to facilitate animal movement. If a wildlife corridor passes through or around a mining lease area, a Wildlife Conservation Plan will be prepared. These measures help protect biodiversity and mitigate the environmental impact of stone mining.</li> </ul>



  
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## **ENVIRONMENTAL IMPACTS:**

Population growth, economic development and environmental degradation are interlinked with each other. Similarly, mining activities have considerable impacts on environment. The most important environmental problems from the mining activities are mercury pollution, cyanide pollution, direct dumping of tailing and affluent into river. These environmental problems from mining activities are the global phenomena. In the study area, stone mining activities have very adverse impact on the environment. It does not only degrade the land and forest areas but also, it affects the air, water and health qualities. Faunal and floral depletion, due to mining activities, is also enormous. Environmental impacts due to mining activities was manifested as water pollution, land degradation, loss of biodiversity, air pollution, increase in health related problems, occupational noise pollution, vibrations, land subsidence and landslides.

## **LAND DEGRADATION:**

Land degradation is one of the significant impacts arising out of mining and quarrying activity which is mainly in the form of alternation of land structure due to excavation, stacking of top soil and loss of land due to dumping of mine waste and overburden soil. Stone and sand quarrying causes damage to property, depletion of ground water, loss of fertile top soil, degradation of forest land, adverse effect on the biodiversity and public health. The impacts include soil, water, air, vegetation, landscape and the effects can be of different entity, depending on several factors. A number of effects on the environment must be considered, such as noise and vibration, dust traffic, and so on. In the area involved in the quarry the vegetation coverage and the soil are replaced by wide holes surrounded by some big accumulations of waste materials. In this way a sort of accelerated erosion can start whose consequences are not only the quick degradation of the landscape, but also the introduction in the natural cycle of harmful substances causing pollution to the surface waters and to the aquifer.

## **FOREST DEPLETION AND LOSS OF BIODIVERSITY:**

Mining and quarrying, either open cast or underground, destroys landscape and forest ecosystems. The waste materials that remain after the extraction of usable ores are dumped on the surrounding land, thus causing loss of top soil, nutrients and supportive micro flora and vegetation. Decrease in biodiversity – floral and faunal is also prominent as many species are endangered or on the verge of extinction.

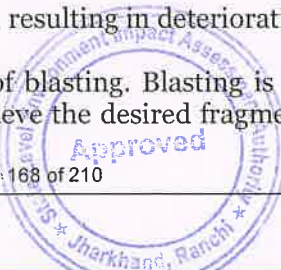
One of the biggest negative impacts of quarrying on the environment is the damage to biodiversity. Biodiversity essentially refers to the range of living species, including fish, insects, invertebrates, reptiles, birds, mammals, plants, fungi and even micro-organisms. Biodiversity conservation is important as all species are interlinked, even if this is not immediately visible or even known, and our survival depends on this fine balance that exists within nature. Quarrying carries the potential of destroying habitats and the species they support. Even if the habitats are not directly removed by excavation, they can be indirectly affected and damaged by environmental impacts – such as changes to ground water or surface water that causes some habitats to dry out or others to become flooded.

## **AIR AND NOISE POLLUTION:**

Air pollution, due to dust from the mines, is a common environmental problem in mines and quarries especially open cast operations. The villages located in the vicinity of mines are suffering from air

pollution. Many people are suffering from asthmatic and lungs problems. Since the industrial revolution, air pollution has had a deep impact on human health, ecosystems, and stone materials. It is primarily caused by anthropic activities, particularly combustion processes involving fossil fuels and wood, which release various inorganic and organic gaseous and solid compounds into the air. It is widely acknowledged that the primary compounds that negatively affect the integrity of stone materials are the oxides that can react with water, leading to acid formation: carbon dioxide (CO<sub>2</sub>), nitrogen oxides (NO<sub>2</sub>), and sulfur oxides (SO<sub>2</sub>). These acids react with stone, especially carbonate-based materials such as marbles and limestones, resulting in deterioration.

Ground vibration and noise occur as a result of blasting. Blasting is the loading of explosives into drilled holes using detonating technique to achieve the desired fragmentation of the rock. Noise can



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interfere with human wellbeing such as hearing, sleep and speech and can cause stress-related diseases such as hypertension. The blasting of rocks in the study area has also caused some buildings to crack.

#### **SURFACE AND GROUND WATER POLLUTION:**

Water pollution is a major concern in mining operations, where ore is being processed in slurry form to enrich the low quality ore. Water is used in a lot of phases of the mining activity such as cutting, washing, separating out of stone and mud, transporter dust controlling system. This naturally involves water pollution due to the transport of suspended solid particles, involving both surface and ground waters. Concerning the surface waters, the impact is mainly caused by the introduction inside the drainage net of the waste products coming from the stone production the increasing the water turbidity and compromise the water net, moreover, the vegetation reduction due to the removal of the ground coverage provokes the increasing in the speed of surface slide.

#### **SOIL CONTAMINATION:**

Soil contamination around the quarrying site is mainly caused by oil spills by trucks and machinery used to extract sand. Thus, stone and sand quarrying also causes serious disturbance to soil, severe soil erosion, and loss of topsoil and removal of top cover. Soil in that area might get compacted because of the transportation of machines and materials.

#### **IMPACT ON ECOLOGY AND AGRICULTURE:**

Physiological disorders are largely the results of unfavorable environment with a negative impact on plant growth even though they are not infectious. Physiological or non-pathogenic disorders of crop plants are mainly caused by changing environmental conditions such as temperature, moisture, unbalanced soil nutrients, inadequate or excess of certain soil minerals, extremes of soil pH and poor drainage.

#### **FLORA AND FAUNA:**

Stone mining, like many other forms of resource extraction, can have significant impacts on flora and fauna. Here's a summary of some of the main effects:

##### **1. Habitat Destruction**

- **Flora:** Mining activities often require clearing large areas of vegetation. This loss of habitat can lead to a decline in plant species diversity and disrupt ecological processes. Important plant species may be completely eradicated, affecting the stability of the local ecosystem.
- **Fauna:** The destruction of habitats can lead to displacement of wildlife. Animals that rely on specific plants or habitats for food, shelter, or breeding may struggle to survive if their environment is altered or destroyed.

##### **2. Soil and Water Pollution**

**Flora:** Mining operations can lead to soil erosion and the contamination of soil with heavy metals and chemicals used in the mining process. Polluted soil can affect plant growth and may lead to the



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- death of sensitive plant species.
- **Fauna:** Polluted water sources can harm aquatic life, including fish and amphibians. Contaminants can enter the food chain, affecting not only aquatic species but also terrestrial animals that rely on these water sources.

### 3. Altered Ecosystems

- **Flora:** The introduction of mining operations can change the structure of local ecosystems. For example, changes in soil composition and drainage patterns can affect which plant species are able to thrive in the area.
- **Fauna:** Changes in the ecosystem can affect animal populations. Predators and prey relationships may be disrupted, and invasive species may take hold, further altering the balance of the ecosystem.

### 4. Noise and Dust Pollution

- **Flora:** Increased dust from mining operations can cover plant leaves, reducing photosynthesis and potentially leading to plant stress or death.
- **Fauna:** Noise pollution can disturb wildlife, leading to changes in behavior, stress, and sometimes abandonment of the area. Birds and other animals that rely on sound for communication may be particularly affected.

### 5. Fragmentation of Habitat

- **Flora:** Mining can create fragmented habitats, which can isolate plant populations and reduce genetic diversity. Small, isolated populations may be more vulnerable to extinction.
- **Fauna:** Fragmentation can lead to smaller, disconnected patches of habitat. This can make it difficult for animals to find mates, food, or migrate, leading to reduced populations and increased risk of extinction.

### 6. Climate Effects

- **Flora:** Mining activities can contribute to climate change through the release of greenhouse gases. Changes in climate can alter growing conditions for plants and lead to shifts in vegetation zones.
- **Fauna:** Climate change can affect animal migration patterns, breeding cycles, and food availability. Species that cannot adapt quickly enough may face extinction.

### Mitigation Measures

To reduce these impacts, mining operations can implement various mitigation strategies, such as:

- **Rehabilitation and Reclamation:** Restoring mined areas to their original state or creating new habitats.
- **Environmental Impact Assessments (EIAs):** Conducting thorough assessments before starting mining projects to understand and plan for potential impacts.
- **Best Practices:** Using techniques to minimize dust, manage waste, and reduce pollution.



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## **22. REMEDIAL MEASURES TO MITIGATE THE IMPACT OF MINING ON THE ENVIRONMENT**

### **Remedial Measures for other than Sand Mining:**

#### **▪ Remedial Measures for Air Pollution:**

- All machineries and transport vehicles will be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha' road shall be done.
- Water sprinkling at loading area.
- Tree plantation along the haul roads & approach road will be done. Plantation along the mine boundary shall be done with tree density of 2000 trees per Hectare as per the norms of MoEF & CC, to control dust & noise.
- Use of personal protective equipment like dust mask.
- Ambient air pollution monitoring will be carried out.

#### **▪ Remedial Measures for Water Pollution:**

- Mining is proposed to plan above the ground water table. Therefore, pumping of ground water from mine pit does not arise in the existing mines and ongoing mining projects to be execute in future shall plan accordingly. The rain water during rainy season is proposed to settle in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system.
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.

#### **▪ Remedial Measures for Noise Pollution:**

- Diesel powered machineries, which is major source of noise in open cast mining shall be properly maintained. Attention shall be paid towards rigorous maintenance of the silencer of the diesel engines.
- Protective devices shall be provided for use of persons employed in the vicinity of high noise areas.
- With the adoption of controlled blasting techniques, the ground vibrations will be minimized.
- Plantation around the lease boundary will cut the noise levels.

#### **▪ Remedial Measures for Land Environment:**

Some of the measures followed to minimize the impacts are as follows:

- The mining activities will be restricted within the lease area only.
- The waste material will be utilized for the construction of road and also will be used by the local people for construction work.
- The surface run off from the lease area will be retain within the lease and used for plantation, dust suppression and block cutting. So, there will be no soil erosion from the lease area and its surrounding due to mining activity.
- The dump will have inward slope with catch drains at inward side of the terrace and the catch drain of the individual terrace will be connected to the garland drain outside the periphery of the dump. Retaining wall and garland drain will be constructed around the





dumps and the surface runoff water pass through the garland drain and finally settled in a settling pit before released outside.

- Retaining wall and garland drains for the proposed waste dump will be constructed to arrest wash offs from the dump.
- Maintenance/repair of vehicles and machineries will not be inside the mining area. However, steel trays will be used for any emergency repair and sudden leakage of oil.

▪ **Remedial Measures for Waste Management:**

The solid waste shall be dumped systematically with proper repose angle and stabilization as follows:

- Gradation of dump shall be done automatically as coarser materials go to the bottom and finer at the top and therefore drain of rain water flow freely to the bottom without endangering the stability of dump.
- Stabilization of dump with top soil and tree plantation shall make the dump more stable on long. Dump should be terraced for every 5 m height and stabilized.
- 1m height parapet shall be constructed for dumps more than 6m height along the toe to prevent and control wash out from dumps entering into natural system through rain water.
- Garland drainage around dump shall prevent under wash of dump by hydrostatic pressure to be developed by surface water and control wash outs and collapse.

▪ **Remedial Measures for Flora and Fauna:**

Extensive plantation comprising of pollutant resistant trees will be undertaken, which will serve not only as pollution sink but also as a noise barrier. It is proposed to include azadirachta Indica, and ficus Religiosa in the plantation program as they serve as sinks for gaseous emissions.

The impact on the fauna due to the mining activity will be insignificant. The progressive plantation over a period of time will reduce the impact, if any, on the fauna.



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### **23. RECLAMATION OF MINED-OUT AREA**

**Reclamation of Mined out area (best practice already implemented in the district, requirement as per rules and regulation, proposed reclamation plan);**

**Reclamation of mined-out area:**

#### **Importance**

It is necessary to reclaim the land affected by mining due to following reasons:

- To put the land into productive use like agriculture, forestry or recreational purposes.
- To check soil erosion from dump leading to destruction of watersheds and siltation of River.
- Accumulation of huge quantity of water in worked out pits may pose threat to life and property.
- To combat adverse visual impact.

This requires two stage planning i.e. pre mining planning and post mining land use and monitoring. First stage considers all necessary measures to be taken for making second stage effective. This requires Environmental Impact Assessment (EIA) to be prepared. This should clearly bring out the likely impact of mining on environment, both biotic and a biotic and the likely extent of degradation, which may occur to the environment in the absence of any abatement measures. And to prepare this statement baseline information are required which includes geology/geomorphology, climate, hydrology/hydrogeology, hydro geochemistry and soil. Generation of information may also be required on quality of water, air and noise level, topography, land use pattern, demography of the area etc.

#### **Components:**

For successful reclamation following points are to be considered

- Listing inventory of pre mining condition.
- Monitoring flexibility of mining programme in the light of efficient land reclamation.
- Evaluation of the post mining requirements of the region and to decide on the needs and desire of the affected ground.
- To make reclamation planning suitable to techno-economical and socio political environment.
- To assess the physio-chemical characteristics of overburden.
- Extra cost of preservation, re-handling, spreading and levelling of subsoil and topsoil.
- Knowledge of hydrogeological/geomorphological conditions. Aesthetic and/or historic value of land.



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

The area is hilly area. No possibility to flooding the area. Since, the pits are developed on the hard compact and medium grain rocks hence, there are no possibilities of slope failure. The Risk Assessment & Risk Management Plan will be prepared for safety of man & machinery deployed in the mining activities as per Mining Act, Rules, and Regulations & DGMS circulars.

Mining activity because of the very nature of the operation, complexity of the systems, procedures and methods always involves some amount of hazards. Hazard identification and risk analysis is carried for identification of undesirable events that can leads to a hazard, the analysis of hazard mechanism by which this undesirable event could occur and usually the estimation of extent, magnitude and likelihood of harmful effects. The activities which can cause high risk related to face stability and the person blasting the shots. It was observed that on a working face of the mine, there were large cracks and unsupported rocks were present, which can lead to a serious hazard and injure workers engaged in loading operation and machineries because of rock falls or slides. This type of condition turns out because improper dressing of the bench and improper supervision. To avoid the hazards due to fall of rocks the face must be examined, made suitable for working and the remedial measures must be taken to make it safe if there is any doubt that a collapse could take place. Working of the face should be in the direction taking into account the geology of the area such that face and quarry side remain stable. Another major risk identified in mines is due to the firing of explosive by an unqualified person. In the mines, there is problem of fly rocks and the village is located close to the mine and so it is rated high as it can affect many people.

Explosives by nature have the potential for the most serious and catastrophic accident. Planning of round of shots, holes correctly drilled, direction logged, weight of explosive suitable for good fragmentation are the few of the steps necessary to ensure its safe use and if the shots are not properly designed can result in misfires, early ignition and flying rocks. No person is allowed to use explosives without being properly trained in its handling.

In the mine a large numbers of heavy vehicles were in operation and the roads were not proper for haulage purpose. The haulage roads were not even and were not wide enough for the crossing purpose and hence, the chances of hazards are very high. The main hazards arising from the use large earth moving vehicles are incompetent drivers, brake failure, lack of all-around visibility from the driver position, vehicle movements particularly reversing, roll over, and maintenance. Those most at risk are the driver and pedestrians likely to be struck by the vehicle, and drivers of smaller vehicles, which cannot be seen from the cabs of large vehicles. Edge protection is always necessary to prevent inadvertent movement over the edge of roadway or a bench. Seatbelt will protect driver in case of roll. Good maintenance and regular testing are necessary to reduce the possibility of brake failure. Access to the vehicles should always be restricted to those people necessary for the work in hand. The use of personal protective equipment and proper arrangements to check if the person is wearing a personal protective equipment or not is essential. The personal protective equipment includes helmet, non-skid safety boots, safety glasses, earmuffs etc.

The required personal protective equipment should be provided and used in a manner that protects the individual from injury. Few minor injuries which can be prevented are slip, trip, or fall hazards; hazards due to rock falls and collapse of unstable rocks, atmosphere containing toxic or combustible gases; protects from chemical or hazardous material etc.

A disaster management plan should be prepared for taking care of for any disaster. Other risk which are included in this category are noise, as it occurs and it can lead to permanent disability. There are problems related to road traffic in and out issuers; inappropriate exposure of moving machines; mechanical failure and because of large number of moving trucks and dumpers there is large quantity of dust present in roadways which affects the operators and can lead to accidents



*[Signature]*  
District Mining Officer  
Jamtara



causing injury. They are in acceptable range because of precautions measures taken but no step is taken it can cause hazard. Hence, the steps should be taken to reduce the hazards such as for dust suppression system should be installed.

Disaster in the mines like fires, explosions, entrapments, and inundations can occur any time, so emergency preparedness is a must. The Disaster Management Plan and risk assessment in the mines will include all sorts of above mentioned emergency and the extent that this plan will be implemented will depend on the nature and scope of the emergency. The basic purpose of Disaster management plan and risk assessment to ensure that mine rescue and recovery activities are conducted safely for rescuer and survivors. According to MMR 1961 a standard operating procedure should be drawn for involvement different category of staff and officers. The SoP should be updated periodically to reduce the chaos and response to the emergency should be quick and smooth.

The responsible person should be familiar with his responsibility during the mock drills. One or two standby should be there to replace the person in Emergency situation. Rescue operations should not include the survivors for any assistance. First Information of Disaster/Emergency should go to the attendance clerk on duty. Duties of attendance Clerk (Emergency Siren) the attendance clerk or other designated person should on getting information of major accident, sound a hotter or a siren immediately declaring a state of emergency at the mine and then to contact the manager and on his advice to call key personnel using the information listed in the Emergency Organization Chart. It is important that all telephone calls are recorded in a telephone log book. Duties of Other Officials should be displayed and handed over to all concerned. Copy the same should be kept at Manager's Office for ready reference. Establishment of Control Room at Unit Level, Area Level and Company Level is essential. Control Room should keep the contact information about –

- Company Manager
- Company Owner/Administrative Officer
- District Administration
- Govt. Hospitals in nearby localities
- Private Nursing Homes of localities

#### 24.1 General

Mining activities are associated with risk that can turn into hazard to life & health if not addressed in time & adequately. This need to be identified & mitigation measures are to be provided to prevent it on measures to be taken to minimize its effects.

#### 24.2 Categorization of Risks

Risk associated with mining projects may be, broadly, categorized into two categories namely on site & off site Risk. They are described below.

#### 24.3 On Site Risks

On site risks that need to be addressed are described, below in brief.

##### 24.3.1 Natural

##### **Risk in mining project may arise due to natural phenomena**

- a) Flooding of opencast / underground working due to heavy rains ingress of water from nearby water body i.e. river, reservoir etc.
- b) Earthquake: - Earthquake in the area may cause damage to life & property.
- c) Land slide: - There might be Land slide in external dump or high wall of opencast mine.

##### 24.3.2 Mechanical

Operation of mine involves use of a number of Heavy earth moving Machines including Drills, Backhoe, Shovel, dumper etc. Operation of these equipment's may cause accident leading to loss



*[Signature]*  
District Mining Officer  
Jamtara



of life or equipment's similarly material including row material, waste material & product are to be transported by road using dumper, tipper. Unregulated transportation may Lead to road accident.

#### **24.3.3 Electrical**

Project operation required operation of electrical equipment. They operated on high voltage & use cables. Use of electrical equipment may cause fire or electrocution.

#### **24.3.4 Fire**

Operation of mine required use of electrical power & diesel oil use of electrical power & oil may cause Fire.

#### **24.3.5 Blasting**

Operation of mine needs blasting using explosives. Unattended & unplanned blasting may cause accident.

#### **24.3.6 Risk Due to Environmental Pollution**

Mining activities may cause health risks for workmen they may be due to exposure to high level of dust or noise in work area.

#### **24.3.7 Offsite Risks**

Mining and allied activities may also cause offsite risk. They are briefed below.

#### **24.3.8 Road Accident**

Mining operation & allied activities need Transportation of row material & furnished product on public road. Movement of heavy vehicles may cause road accident.

#### **24.3.9 Ground Vibration**

Ill planned blasting may cause ground vibration outside the lease area that may affect stability of structures located in close vicinity.

#### **24.3.10 Blasting**

Ill planed blasting may produce fly rocks that may cause injury to people/animal in vicinity of lease area.

#### **24.3.11 Environmental Pollution**

Project activities may generate environmental pollution that may attest health of people living in vicinity of lease area.

#### **24.3.12 Risk and Disaster Management**

Kipping above in consideration, proper risk and disaster management plan need to be developed along with mining plan for all mining project. Operated strictly following DGMS rules. D.M.P. Will have following components. All mines should be planned.

#### **24.3.13 Flooding**

The drainage plan of the mine has to be prepared consideration the maximum rainfall in the area corresponding to maximum quantity of water accumulated in quarry, sufficient capacity of pump need to be prodded for preventing flooding.

#### **24.3.14 Earthquake**

If the mine is in zone iii & above of impact of earthquake must be integrated with planning & design of the project.





**24.3.15 Land Slide**

To prevent land slide in the mine following measures need to be taken nature of rock corresponding to

- i. Proper slope to be provided to advancing bench of the mine.
- ii. Proper slope (45° - 50°) to be provided for terminal slope to the quarry.
- iii. External dump has to be properly planned with proper side slope to prevent slope failure.

External dump should be located on a stable ground with load bearing capacity to support load of external dump.

External dump should be proper drainage plan to prevent building up of internal hydraulic pressure.

**24.3.16 Mechanical**

- i. Regular training to equipment operator.
- ii. Regular repair & maintenance of equipment.

**24.3.17 Electrical**

- Electrical system need to be designed following relevant prevailing rules as per Act.
- Regular maintenance and upkeep of cables, switches etc.

**24.3.18 Road Accident**

- Proper lay out of internal roads within the lease area.
- Ensure speed limits within lease area.

**24.3.19 Vibration and Blasting**

- Proper design of Blasting pattern to ensure ground vibration within limit.
- Use of optimal quantity of explosives.
- Hooter should be used to inform & warn workman before blasting in done.

**24.3.20 Environmental Pollution**

- All workmen to be provided with ear mutt & mask.
- Pollution control measures to minimize environmental pollution.
- Regular health check-up of workman as per DGMS Rules.
- Trucks with Pollution under control certificate to be allowed.

**24.3.21 Disaster Management Plan**

• **Provision of Siren:** - Arrangement to be made to provide siren to inform workman about occurrence of accident and instruction that on hearing siren mining activities to be stopped & assemble at pre - determined area.

• **First Aid Centre:** - A first-aid Centre to be provided next to mine office.

• **Arrangement for Medical Aid:** - Arrangement shown be in place so that services ambulance can be available for rescue of injured workmen.

Provided medical attendance to them. For this purpose, Hospital/Nursing homes with ambulance facility need to be identified.

• Arrangement to be made for information to police and local administration.

• An executive to be nominated who is responsible for handling disaster situation.

• Mine office should serve as control room with telephone facility phone number of hospital, police station, local administration should be readily available.

**24.4 Risk & their Probability:**

RISK IDENTIFIED	PROBABILITY
Fire in diesel stored for operation of equipments.	LOW As proponents procure diesel on daily basis in absence of proper storage.



*District Mining Officer  
Jamtara*

DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



In most of places electrical power is not available.	
<b>Blasting</b> for mining of stone. On an average a Stone mine would produce 250 T/Day in small Stone mines. This will use approx. 35 Kgs of explosives. This produces ground vibration and fly rock. Vibration may affect stability of structure & fly rock may injure people.	<b>LOW</b> Since mines are located 500m away from habitated area problem of ground vibration & fly rock are of low risk.
<b>Road Accident</b> This may be due to movement of vehicles on road carrying minerals.	<b>LOW</b> As number of vehicles per day in small mine may be 25-30 trips per day. Advice vehicles operator to control speed near habitation area.
<b>Electrocution</b> In case of mines which operated on electrical power. Power cables are used. There is risk of electrocution.	<b>LOW</b>
<b>Environmental Pollution</b> Due to; ✓Blasting ✓Drilling ✓Handling ✓Transporting	<b>MEDIUM</b> Environmental Pollution can be controlled by suitable mitigative measures including; ✓Using optimal quantity of explosive. ✓Water Sprinkling on drilling site. ✓Trucks carrying product stone to be covered. ✓Regular water sprinkling on haul road. ✓Vehicles with pollution under control certificate. ✓Plantation in safety zone. ✓Avenue plantation along link road.

Natural Risk		
Earthquake	<b>LOW</b> As district fall in Zone II which is low risk zone.	
Flood	<b>LOW</b> ✓All identified potential areas are away from river. ✓Proper arrangement for dewatering of quarry during the monsoon period.	
Slope Failure	<b>LOW</b> Mineral resource is massive deposit having no shear planes. Hence land slide risk is low. Moreover, running slope will be maintain at 75" to avoid slope failure.	
<b>LOW</b>	<b>MEDIUM</b>	<b>HIGH</b>
0% to 30%	30% to 60%	60% to 100%



*[Signature]*  
District Mining Officer  
Jamtara



## **25. DETAILS OF THE OCCUPATIONAL HEALTH ISSUES IN THE DISTRICT**

**Details of the Occupational Health issues in the District. (Last five-year data of number of patients of Silicosis & Tuberculosis is also needs to be submitted);**

### **Occupational Health Hazard and Remedial Measures**

The persons employed in the mines are exposed to a number of hazards at work which adversely affect their health. Some of the important ones are dust, noise, heat, humidity, vibration etc. In recent times, there has been increasing awareness among mining industry and the workers about occupational diseases such as Coal Worker's Pneumoconiosis, Silicosis, Manganese Poisoning, Hearing Impairment etc. caused by exposure to health hazards at work. Almost all occupational diseases are known to cause permanent disablement and there is no effective treatment. However, most of the occupational diseases can be prevented by adopting proper occupational health measures and engineering control on airborne dust at workplace. 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 21<sup>st</sup> July, 1952

1. Silicosis
2. Pneumoconiosis

S.R. O. 2521 dated the 26<sup>th</sup> June, 1986

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

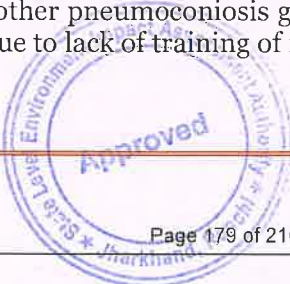
25 S.O. 399(E) dated 21<sup>st</sup> February, 2011

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

### **System of Detection of Occupational Diseases in Mines**

In order to detect occupational diseases, the industry is required to conduct medical examinations and health surveillance of workers as per the provisions of Mines Act. The present efforts of mines management are concentrated on detection of silicosis, Pneumoconiosis and other notified diseases. Very little attention is paid to other occupational diseases. The essential features of health surveillance programme required to be carried out in mines are:

- (a) Initial Medical Examination of persons to be employed in mines.
- (b) Periodic Medical Examination once every five years. General physical examination, chest radiographs, lung function tests and audiometric.
- (c) Classification of chest radiographs of workers as per ILO Classification.
- (d) Medical examination within one year of superannuation.
- (e) Evaluation of all cases of suspected pneumoconiosis by Pneumoconiosis Medical Board.
- (f) Maintenance of medical records till the person is in service and 10 years thereafter. The cases of Silicosis detected during health surveillance programme are referred to Pneumoconiosis Medical Board of the mining companies for evaluation and certification. If certified, the case is notified to the enforcement authority and evaluated for disability and payment of compensation. Many cases of silicosis and other pneumoconiosis go undetected and a large number of cases of Silicosis are misdiagnosed due to lack of training of medical professionals.



*[Signature]*  
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Jamtara

DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



As discussion with Jamtara District Civil Surgeon Office, there are not any cases of Silicosis & Tuberculosis, due to Stone mining activity in last five-years in Jamtara district and further the data of number of patients of Silicosis & Tuberculosis, due to Stone mining activity are not found.



कार्यालय:-जिला स्वास्थ्य समिति, जामताड़ा।

2024

पत्रांक 622(DMS)

प्रेषक : सिविल सर्जन-सह-सचिव,  
जिला स्वास्थ्य समिति, जामताड़ा।

सेवा में,

जिला खनन पदाधिकारी,  
जामताड़ा।

विषय : Sillicosis & TB मरीजों के विवरणी के संबंध में।

दिनांक - 19/07/24

प्रसंग : भवदीय का पत्रांक 508/एम0, जामताड़ा, दिनांक 16.07.24

महाशय,

उपरोक्त प्रसंगाधीन विषयक संदर्भ में कहना है कि लघु खनिज (बालू छोड़कर) का DSR तैयार करने हेतु Draft DSR का सिरियल नं0-27 के संदर्भ में Sillicosis & TB मरीजों से संबंधित सूचना (विगत पाँच वर्षों का) की माँग की गई है जो निम्न प्रकार है :-

Sl.	YEAR (April- March)	Sillicosis patients	TB patients
1	2018-2019	0	941
2	2019-2020	0	1029
3	2020-2021	0	668
4	2021-2022	0	837
5	2022-2023	0	1161
6	2023-2024	0	452

विश्वास भाजन

सिविल सर्जन-सह-सचिव,  
जिला स्वास्थ्य समिति, जामताड़ा।

DHS,JAMTARA



District Mining Officer  
Jamtara



## **26. PLANTATION AND GREEN BELT DEVELOPMENT**

### **28.1 Plantation and Green Belt Development in respect of leases already granted in the District;**

Green belt along lease boundary and both sides of transportation road shall be developed in almost all the existing leases in the district. Maximum numbers of plants shall be planted in each year around the lease boundary and both sides of transportation road as mentioned in mining plan. Some mine owner also planted a large number of plants outside the lease area to develop green belt in the district. Neem, Sheesham, Aam, Sal, Arjun, Teak, Mahua, Ashoka, Jamun, Pipal, Banyan etc. are some important plants commonly planted in mine site of Jamtara district.

It is proposed to have a detailed record of plantation to be kept by the respective owner/agent/manager of the mine every year, which has been planted in the safety zone area and transport rout, which is statutorily required. As per the norms of the forest department, the plantation has to be carried out at the rate of 2500 local plants per hectare and along the road side, at an interval of 2 meters in the zig-zag manner in both sides.

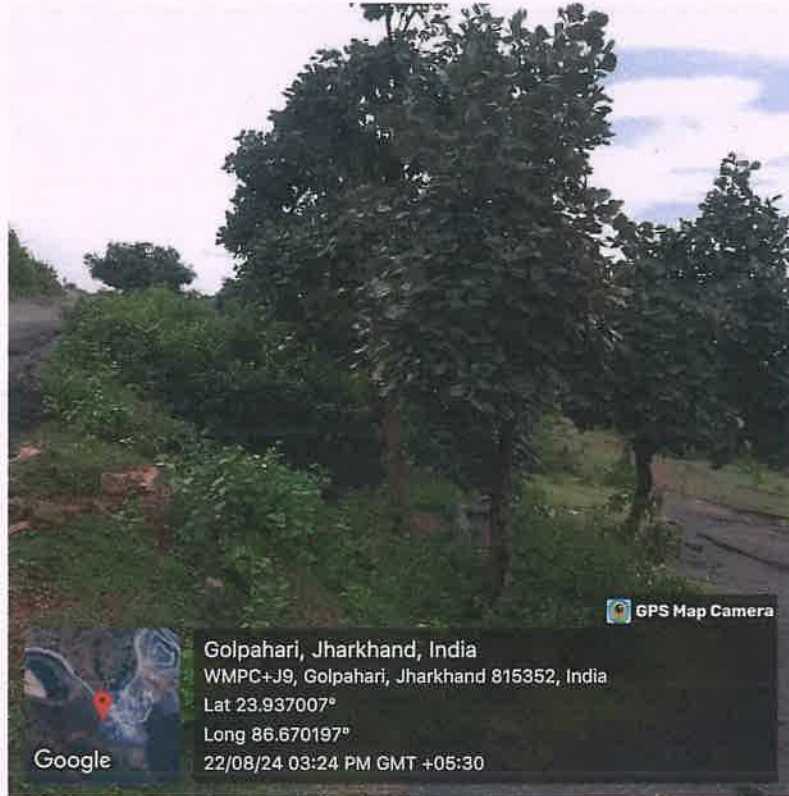
  
District Mining Officer  
Jamtara



DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



*[Signature]*  
 District Mining Officer  
 Jamtara



*M/s Anil Kumar Pandey*  
Contractors & Suppliers

पं सं: AKP/DMO/Jamtara/53

दिनांक: 18.07.2024

सेवा में,  
विभाजन पर्यावरणीय  
प्रशासक, झारखण्ड

विषय:- सड़क कृषि का DSA Approval के सम्बन्ध में।

संदर्भ :- पर्यावरण SDR/एन, जामतरा, विनांक - 16/07/2024

महोदय,

उपर्युक्त विषय के संबंध में कहना है कि मेरे मीठा बोलपट्टाही क्षेत्र पर खनिज भ्रमण पट्टा में गोधारापन का कर्म कर लिया गया है।

यह पत्र आपके मूल्यांकन हेतु विभाजन कार्यालय में विभाजित पत्र है।

आपका विश्वासी

*Anil K. Pandey*

(प्रमाणित हस्ताक्षर)

Lessee Code :- 0624449601

Site Off: Vill Golpahari, P.S. - Dist. Jharkhand, PIN - 815352, Jharkhand  
Corp. Off: Flat No. 109, Laxmi Vihar Apartment, Condo Road, Ranchi - 816009, Jharkhand  
Rand. Off: +91 9731219579 101 E-mail: pandey.anil0@gmail.com



*Anil K. Pandey*  
District Mining Officer  
Jamtara

DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



Approved  
 Page 184 of 210  
 Jharkhand, Ranchi

*[Signature]*  
 District Mining Officer  
 Jamtara



GPS Map Camera  
 Golpahari, Jharkhand, India  
 WMPC+J9, Golpahari, Jharkhand 815352, India  
 Lat 23.938823°  
 Long 86.671164°  
 22/08/24 03:18 PM GMT +05:30  
 Google



GPS Map Camera  
 Golpahari, Jharkhand, India  
 WMPC+J9, Golpahari, Jharkhand 815352, India  
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 Google



GPS Map Camera  
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 Long 86.671191°  
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 Google

**KAMAL BHUSHAN**  
 Stone Mines & Crusher

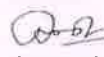
पं० सं०: KB/DMO/Jamlara:60 दिनांक: 18.07.2024

सेवा में,  
 जिला खनन पदाधिकारी  
 जामताड़ा, झारखण्ड

विषय:- लघु खनिज का DSR Approval के सम्बन्ध में।

संदर्भ :- पत्रांक 509/एम०, जामताड़ा, दिनांक - 16/07/2024

महोदय,  
 उपर्युक्त विषय के संबंध में कहना है कि मेरे मौजा गोलपहारी क्षेत्र पर धारित खनन पट्टा में पौधारोपण का कार्य कर लिया गया है।  
 यह पत्र आपके मुचनार्थ हेतु जिला खनन कार्यालय में दिया जा रहा है।

आपका विद्यार्थी  
  
 (मं. कमान भूखण्ड प्रो पवन कुमार झा)  
 Lessee Code :- 0624108901

2024

Regd. Off. " Sri Bhawanath Bhawan", Malhenkam, PO - Hehal, PS - Sukhdeo Nagar, Ranchi - 834005, JH  
 Contact no: 944115144, 954330739 DM, E-mail: pandey.ansu0@gmail.com



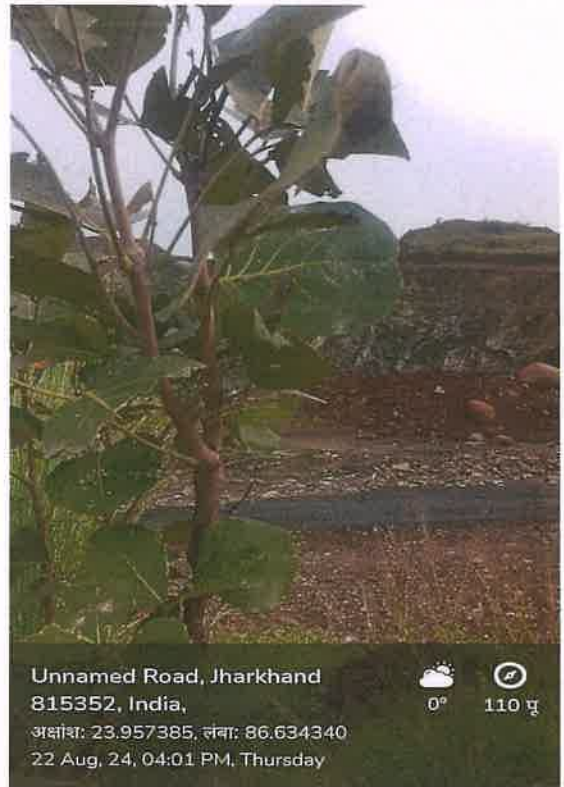
*(Signature)*  
 District Mining Officer  
 Jamtara

DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



Approved  
District Mining Officer  
Jamtara

Approved  
District Mining Officer  
Jamtara



Unnamed Road, Jharkhand  
 815352, India,  
 अक्षांश: 23.957385, लंबा: 86.634340  
 22 Aug, 24, 04:01 PM, Thursday

0° 110 पृ



Unnamed Road, Jharkhand  
 815352, India,  
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 22 Aug, 24, 04:06 PM, Thursday

0° 293 उ पृ



बान्डी (PWR)  
 प्रॉजैक्ट नं. JRDY  
 82  
 4.74 PCRE  
 21.02.2016  
 10:40 02.10.23



*[Signature]*  
 District Mining Officer  
 Jamtara



Unnamed Road, Jharkhand  
815352, India,

अक्षांश: 23.957352, लंबा: 86.634057  
22 Aug, 24, 03:58 PM, Thursday

0° 269 प



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815352, India,

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22 Aug, 24, 03:59 PM, Thursday

0° 282 प



Unnamed Road, Jharkhand  
815352, India,

अक्षांश: 23.957385, लंबा: 86.634340  
22 Aug, 24, 04:05 PM, Thursday

0° 305 उपू



*[Signature]*  
District Mining Officer  
Jamtara

# M/S MAA SHAKTI CORPORATION

प० सं०: MSC/DMO/Jamtara/03

दिनांक: 18.07.2024

सेवा में,

जिला खनन पदाधिकारी

जामताड़ा, झारखण्ड

विषय:- लघु खनिज का DSR Approval के सम्बन्ध में।

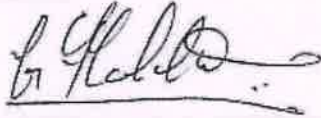
संदर्भ :- पत्रांक 509/एम०, जामताड़ा, दिनांक - 16/07/2024

महाशय,

उपर्युक्त विषय के संबंध में कहना है कि मेरे मौजा नयाडीह क्षेत्र पर धारित खनन पट्टा में पौधारोपण का कार्य कर लिया गया है।

यह पत्र आपके सूचनार्थ हेतु जिला खनन कार्यालय में दिया जा रहा है।

आपका विश्वासी



(मे. माँ शक्ति कारपोरेशन)

Lessee Code :- 0624558801

Site Off: Vill- Nayadih, P.S. + Dist.- Jamtara, PIN - 815351, Jharkhand



  
District Mining Officer  
Jamtara



Approved  
District Authority  
Jharkhand, Ranchi

*[Signature]*  
District Mining Officer  
Jamtara



**RAH AGRO TECHNOCRATS PVT. LTD.**

Regd. Office: Village No. 112, Road No. 7  
 All Kharwa Nagar, Jharkhand, India - 800001  
 Local Address: Village of Ganda Pura, Dist. Bardhaman, Pin- 801101  
 Email ID: rahagro@rediffmail.com

Ref No-

Date- 22/08/24

सेवा में

जिला खनन पदाधिकारी

जामताड़ा, झारखण्ड

विषय: तपु खनिज का DSR Approval के सम्बन्ध में।

संदर्भ: पत्रक 509/एम० जामताड़ा दिनांक - 16/07/2024

महोदय,

तपुखनन विषय के सम्बन्ध में कहना है की मेरे मौजा Kenduatanr क्षेत्र पर धरित खनन पट्टा में योजनांकन का कार्य कर लिया गया है। गैर खनन पट्टा क्षेत्र में 2.25 बीघा लगाया गया है।

यह गत आपके सूचनाएं हेतु जिला खनन जगतालाप में दिया जा रहा है।

आपका विश्वसनी

RAH AGRO TECHNOCRATS PVT. LTD.

Harindra K. Singh

DIRECTOR

(Rah Agro Technocrats PVT. LTD.)

Lease Code: 0624131301



*[Signature]*  
 District Mining Officer  
 Jamtara

DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



*[Signature]*  
District Mining Officer  
Jamtara



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 District Mining Officer  
 Jharkhand, Ranchi  
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District Mining Officer  
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**M/S MAX ALERT SYSTEM LIMITED**

SAWLAPUR, NARAYANPUR  
JAMTARA  
DIST. JAMTARA  
JHARKHAND (815353)

PAN-AAECM0770G

E-mail - [msalertsystem@gmail.com](mailto:msalertsystem@gmail.com)

Date: - 22/08/2024

**To,**

The District Mining Officer  
Jamtara, Jharkhand

Ref No- 509/M, dated - 16/07/2024

Subject- DSR approval **for** minor minerals

As per the above subject **our** lease area Sawlapur mines plantation work **of 100** plant has been done.

This letter **is** hereby submitted **to your** office **for** documentary record.

Thankyou

Yours's faithfully  
Max alert system limited  
0624861201



*Signature*  
District Mining Officer  
Jamtara



Environment Impact  
Approved  
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Jharkhand, Ranchi

District Mining Officer  
Jamtara



*[Signature]*  
District Mining Officer  
Jamtara

**DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND**



Sl. No.	Stone mines	Address of Mines	Status of Mines	Area of Mines (Ha.)	Total Plantation as per EC	No of plantation at site	Remarks
1	Shri Kamal Bhushan Golpahari Stone Mines	Mouza - Golpahari Block - Jamtara Panchyat - Sukhjora P. S. - Jamtara P. O. - Gundlipahari District - Jamtara	Working	4.45	2350	138	2212
2	M/S Amit Kumar Pandey, Golpahari Stone Mines	Mouza - Golpahari Block - Jamtara P. S. - Jamtara P. O. - Dhobna District - Jamtara	Working	4.45	2350	110	2240
3	Rah Agro, Kenduatnr Stone Mines	Mouza - Kenduatand Block - Narayanpur P. S. - Narayanpur P. O. - Narayanpur District - Jamtara	Working	1.730	914	115	799
4	M/S Maa Shakti Corporation, Nayadih Stone Mines	Mouza - Nayadih Block - Narayanpur P. S. - Narayanpur P. O. - Gokula District - Jamtara	Working	2.428	1278	95	1183
5	M/S Max Alert System Sawalpur Stone Mines	Mouza - Sawalapur Block - Narayanpur P. S. - Narayanpur P. O. - Sawalapur District - Jamtara	Working	3.43	1812	155	1657
6	M/S Maa Durga Enterprises Piplatada Stone Mines	Mouza - Pipalatada Block - Narayanpur P. S. - Narayanpur P. O. - Narayanpur District - Jamtara	Working	1.950	1030	145	885
7	Shri Sujit Kumar Yadav Bandarpahari Stone Mines	Mouza - Bandarpahari Block - Fatehpur P. S. - Bindapathar P. O. - Tilaki District - Jamtara	Non-Working	1.918	1013		
8	Shri Nityanand Yadav Salpra Stone Mines	Mouza - Salpra Block - Fatehpur P. S. - Bindapathar P. O. - Tilaki District - Jamtara	Non-Working	1.639	866		
9	Md. Azaz Ansari & Md. Saddam Ansari Kelahi Stone Mines	Mouza - Kelahi Block - Jamtara Panchyat - Piyalsola P. S. - Mihijam P. O. - Kelahi District - Jamtara	Non-Working	0.488	258		
10	Shri Binanjay Bharti S/o Late Ravindranath Bharti Golpahari Stone Mines	Mouza - Golpahari Block - Narayanpur P. S. - Narayanpur P. O. - Golpahari District - Jamtara	Non-Working	11.000	5808		



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**DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND**



11	M/s Sanjeet Hembrom Managing Partner: Shri Amrendra Tiwari Chandradipa Stone Mines	Mouza - Chandradipa Block - Jamtara P. S. - Mihijam P. O. - Mihijam District - Jamtara	Non-Working	5.000	2640		
12	M/s Shiv Durga Mining Project Teliyadh Stone Mines	Mouza - Teliyadh Block - Karmatanr P. S. - Karmatanr P. O. - Karmatanr District - Jamtara	Non-Working	2.43	1284		
13	Shri Uttam Kumar Mahto S/o Girdhari Mahato Sahajpur Stone Mines	Mouza - Sahajpur Block - Karmatanr P. S. - Karmatanr District - Jamtara	Non-Working	6.47	3417		

**Undertaking**

The Deputy Commissioner through District Mining Officer will ensure that the respective mines owner of the respective leases shall complete the plantation within six months from the date of approval of District Survey Report..

*[Signature]*  
District Mining Officer  
Jamtara





## 27. ADDITIONAL INFORMATION

### Details of Identified Potential Deposits of Stone, Quartz / Feldspar & Bricks in Jamtara, Jharkhand:

IDENTIFIED POTENTIAL DEPOSITS [STONE, QUARTZ/FELDSPAR & BRICKS]			
Sl. No.	Name of the Mineral	Area of Mining Lease to be allotted (Ha)	Address of the Mining Lease
1	2	3	4
1	Stone	3.64	Mouza - Bhalsunda Plot No. - - 1721 Block - Jamtara
2	Stone	1.62	Mouza - Putuljora Khesra No. - 1791 Block - Fatehpur
3	Stone	0.89	Mouza - Kalajhariya Plot No. - - 100 Block - Nala
4	Stone	3.64	Mouza - Bhalsunda Plot No. - -172/Ansh Block - Jamtara
5	Stone	3.34	Mouza - Sawalapur Plot No. - - 421 Block - Narayanpur
6	Stone	1.32	Mouza - Piplatand Plot No. - 251 to 260 and 283, 284 Block - Narayanpur
7	Stone	1.85	Mouza - Piplatanr Plot No. - -180, 181, 184, 185, 187, 198, 199, 201, 202 Block - Narayanpur
8	Stone	0.82	Mouza - Banspahari Plot No. - -162 to 168 Block - Narayanpur
9	Stone	0.83	Mouza - Ladhna Plot No. - - 1455, 1461, 1471 Block - Jamtara
10	Stone	1.38	Mouza - Piplatanr Plot No. - - 251 to 253 Block - Narayanpur
11	Stone	1.38	Mouza - Banspahari Plot No. - - 162 to 168 and 165/1532 Block - Narayanpur
12	Stone	4.14	Mouza - Piplatanr Plot No. - - 673, 680, 681, 682, 768, 767, 764, 765, 766, 763, 750, 751, 752, 749 Block - Narayanpur
13	Stone	1.74	Mouza - Banspahari



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DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



			Plot No. - -380, 385, 384, 515, 517, 516, 520, 521 Block - Narayanpur
14	Stone	0.83	Mouza - Piplatanr Plot No. - 251 to 258 Area - 1.36 Acres and Mouza - Banspahari Plot No. - -162 to 166 and 165/1532 Area - 0.68 Acres Block - Narayanpur
15	Stone	1.85	Mouza - Piplatanr Plot No. - 1180, 1181, 1184, 1185, 1187, 1198, 1199, 1201 and 1202 Block - Narayanpur
16	Stone	2.13	Mouza - Piplatanr Plot No. - - 56, 57, 58, 60, 61, 62, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82 Block - Narayanpur
17	Stone	2.02	Mouza - Piplatanr Plot No. - - 1884, 1885, 1198, 1199, 1201, 1202, 1205, 1206, 1207, 1180 Part 1181, 1187 Block - Narayanpur
18	Stone	1.27	Mouza - Phuljori Plot No. - -1859, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1881 Block - Jamtara
19	Stone	2.74	Mouza - Banspahari Plot No. - - 522, 5241, 528, 527, 529 to 540 Block - Fatehpur
20	Stone	1.13	Mouza - Banspahari Plot No. - - 522, 530, 531, 533, 534, 535, 536, 537, 538, 539 Block - Fatehpur
21	Stone	2.73	Mouza - Rampur Plot No. - - 714, 715, 716, 717, 792, 793, 794 Block - Nala
22	Stone	1.74	Mouza - Banspahari Plot No. - -380, 385, 384, 515, 517, 516, 520, 521 Block - Fatehpur
23	Stone	1.27	Mouza - Phuljori Plot No. - -1859, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1881 Block - Jamtara
24	Stone	2.67	Mouza - Piplatanr Plot No. - -768, 767, 764, 765, 766, 763, 750, 751, 752 and 749 Block - Jamtara
25	Stone		Mouza - Piplatanr Plot No. - - 763, 767, 769, 749, 750, 751, 752, 765, 764, 766 Block - Jamtara
26	Stone	2.91	Mouza - Chandradipa Plot No. - - 641, 1148, 1149, 1151/P, 649, 636, 637, 638, 1147, 640, 1154/P, 1152/P and 1153/P Block - Jamtara



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DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



27	Stone	1.91	Mouza - Banspahari Plot No. - - 530, 533, 534, 535, 536, 537, 538, 540, 542(P) 531, 522 Block - Fatehpur
28	Stone	0.45	Mouza - Mahajori Plot No. - 766 Block - Nala
29	Stone	6.07	Mouza - Kelahi Plot No. - 5288/Part Block - Jamtara
30	Stone	0.61	Mouza - Purnanagar Plot No. - 114/Part Block - Narayanpur
31	Stone	1.21	Mouza - Khamarbad Plot No. - 86 Block - Nala
32	Stone	1.62	Mouza - Golpahari Plot No. - 2357/Part Block - Jamtara
33	Stone	0.61	Mouza - Bardehi Plot No. - 354 Block - Nala
34	Stone	0.61	Mouza - Bardehi Plot No. - 354/Part Block - Nala
35	Stone	0.53	Mouza - Bardehi Plot No. - 693/Part Block - Nala
36	Stone	0.36	Mouza - Hathiyapathar Plot No. - 661 Block - Nala
37	Stone	0.67	Mouza - Nawaikol Plot No. - 1035 Block - Jamtara
38	Stone	1.01	Mouza - Muram Plot No. - 597/Part Block - Nala
39	Stone	1.62	Mouza - Nildaha Plot No. - 2259 Part Block - Jamtara
40	Stone	0.48	Mouza - Nawadih Plot No. - 785 Block - Narayanpur
41	Stone	4.86	Mouza - Nildaha Plot No. - 2259/P, 2296/A Block - Jamtara
42	Stone	6.07	Mouza - Karmoi Plot No. - 1306 Block - Narayanpur
43	Stone	0.81	Mouza - Putuljore Plot No. - 2/7, 2/12, 2/13, 8/18 Block - Fatehpur



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DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



44	Stone	1.01	Mouza - Karmatanr Plot No. - 504/Part Block - Karmatanr
45	Stone	0.40	Mouza - Nayadih Plot No. - 3234/Part Block - Narayanpur
46	Stone	1.46	Mouza - Putuljore Plot No. - 1791/Part Block - Fatehpur
47	Stone	0.40	Mouza - Hariharpur Plot No. - 32/225 Block - Narayanpur
48	Stone	1.62	Mouza - Murgatona Plot No. - 2182/Part Block - Jamtara
49	Stone	0.81	Mouza - Kuchakuri Plot No. - 197/Part Block - Nala
50	Stone	0.38	Mouza - Fofnad Plot No. - 169, 170, 171 Block - Karmatanr
51	Stone	0.40	Mouza - Fansidangal Plot No. - 3 & 7 Block - Fatehpur
52	Stone	0.67	Mouza - Bolborai Plot No. - 883 to 887 Block - Nala
53	Stone	0.21	Mouza - Nawaikol Plot No. - 401 Block - Jamtara
54	Stone	6.00	Mouza - Kichakuri Plot No. - 197/Part Block - Nala
55	Stone	2.43	Mouza - Gundlipahari Plot No. - 700, 704 Block - Jamtara
56	Stone	0.81	Mouza - Bhandarkol Plot No. - 384/Part Block - Nala
57	Stone	4.05	Mouza - Chandradipa Plot No. - 3238/Part Block - Jamtara
58	Stone	0.37	Mouza - Salpatra Plot No. - 48/B Block - Fatehpur
59	Stone	3.84	Mouza - Bhalsunda Plot No. - 1721 Block - Jamtara
60	Stone	2.02	Mouza - Chandradipa Plot No. - 843/Part Block - Jamtara
61	Stone	0.40	Mouza - Fofnad



*[Signature]*  
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DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



			Plot No. - 2121 Block - Karmatanr
62	Stone	0.65	Mouza - Chapati Plot No. - 718 Block - Karmatar
63	Stone	2.02	Mouza - Kelahi Plot No. - 5288/Part Block - Jamtara
64	Stone	3.64	Mouza - Ghatiyari Plot No. - 1085 Block - Narayanpur
65	Stone	2.11	Mouza - Gundlipahari Plot No. - 693, 694, 695 Block - Jamtara
66	Stone	2.02	Mouza - Jurgudih Plot No. - 323 Block - Jamtara
67	Stone	4.05	Mouza - Golpahari Plot No. - 2357 Block - Jamtara
68	Stone	18.21	Mouza - Golpahari Plot No. - 2652, 553 to 565 Block - Jamtara
69	Stone	18.21	Mouza - Bhandaro Plot No. - 1291, 1288, 948 Block - Jamtara
70	Stone	2.71	Mouza - Dhobna Plot No. - 2513/Part Block - Jamtara
71	Stone	2.02	Mouza - Salpatra Plot No. - 48/Part Block - Fatehpur
72	Stone	2.02	Mouza - Bandarpahari Plot No. - 90/Part Block - Fatehpur
73	Stone	0.76	Mouza - Kalipahari Plot No. - 367 Block - Fatehpur
74	Stone	2.02	Mouza - Ladna Plot No. - 4253/Part Block - Jamtara
75	Quartz & Feldspar	3.04	Mouza - Sabanpur Plot No. - 467/Part, 466 & 2476 Block - Narayanpur
76	Quartz & Feldspar	4.74	Mouza - Sabanpur Plot No. - 467 Block - Narayanpur
77	Stone	1.46	Mouza - Dhobna (urf-Kalajharia) Plot No. - 100/Part Block - Nala
78	Stone	4.05	Mouza - Chandradipa Plot No. - 624/Part & 569



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DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



Block - Jamtara			
79	Stone	4.86	Mouza - Chandradipa Plot No. - 843/Part Block - Jamtara
80	Stone	1.56	Mouza - Bandarpahari Plot No. - 90/Part Block - Fatehpur
81	Stone	3.24	Mouza - Chandradipa Plot No. - 625 Block - Jamtara
82	Stone	4.03	Mouza - Gondlipahari Plot No. - 700/B, 706, 701, 702, 703, 704 Block - Jamtara
83	Stone	9.31	Mouza - Tarni Plot No. - 619 Block - Narayanpur
84	Stone	5.26	Mouza - Phuljori Plot No. - 2217 Block - Jamtara
85	Stone	6.27	Mouza - Nildaha Plot No. - 2259/Part Block - Jamtara
86	Stone	3.64	Mouza - Bhalsunda Plot No. - 1721/Part Block - Jamtara
87	Stone		Mouza - Ladna Plot No. - 1473/Part Block - Jamtara
88	Stone	4.85	Mouza - Bhandaro Plot No. - 1291/Part Block - Jamtara
89	Stone	0.81	Mouza - Kichakuri Plot No. - 223/Part Block - Nala
90	Stone	3.64	Mouza - Nayadih Plot No. - 210/Part Block - Narayanpur
91	Stone	4.86	Mouza - Nayadih Plot No. - 210/Part Block - Narayanpur
92	Stone	2.43	Mouza - Gundlipahari Plot No. - 700/Part Block - Jamtara
93	Stone	2.83	Mouza - Behrakuri Plot No. - 1895/Part Block - Jamtara
94	Stone	2.63	Mouza - Behrakuri Plot No. - 1803/Part Block - Jamtara
95	Stone	1.21	Mouza - Behrakuri Plot No. - 1895/Part Block - Jamtara



*[Signature]*  
District Mining Officer  
Jamtara

DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



96	Stone	4.05	Mouza - Jurgudih Plot No. - 323 Block - Jamtara
97	Stone	2.23	Mouza - Nayadih Plot No. - 21/Part Block - Narayanpur
98	Stone	4.05	Mouza - Goakola Plot No. - 220 Block - Jamtara
99	Stone	4.86	Mouza - Chandradipa Plot No. - 3238/Part Block - Jamtara
100	Stone	2.43	Mouza - Bhandaro Plot No. - 1291/Part Block - Jamtara
101	Stone	0.99	Mouza - Piplatand Plot No. - 1131/Part Block - Narayanpur
102	Stone	4.05	Mouza - Nildaha Plot No. - 3170/Part Block - Jamtara
103	Stone	2.18	Mouza - Banspahari Plot No. - 693/Part Block - Narayanpur
104	Stone	2.02	Mouza - Kelahi Plot No. - 5288/Part Block - Jamtara
105	Stone	4.45	Mouza - Phuljori Plot No. - 1908/Part Block - Jamtara
106	Stone	1.62	Mouza - Phuljharia & Murlipahari Plot No. - 160 & 5/A Block - Narayanpur
107	Stone	1.42	Mouza - Muram Plot No. - 597/Part Block - Nala
108	Quartz & Feldspar	0.56	Mouza - Sawlapur Plot No. - 601 Block - Narayanpur
109	Quartz & Feldspar	0.53	Mouza - Sawlapur Plot No. - 601/Part Block - Narayanpur
110	Quartz & Feldspar	2.39	Mouza - Jamkanali Plot No. - 1379 Block - Nala
111	Stone	4.55	Mouza - Sawlapur Plot No. - 421 Block - Narayanpur
112	Quartz & Feldspar	2.79	Mouza - Madhopur Plot No. - 849 Block - Nala



*[Signature]*  
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DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



113	Stone	4.86	Mouza - Chandradipa Plot No. - 845/Part Block - Jamtara
114	Stone	2.38	Mouza - Piplatand Plot No. - 261 to 282 & 258 Block - Narayanpur
115	Stone	1.21	Mouza - Kelahi Plot No. - 5288/Part Block - Jamtara
116	Stone	4.25	Mouza - Jurgudih Plot No. - 323 Block - Jamtara
117	Stone	1.87	Mouza - Salpatra Plot No. - 48 Block - Fatehpur
118	Stone	0.56	Mouza - Lataiya Plot No. - 08 Block - Narayanpur
119	Bricks	3.35	Mouza - Jabardaha Plot No. - 464, 465, 476 Block - Nala
120	Bricks	4.00	Mouza - Supaidih Plot No. - 562 Block - Jamtara
121	Bricks	4.00	Mouza - Joridangal Plot No. - 987, 989, 1002, 988, 1007, 1009 Block - Nala
122	Stone	2.17	Mouza - Chandradipa Plot No. - 76 Block - Jamtara
123	Stone	1.76	Mouza - Rampur Plot No. - 642, 643, 644, 647, 655, 667, 640, 641, 666, 668 Block - Narayanpur
124	Stone	0.81	Mouza - Haripur Plot No. - 245, 246, 248(P), 250, 251, 252, 256, 257(P), 269(P), 253 Block - Fatehpur
125	Stone	2.28	Mouza - Piplatanr No. - 17 Plot No. - 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 88 Block - Narayanpur
126	Stone	2.82	Mouza - Piplatanr Plot No. - 763, 767, 749, 750, 751, 752, 765, 766, 764
127	Stone	0.81	Mouza - Muram Plot No. - 597/Part
128	Stone	2.21	Mouza - Muram Plot No. - 20/Part
129	Stone	2.17	Mouza - Muram Plot No. - 1893, 1163
130	Stone	1.93	Mouza - Nildaha



*Atul*  
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			Plot No. – 3200, 3201, 3202, 3203, 3204, 3205, 3206; 3207, 3208, 3209, 3210, 3211, 3212, 3213, 3214, 3215, 3216, 3217, 3219, 3220, 3221, 3222, 3223
131	Stone	0.70	Mouza – Nildaha Plot No. – 3175
132	Stone	1.27	Mouza – Phuljori Plot No. – 1859, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1881
133	Stone	2.02	Mouza – Piplatanr Plot No. – 1184, 1185, 1198, 1199, 1201, 1202, 1205, 1206, 1207, 1180/Ansh, 1181, 1187
134	Stone	1.13	Mouza – Banspahari Plot No. – 522, 530, 531, 533, 534, 535, 536, 537, 538, 539, 540
135	Stone	2.83	Mouza – Muram, Plot No. – 597/Ansh



*[Signature]*  
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DISTRICT SURVEY REPORT OF "MINOR MINERAL (STONE) OTHER THAN SAND MINING OR RIVER-BED MINING" FOR JAMTARA DISTRICT OF JHARKHAND



A qualified surveyor accompanied by a Geologist visited the area and conducted survey and reconnaissance exploration of the area. The areas were contoured by Total Station survey instrument coupled with GPS. Since, these are the deposits of igneous rock; there should be no doubt on its continuation to a greater depth. These potential Stone deposits are identified on the basis of geological studies and are subjected to obtain clearances from concerned departments. The aforementioned area described may cover Forest land, Jungle-jhari, Raiyati and different types of Government land. It must be verified by concerned departments. Moreover, any other area which may be found feasible for Stone mining shall be incorporated in the DSR prospectively.



*[Signature]*  
District Mining Officer  
Jamtara



### References:

- District Mining Office – Jamtara
- District Forest Office – Jamtara
- CGWB Report of Jamtara
- Geology of Bihar and Jharkhand by T. M. Mahadevan
- National Institute of Disaster Management Report
- Resource Map of Jamtara District from Geological Survey of India
- Geological Map of Jamtara District from Geological Survey of India
- Report of Central Ground Water Board, Ministry of Water Resources – State Unit Office, Ranchi, September 2013.
- D. S. R. of Stone (2018) – Jamtara
- JSAC, Deptt. of Mines & Geology, Govt. of Jharkhand
- <http://www.jharkhandminerals.gov.in>
- <https://www.hidustantimes.com>
- District Statistical Office, Jamtara
- <https://en.wikipedia.org/wiki/Jamtara>
- [https://sameti.org/Soil\\_Inventory/Jamtara\\_Soil\\_Analysis.pdf](https://sameti.org/Soil_Inventory/Jamtara_Soil_Analysis.pdf)
- National Informatics Centre



  
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