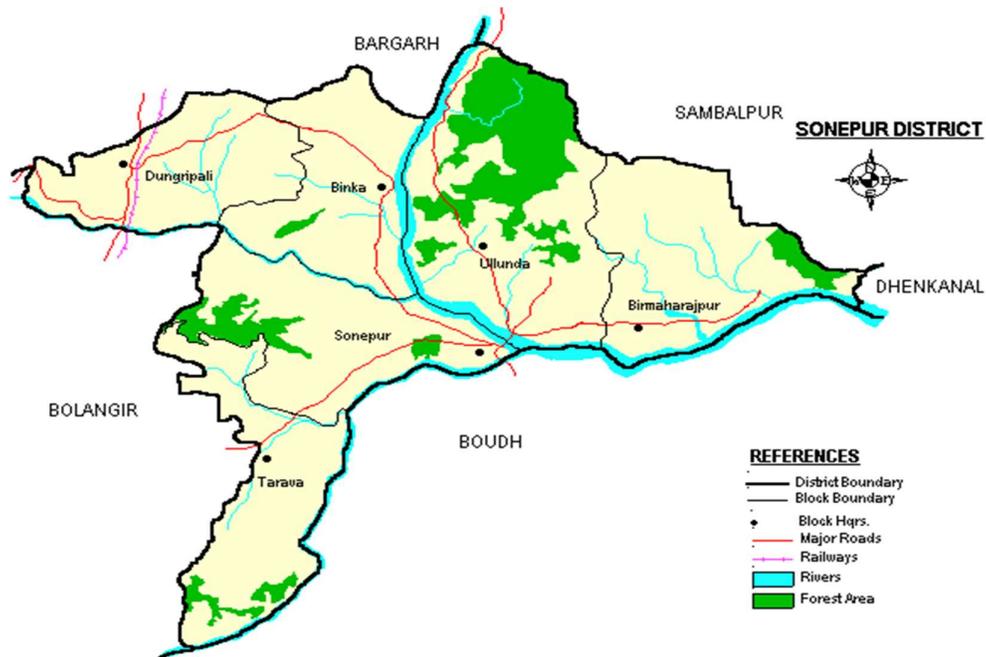




District Survey Report (D.S.R.) Of *Subarnapur District, Odisha* for Specified Minor Minerals (For Planning & Exploitation of Minor Mineral Resources)



(Prepared in accordance with Para 7(iii) (a) of S.O.141(E) Dated 15th January, 2016, as Amended on S.O.3611(E). Dated 25th July 2018 of Ministry of Environment, Forest and Climate Change Notification)

COLLECTORATE SUBARNAPUR

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Chapter-1

1.0 Introduction:-

The MOEF &CC came out with Environmental Impact Assessment Notification S.O. 3611(E), dated the 25th July, 2018 issued vide number S.O.-1533(E) dated 14th Sept, 2006. It has been made mandatory to obtain environmental clearance for different kinds of development projects as listed in Scheduled-I of notification. In pursuance MOEF&CC Notification S.O. 141(E) dated 15th Jan, 2016, District Environment Impact Assessment Authority (DEIAA) & District level Expert Appraisal Committee (DEAC) has been formed for Category –B2 Minor Minerals having area less than or equal to 5 ha.

Under 7(iii) (a) it was also suggested to prepare the district survey report for sand mining or river bed mining and mining of other mineral as prescribed in Appendix X. This has been modified vide S.O. No. - 3611(E) dated 25th July, 2018.

MOEF&CC in consultation with State Government has prepared Guidelines on Sustainable Sand & other Minor minerals mining detailing the provisions on Environmental Clearance for cluster.

SEAC will scrutinize and recommend the prior environmental clearance of Mining of Minor Mineral on basis of District Survey report. This will be a model and guiding document which is a compendium of available mineral resources, geographical setup, environmental and ecological set up of the district and replenishment of minerals and is based on data of various departments, published reports, Journal and websites. The District Survey report will form the basis for application for environmental clearance, preparation of reports and appraisal of projects. District Survey Reports are to be reviewed once in every five years as per statue, however the data bank of DSR can be updated, if required.

The Main objective of the preparation of District Survey Report is to ensure the following:-

1. Identification of river sand mining areas with geo references.
2. Identification of potential area of river silt with geo reference, which is being used for filling purposes.
3. Identification of other minor minerals with geo reference.
4. Identification of other mineral resources if available.
5. Identification of areas of proximity to infrastructural structures and installations where mining should be prohibited.

Chapter-2

2.1 Overview of the district:-

Subarnapur District, also called Sonepur District or Sonepur District, is an administrative district in Odisha state in eastern India. The town of Sonepur is the district headquarters. In the 8th century CE, the region was known as Swarnapur and was ruled by vassal lords of the Bhaumkaras of Tosali. The region was then ruled by the Somavamsis and eventually became one of two capitals of the Somavamsis. Around the 10th and 11th centuries, the region was called Pashima Lanka or Western Lanka. The evidence for these names comes from a Somavamsi prince of the region called Kumara Someswaradeva who issued a copper plate charter in the late 10th century which identified him as the ruler of Paschima Lanka. Historically, the presiding deity of the region was the goddess Lankeswari. At some point during Somavamsi rule, the region was given its current name, Subarnapur. It was formally established as a district in 1993.

The district has a total geographical area of 2344 sq.km, with 2 Subdivision and 6 administrative blocks. The district is having 3 towns and 80 Gram Panchayats .It is one of the economically backward districts of Orissa and is presently under KBK region. The district is situated between 20° 30' and 21° 11' North latitude and 83° 27' and 84° 16' East longitude covered under survey of India degree sheets no 64O, 64P and 73D. It is bounded on the north by Bargarh and Sambalpur district, on the east by Sambalpur and Angul districts, on the south by Boudh district and on the west by Bolangir district of Orissa.

The Subarnapur district comes under Mahanadi basin.

The river Mahanadi, Tel and their tributaries constitute the main drainage system in the district. The tributaries are ephemeral in nature. The river Mahanadi flows an almost north south course as it enters the district, which changes to south east as it nears Sonepur and finally takes an easterly course after confluence of river Tel with it at Sonepur. River Tel

flows in a north easterly course through the border of the district in the south western part before its confluence with Mahanadi. Ong is another important tributary of the river Mahanadi which flows in a south easterly course in the western part of the district and joins Mahanadi a few kilometres north of Sonepur. The drainage is effluent in nature.

The district gets irrigation from major, minor & lift irrigation projects and also from ground water source. The major source of flow irrigation projects is surface water, which mainly depends on rainfall, hence actual area-getting irrigation in different crop seasons in different year varies. The irrigation potential created from all sources aggregates to 97690 Ha in the district.

2.2 Administrative Setup:-

For administrative convenience, the district is divided into two Subdivisions, six Tahasils, six Blocks, nine Police stations and 109 Gram Panchayats. There are 3 statutory towns, one Municipality and two NACs. There are 985 villages, of which 130 are uninhabited.

1	No. of SubDivision	02	Sonepur & Birmaharajpur
2	No. of Tahasils	06	Binka, Birmaharajpur, Rampur, Sonepur, Tarbha & Ullunda
3	No. of R.I. Circles	40	Binka- 8, Birmaharajpur-5, Rampur-9, Sonepur-5, Tarva-7 & Ullunda-6
4	No. of Blocks	06	Binka, Birmaharajpur, Dunguripali, Sonepur, Tarva&Ullunda
5	No. of ICDS projects	06	Sonepur Municipality, NAC Binka & Tarbha
6	No. of ULBs	03	Sonepur, Binika & Tarbha
7	No. of statutory towns	03	Binka, Birmharajpur, Subalaya, Dunguripali, Rampur, Sonepur, Lachhipur Tarbha, Ullunda
8	No. of Police Stations	09	Binka-16, Birmaharajpur-15, Dunguripali-26, Sonepur-14, Tarva-21 & Ullunda-17
9	No. of GPs	109	5 855 habitat & 130 un-habitat villages
10	No. of villages	985	855 habitat & 130 un-habitat villages
11	No. of Assembly Constituencies	2	XI. No. of Assembly Constituencies 2 65-Sonepur & 64-Birmharajpur

For maintenance of law and order the district is divided into eight police stations, namely; Dunguripali, Binika, Rampur, Tarbha, Sonapur, Biramaharajpur, Ulunda and Subalaya. There are three statutory towns i.e, Sonapur Town (M), Tarbha Town (NAC) and Binika Town (NAC) in the district. Each town is in charge of an Executive officer who looks after the developmental activities of the towns. Besides, Village Subalaya in Subalaya Police Station under Biramaharajpur Tahasil has been declared as Census Town during 2011 Census.

2.3 Geography & Demography:-

2.3.1. Geography:

The District is situated within Latitude 20° 30 to 21° 11 North & Longitude 83° 27 to 84° 16 East coming within survey of India Topo Map No. F44R (64O), F44X (64P) & F45S (73D). The geographical area of the District 2284.89 Sq. KM having 6 Administrative Blocks, 6 Tahasils, 3 Urban Town with 3 Urban Local Bodies (Sonapur, Tarbha & Binka). It is one of the economically backward District of Odisha and is presently under KBK (Kalahandi-Balangir-Koraput region). There are 37 Reserve Forests, area 39198.7230 Ha., Proposed Reserve Forests 2 nos. having 482.0 Ha. & DLC Forests 447 villages having 9420.021 Ha.

2.3.2 Demography:

Table No-1 Population of Subarnapur District.

Population	610183
Male	311312
Female	298871

2.3.3. Demographic details of Subarnapur District for 2011:

Area in Sq.m.	2284.89
Density /Km ²	261
Proportion to Odisha Population	1.45%
Sex Ratio(per1000)	960
Child Sex Ratio(0-6)	952
Total Child Population	74821
Boy Population (0-6)	38335
Girl population (0-6)	36486
Average Literacy	74.42%
Male Literacy	84.45
Female Literacy	64.04%
Male Literate	230393
Female Literate	168028

Subarnapur (also known as Sonepur) town is the district headquarters of Subarnapur district of Odisha. It is also known as second Varanasi of India for its clusters of temples (nearly 108) having architectural importance and also of tantricism and second Allahabad (Prayag Raj) for the meeting point (Sangam) of three rivers Mahanadi, Tel and Sukhtel in one place just like in Allahabad. Subarnapur is also famous for silk, Sambalpur Handloom, prawns and terracotta etc.

2.4 Topography:-

Subarnapur constitutes a portion of the peninsular region. The district is a table land constituting a part of the Western Central Table Level. It falls under the ninth agro-climatic zone of Odisha. It is located in the Mahanadi basin. Parts of the district are undulating plains with irregular hill ranges.

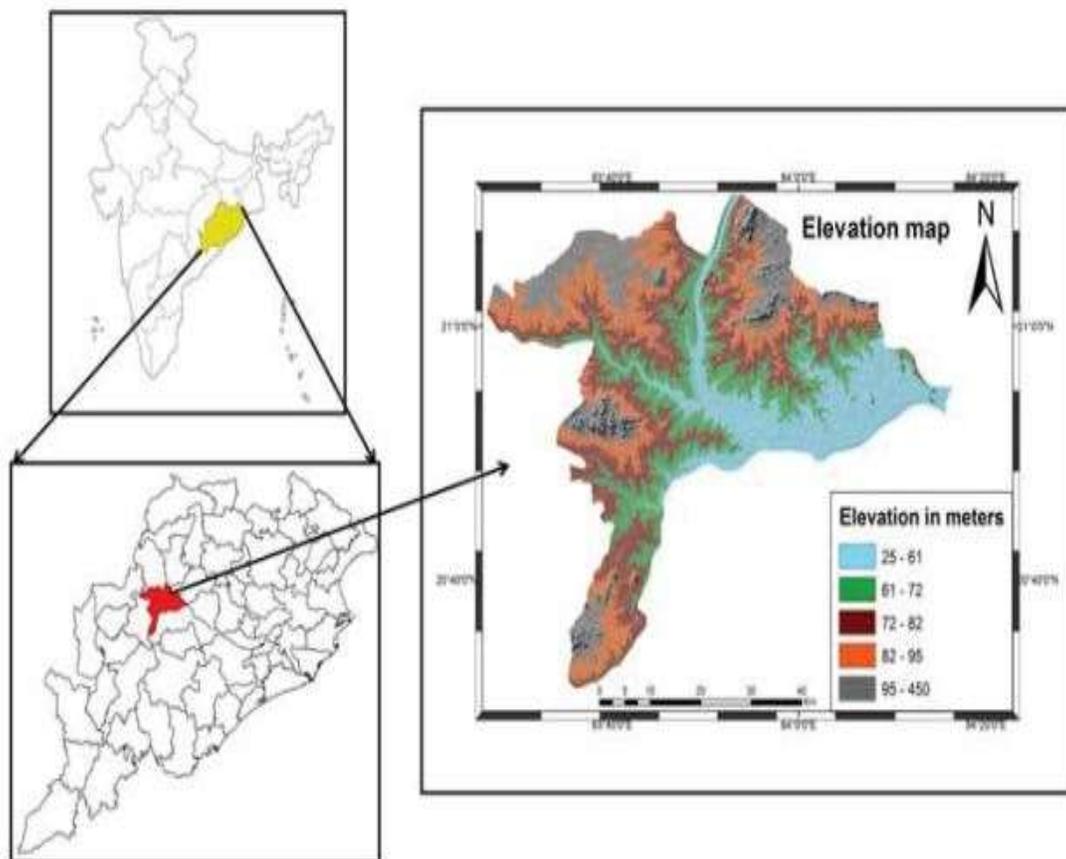
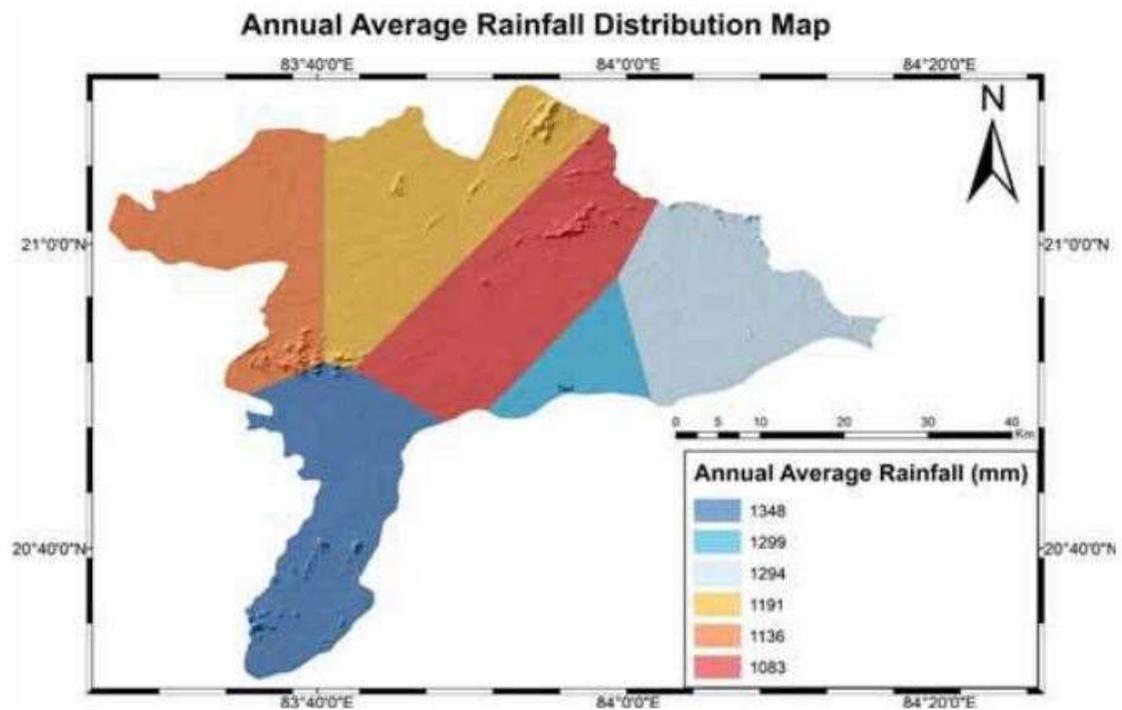


Figure 1. Map of the study area.

2.5 Climate & Rainfall:-

Subarnapur is situated in north eastern corner of the Deccan plateau. This District mostly faces four seasons in a year, i.e., winter season from December to February is followed by the pre-monsoon or hot weather season from March to May. The period from June to September constitute the south-west monsoon season and the period of October and November is the post-monsoon season. The Climate is extreme. It is hot and moist. The mean maximum temperature 43.3oC goes up to 45oC. In the hot weather season from March to May, weather is generally dry and uncomfortable. Winters are very cold with temperature as low as 7oC. The mean minimum temperature is 13oC. The summer is followed by the rainy season, which starts with the outbreak of the south-west monsoon in June. It reaches its peak in August and retreats in the middle of October. It experiences fairly good rainfall and high degree of humidity. The actual rainfall varies from block to block. About 84% of rainfall is received during the period from June to September. The normal average rainfall is not uniformly distributed. The annual rainfall of the district is 1418.5 mm in 61.6 rainy days.



2.6 Soil Type: -

The district has alluvial and fertile soil in the basins of the rivers “Mahanadi”, “Tel” & “Ong” suitable for cultivation of a few cash crops. The soil of the district is broadly classified as sandy, sandy loam and sandy clay. The main soil types are Mixed Red & Black soil and Black soil. According to Water-retention capacity, agricultural land in Sonepur can be categorized into 4 types; Ata, Mal, Borna, Bahal. Soil of the district is mostly neutral to alkaline in nature having low organic carbon content. Birmaharajpur and Binka Block soil is adequate in Phosphorous and Potash. However, status of micro nutrients like Zinc, Boron, Sulphur and copper are low to very low in some parts of the district. Boron and Zinc application is deficient mostly in all blocks. Sulphur is deficient in parts of Sonepur, Ulunda and Dunguripali Block and Copper is deficient mainly in Ulunda Block. The rock types in the district are alluvial and laterite. Lower Gondwana sand stones are also found here. The hills of the district have a cap of high-level laterite.

2.7 Forest Cover: -

All six Blocks of Subarnapur district come under four forest ranges. 431.8625 sq.km is covered by forest which is 18.28% of the total geographical area of Subarnapur district. The land covered by 37 nos. of reserved forest is 391.94475 Sqkm, 2 nos. of proposed reserved forest is 4.82 Sqkm, Village Forest is 21.105 Sqkm Revenue Forest 10.85495 Sqkm & unclassified forest 0.03 Sqkm. There are 8.10 km forest road in Tarbha Block, 25.20 km forest road in Ullunda Block and 7.10 km forest road in Birmaharajpur Block.

2.8 River System: -

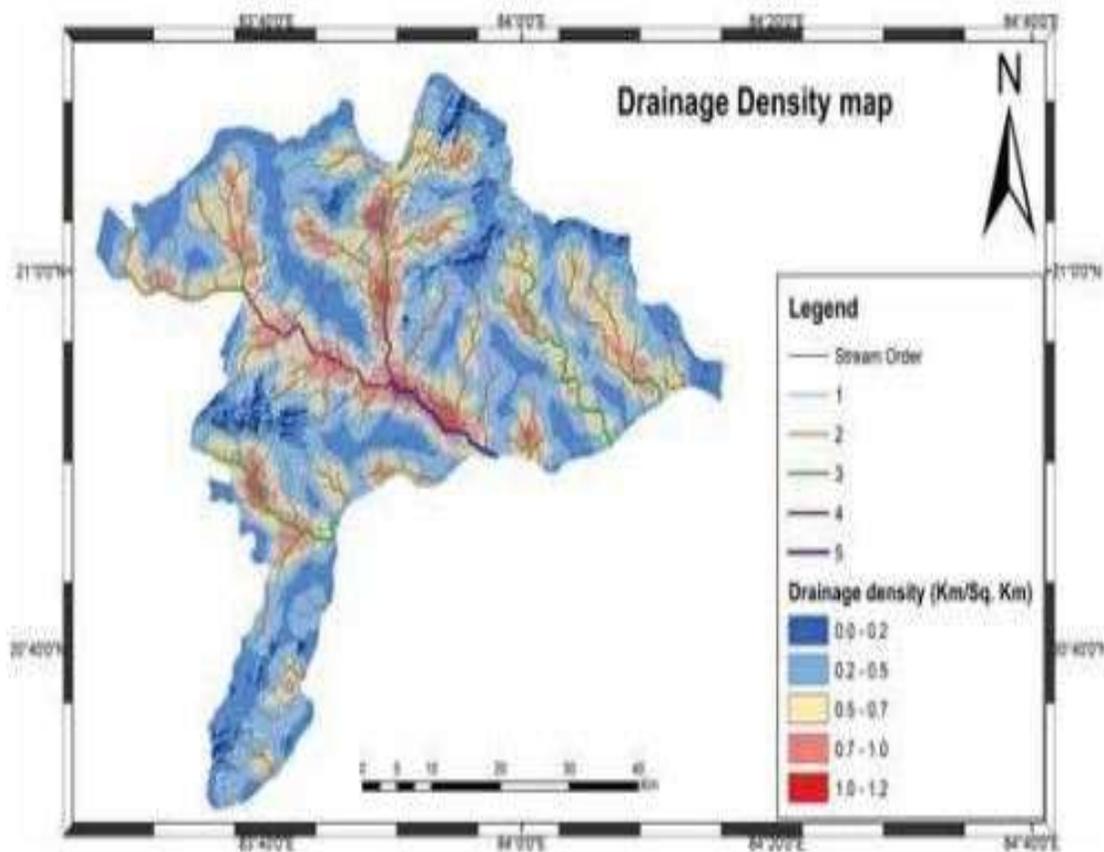
The main rivers in this district are the Mahanadi, Tel, SukTel and Ong. The Mahanadi flows right through the heart of Subarnapur district. The other prominent rivers which traverse the territory are the Tel and Ong. They drain water from different parts of the area

through small tributaries and ultimately flow into the Mahanadi at Sonepur. The Ong originates in Gandhamardan Hills and after flowing through Bargarh it enters Balangir district on the west of Salebhata near Agalpur. It meets Mahanadi a few km north-west of Sonepur town. River Tel emerges from the north-western part of the Koraput district and after flowing through Kalahandi, it touches the southern border of Balangir and then flows into Mahanadi near Sonepur. Among other rivers Jira, the northernmost affluent river discharges water into Mahanadi. Besides, Nibrutijore, Surubalijore, Harihar jore, Badjore and Balijore are rain-fed rivulets that flow in Subarnapur. Here are also small rain-fed streams / nallahas that discharge into the main rivers/ jores during the rainy season. Most of the farming activities in this district depend on these river systems which are well connected through different LIPs, and canal systems. There are 58 numbers of Minor Irrigation Projects in the district having canal system for irrigation purpose. The district has two types of Agro-Climatic situations, irrigated and rainfed. Binka and Dunguripali are irrigated. Sonepur, Tarbha, Birmaharajpur and Ulunda are rain-fed.

2.8.1 Drainage Density:-

Drainage density is an important factor controlling the groundwater movement and storage of a given region (Senanayake et al. 2016). Transmissibility is a measure of permeability of groundwater in a terrain, which is inversely related to the square of drainage density (Carlston 1963). The drainage map of the study area was prepared from the Cartosat-1 DEM and was classified on the basis of the Strahler stream order method (Strahler 1964). The drainage pattern is mainly dendritic in nature and governed by the Mahanadi river and its tributaries. Drainage density is a measure of the length of the streams within a square grid and it reflects the permeability and the suitability to further groundwater development (Karanth 1987).

The drainage density was classified into five groups, viz., very high (1.0–1.2 km/km²), high (0.7–1.0 km/km²), medium (0.5–0.7 km/km²), low (0.2–0.5 km/km²) and very low (0.0–0.2 km/km²). The area with the lowest drainage density was given the highest rank while the area with the highest drainage density was given the lowest rank.



(Fig-3: Drainage Density map of the Subarnapur district)

2.9 Agriculture and Irrigation: -

Agriculture plays a vital role in the district economy. It is the most important source of livelihood and provides employment to 74.24% of population in the district. Out of total area of 1, 85, 409 ha, total cultivable area constitutes of 1, 37, 192 ha (74%). The net sown area is 1, 28, 633 ha (69.37%). 47790ha high land, 41641 ha medium land & 38887 ha low land constitute the net sown area. In Dunguripali & Binka block an ayacut area of 42840.2 ha

has been created & irrigated by major irrigation project i.e. Hirakud Dam. In Birmaharajpur & Ullunda blocks 9450 ha ayacut area has been created & irrigated through medium irrigation i.e Hariharjore project. In Birmaharajpur, Sonapur, Tarbha & Ullunda 7413.41 ha minor irrigation ayacut area has been created & irrigated by 59 numbers of minor irrigation projects.

2.10 Industries and mining:-

The industrial profile of Subarnapur District reveals that there are 733 MSME units and 487 Artisan units/Cottage industries (Handloom & Handicraft) exist. 2565 persons are engaged in the MSME sector and 975 persons are earning their livelihood through the cottage industries. There are only 42 numbers of small-scale industries like Rice Mills exist in Subarnapur District.

2.11 Road and Railway Network:

Road and Railway are the main source of Transport & Communication in the district. National Highway 57 (Khordha-Bolangir) passes through this district. The road transport network covers NH- 42 KM, State Highway- 42.35 KM, Major District road-72.45 KM, Rural roads- 94.71 KM, G.P & Panchayat Samiti Road 2058.26 KM, Forest Road 40.4 KM & other road of 5 Km and Railway covers 13 Km in the Dunguripali Block, 22.584 Km in Sonapur Block and 6.680 Km in Tarbha block. Singhari 35 KM & Dunguripali (60km) are two nearest railway station in the district. However, for rail transport & communication nearest railway stations of neighbouring district are Bichhupali 40Km, Bolangir 50 Km, Rairakhol 70 Km and Sambalpur 80 Km away from the district headquarter.

Chapter-3

3. Geology and Mineral Resources of the District

3.1. Geology:-

The state of Odisha consists of rocks ranging in age from Mesoarchean to Recent.

The Precambrian terrain in the state can be distributed in the following parts (GSI 2011):

- Eastern Indian craton: northern and northwestern Odisha.
- Part of Bastar craton: western Odisha.
- Part of Eastern Ghats Mobile Belt (EGMB): central and southern Odisha.

The major portion of the study area falls under three supergroups, viz., Bastar cratonic gneiss (BCG), Eastern Ghats Mobile Belt (EGMB) and Lower Gondwana (table 2; GSI 2009).

Rock Type		Group/Supergroup
Sandstone and Shale		(Lower Gondwana)
-----Unconformity-----		
Gabbro and anorthosite		Eastern Ghats Mobile Belt(EGMB)
Garnetiferous granite gneiss		
Calc-Silicate	Khondalite Group	
Quartz-garnet-silimanite		
Schist/gneiss		
Pyroxene granulite-Charnockite Suite		
-----Tectonic Contact/Unconformity-----		
Biotite Granite Gneiss		Bastar Cratonic Gneiss (BCG)

(Table No-2:-Stratigraphic Succession of the Subarnapur district)

3.1.1 BCG :-

Part of western Odisha consists of Bastar craton. This cratonic strip is delimited by Mahanadi graben in the northeast and EGMB in the east and southeast. The major lithostratigraphic units in this part are: Archaean super cluster of the granite gneisses and granitoids, Bengpal and Bailadila groups with age ranging from Neo-Archaean to palaeoproterozoic.

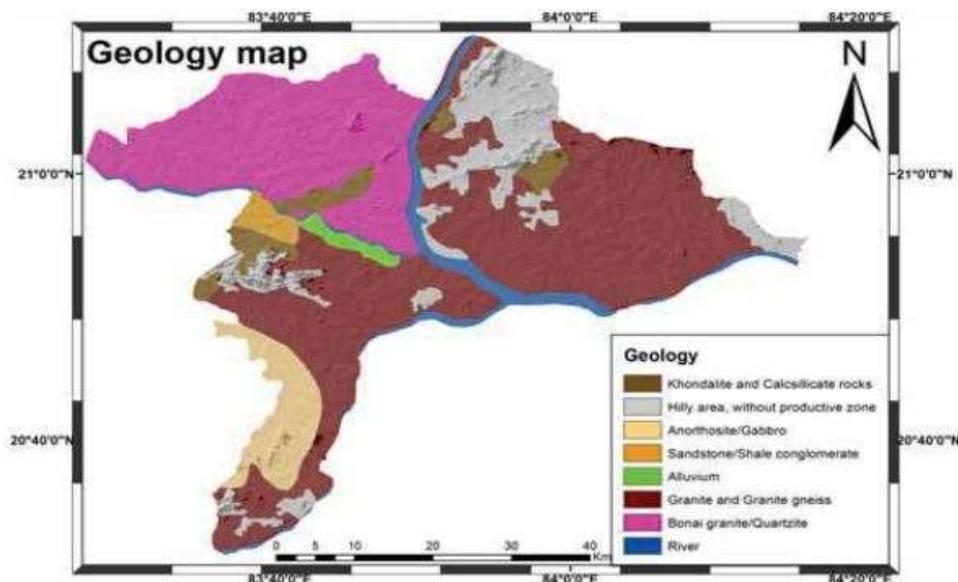
3.1.2 EGMB :-

The EGMB extends for over 1000 km from Odisha to southeastern part of Andhra Pradesh along the coastline. It comprises garnetiferous, graphite bearing sillimanite schist and gneiss (Khondalite).

3.1.3 Lower gondawana :-

These rocks rest unconformably on the Precambrian basement comprising granitoids, hornblende gneiss, schist and amphibolites. The base of the Gondwana sequence has been exposed along the southern margin of the basin and it is defined by Talchir formation formed by more than 325 m thick pile of glacial and periglacial deposits. The geology of the sonapur area (figure 4) can also be grouped into consolidated, semi-consolidated and unconsolidated formations. Consolidated formations include granites, gneiss, Khondalite, quartzite, anorthosite and gabbro. Among these formations, granite and granite gneisses form good aquifers due to the presence of weathered and fissured zones. The thickness of the weathered zone ranges from 10 to 15 m and the groundwater yields are up to 10 litres per second (lps) (CGWB 2013). The groundwater development possibility is limited in the Khondalite suite of rocks (up to 10 lps). These types of rocks are mainly formed by quartz–garnet–sillimanite schist and gneiss. Calcsilicates and quartzite are also present in minute amounts. The quartzite group of rocks often does not have good primary porosity and is very hard in nature, but due to brittle nature of these rocks, fractures and weathering are often observed. These

features contribute to secondary porosity and render the formation suitable for holding and transmitting groundwater with typical yields up to 10 lps (Unesco 1984; Cook 2003; CGWB 2013; Karanam et al. 2014; Senanayake et al. 2016). Anorthosite rocks are very hard and not suitable for groundwater movement. Hence the yields are low to moderate up to 3 lps (CGWB 2013). About 78.9% of the total area is contributed by anorthosite, granite/quartzite, khondalite, granite and gneiss rocks (table 5). The other types of formations are semi-consolidated in nature and belong to the Lower Gondwana age group (figure 3). This formation consists of sandstones and conglomerates with typical groundwater yields \5 lps (CGWB 2013). A very small patch of this formation is observed in the western part of the study area (CGWB 2013). Recent alluvium and laterites form the unconsolidated formations along the main drainage channels and possess high-water bearing capacity (figure 4). The groundwater yields in alluvial formations are up to 10 lps (CGWB 2013). Based on the reported yield values of these geological formations (CGWB 2013) the relative importance of each of these formations regarding groundwater movement and storage capacity was ranked as per Senanayake et al. (2016). The classes of the geological map is given below:-

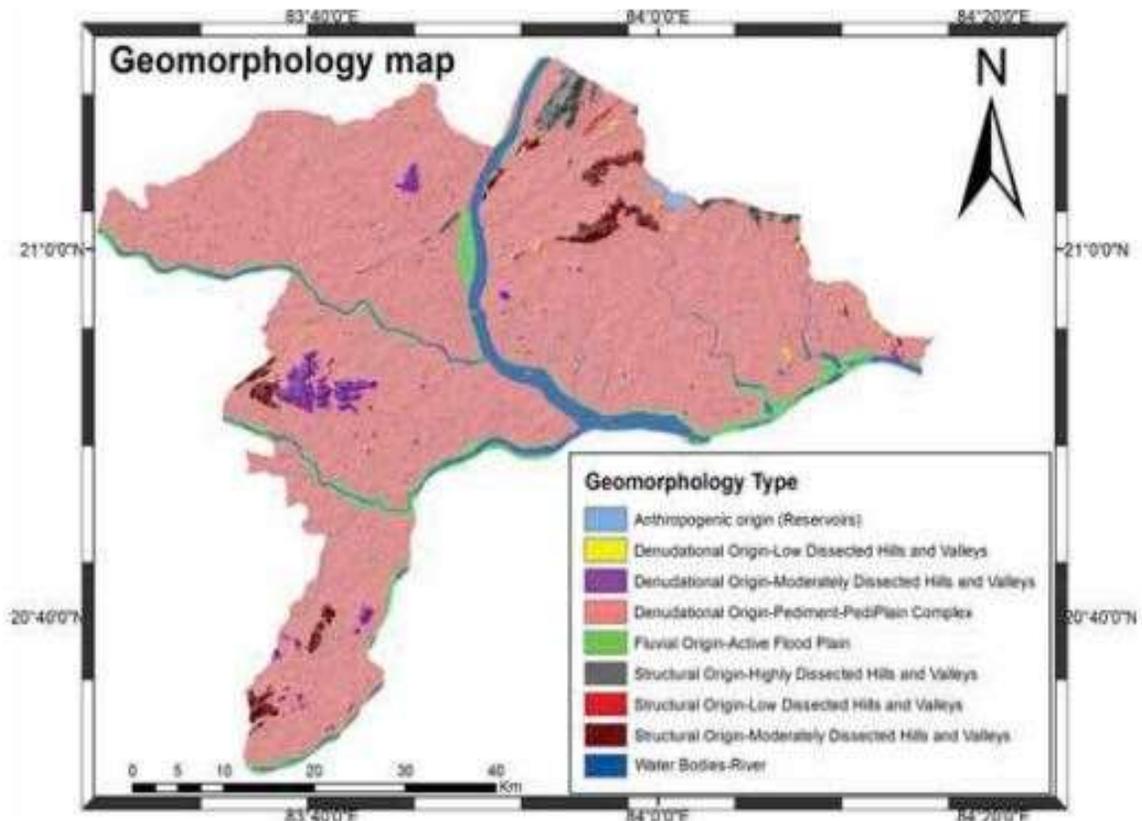


(Fig-4: Geological map of the Subarnapur district)

3.2 Geomorphology :-

The identification of different landforms and the preparation of a geomorphic map are very important in evaluating the groundwater prospects. Geomorphological features such as slope, extent of weathering and type of landform play a direct role in determining the groundwater potentiality of a region. The study area is divided into nine major landforms (according to the NRSC 2012 and ISRO 2013 classification schemes), some of the major features are viz., pediment–pediplain complex (84.4%), low-to-high dissected hills and valleys (3.9%), active flood plains (3.5%) and low to moderately dissected hills and valleys (1.5%), as shown in figure 4. The geomorphic classification is explained as the categorisation and description of the nature, origin and development of landforms. The fundamental parameters, which are considered for the classification of the geomorphic features are origin and development (process), general structure and shape (landform), dimensions and characteristics (morphometry) and the presence and status of process overprinting (geomorphic generation). Pediments of the denudational origin are gently sloping (0.5–7.0) weathered rock surface areas with erosional bedrock characterized by low relief and generally found in hills and plains (Deepika et al. 2013). It develops due to laminar sheet flows of water. Because of the massive and compact rocky structure with numerous fractures and joints, these are considered as good for groundwater movements and storage (Ndatuwong and Yadav 2014). Pediplains are defined as the gently inclined sloping surface of thick weathered granite, gneiss and weathered material formed by coalescence of pediments. This type of landform forms very good recharge and storage zones. The groundwater prospect in these zones depends on the extent of weathering (Raghu and Mruthyunjaya 2011). Denudational hills consist of jointed and fractured granites and gneisses, and are formed due to differential erosion and weathering processes. The presence of fractures, joints and topographic cuts makes infiltration of groundwater possible but with increasing slope the runoff possibility

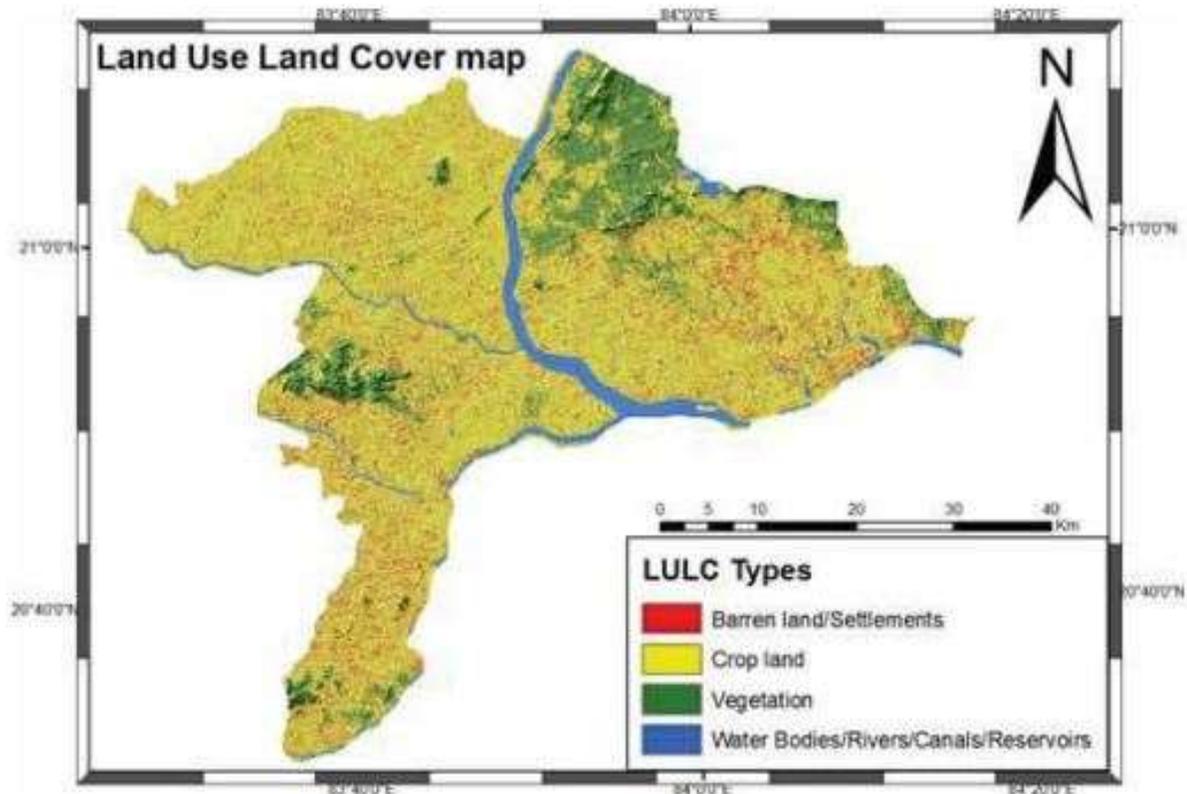
also increases limiting the groundwater recharge process (Deepika et al. 2013; Jasrotia et al. 2013). Therefore, the highly dissected hills with sharp relief, formed due to the severe erosion process have very less groundwater prospect than the low-dissected hills. Structural hills are formed due to the combined effect of tectonism and denudation. Being compact and hard in nature these types of formations mainly act as runoff zones. The infiltration possibilities are limited only through fractures and faults (Deepika et al. 2013) and so why groundwater potential is very poor in this region. Active flood plains are formed by the lateral movement of a stream and by overbank deposition (Pareta and Pareta 2015), which act as good aquifers due to their high permeability (Deepika et al. 2013; Jasrotia et al. 2013).



(Fig-5: Geomorphology map of the Subarnapur district)

3.3 Land use land cover:-

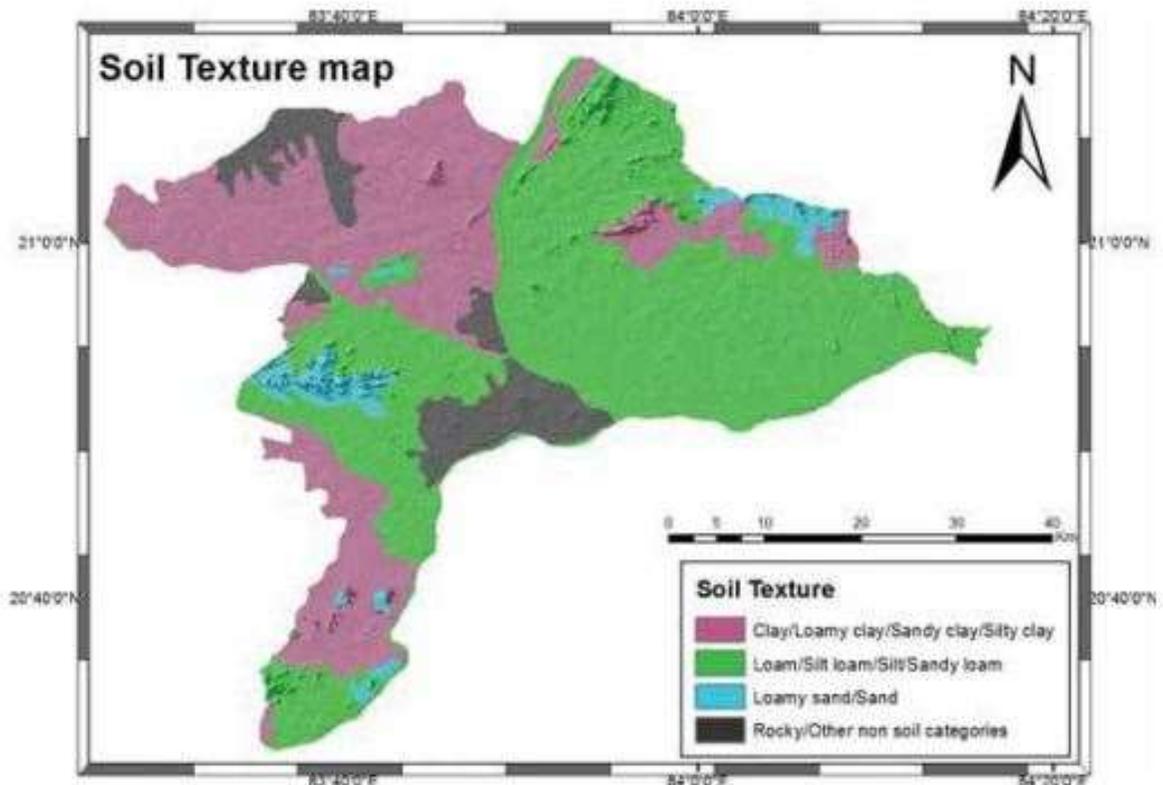
LULC is an important factor reflecting the human influence on the groundwater resources. The infiltration, storage and discharge of groundwater depend on the different land use patterns (Mohanty and Behera 2010; Mishra et al. 2014; Barik et al. 2017). The LULC of this area can be classified into four types, water bodies (river/canals/reservoirs), forests, settlements/barren land and crop land (figure 6). Data suggest that most of the areas are covered by the crop land (70.0%) with patches of the forest land in the north and central regions and water bodies (river/canals/reservoirs) occupy 5.9% of the total area. The vegetation (forest) is an indicator of good groundwater potential while the settlements/barren lands indicate very poor groundwater prospects (Sikdar et al. 2004; Mishra et al. 2014).



(Fig-6: Landuse and Land Cover map of the Subarnapur district)

3.4 Soil texture:-

Soil texture is an important factor for delineating the groundwater potential zones of an area (Ibrahim-Bathis and Ahmed 2016). The holding capacity and infiltration rate of water depends on soil properties like structure, porosity, adhesion and consistency (Bouwer 2006; Mc Garry 2006). Surface infiltration systems normally require permeable surface soils that allow high-infiltration and minimise land requirements. The vadose zones should be devoid of clay or other fine-textured material layers that restrict downward flow and create water logging issues reducing groundwater recharge (Bouwer 2006). The soil texture zonation map of the area shows four major classes (figure 7), viz., coarse texture soil (loamy sand/sand), medium texture soil (loam/silt/loam silt/sandy loam/loam), fine texture soil (clay/loamy clay/sandy clay/silty clay) and rocky/water bodies including the rock and other non-soil.



(Fig-7: Soil Texture map of the Subarnapur district)

3.5 Mineral Resources of the district:-

Minerals like minor mineral as well as few major minerals were available in the District, which are mainly used in industrial units in the District. Apart from the other mineral occurrence of Specified minor mineral like Quartz, Quartzite, Graphite and Manganese. Only production of Quartz is economically viable. Some Gemstones along with Semi-Precious to Precious Stones are also found in different sector of the Subarnapur district. Except these, no minerals in large quantity which can be explored for commercial purpose found in the District. Minerals like Diamond were also shows there occurrence in the Mahanadi River bed, particularly in Binika of Subarnapur district and some semi-precious stones like Aquamarine were found in the Badamal, Mursundi, Bairagipalli, Amarpalli village of the Subarnapur district of Odisha. The details of Specified minor mineral with the geological occurrences are summarised in the **Annexure-I**.

Chapter-4

4.0 RISK ASSESSMENT AND DISASTER MANAGEMENT PLAN: -

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 turn 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 may 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 is essential to check if the person is wearing protective equipment or not. 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 causing injury. They are in acceptable range because of precautions measures taken but no step is taken it can cause hazard hence steps should be taken to reduce the hazards such as for dust suppression system should be installed. Other problems like occurrence of lots of mosquitoes in the area due to unhygienic conditions

which affect the human health causing malaria, dengue etc. and causing a person to be hospitalized. 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 act 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 shooter 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

4.1 DETAILS OF THE OCCUPATIONAL HEALTH ISSUE IN THE DISTRICT:

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 21st July, 1952 P a g e | 44 1. Silicosis 2. Tuberculosis Total Number of TB cases in Balangir District of last 5 years. S.R. O. 2521 dated the 26th June, 1986 Cancer of lung or the stomach or the pleura and peritoneum (i.e. mesothelioma) 25 S.O. 399(E) dated 21st February, 2011 1. Noise Induced Hearing Loss 2. Contact Dermatitis caused by direct contact with chemical. 3. Pathological manifestations due to radium or radioactive substances 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 audiometry. (c) Classification of chest radiographs of workers as per ILO Classification. (d) Medical examination within one year of superannuation. Evaluation of all cases of suspected pneumoconiosis by Pneumoconiosis Medical Board. (e) 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.

4.2 CONCLUSION:

Since it is an interim report, to meet the requirement of minerals in the present scenario, it is proposed to identify such potential areas at certain interval and get the data bank of DSR to be updated. The mining activity in any area is on one hand bring revenue and employment (Direct and indirect) and on other hand if not done properly potential pollution and ecological imbalance increases, the ability of the ecosystem can also be reduced. Particulate matter transported by the wind as a result of excavations, blasting, transportation of materials, heavy equipments used raise these particulate levels; and Gas emissions from the combustion of fuels in stationary and mobile sources, explosions, and mineral processing. All these activities indirectly affected the biodiversity of area. Larger potential and smaller areas have been identified in Subarnapur District on the basis of geological study carried out during field observation, which can be considered for mining concession after all the parameters for statutory clearances are verified by consulting with concerned authorities.

SL NO	NAME OF SOURCE	MOUZA	STATUS	Khata No.	Plot No.	kisam	Name Of The Tentant	AREA IN AC	AREA IN HA	Total Area in AC	Total Area In HA	NAME OF MINERAL	NAME OF LESSEE	ADDRESS & CONTACT NO OF LESSEE	DATE AND REGISTRATIO N NO	PERIOD OF LEASE	NO & DATE OF GRANT OF ENV CLEARANCE	NAME OF SUCCESFUL BIDDER	ADDRESS & CONTACT NO OF SUCCESFUL BIDDER	Location of the Mining Lease(Latitude/Longitude)	RESERVE IN CUM AS PER MINING PLAN	
1	Sarguna Decorative Stone	Sargura	Non-operational	193	944/p	Pathar Chatan		9.09	3.68	9.09	3.68	Decorative Stone	M/S Penguin Trading and Agencies Ltd	Maa Pravati Enclaves, D-Block, Second Floor, Station Road, Barbil, Keonjhar-758035	ML NO.29 DT.27/10/2017	NA	MXIV(1)-20/2010-9600/DM Dt- 05/11/15		Maa Pravati Enclaves, D-Block, Second Floor, Station Road, Barbil, Keonjhar-758035	Sargura Latitude-21°05'02.03" to 21°05'10.02"N Longitude- 83°46'53.60" to 83°47'02.90" E	GR-78905Cum MR-49755Cum	
2	Manikpur Quartz & Gem Stone Deposition	Manikpur	Running							48.66	19.692	Quartz & Gem Stone	M/S Manikeswari Minerals	At/Po- Bhawanipatna, Dist- Kalahandi	ML NO.25 S 15/01/2001	11/09/2017 to 10/09/2067 50 Years	III(E) SM-34/2003277/SM Dt- 09/01/2017	Rajendra Ku Agrawal	At/Po- Bhawanipatna, Dist- Kalahandi	Latitude-20°55'52.7" to 20°55'28.8"N Longitude- 84°04'03.9" to 84°04'07.0" E"	GR- 123039 Cum MR- 74887Cum	
				69	122/P	Mala-A	Chini Pradhan	0.170	0.068													
				59	123/P	Mala-A	Goura Pradhan	1.110	0.449													
				102	124/P	Atta	Dinabandhu Luha	0.250	0.101													
				102	127/P	Atta	Dinabandhu Luha	1.880	0.760													
				123	129/P	Atta	Nilagiri Patra & Others	1.350	0.546													
				62	130/P	Atta	Ghutu Luha	1.320	0.534													
				70	131/P	Atta	Chipababu Mahanandia & others	0.040	0.016													
				180	139/P	Atta	Maguni Prasad Panigrahi	0.910	0.368													
				180	140	Mala-A	Maguni Prasad Panigrahi	1.950	0.789													
				180	141	Mala-A	Maguni Prasad Panigrahi	0.230	0.093													
				73	142	Mala-A	Cheda Badi	3.000	1.214													
				173	143/P	Mala-A	Bhuluka Ganda & Others	0.450	0.182													
				120	144/P	Mala-A	Narayan Badi	0.200	0.080													
				259	148/P	Atta	Rakhit	0.350	0.141													
				128	150/P	Mala-A	Paradesi Ganda & Others	0.050	0.020													
				153	151	Mala-A	Bipin Bhukta	0.300	0.121													
				153	152/P	Atta	Bipin Bhukta	1.010	0.408													
				259	153	Unnata Jojana Jogya	Rakhit	0.140	0.056													
				259	154	Unnata Jojana Jogya	Rakhit	0.070	0.028													
				262	155	Patharbani	A.J.A	0.280	0.113													
				19	156	Atta	Ananda Badi	0.110	0.044													
				23	157	Atta	Ananda Badi	2.430	0.983													
				62	158/P	Atta	Ghutu Luha	0.900	0.364													
				174	159	Mala-A	Bhuluka Ganda & Others	0.410	0.165													
				174	160	Mala-A	Bhuluka Ganda & Others	0.420	0.169													
				174	161/P	Mala-A	Bhuluka Ganda & Others	2.920	1.181													
				174	162	Mala-A	Bhuluka Ganda & Others	0.270	0.109													
				23	163	Mala-A	Ananda Badi	0.310	0.125													
				23	164	Mala-A	Ananda Badi	0.180	0.072													
				23	165	Mala-A	Ananda Badi	0.440	0.178													
				92	166	Mala-A	Tripurari Gand & Others	0.530	0.214													
				92	167	Atta	Tripurari Gand & Others	0.670	0.271													
				92	168	Mala-A	Tripurari Gand & Others	0.430	0.174													
				126	169	Atta	Parakhita Pradhan	0.310	0.125													
				262	170	Patharbani	A.J.A	0.940	0.380													
				346	171	Mala-A	Suru Badi	0.430	0.174													
				131	172/P	Jalasaya	Parakhita Pradhan & Others	2.800	1.133													
				131	173/P	Adi	Parakhita Pradhan & Others	0.050	0.020													
				59	174/P	Mala-A	Goura Pradhan	0.100	0.040													
				59	175/P	Berna	Goura Pradhan	0.440	0.178													
				59	176/P	Bahal	Goura Pradhan	0.270	0.109													
				59	177	Atta	Goura Pradhan	0.780	0.315													
				126	178	Atta	A.J.A	0.390	0.157													
				3	180	Mala	Ainthu Badi & Others	0.320	0.129													
				107	181	Mala	Durqa Jagadal & Others	2.480	1.003													
				152	182/P	mala	Bidyadhar Gand	0.450	0.182													
				152	183/P	Berna	Bidyadhar Gand	0.420	0.169													
				180	184/P	Berna	Mahguni Prasad Panigrahi	0.020	0.008													
				214	185/P	Atta	Lubha Bag	0.790	0.319													
				69	187/P	Atta	Chini Pradhan	0.220	0.089													
				34	597/P	Atta	Kirtanubha Sagar	0.150	0.060													
				156	288/P	Atta	Biranchi Surajal	0.100	0.040													
				156	289/P	Bahal	Biranchi Surajal	1.100	0.445													
				34	290	Berna	Kirta Sagar	0.050	0.020													
				259	291	Adi	Rakhit	0.140	0.056													
				259	292	Jalasaya	Rakhit	0.400	0.161													
				259	293/P	Sarba sadharanJojana	Rakhit	0.050	0.020													
				164	294/P	Mala	Baisakhu Badi	0.390	0.157													
				77	295/P	Jalasaya	Janu Badi	0.080	0.032													
				259	296/P	Jalasaya	Rakhit	0.030	0.012													
				259	297	Mala	Rakhit	0.300	0.121													
				3	298	Mala	Ainthu Badi & Others	0.240	0.097													
				152	299	Mala	Bidyadhar Gand	0.350	0.141													
				60	300	Mala	Goura Badi	0.160	0.064													
				79	301	Mala	Janma Badi	0.260	0.105													
				77	302	Mala	Janu Badi	0.380	0.153													
				164	303	Mala	Baisakhu Badi	0.390	0.157													
				3	304	Mala	Ainthu Badi & Others	0.270	0.109													
				259	305	Jalasaya	Rakhit	0.120	0.048													
				259	306	Jalasaya	Rakhit	0.120	0.048													
				259	307/P	Jalasaya	Rakhit	0.050	0.020													
				260	308	Rasta	Sarbasadharan	1.720	0.696													
				107	324/P	Mala	Durqa Jagadal & Others	0.250	0.101													
				104	403/P	Mala	Dinabandhu Bhoi	0.100	0.040													
				144	404/P	Mala	Basista Pradhan	0.100	0.040													
				214	407/P																	

3	GBC Quartz & Gem Stone	Bhutipalli	Running	208	432/P	Mala-A	Ramachandra Panigrahi	0.010	0.004	12.090	4.892	Quartz & Gem Stone	M/S Manikeswari Minerals	At/Po- Bhawanipatna, Dist- Kalahandi	NA	11/09/2006 to 10/09/2026 20Years	III(E) SM-35/03/3467/SM Dt- 16/02/2006	Rajendra Ku Agrawal	At/Po- Bhawanipatna, Dist- Kalahandi	Latitude-20°56'36.0" to 20°56'19.9"N Longitude- 84°05'23.1" to 84°05'12.8" "E"	GR-271757Cum MR- 123743Cum
				7	434/P	Mala-A	Ajanu Bhoi	0.200	0.080												
				92	445/P	Berna	Tripurari Gand & Others	0.070	0.028												
				23	446/P	Mala-A	anada Badi	0.300	0.121												
				59	449/P	Mala-A	Goura Pradhan	0.120	0.048												
				127	1110/P	Patita	Rakhit	0.010	0.004												
				110	1111/P	Atta	Sadhabani Pradhan	1.025	0.414												
				129	1112/P	Pathara bani	A.A.A	1.700	0.687												
				110	1113/P	Bahala Ajs	Sadhabani Pradhan	0.100	0.040												
				125	1130/P	Berna Ajs	Hrusikesh Panda	0.150	0.060												
				115	1131/P	Bahala Ajs	Srinibas Mahakur	0.175	0.070												
				115	1132/P	Bahala Ajs	Srinibas Mahakur	0.130	0.052												
				115	1135/P	Bahala Ajs	Srinibas Mahakur	0.060	0.024												
				5	688/P	Bahala Ajs	Udaya Pradhan	0.010	0.004												
				144	689/P	Bahala Ajs	Radhakanta Pradhan	0.130	0.052												
		144		690	Bahala Ajs	Radhakanta Pradhan	0.790	0.319													
		105		692/P	Mala	Benudhar Sahu	0.140	0.056													
		144		694/P	Berna Ajs	Radhakanta Pradhan	0.265	0.107													
		8		695/P	Mala Ajs	Kambu Pradhan	0.150	0.060													
		141		1643	Bahala Ajs	Raghab Pradhan	0.180	0.072													
		141		1644/P	Atta	Raghab Pradhan	0.090	0.036													
		144		1645/P	Atta	Radhakanta Pradhan	0.145	0.058													
		230		15	Mala	Sankara Patra	0.110	0.044													
		230		14	Mala	Sankara Patra	0.365	0.147													
		160		15	Mala	Bansidhar Mirdha	0.555	0.224													
		178		16	Mala	Beda Mirdha	0.820	0.331													
		270		17	Gochar	Rakhit	1.750	0.708													
		7		18/P	Bandha	Akur Biswal	0.250	0.101													
		124		21/P	Mala	Nabin Mahakur	0.250	0.101													
		230		22	Mala	Sankara Patra	0.860	0.348													
		104		30/P	Bahala Ajs	Damodhar Mahanandia	0.150	0.060													
		272		92	Pathara Chatan	A.A.A	1.730	0.700													
		9		160/P	Atta	Iswar Pradhan	1.250	0.505													
102	161/p	Atta	Ramanarayan Mishra & Others	0.550	0.222																
102	162/P	Atta	Ramanarayan Mishra & Others	0.450	0.182																
130	166/P	Gochara	Rakhita	20.027	8.104																
98	167	Atta	Raghunath Pradhan	0.460	0.186																
78	168	Atta	Biranchi Pradhani	0.130	0.052																
57	169	Atta	Paradesi Pradhan	0.130	0.052																
77	170	Atta	Bideshi Pradhan	0.075	0.030																
78	171	Mala-A	Biranchi Pradhani	0.120	0.048																
67	172	Mala-A	Paradesi Pradhan	0.120	0.048																
77	173	Mala-A	Bideshi Pradhan	0.120	0.048																
98	174	Atta	Raghunath Pradhan	0.750	0.303																
55	175	Mala-A	Dusta Pradhan	0.300	0.121																
13	176	Mala-A	Kasta Pradhan	0.560	0.226																
13	177/P	Mala-A	Kasta Pradhan	1.230	0.497																
55	178/P	Mala-A	Dusta Pradhan	0.320	0.129																
55	179/p	Mala-A	Dusta Pradhan	0.250	0.101																
13	180/P	Mala-A	Kasta Pradhan	0.540	0.218																
55	181	Mala-A	Dusta Pradhan	0.180	0.072																
13	182	Mala-A	Kasta Pradhan	0.200	0.080																
98	183	Mala-A	Raghunath Pradhan	1.248	0.505																
78	184	Berna-A	Biranchi Pradhani	0.415	0.167																
67	185	Berna-A	Paradesi Pradhan	0.300	0.121																
77	186	Berna-A	Bideshi Pradhan	0.350	0.141																
78	187	Berna-A	Biranchi Pradhani	0.350	0.141																
13	188	Berna-A	Kasta Pradhan	0.400	0.161																
97	189	Berna-A	Raghubar Barakutia	1.350	0.546																
60	190	Berna-A	Narayan Pradhan	2.200	0.892																
83	191	Berna-A	Brundaban Pradhan	0.425	0.171																
75	192	Berna-A	Babana Pradhan	0.405	0.163																
75	193	Berna-A	Babana Pradhan	0.225	0.091																
65	194	Berna-A	Pratap Pradhan	0.285	0.115																
65	195	Berna-A	Pratap Pradhan	0.415	0.167																
60	196	Berna-A	Narayan Pradhan	0.680	0.275																
83	197	Berna-A	Brundaban Pradhan	0.345	0.139																
55	198	Berna-A	Pratap Pradhan	0.180	0.072																
75	199	Berna-A	Babana Pradhan	0.110	0.044																
101	200	Berna-A	Ramnarayan Mishra	0.120	0.048																
9	201/P	Berna-A	Iswar Pradhan	0.500	0.202																
60	202	Mala-A	Narayan Pradhan	0.070	0.028																
59	203/P	Mala-A	Narasingh Pradhan & Others	0.010	0.004																
50	205/P	Mala-A	Ramnarayan Mishra	0.035	0.014																
75	206/P	Bahal-A	Babana Pradhan	0.280	0.113																
92	209/P	Bahal-A	Mahaguru Thapa	0.080	0.032																
56	220	Berna-A	Debara Sethi	0.100	0.040																
70	293/P	Berna-A	Prasanta Ku Mishra	0.075	0.030																
61	297	Berna-A	Narayan Pr Mishra	0.310	0.125																
70	298/P	Berna-A	Prasanta Ku Mishra	0.390	0.157																
61	299	Berna-A	Narayan Prasad Mishra	0.435	0.176																
61	300	Berna-A	Narayan Prasad Mishra	0.370	0.149																
133/8	301	Bahal-A	Satya Barna Mishra	1.160	0.469																
51	302	Berna-A	Durga Pr Mishra	0.840	0.339																
133/8	303	Berna-A	Satyabarna Mishra & Others	0.370	0.149																
6	304	Berna-A	Anand Prasad Mishra	1.200	0.485																
24	305	Berna-A	Gangadhar Mishra	0.500	0.202																
4	Bankia Quartz & Gem Stone	Bankia	Running	9	160/P	Atta	Iswar Pradhan	1.250	0.505	52.120	21.092	Quartz & Gem Stone	M/S Manikeswari Minerals	At/Po- Bhawanipatna, Dist- Kalahandi	ML NO.22	NA	III(E) SM-36/2003/262/SM Dt- 07/01/2017	Rajendra Ku Agrawal	At/Po- Bhawanipatna, Dist- Kalahandi	Latitude-20°56'45" to 20°56'10"N Longitude- 84°05'19" to 84°05'38" "E"	GR- 406616Cum MR- 392840Cum
				102	161/p	Atta	Ramanarayan Mishra & Others	0.550	0.222												
				102	162/P	Atta	Ramanarayan Mishra & Others	0.450	0.182												
				130	166/P	Gochara	Rakhita	20.027	8.104												
				98	167	Atta	Raghunath Pradhan	0.460	0.186												
				78	168	Atta	Biranchi Pradhani	0.130	0.052												
				57	169	Atta	Paradesi Pradhan	0.130	0.052												
				77	170	Atta	Bideshi Pradhan	0.075	0.030												
				78	171	Mala-A	Biranchi Pradhani	0.120	0.048												
				67	172	Mala-A	Paradesi Pradhan	0.120	0.048												
				77	173	Mala-A	Bideshi Pradhan	0.120	0.048												
				98	174	Atta	Raghunath Pradhan	0.750	0.303												
				55	175	Mala-A	Dusta Pradhan	0.300	0.121												
				13	176	Mala-A	Kasta Pradhan	0.560	0.226												
				13	177/P	Mala-A	Kasta Pradhan	1.230	0.497												
				55	178/P	Mala-A	Dusta Pradhan	0.320	0.129												
				55	179/p	Mala-A	Dusta Pradhan	0.250	0.101												
				13	180/P	Mala-A	Kasta Pradhan	0.540	0.218												
				55	181	Mala-A	Dusta Pradhan	0.180	0.072												
				13	182	Mala-A	Kasta Pradhan	0.200	0.080												
				98	183	Mala-A	Raghunath Pradhan	1.248	0.505												
				78	184	Berna-A	Biranchi Pradhani	0.415	0.167												
				67	185	Berna-A	Paradesi Pradhan	0.300	0.121												
				77	186	Berna-A	Bideshi Pradhan	0.350	0.141												
				78	187	Berna-A	Biranchi Pradhani	0.350	0.141												
				13	188	Berna-A	Kasta Pradhan	0.400	0.161												
				97	189	Berna-A	Raghubar Barakutia	1.350	0.546												
				60	190	Berna-A	Narayan Pradhan	2.200	0.892												
				83	191	Berna-A	Brundaban Pradhan	0.425	0.171												
				75	192	Berna-A	Babana Pradhan	0.405	0.163												
				75	193	Berna-A	Babana Pradhan	0.225	0.091												
				65	194	Berna-A	Pratap Pradhan	0.285	0.115												
				65	195	Berna-A	Pratap Pradhan	0.415	0.167												
60	196	Berna-A	Narayan Pradhan	0.680	0.275																
83	197	Berna-A	Brundaban Pradhan	0.345	0.139																
55	198	Berna-A	Pratap Pradhan	0.180	0.072																
75	199	Berna-A	Babana Pradhan	0.110	0.044																
101	200	Berna-A	Ramnarayan Mishra	0.120	0.048																
9	201/P	Berna-A	Iswar Pradhan	0.500	0.202																
60	202	Mala-A	Narayan Pradhan	0.070	0.028																
59	203/P	Mala-A	Narasingh Pradhan & Others	0.010	0.004																
50	205/P	Mala-A	Ramnarayan Mishra	0.035	0.014																
75	206/P	Bahal-A	Babana Pradhan	0.280	0.113																
92	209/P	Bahal-A	Mahaguru Thapa	0.080	0.032																
56	220	Berna-A	Debara Sethi	0.100	0.040																
70	293/P	Berna-A	Prasanta Ku Mishra	0.075	0.030																
61	297	Berna-A	Narayan Pr Mishra	0.310	0.125																
70	298/P	Berna-A	Prasanta Ku Mishra	0.390	0.157																
61	299	Berna-A	Narayan Prasad Mishra	0.435	0.176																
61	300	Berna-A	Narayan Prasad Mishra	0.370	0.149																
133/8	301	Bahal-A	Satya Barna Mishra	1.160	0.469																
51	302	Berna-A	Durga Pr Mishra	0.840	0.339																
133/8	303	Berna-A	Satyabarna Mishra & Others	0.370	0.149																
6	304	Berna-A	Anand Prasad Mishra	1.200	0.485																
24	305	Berna-A	Gangadhar Mishra	0.500	0.202																

7	Bagbahali Quartz & Semi- Precious Stone	Bagbahali Junglic No. 32	Non-operational	1	2/P	Patita	Rakhit	28.027	11.342	90.387	36.578	Quartz & Semi-Precious Stone	Jay Jagannath Multi-Mineral Pvt. Ltd.	L-193, Baramunda, H.B Colony, Bhubaneswar-751003	M.L No- 107/S	NA	NA	Manas Ranjan saho	L-193, Baramunda, H.B Colony, Bhubaneswar-751003	NA	NA
		1		3/P	Patita	Rakhit	18.380	7.438													
				54/P	Patita	Rakhit	0.650	0.263													
		2		55	Patita	Rakhit	0.200	0.080													
		2		56/P	Patita	Rakhit	0.500	0.202													
		2		57/P	Patita	Rakhit	0.550	0.222													
		2		58/P	Patita	Rakhit	0.320	0.129													
		2		59/P	Patita	Rakhit	0.210	0.084													
		2		121/P	Patita	Rakhit	0.650	0.263													
		2		122	Patita	Rakhit	0.675	0.273													
		2		123	Patita	Rakhit	0.500	0.202													
		2		124	Patita	Rakhit	0.375	0.151													
		2		125	Patita	Rakhit	0.150	0.060													
		5		126	Patita	P. Dehury	0.075	0.030													
		2		127	Patita	Rakhit	0.075	0.030													
		4		128/P	Rasta	Sarbasadharan	0.100	0.040													
		5		129/P	Patita	P. Dehury	0.300	0.121													
		4		53/P	Rasta	Sarbasadharan	0.060	0.024													
		4		146/P	Patita	Sarbasadharan	0.030	0.012													
				120/P	Patita	Rakhit	0.010	0.004													
8	Khairmal Quartz & Semi- Precious Stone	Khairmal	Non-operational	8	26/P	Patita	Rakhit	43.625	17.654	66.415	26.877	Quartz & Semi-Precious Stone	Jay Jagannath Multi-Mineral Pvt. Ltd.	L-193, Baramunda, H.B Colony, Bhubaneswar-751003	M.L No- 109/S	NA	NA	Manas Ranjan saho	L-193, Baramunda, H.B Colony, Bhubaneswar-751003	NA	NA
				8	27/P	Patita	Rakhit	19.420	7.858												
				8	28/P	Patita	Rakhit	1.870	0.756												
				8	29/P	Patita	Rakhit	1.500	0.607												
9	Janakapur & Khandahata Quartz & Semi Precious Stone	Janakapur No-238	Non-operational	60	12/P	Berna	Balaram Pradhan & Others	0.020	0.008	22.804	9.228	Quartz & Semi-Precious Stone	Jay Jagannath Multi-Mineral Pvt. Ltd.	L-193, Baramunda, H.B Colony, Bhubaneswar-751003	M. No- 104/S	NA	NA	Manas Ranjan saho	L-193, Baramunda, H.B Colony, Bhubaneswar-751003	NA	NA
				60	13/P	Berna	Balaram Pradhan & Others	0.245	0.099												
				48	14/P	Berna	Padu Urma & Others	0.080	0.032												
				48	16/P	Berna	Padu Urma & Others	0.090	0.036												
				48	17/P	Berna	Padu Urma & Others	2.345	0.948												
				82	18/P	Berna	Rudrakshya Prasad Kormi	0.325	0.131												
				77	19/P	Berna	Ramakanta Tarif	0.530	0.214												
				35	20/P	Berna	Dwaru Karna	0.090	0.036												
				61	27/P	Berna	Basu Karna	0.095	0.038												
				35	29/P	Berna	Dwaru Karna	0.185	0.074												
				77	30	Atta	Ramakanta Tarif	0.150	0.060												
				82	31	Atta	Rudrakshya Prasad Kormi	0.070	0.028												
				82	32	Bahal	Rudrakshya Prasad Kormi	0.450	0.182												
				48	33	Mala	Padu Urma & Others	0.680	0.275												
				48	34	Mala	Padu Urma & Others	0.060	0.024												
				48	35	Mala	Padu Urma & Others	0.320	0.129												
				48	36	Mala	Padu Urma & Others	0.320	0.129												
				102	37	Patharbani	Abad Aioqya anabadi	0.070	0.028												
				102	38	Patharbani	Abad Aioqya anabadi	0.050	0.020												
				102	39	Patharbani	Abad Aioqya anabadi	1.340	0.542												
				10	40/P	Mala	Ekadasia Pradhan	0.160	0.064												
				6	41	Mala	Udhaba Pradhan	0.420	0.169												
				56	42/P	Mala	Baruna Pradhan	0.760	0.307												
				10	43/P	Mala	Ekadasia Pradhan	0.060	0.024												
				5	57/P	Mala	Udhaba Pradhan	0.390	0.157												
				12	60/P	Mala	Kapur Urma	0.410	0.165												
				102	61	Patharbani	Abad Aioqya anabadi	0.040	0.016												
				82	62	Mala	Rudrakshya Prasad Kormi	1.110	0.449												
				11	63	Mala	Ekadasia Pradhan	0.120	0.048												
				5	64/P	Mala	Udhaba Pradhan	0.110	0.044												
				65	65/P	Mala	Biranchi Karna	0.060	0.024												
				71	66	Mala	Maharaga Singa	0.620	0.250												
				79	67/P	Mala	Rakesh Urma & Others	0.470	0.190												
				79	68	Mala	Rakesh Urma & Others	0.060	0.024												
				65	69	Mala	Biranchi Karna	0.500	0.202												
				5	70	Berna	Udhaba Pradhan	0.450	0.182												
				5	56/P	Berna	Udhaba Pradhan	0.110	0.044												
				55	71	Berna	Baruna Pradhan	0.330	0.133												
				10	72	Berna	Ekadasia Pradhan	0.080	0.032												
				10	73	Berna	Ekadasia Pradhan	0.180	0.072												
		97		74	Berna	Mutu Bahei & Others	0.100	0.040													
		10		75/P	Berna	Ekadasia Pradhan	0.332	0.134													
		10		85/P	Berna	Ekadasia Pradhan	0.012	0.004													
		97		87/P	Mala	Mutu Bahei & Others	0.795	0.321													
		97		86/P	Mala	Mutu Bahei & Others	0.020	0.008													
		97		88/P	Berna	Mutu Bahei & Others	0.270	0.109													
		55		89/P	Berna	Baruna Pradhan	0.350	0.141													
		55		90/P	Berna	Baruna Pradhan	0.125	0.050													
		11		92/P	Berna	Ekadasia Pradhan	0.620	0.250													
		11		91/P	Berna	Ekadasia Pradhan	0.275	0.111													
		5		9	Berna	Udhaba Pradhan	0.810	0.327													
		6		94	Berna	Udhaba Pradhan	0.100	0.040													
		7		95	Patita	Udhaba Pradhan	0.120	0.048													
		7		96	Jalasaya	Udhaba Pradhan	0.880	0.356													
		7		96	Atta	Udhaba Pradhan	0.230	0.093													
		33		98	Berna	Dasaratha Taria	0.370	0.149													
		7		99/P	Mala	Udhaba Pradhan	0.475	0.152													
		5		103/P	Mala	Udhaba Pradhan	0.155	0.062													
		5		104/P	Berna	Udhaba Pradhan	0.510	0.206													
		301		1791/P	Bahal	Sadananda Karna	2.260	0.914													
368	1792/P	Patharbani	Abad Aioqya anabadi	0.040	0.016																
56	1793/P	Bahal	Gouri Sankar Ghasi & Others	0.02	0.008																
20	565/P	Atta	Chintamani Panda	0.180	0.072																
24	566/P	Atta	Dirju Ganda & Others	0.280	0.113																
20	567/P	Atta	Chintamani Panda	0.400	0.161																
24	568	Atta	Dirju Ganda & Others	0.570	0.230																
67	569	Patia	Shiba Panda	0.650	0.263																
8	571/P	Patia	Ashok Panda & Others	0.040	0.016																
73	636/P	Gochar	Rakhit	2.000	0.809																
73	637/P	Gochar	Rakhit	4.060	1.000																
69	638	Patia	Sulochana Naik	1.380	1.643																
5	639	Patia	Ashok Panda & Others	0.810	0.327																
22	640/P	Patia	Dasarath Tandia	1.100	0.445																
15	644/P	Patia	Krushna Ch Mishra	0.200	0.080																
15	645/P	Patia	Krushna Ch Mishra	0.380	0.153																
15	646/P	Patia	Krushna Ch Mishra	0.180	0.072																
73	654/P	Basti Jogya	Rakhit	0.060	0.024																
21	655/P	MalaAnjala	Tapaswini Bhara Sagar	0.520	0.210																
59	659/P	MalaAnjala	Ramesh Kumnhar	0.250	0.101																
21	660/P	MalaAnjala	Tapaswini Bhara Sagar	0.240	0.097																
15	661/P	MalaAnjala	Krushna Ch Mishra	0.500	0.202																
21	662/P	Patita	Tapaswini Bhara Sagar	0.480	0.194																
9	Khandahata No-236			20	565/P	Atta	Chintamani Panda	0.180	0.072												
				24	566/P	Atta	Dirju Ganda & Others	0.280	0.113												
				20	567/P	Atta	Chintamani Panda	0.400	0.161												
				24	568	Atta	Dirju Ganda & Others	0.570	0.230												
				67	569	Patia	Shiba Panda	0.650	0.263												
				8	571/P	Patia	Ashok Panda & Others	0.040	0.016												
				73	636/P	Gochar	Rakhit	2.000	0.809												
				73	637/P	Gochar	Rakhit	4.060	1.000												
				69	638	Patia	Sulochana Naik	1.380	1.643												
				5	639	Patia	Ashok Panda & Others	0.810	0.327												
				22	640/P	Patia	Dasarath Tandia	1.100	0.445												
				15	644/P	Patia	Krushna Ch Mishra	0.200	0.080												

11	Helmura Quartz Mines	Helmura No- 268	Non-operational	95	17	A.J.A Nala	Govt Land	1.880	0.760	51.610	20.881	Quartz	Dr. Prithi Paul Singh Sethi	NA	NA	NA	NA	Dr. Prithi Paul Singh Sethi	NA	NA	NA																
				89	20/P	Bahal	Hare Panda	0.280	0.113																												
				22	22/P	Atta	Gobinda Ch. Padhi	0.060	0.024																												
				22	31/P	Atta	Gobinda Ch. Padhi	0.700	0.283																												
				22	35/P	Berna	Gobinda Ch. Padhi	1.700	0.687																												
				18	23/P	Atta	Ganesh Meher	1.740	0.704																												
				89	24/P	Atta	Hare Panda	1.390	0.562																												
				6	26	Atta	Kapil Ganda	1.830	0.740																												
				78	27	Atta	Behed Panda	2.000	0.809																												
				29	29	Atta	Jeti Naik	2.000	0.809																												
				79	32/P	Atta	Shyam Sundar Jagdalla	0.800	0.323																												
				46	34/P	Atta	Nageswar Jagdalla	1.320	0.534																												
				8	47/P	Atta	Kanhai Sethi & Others	0.010	0.004																												
				70	65	Mala	Ranka Padhan	2.065	0.835																												
				92	78	Rasta	Govt Land	2.130	0.861																												
				45	407	Atta	Narayan Khandaqiri	2.000	0.809																												
				24	33/P	Atta	Chana Jagdala	1.010	0.408																												
				24	46/P	Atta	Chana Jagdala	0.765	0.309																												
				12	Hatilimunda Quartz & Gemstone	Hatilimunda	Non-operational	14	193/P													Mala	Padhi Bhoi	0.030	0.012	13.610	5.508	Quartz & Gem Stone	Ashok Goel	NA	NA	NA	NA	Ashok Goel	NA	NA	NA
								14	209/P													Bahal	Padhi Bhoi	0.370	0.149												
2	211/P	Patharchatan	Abad Ajoqya anabadi					0.080	0.032																												
12	212	Berna	Daman Bhoi					0.617	0.249																												
14	213	Berna	Padhi Bhoi					0.195	0.078																												
12	214	Mal	Daman Bhoi					0.707	0.286																												
12	215/P	Mal	Daman Bhoi					0.485	0.196																												
12	216	Atta	Daman Bhoi					0.200	0.080																												
14	217/P	Mal	Padhi Bhoi					0.256	0.103																												
12	218/P	Mal	Daman Bhoi					0.040	0.016																												
12	222/P	Mal	Daman Bhoi					0.400	0.161																												
3	223/P	Rasta	Sarbasadharan					0.105	0.042																												
14	225/P	Atta	Padhi Bhoi					0.660	0.267																												
12	226/P	Atta	Daman Bhoi					0.420	0.169																												
12	227/P	Atta	Daman Bhoi					1.534	0.620																												
3	229/P	Rasta	Sarbasadharan					0.150	0.060																												
12	231/P	Mal	Daman Bhoi					0.206	0.083																												
12	232	Mal	Daman Bhoi					0.893	0.361																												
14	233	Mal	Padhi Bhoi					0.063	0.025																												
12	234	Mal	Daman Bhoi					0.134	0.054																												
12	235/P	Atta	Daman Bhoi					0.242	0.097																												
14	236	Atta	Padhi Bhoi					0.102	0.041																												
14	237	Berna	Padhi Bhoi					0.683	0.276																												
10	238	Nal	Chandra Bhoi & Others					0.070	0.028																												
15	239	Nal	Bibhisana Pradhan					0.025	0.010																												
17	240/P	Nal	Sundar Bhoi					0.150	0.060																												
15	241	Nal	Bibhisana Pradhan					0.035	0.014																												
10	242	Nal	Chandra Bhoi & Others					0.025	0.010																												
15	243/P	Nal	Bibhisana Pradhan					0.050	0.020																												
14	305	Nal	Padhi Bhoi					0.084	0.033																												
17	256/P	Berna	Sundar Bhoi					0.068	0.027																												
13	257	Mal	Dharanidhar Pradhan					0.233	0.094																												
15	258/P	Berna	Bibhisana Pradhan					0.230	0.093																												
13	259	Berna	Dharanidhar Pradhan					0.280	0.113																												
15	260/P	Berna	Bibhisana Pradhan					0.118	0.047																												
3	261/P	Rasta	Sarbasadharan					0.380	0.153																												
15	262/P	Nal	Bibhisana Pradhan					0.090	0.036																												
15	264/P	Berna	Bibhisana Pradhan					0.025	0.010																												
15	266/P	Nal	Bibhisana Pradhan					0.250	0.101																												
3	267/P	Rasta	Sarbasadharan					0.230	0.093																												
4	252/P	Gochar	Rakhit	0.110	0.044																																
4	287/P	Gochar	Rakhit	0.210	0.084																																
4	288/P	Gochar	Rakhit	0.400	0.161																																
4	289/P	Gochar	Rakhit	0.270	0.109																																
15	290/P	Atta	Bibhisana Pradhan	0.675	0.273																																
30	291/P	Mala	Chandra Bhoi & Others	0.270	0.109																																
15	255/P	Atta	Bibhisana Pradhan	0.760	0.307																																
13				5	498/P	Berna	Achutananda Dalei & Others	0.120	0.048																												
				159	499/P	Berna	Satyabadi Majhi	0.120	0.048																												
				159	500/P	Berna	Satyabadi Majhi	0.150	0.060																												
				5	501/P	Atta	Achutananda Dalei & Others	0.040	0.016																												
				207	547/P	Mahara	Rakhit	0.020	0.008																												
				5	554/P	Gharabari	Achutananda Dalei & Others	0.060	0.024																												
				5	555/P	Gharabari	Achutananda Dalei & Others	0.100	0.040																												
				5	556/P	Bahal	Achutananda Dalei & Others	0.150	0.060																												
				81	557/P	Bahal	Narayan Bagh	0.030	0.012																												
				164	558/P	Bahal	Narayan Bagh	0.700	0.283																												
				59	559/P	Atta	Jhasketan Dalei & Others	1.080	0.437																												
				59	560	Atta	Jhasketan Dalei & Others	0.480	0.194																												
				59	561	Mala	Jhasketan Dalei & Others	0.930	0.376																												
				59	562	Bahal	Jhasketan Dalei & Others	0.170	0.068																												
				5	563/P	Bahal	Achutananda Dalei & Others	1.200	0.485																												
				59	564	Mala	Jhasketan Dalei & Others	0.130	0.052																												
				5	565/P	Atta	Achutananda Dalei & Others	1.000	0.404																												
				5	566	Bahal	Achutananda Dalei & Others	0.590	0.238																												
				59	567	Atta	Jhasketan Dalei & Others	0.760	0.307																												
				138	568	Mala	Murali Dakei & Others	0.390	0.157																												
				138	569	Mala	Murali Dakei & Others	0.240	0.097																												
				59	570	Mala	Jhasketan Dalei & Others	0.170	0.068																												
				138	571	Mala	Murali Dakei & Others	0.180	0.072																												
				210	572	Dunguri	Abada Ajoqya Anabadi	6.300	2.549																												
				208	573/P	Rasta	Sarbasadharan	0.400	0.161																												
				210	574	Dunguri	Abad Ajoqya anabadi	1.250	0.505																												
				47	575	Atta	Ghasi Patra & Others	0.990	0.400																												
				47	576	Atta	Ghasi Patra & Others	1.200	0.485																												
				47	577	Atta	Ghasi Patra & Others	0.150	0.060																												
				47	578	Atta	Ghasi Patra & Others	0.060	0.024																												
				47	579	Atta	Ghasi Patra & Others	0.090	0.036																												
				210	580	Chattan	Abad Ajoqya anabadi	0.500	0.202																												
				61	581	Bahal	Damaru Patra & Others	0.120	0.048																												
				61	582	Bahal	Damaru Patra & Others	0.156	0.063																												
				61	583	Bahal	Damaru Patra & Others	0.156	0.063																												
				61	584	Bahal	Damaru Patra & Others	0.262	0.106																												
				44	585	Atta	Ghasi Patra	0.490	0.198																												
				44	586	Bahal	Ghasi Patra	0.660	0.267																												
				74	587	Bahal	Dillip Patra & Others	1.140	0.461																												
				44	588	Bahal	Ghasi Patra	0.190	0.076																												

215	26	Atta	Radhamadhab Panigrahi	1.600	0.647
215	27	Atta	Radhamadhab Panigrahi	0.280	0.113
175	28	Atta	Radhamadhab Panigrahi	0.170	0.068
16	29	Mala	Urmila Naik & Others	0.100	0.040
215	30	Atta	Radhamadhab Panigrahi	0.530	0.214
215	31	Atta	Radhamadhab Panigrahi	1.270	0.513
215	32	Atta	Radhamadhab Panigrahi	0.910	0.368
175	33	Atta	Radhamadhab Panigrahi	0.170	0.068
175	34	Atta	Radhamadhab Panigrahi	2.920	1.181
177	35	Atta	Radesyama Panigrahi	1.740	0.704
177	36	Atta	Radesyama Panigrahi	0.140	0.056
177	37	Atta	Radesyama Panigrahi	0.040	0.016
34	38	Atta	Sri Govinda Gopal Mahaprabhu	0.190	0.076
34	39	Atta	Sri Govinda Gopal Mahaprabhu	0.040	0.016
202	40/P	Patita	Suresh Prasad Panda & Rajendra Panda	0.380	0.153
177	41/P	Atta	Radesyama Panigrahi	0.160	0.064
177	42	Rasta	Radesyama Panigrahi	0.340	0.137
34	43	Patita Rasta	Sri Govinda Gopal Mahaprabhu	0.150	0.060
202	44	Patita	Suresh Prasad Panda & Rajendra Panda	0.110	0.044
34	45	Atta	Sri Govinda Gopal Mahaprabhu	0.100	0.040
34	46	Atta	Sri Govinda Gopal Mahaprabhu	0.970	0.392
177	47	Atta	Radesyama Panigrahi	0.890	0.360
34	48	Atta	Sri Govinda Gopal Mahaprabhu	0.380	0.153
34	49	Atta	Sri Govinda Gopal Mahaprabhu	1.015	0.410
34	50	Atta	Sri Govinda Gopal Mahaprabhu	2.300	0.930
215	51	Atta	Radhamadhab Panigrahi	0.240	0.097
34	52	Patita	Sri Govinda Gopal Mahaprabhu	0.150	0.060
175	53	Atta	Radhamadhab Panigrahi	0.530	0.214
34	54	Patita	Sri Govinda Gopal Mahaprabhu	0.210	0.084
34	55	Atta	Sri Govinda Gopal Mahaprabhu	1.540	0.623
215	56	Rasta	Sarbasadharan	0.340	0.137
32	57	Atta	Kunja Bihari Panigrahi	0.060	0.024
32	58	Atta	Kunja Bihari Panigrahi	0.380	0.153
32	59	Atta	Kunja Bihari Panigrahi	0.220	0.089
32	60	Atta	Kunja Bihari Panigrahi	0.150	0.060
315	61	Atta	Radhamadhab Panigrahi	0.450	0.182
34	62	Patita	Sri Govinda Gopal Mahaprabhu	0.070	0.028
34	63	Atta	Sri Govinda Gopal Mahaprabhu	0.150	0.060
215	64	Atta	Radhamadhab Panigrahi	0.750	0.300
215	65	Mala	Radhamadhab Panigrahi	0.280	0.113
215	66	Atta	Radhamadhab Panigrahi	0.530	0.214
215	67	Adi	Radhamadhab Panigrahi	0.700	0.283
215	68	Adi	Radhamadhab Panigrahi	0.240	0.097
32	69	Atta	Kunja Bihari Panigrahi	0.490	0.198
32	70	Atta	Kunja Bihari Panigrahi	0.650	0.263
214	71	Gochar	Rakhit	0.250	0.101
32	72	Atta	Kunja Bihari Panigrahi	1.100	0.445
32	73	Atta	Kunja Bihari Panigrahi	0.610	0.246
175	74	Adi	Radhamadhab Panigrahi	0.280	0.113
175	75	Atta	Radhamadhab Panigrahi	0.320	0.129
175	76/P	Atta	Radhamadhab Panigrahi	0.030	0.012
32	77/P	Atta	Kunja Bihari Panigrahi	0.070	0.028
32	78/P	Mala	Kunja Bihari Panigrahi	0.120	0.048
177	80/P	Atta	Rajaogopal Panigrahi	0.030	0.012
177	81	Mala	Rajaogopal Panigrahi	0.110	0.044
177	82	Mala	Radesyama Panigrahi	0.240	0.097
177	83	Atta	Radesyama Panigrahi	1.000	0.404
214	84/P	Gramya Jungle	Rakhit	0.220	0.089
34	91/p	Atta	Sri Govinda Gopal Mahaprabhu	0.270	0.109
34	92/P	Atta	Sri Govinda Gopal Mahaprabhu	0.050	0.020
215	94/P	Rasta	Sarbasadharan	0.050	0.020
64	102/P	Atta	Secha Banka	0.070	0.028
168	103/P	Atta	Ranka Bagha	0.100	0.040
92	104/P	Atta	Dhanu Bagha	0.230	0.093
168	105	Atta	Ranka Bagha	0.780	0.315
108	106	Atta	Padu Bagha	0.400	0.161
64	107	Atta	Secha Banka	0.810	0.327
92	108	Atta	Dhanu Bagha	0.230	0.093
23	109	Atta	Kartika Pradhan & Others	0.070	0.028
217	110/P	Patharbani	Abad Ajoqya anabadi	0.070	0.028
217	112/P	Patharbani	Abad Ajoqya anabadi	0.110	0.044
15	113	Atta	Urmila Mendili	1.390	0.562
215	114	Rasta	Sarbasadharan	0.420	0.169
23	115	Atta	Kartika Pradhan & Others	1.140	0.461
34	116	Atta	Sri Govinda Gopal Mahaprabhu	0.420	0.169
34	117	Atta	Sri Govinda Gopal Mahaprabhu	0.480	0.194
177	118	Atta	Radesyama Panigrahi	0.600	0.242
128	119	Atta	Babaji Behera	0.200	0.080
215	120	Rasta	Sarbasadharan	0.640	0.258
215	121	Dharsa	Sarbasadharan	0.740	0.299
214	122/P	Rasta	Sarbasadharan	0.060	0.024
215	123/P	Rasta	Sarbasadharan	0.020	0.008
34	126/P	Patita	Sri Govinda Gopal Mahaprabhu	0.120	0.048
214	127/P	Bandha	Rakhit	0.700	0.283
214	128	Adi	Rakhit	0.060	0.024
214	129	Gochar	Rakhit	0.880	0.356
217	130	Nala	Abad Ajoqya anabadi	0.250	0.101
214	131	Gochar	Rakhit	0.580	0.234
215	132/P	Rasta	Sarbasadharan	0.490	0.198
160	133/P	Atta	Muralidhar Pradhan	0.090	0.036
154	183/P	Atta	Madhu Sahu	0.040	0.016
215	184	Rasta	Sarbasadharan	0.780	0.315
94	1573/P	Atta	Narayan Banachor	0.060	0.024
60	1576/P	Atta	Chala Coukidar	0.200	0.080
60	1577	Atta	Chala Coukidar	0.080	0.032
24	1578	Atta	Kali Charan Panigrahy	0.440	0.178
180	1579	Atta	Sri Govinda Gopal Mahaprabhu	4.500	1.821
214	1580/P	Gramya Jungle	Rakhit	2.100	0.849
214	1582/P	Gochar	Rakhit	0.010	0.004
24	1587/P	Berna	Kali Charan Panigrahy	0.180	0.072
24	1588/P	Berna	Kali Charan Panigrahy	0.100	0.040
217	1614/P	Patharbani	Abad Ajoqya anabadi	0.110	0.044
25	1615/P	Mala	Sri Govinda Gopal Mahaprabhu	0.050	0.020
214	1616/P	Gochar	Rakhit	0.020	0.008

Telipali No- 171

16 Telipali Quartz & Mikaand Gem Stone Quarry

Non-operational

107.010

43.305

Quartz & Mikaand Gem Stone

M/s Ferro Alloys Corporation Ltd.

NA

NA

NA

NA

M/s Ferro Alloys Corporation Ltd.

NA

NA

NA

160	1660/P	Mala	Muralidhar Pradhan	0.070	0.028
160	1661	Berna	Muralidhar Pradhan	0.660	0.267
160	1662/P	Berna	Muralidhar Pradhan	0.100	0.040
160	1663/P	Berna	Muralidhar Pradhan	0.050	0.020
188	1672/P	Mala	Santosh Baghar	0.170	0.068
46	1695/P	Atta	Ghualu Baghar	0.060	0.024
92	1696/P	Atta	Dhanu Bagha	0.100	0.040
92	1697/P	Atta	Dhanu Bagha	0.080	0.032
46	1698/P	Mala	Ghualu Baghar	0.420	0.169
24	1699	Berna	Kali Charan Panigrahy	1.160	0.469
24	1700	Berna	Kali Charan Panigrahy	0.120	0.048
25	1701	Bhal	Sri Govinda Gopal Mahaprabhu	0.520	0.210
24	1702	Atta	Kali Charan Panigrahy	2.580	1.044
24	1703	Atta	Kali Charan Panigrahy	1.640	0.663
24	1704	Atta	Kali Charan Panigrahy	1.040	0.420
214	1705	Gramya Jungle	Rakhit	0.520	0.210
24	1706	Bahal	Kali Charan Panigrahy	0.040	0.016
25	1707		Sri Govinda Gopal Mahaprabhu	0.380	0.153
214	1708	Gramya Jungle	Rakhita	0.110	0.044
175	1709	Atta	Radhamadhab Panigrahi	0.480	0.194
180	1710	Bahal	Sri Govinda Gopal Mahaprabhu	1.070	0.433
24	1711	Atta	Kali Charan Panigrahy	0.300	0.121
180	1712	Bahal	Sri Govinda Gopal Mahaprabhu	0.190	0.076
24	1713/P	Atta	Kali Charan Panigrahy	0.600	0.242
23	1714/P	Atta	Kartika Pradhan & Others	0.180	0.072
15	1715	Mala	Urmila Mendili	0.230	0.093
217	1716	Patharabani	Abad Ajoqya anabadi	0.010	0.004
23	1718/P	Bahal	Kartika Pradhan & Others	0.010	0.004
25	1720/P	Atta	Sri Govinda Gopal Mahaprabhu	0.820	0.331
180	1721/P	Patita	Sri Govinda Gopal Mahaprabhu	0.170	0.068
24	1722	Atta	Kali Charan Panigrahy	0.600	0.242
180	1723	Bahal	Sri Govinda Gopal Mahaprabhu	0.770	0.311
217	1724	Patharabani	Abad Ajoqya anabadi	0.240	0.097
25	1725	Bahal	Sri Govinda Gopal Mahaprabhu	0.140	0.056
25	1726/P	Atta	Sri Govinda Gopal Mahaprabhu	1.530	0.619
25	1727	Bahal	Sri Govinda Gopal Mahaprabhu	0.310	0.125
217	1728/P	Patharabani	Abad Ajoqya anabadi	0.020	0.008
217	1729/P	Patharabani	Abad Ajoqya anabadi	0.170	0.068
25	1730/P	Bahal	Sri Govinda Gopal Mahaprabhu	0.280	0.113
25	2287	Atta	Sri Govinda Gopal Mahaprabhu	0.370	0.149
29	2290	Atta	Kasi Behera	0.200	0.080
122	2291	Atta	Banamali Baghara	0.200	0.080
123	2292	Atta	Balaram Barik	0.200	0.080
22	2293	Atta	Kasta Dunguria	0.200	0.080
216	2294	Atta	Abad Ajoqya anabadi	0.150	0.060
10	3/P	Patita	Abad Ajoqya anabadi	0.030	0.012
6	8/P	Atta	Muralidhar Pradhan	0.030	0.012
6	9/P	Mala	Muralidhar Pradhan	0.170	0.068
10	10/P	Patita	Abad Ajoqya anabadi	0.070	0.028
10	11/P	Patita	Abad Ajoqya anabadi	0.090	0.036
10	14/P	Patita	Abad Ajoqya anabadi	0.020	0.008
10	16/P	Patita	Abad Ajoqya anabadi	0.310	0.125
10	17/P	Patita	Abad Ajoqya anabadi	0.750	0.303
10	18/P	Patita	Abad Ajoqya anabadi	0.340	0.137
10	19/P	Patita	Abad Ajoqya anabadi	0.280	0.113
10	20/P	Patita	Abad Ajoqya anabadi	0.090	0.036
10	24/P	Patita	Abad Ajoqya anabadi	0.370	0.149
14	30/P	Patita	Abad Ajoqya anabadi	0.350	0.141
8	32/P	Patita	Rakhit	0.770	0.311
5	34/P	Atta	Satika Kalecha	0.560	0.226
8	35/P	Patita	Rakhit	1.130	0.457
7	36	Atta	Satika Kalecha	2.000	0.809
8	37	Patita	Rakhit	1.920	0.776
8	38	Gochar	Rakhit	0.570	0.230
8	39/P	Bastijogya	Rakhit	0.270	0.109
1	40/P	Atta	Kasta Dunguria	0.900	0.364
2	41	Mala	Kuladhara Nayak	0.415	0.167
6	42	Berna	Muralidhar Pradhan	0.060	0.024
2	43/P	Mala	Kuladhara Nayak	0.500	0.202
6	44	Atta	Muralidhar Pradhan	0.100	0.040
10	45	Patita	Abad Ajoqya anabadi	0.170	0.068
6	46/P	Atta	Muralidhar Pradhan	1.470	0.594
4	47/P	Mala	Bhagabat Naik	2.000	0.809
8	48	Unnata Yojana Jogya	Rakhit	0.840	0.339
3	49/P	Mala	Purna Kalata	2.000	0.809
2	50/P	Mala	Kuladhara Nayak	1.065	0.430
1	51/P	Atta	Kasta Dunguria	0.300	0.121
9	54/P	Rasta	Sarbasadharan	0.300	0.121
10	58	Patita	Abad Ajoqya anabadi	0.340	0.137
10	59	Patita	Abad Ajoqya anabadi	0.185	0.074
10	60	Patita	Abad Ajoqya anabadi	0.160	0.064

Telipali Jungle No-172

17	Burbuda Block	Burbuda & Others Tahasil-Birmaharajpur	Non-operational	NA	NA	NA	NA	119.79	48.478	119.79	48.478	Quartz & Quartzite	NA	Govt Of Odisha	oration Work goin	NA	Not Auction	To be Auctoin	NA	NA	0.007257 Million T
18	Telipali Quarzite Block	Telipali, Tahasil-Birmaharajpur	Non-operational	NA	NA	NA	NA	NA	NA	NA	NA	Quarzite	NA	Govt Of Odisha	oration Work goin	NA	Not Auction	To be Auctoin	NA	9° to 20°56'15.305"N Longitude- 84°03'10.53	NA
19	Telipali & Ludumunda Quartz Block	Telipali, Tahasil-Birmaharajpur	Non-operational	NA	NA	NA	NA	NA	NA	NA	NA	Quartz	NA	Govt Of Odisha	oration Work goin	NA	Not Auction	To be Auctoin	NA	to 20°56'22.16760"N Longitude- 84°03'07.87	NA
20	Chandili Quartz & Quarzite Block	Chandili etc Tahasil-Birmaharajpur	Non-operational	NA	NA	NA	NA	NA	NA	NA	NA	Quartz & Quartzite	NA	Govt Of Odisha	oration Work goin	NA	Not Auction	To be Auctoin	NA	54°03" to 20°53'44"N Longitude- 84°08'41" to	NA
21	Burbuda Quartz Block	Burbuda & Others Tahasil-Birmaharajpur	Non-operational	NA	NA	NA	NA	66.038	26.725	66.038	26.725	Quartz	NA	Govt Of Odisha	oration Work goin	NA	Not Auction	To be Auctoin	NA	-20°59'36" to 21°00'16"N Longitude- 84°06'4	NA