DISTRICT SURVEY REPORT FOR RIVER SAND MINING PROJECT FOR THE DISTRICT – BHANDARA

1.0 INTRODUCTION.

Ministry of Environment and Forest (MoEF) Notification 2006 and Sustainable Sand Mining Management Guidelines 2016 and as per provision in Mines and Minerals (Development and Regulation) Act 1957 Schedule 60 section 15, Govt Of Maharashtra makes a Minor Mineral Extraction Rules 2013 to extract all the minor mineral in scientific way so that there is no adverse impact on Environment and Climate. To extract the every minor mineral from any land (either Government or Private) there is provision of mining plan which is approved by competent authority; For long term leased minor mineral (5 – 10 years period) Senior Deputy Director of Directorate of Geology and Mining is a Competent authority, for short term Temporary permits which is valid for one year, Committee headed by Hon. Collector is Final authority to Approved the District Mining Plan.

As per Minor Mineral Extraction Rules 2013 Rules 70, Disposal of sand from River bed, Nallah and creeks by way of public auction, in this regards Govt resolution Gaukhni -10/0512/prakra kra 300/kha dated 12th March 2013 is applicable in entire state. As per Sustainable sand mining management guidelines 2016, Standard Environment condition for sand mining and sustainable mining practices, district level survey report should be prepared and area suitable for mining and area prohibited for mining be identified.

In this regard, river sand mining project of District Bhandara 2017 -18 having 77 proposal from All 7 tahsil namely Bhandara, Pawani, Mohadi, Tumsar, Lakhani, Lakhandur and Sakoli. Details of each Tahsilwise data are as given below,

<table>
<thead>
<tr>
<th>Sr No</th>
<th>Tahsil</th>
<th>Sandplot Included</th>
<th>Area cover in Ha</th>
<th>Qty estimated (In Brass)</th>
<th>Approx cost (@ Rs 1500/Brass)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bhandara</td>
<td>5</td>
<td>17.00</td>
<td>60953</td>
<td>70096000</td>
</tr>
<tr>
<td>2</td>
<td>Pawani</td>
<td>12</td>
<td>40.31</td>
<td>95075</td>
<td>113150700</td>
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<tr>
<td>3</td>
<td>Mohadi</td>
<td>16</td>
<td>46.50</td>
<td>178529</td>
<td>104788100</td>
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<tr>
<td>4</td>
<td>Tumsar</td>
<td>15</td>
<td>28.80</td>
<td>73918</td>
<td>54400300</td>
</tr>
<tr>
<td>5</td>
<td>Lakhani</td>
<td>6</td>
<td>11.70</td>
<td>20670</td>
<td>11791160</td>
</tr>
<tr>
<td>6</td>
<td>Lakhandur</td>
<td>9</td>
<td>23.01</td>
<td>63622</td>
<td>41179800</td>
</tr>
<tr>
<td>7</td>
<td>Sakoli</td>
<td>14</td>
<td>12.65</td>
<td>24554</td>
<td>10605300</td>
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<tr>
<td>Total</td>
<td></td>
<td>77</td>
<td>179.97</td>
<td>517321</td>
<td>406011360</td>
</tr>
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</table>
2.0 BRIEF DESCRIPTION OF PROJECT AND PROJECT PROPOUNENT.

2.1 Aim –

Bhandara district having 3 major river, Wainganga, Bavanthadi and Chulbandh, these river are in mature stage where the flow rate is slightly low than younger stage. In this pattern, river may change his behavior from erosion to deposition. In this stage river may deposits the sand & gravels.

Hydrological, if sand deposition in river bed could not be excavated regularly/ yearly basis, excessive sand thickness may causes to change the flow pattern of river that may damage the nearby crop and farms. It also affect on soil pattern of the adjoining area.

To avoid the above situation and keep the flow pattern as usual on regular basis, District Mining authority, Hydrologist from Groundwater surveys and Development agency and Tahsildar doing a joint scientific survey of sand plot (Pre monsoon & Post Monsoon) and measure the depth of sand thickness, check the water level scenario of the area and without affecting any environmental specification as mention in Govt. resolution dated 12.03.2013 they recommend a sand thickness for excavation.

2.2 Project Proponent –

Deputy Collector (Revenue) Collector office Bhandara is Project proponent who apply for Environment clearance for the Project. After Auction and Finalization of the agreement with highest bidder, Environment clearance certificate is transfer to concern bidder.

2.3 Period Of Project –

Period of the Project is 1st October 2017 to 30 September 2018.

2.4 Monitoring Authority –

Talathi, Circle Officer, Tahsildar, Subdivisional Magistrate (Revenue), District Mining Officer, Addititional Collector and Collector as well as the Officer from Directorate of Geology and Mining, Nagpur Maharshtra state is the monitoring authority. Officer deputed by district authority for monitoring an illegal sand excavation and transportation is also authority.

3.0 PROJECT RELATED TRIBUTARY

Wainganga is Major River flowing North to south and at Pawani it moves towards the east i.e. Lakhandur Tahsil and covering 4 tahsil in district i.e. Tumsar, Mohadi, Bhandara, Pawani and Lakhandur with length approx 130 km. Most of the sandplot comes in this river and quality of sand is famous in entire Maharashtra state as well as adjoining state like Chattisgarh and Madya Pradesh.
Chulbandh river is second important river which is flowing North to south of eastern part of district and covering 3 tahsil i.e. Sakoli, Lakhani and Lakhandur with length 77 km. Sakoli, Lakhni & Lakhandur Tahsil’s sandplot comes in Chulbandh river.

Bavanthadi River flowing to the north side of the district and it is boundary of district as well as Maharashtra state which divide from Madhya Pradesh. Total length of the river in district is 44.8 km, Tumsar Tahsil sandplot comes in this river.

Sur nalla is small tributaries flowing in Mohadi and Bhandara Tahsils, 5 sandplot of Mohadi tahsil comes in Sur River.

4.0 GEOLOGY, GEOMORPHOLOGY AND HYDROLOGY

4.1 – GEOLOGY

Bhandara district is unique in Maharashtra in the sense that the entire area of the district is occupied by metamorphic and igneous rocks. The district is underlain by various types of rock formations from the oldest Granites and Gneiss of the Precambrian to the Recent Alluvium.

4.1.1 – Hard Rock Area (Archean age) -- The granites and gneiss are found along a wide NE-SW tract in the north central part of the district, just north of Bhandara town. The gneiss comprises biotite-hornblende gneiss, amphibolites, granulites and migmatite. The biotite gneiss is often referred to as Tirodi gneiss. It is composite in character and forms the basement for younger metamorphosed sedimentary rocks.

4.1.2 – Dharwar Supergroup rocks -- The calc-granulites, mica and hornblende schist’s with associated quartzite’s form the Sausar Group. This is predominant in the north-eastern side of the district, occupying northern part of Tumsar taluka. The other dominant group of Meta sediments is termed as Sakoli Group and forms an important suite of rocks consisting mainly of low grade metamorphics such as phyllites, chlorite schist and quartzite’s. The outcrop of these rocks has a triangular shape, known as ‘Bhandara triangle’, with its apex near Gondia and its base stretching in the SE-SW direction occupying major points of Bhandara, Lakhani, Sakoli and Lakhandur talukas.

4.1.3 – Vindyan Supergroup rocks -- A small occurrence of Vindhyan formation is seen in the extreme southern part of the district in parts of Pawni taluka. This formation consists of hard and compact quartzitic sandstone.

4.2.1 – Soft Rock Area (Gondwana) -- Lower Gondwana sediments belonging to Kamthi Group are exposed in a narrow outcrop in the southern part of the district in parts of Lakhandur taluka at its border with Chandrapur district. These are composed of conglomerate, sandstone, shale and clay.
4.2.2 – Alluvium -- Adjoining the course of Wainganga River and Chulbhand River, a number of patches of Alluvium are found with an aerial extent ranging from 20 to 50 sq.km, the largest of which has an extent of 300 sq.km occupying major parts of Pawni taluka. The thickness of alluvium varies from 6 to 30 m.

4.2 - GEOMORPHOLOGY

The district forms part of Waingangā sub-basin and has an undulating terrain with elevations ranging from 263 to 315 m amsl. Physiographically, the district can be broadly divided into two units viz; the one controlled by structural features i.e. the structural origin and the other controlled by differential weathering i.e. the denudation origin. The structural hills and Ridges are more common in the eastern and southern parts of the district, while the educational features like pediments/peidiplains are seen in north central, west central and south-west portions.

4.3 – HYDROGEOLOGY

The Pre-Cambrian crystalline rocks are the major water bearing formations in the district. The weathered portions of crystalline rocks together with joints and fracture zones act as good aquifers. Ground water occurs under water table conditions in the weathered mantle and then in the fractured, well-jointed and sheared zones. Dugwells, dug cum borewells and bore wells are the common ground water abstraction structures. Ground water occurs under water table conditions and semi-confined to conditions in these formations. Water table conditions prevail in the weathered mantle and the fractures, jointed and sheared zones. At places where the argillaceous lithounits like phyllites and mica schist’s act as a confining medium, the ground water is found to occur under semi-confined conditions. In Gondwana, ground water occurs in the weathered mantle and the fairly well-jointed portions of these rocks which comprise pink coloured argillaceous quartzitic sandstones and carbonaceous shales. The weathered mantle constitutes a better aquifer in view of its high degree of porosity. Ground water occurs under water table conditions or phreatic condition in the weathered mantle and the joints and fractures of the country rock. It occurs under semi-confined state in the area where carbonaceous shale form aquicludes. It also occurs in the porous material of the sandstones. In the alluvium bordering major rivers especially the Waingangā, ground water occurs in the sand and gravel, present in the lower horizons. The upper horizon mainly consists of clay and fine silt. Ground water occurs in the alluvium under phreatic semi-confined conditions in the inter-granular pore spaces of sand and gravel.