



राज्य स्तरीय पर्यावरण समाघात निर्धारण प्राधिकरण, झारखण्ड

State Level Environment Impact Assessment Authority, Jharkhand

पौधशाला परिसर, धुर्वा, बस स्टैण्ड, के समीप, पो0+थाना-धुर्वा, राँची झारखण्ड 834004

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सत्यमेव जयते

पत्रांक:- 07

दिनांक:- 02-04-2023

प्रेषक:

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

सेवा में,

उपायुक्त,
जिला : पाकुड़।

विषय : पाकुड़ जिला का बालू खनिज से संबंधित DSR के अनुमोदन के संबंध में।

प्रसंग : आपका कार्यालय का पत्रांक-432/एम, दि0-04.03.2023।

महाशय,

उपर्युक्त विषयक आपके कार्यालय के प्रासंगिक पत्र दिनांक 04.03.2023 द्वारा पाकुड़, जिला का बालू खनिज से संबंधित DSR की एक प्रति अनुमोदन हेतु दिनांक 16.03.2023 को SEIAA कार्यालय में समर्पित किया गया।

तदनुसार SEAC, झारखण्ड की 102वीं बैठक दिनांक 21.03.2023 से दिनांक 25.03.2023 में Shri Pradeep Kumar, DMO, Pakur की उपस्थिति में M/s Atmos Sustainable Solution Pvt. Ltd., Noida, U.P. consultant द्वारा दिनांक 21.03.2023 में SEAC के समक्ष Presentation दिया गया, जिसमें DSR के Salient Features निम्नवत् बताये गये :-

1. The final DSR submitted is duly signed by all members of the Sub Divisional Committee and the Consultant. All the pages of the DSR are signed by the authorized officer of the Sub Divisional Committee.
2. The final DSR consists of the complete potential area and is demarcated as Potential Resource Area (PRA) / Sand Leases / Ghats as per Enforcement and Monitoring Guidelines for Sand Mining (EMGSM), 2020.
3. The replenishment study of pre & post monsoon period is included in final DSR.
4. The final DSR has been placed in the public domain for 01 (One) month from the 19.12.2022. As per the Sub Divisional Committee no comments / observations were obtained.
5. Demand and supply of the river bed material has been provided. The future demand for next 05 years is included in the final DSR.
6. The PRA / Sand Leases / Ghats have not been proposed on the confluence / meanders / concavities / active channels of the river.

1/20

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7. Khata & Khasra numbers of the lease area certified by the concerned Circle Officer (CO) are incorporated in the final DSR.
8. The distance of PRA / Sand Leases / Ghats from the Forest / Wildlife Protected area / Birds Sanctuary/ Wildlife Sanctuary / National Park / Eco Sensitive Zone has been verified and certified by the concerned DFOs of the respective Territorial and Wildlife division.
9. A report detailing the presence of aquatic animal in the river in proximity of the proposed PRA / Sand Leases / Ghats is included in the final DSR.
10. The proposed PRA / Sand Leases / Ghats meet the siting criteria of State Pollution Control Board / SEIAA.
11. High resolution color satellite images of the proposed potential sand mining areas are included in final DSR.
12. Bulk density and specific gravity of sand sample data has been provided by NABL accredited laboratory.
13. Cluster and contiguous cluster formation as per EMGSM guidelines, 2020 has been included in the Annexures.
14. Mining is restricted to 3/4th of the river width and 60% of the mineable reserve.
15. Transportation routes for movement of sand are provided in the final DSR.
16. All the annexures as per EMGSM guidelines, 2020 are included in the final DSR.
17. An undertaking with reference to Point no.9.3 of the EMGSM guidelines, 2020 regarding monitoring of mining near inter-district or inter-state boundary has been provided.
18. The representative of the Sub Divisional Committee along with the Consultants have affirmed that all the guidelines of EMGSM guidelines, 2020 / Hon'ble Apex Court in Civil Appeal no. 3661-3662/2020, Pawan Kumar vs State of Bihar & ors, Hon'ble NGT in O.A. no. 54/2022/EZ, Bhumi Adhigrahan Visthapan Avam Punarvas Kisan Samiti vs State of Jharkhand & ors have been followed in preparation of the final DSR.

SEAC द्वारा उपरोक्त तथ्यों के आलोक में सर्वसम्मति से आपके द्वारा समर्पित DSR को अनुमोदन हेतु SEIAA को अपनी अनुशंसा भेजी गयी।

SEAC की DSR Pakur को अनुमोदन हेतु भेजी गयी अनुशंसा के आलोक में SEIAA, झारखण्ड की 103वीं बैठक दिनांक 01.04.2023 एवं दिनांक 02.04.2023 में विचार किया गया।

विचारोपरांत SEAC द्वारा की गयी अनुशंसा के आलोक में SEIAA द्वारा सर्वसम्मति से पाकुड़ जिला का बालू खनिज से संबंधित DSR का अनुमोदन किया गया।

पाकुड़ जिला का बालू खनिज से संबंधित अनुमोदित DSR की एक मूल प्रति अत्र-सह-संलग्न कर आपको अग्रेतर कार्रवाई हेतु भेजी जा रही है।

अनु० यथोक्त।

विश्वासभाजन,

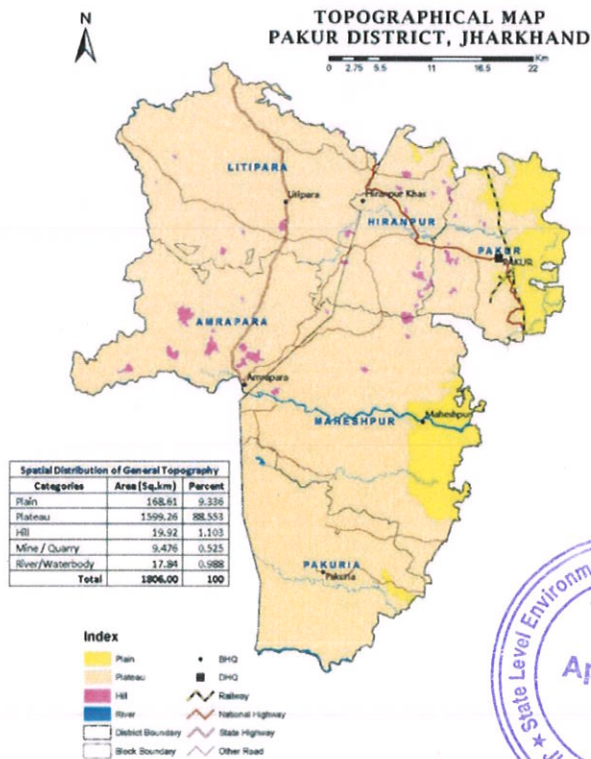
सदस्य सचिव,

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



DISTRICT SURVEY REPORT OF RIVER BED SAND MINING WITH POTENTIAL AREA FOR PAKUR DISTRICT, JHARKHAND

As per Notification No. S.O.141 (E) New Delhi Dated 15th of January 2016, S.O.3611 (E) New Delhi Dated 25th of July 2018, Sustainable Sand Mining Guidelines, 2016 and Enforcement & Monitoring Guidelines for Sand Mining (EMGSM) January 2020, Issued by Ministry of Environment, Forest and Climate Change (MoEF & CC)



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PREPARED BY
ATMOS SUSTAINABLE SOLUTION PVT. LTD.
A-73, 3rd Floor, Sector-65, Noida, Uttar Pradesh-201301
QCI NABET Accreditation No.-NABET/EIA/2023/IA0063

CERTIFICATE

The District Survey Report (DSR), Pakur for sand mineral has been prepared in accordance with guideline issued by the Ministry of Environment, Forest & Climate Change (MoEF&CC), Government of India vide the notification S.O. 141(E) Dated 15th January, 2016 and the amended notification S.O. 3611(E) Dated 25th July, 2018.

This DSR for sand mineral which is a compendium of available mineral resources, geographical set up, environmental and ecological condition of the district and is based on survey made on the sources of the different tehsils of the District and data various departments like Geology & Mining, Forests, Irrigation, Agriculture, Health Departments; published reports & websites. The DSR report will be web hosted for one month in the Pakur District to invite any comments from the public.

It will no doubt, form the basis for application for environmental clearance, preparation of reports and appraisal of projects. The SEIAA and SEAC will scrutinize the applications and recommended for environmental clearance of mining of minor minerals (sand) on the basis of this District Survey Report. As per guideline the Report will be updated once in every five years.

Reviewed By:


4/9/23
Deputy Commissioner

Pakur

Date:


02/04/2023
Member

State Level Environment Impact
Assessment Authority, Jharkhand



Approved By:

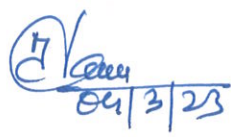
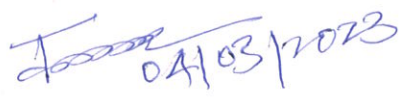
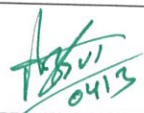
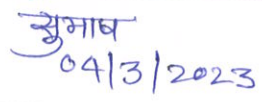
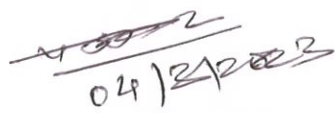

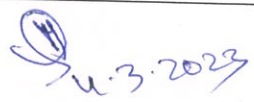

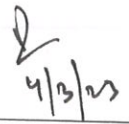

02/04/2023
Member Secretary

State Level Environment
Impact Assessment Authority,
Ranchi, Jharkhand


02/04/2023
Chairman

State Level Environment Impact
Assessment Authority, Jharkhand

**SUB-DIVISIONAL COMMITTEE COMPRISING
UNDER THE GUIDELINE OF MOEF & CC, NEW DELHI, 25TH JULY 2018**

Minor Irrigation Department Pakur	 04/3/23
State Pollution Control Board or Regional officer	 04/03/2023
DIST. AGRICULTURE OFFICER PAKUR	 04/3
Assistant Director, Geology Pakur	 04/3/2023
District Mining Officer Pakur	 04/3/2023
Divisional Forest Officer Pakur	
Additional collector, Pakur	 4.3.2023
Sub-Divisional Magistrate Pakur	 04.3.2023
Deputy Commissioner Pakur	 4/3/23





PREFACE

The purpose and structure of District Survey Report has been discretely discussed under Para 7(iii) (a) and Annexure (x) of the notification issued by Ministry of Environment, Forest and Climate Change, Government of India on 15th January 2016 to which the Central Government makes the amendments by Notification dated 25 July 2018. The District Survey Report (DSR) is to be prepared in every district for each minor mineral. It will guide systematic and scientific utilization of natural resources, so that present and future generation may be benefitted at large. The purpose of District Survey Report (DSR) is identification of areas of aggradations or deposition where mining can be allowed; and identification of areas of erosion and proximity to infrastructural structures and installations where mining should be prohibited.

Atmos Sustainable Solutions Pvt Ltd has prepared this Draft District Survey Report comprising of secondary data published and endorsed by various departments and websites about geology of the area, mineral wealth details, details of lease and mining activity in the district and revenue of mineral along with the primary data collected from ground survey. This report also contains details of climatic conditions, topography and terrain, land form, forest, rivers, soil, agriculture, road, transportation, irrigation etc. The DSR would also help to calculate the Annual Rate of Replenishment Wherever Applicable and Allow Time for Replenishment.

Further, In Pursuance to The Order of Hon'ble Supreme Court Dated The 27th 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., Prior Environmental Clearance Has Now Become Mandatory For Mining Of Minor Minerals Irrespective Of The Area Of Mining Lease; And Also In View Of The Hon'ble National Green Tribunal, Order Dated The 13th 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, The Ministry Of Environment, Forest And Climate Change In Consultation With State Governments Has Prepared Guidelines On Sustainable Sand Mining Detailing The Provisions On Environmental Clearance For Cluster, Creation Of District Environment Impact Assessment Authority And Proper Monitoring Of Minor Mineral Mining Using Information Technology And Information Technology Enabled Services To Track The Mined Out Material From Source To Destination.



हनुम



OBJECTIVES

The Main objective of the preparation of District Survey Report (as per the Sustainable Sand Mining Guideline) is to ensure the following: -

1. Identification of areas of aggradations or deposition where mining can be allowed
2. Identification of areas of erosion and proximity to infrastructural structures and installations where mining should be prohibited and calculation of annual rate of replenishment and allowing time for replenishment after mining in that area.
3. Identification of mineral wealth in the district.



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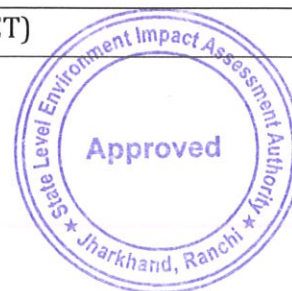
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16	Test Report of sand from NABL Accredited agency
17	Copy of Work Order
18	Minutes of SEAC Ranchi
19	Copy of certificate of Accreditation (NABET)



HLC

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DISTRICT SURVEY REPORT OF PAKUR DISTRICT
FOR
SAND MINING OR RIVER BED MINING

PREPARED UNDER:

- Appendix -X of MoEF&CC, GoI Notification S.O. 141(E) dated 15.1.2016
- Sustainable Sand Mining Guidelines
- MoEF&CC, GoI Notification S.O. 3611(E) dated 25.07.2018
- Sand Mining Framework -2018
- Enforcement & Monitoring Guidelines for Sand Mining by MoEF&CC-2020
- Jharkhand Minor Mineral Concession (Amendment) Rules 2020. The notification stated about the prevention of Illegal mining, transportation and storage of sand and guidelines for mining activity, safety barriers, mining depth and lease.



A handwritten signature in blue ink, located below the stamp of Atmos Sustainable Solutions P. Ltd.



DISTRICT SURVEY REPORT FOR RIVER BED SAND MINING

As per the Gazette Notification dated 15th January, 2016 of Ministry of Environment, Forest and Climate Change a joint survey has been carried out by the District Environment Impact Assessment Authority (DEIAA) with the assistance of Irrigation Department, Drainage Department, Forest Department, Mining Department and Revenue Department in the district for preparation of the Draft District Survey Report.

The Ministry of Environment Forest & Climate Change formulated the Sustainable Sand Management Guidelines 2016 which focuses on the Management of Sand 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, Act 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.

India is developing at a faster pace and much technological advancement has already been taken place in the surveillance and remote monitoring in the field of mining. Thus, it is prudent to utilize the technological advancement for the effective monitoring of the mining activities particularly sand mining in the country.

Use of latest remote surveillance and IT services helps in effective monitoring of the sand mining activity in-country and also assist the government in controlling the illegal mining activity in the country. Thus, there is a need for an effective policy for monitoring of sand mining in the Country which can be enforced on the ground. These guidelines focus on the effective monitoring of the sand mining since from the identification of sand mineral sources to its dispatch and end-use by consumers and the general public. Further, the effective monitoring and enforcement require efforts from not only Government agencies but also by consumers and the general public.

It is the responsibility of every citizen of India to protect the environment and effective monitoring can only be possible when all the stakeholders' viz. Central Government, State Government,



Leaseholders/Mine Owners, Distributors, Dealers, Transporters and Consumers (bulk & retail) will contribute towards sustainable mining, and comply with all the statutory provisions. It is felt necessary to identify the minimum requirements across all geographical regions to have a uniform protocol for monitoring and enforcement of regulatory provision prescribed for sustainable sand and gravel mining.

This document will serve as a guideline for collection of critical information for enforcement of the regulatory provision(s) and also highlights the essential infrastructural requirements necessary for effective monitoring for Sustainable Sand Mining.

The document is prepared in consideration of various orders/directions issued by Hon'ble NGT in matters pertaining to illegal sand mining and also based on the reports submitted by expert committees and investigation teams.

Further, this document is supplemental to the existing "Sustainable Sand Mining Management Guideline-2016" (SSMG-2016), and these two guidelines viz. "Enforcement & Monitoring Guidelines for Sand Mining" (EMGSM-2020) and SSMG-2016 shall be read and implemented in sync with each other. In case, any ambiguity or variation between the provisions of both these document arises, the provision made in "Enforcement & Monitoring Guidelines for Sand Mining-2020" shall prevail.



A handwritten signature in blue ink, appearing to be "M. K. Singh", written in a cursive style.



CHAPTER - 01 INTRODUCTION

1.1 Location and Geographical Area:

Pakur District is having a large number of stone mines and crushers. Approximately 150 mines & 250 crushers are in operation with the support of one lac labour force in present time. The stone industry is paying eight to nine crore rupees per year as royalty to the Govt. in addition to commercial taxes. The quality of Pakur black stone chips is excellent for constructional purpose. Black stones of Pakur are also exported in the South Asian countries.

Though Pakur is not rich in minerals. However a number of economic minerals occur here and there and are being worked out. Among the minerals found are coal, china clay, fireclay, quartz, and silica sand and glass sand. However a lot of infra structural constrains stand in the way of development of the mineral industry.

Pakur in its emergence and inception had been a cluster of ponds and orchards surrounded by deep forest and hard rocks under the range of Rajmahal hills.

Pakur district is one of the twenty-four districts of Jharkhand state, India, and Pakur is the administrative headquarters of this district. Pakur sub-division of Sahibganj district was carved out on 28 January 1994 to constitute Pakur District. The district, with a population of 900,422 (census 2011), and covering an area of 686.21 km², is situated on the north-eastern corner of Jharkhand state.

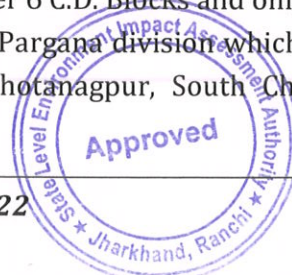
It exists between 24° 49' 45" N & 24° 14' 0" N latitude and between 87° 24' 0" E and 87° 55' 0" E longitudes. The district falls in Survey of India Toposheet nos. 72 P/ 5, P/ 6, P/9, P/10, P/ 11, P/ 14 and P/ 15.

The district is bounded on the north by Sahibganj district, on the south by Dumka district, on the west by Godda district, and on the east by the Murshidabad district of West Bengal. The west of the district contains the Rajmahal Hills, while the east of the district is mostly flat plain.

1.2 Administrative Setup:

Pakur is an administrative district in the state of Jharkhand. The district headquarter is located at Pakur town which is situated at 362 km from Ranchi, the State capital. In 1983, Pakur district was created from Dumka District.

The district of Pakur possesses one subdivision, viz., Pakur and over 6 C.D. Blocks and only one town statutory town and three census towns. The district is in Santhal Pargana division which is in turn, under Jharkhand state (which has five divisions, e.g. North Chotanagpur, South Chotanagpur,



Santhal Pargana, Palamu and Kolhan and was came out from erstwhile Bihar state on 15th November, 2000).

The administrative units of the district are as below

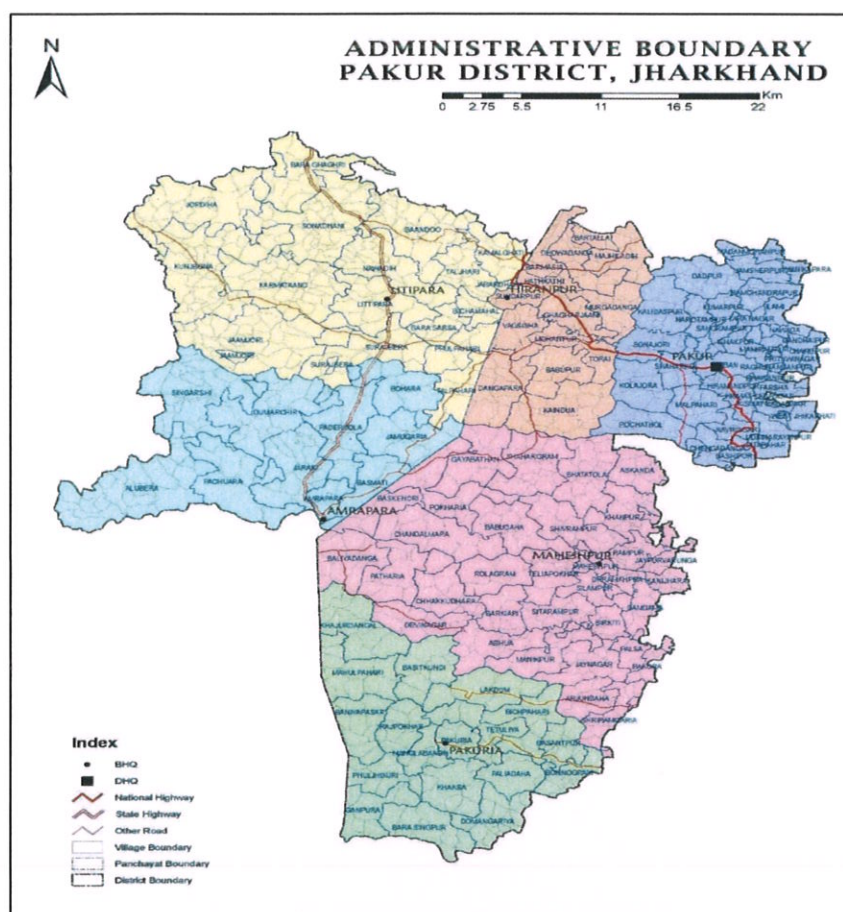
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- Name of C.D. Blocks
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 - Amrarpara,
 - Maheshpur,
 - Pakur,
 - Hiranpur,
 - Pakuria



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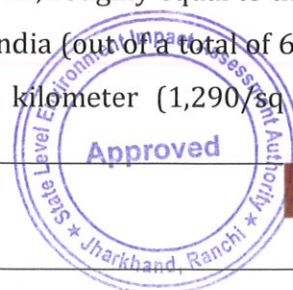
Source: Jharkhand Space Application Centre

Figure no. 1.1: Administrative boundary of Pakur district

Démographics:

The District, with population of about 9, 00,422 lakhs is Jharkhand's the 7th least populous district. Total geographical area of the district is 1811 km² and it is the 4th smallest district by area in the state. Population density of the district is 497 persons per km². The district is home to about 9, 00,422 lakh people, among them about 4.5 lakh (50%) are male and about 4.5 lakh (50%) are female. 55% of the whole population are from general caste, 3% are from schedule caste and 42% are schedule tribes. Hindus contribute 46% of the total population and are the largest religious community in the district followed by Muslims which contribute 36% of the total population all other religious communities contribute 18 % of the total population. Population of the district has increased by 28.3% in last 10 years.

According to the 2011 census Pakur district has a population of 900,422, roughly equal to the nation of Fiji or the US state of Delaware. This gives it a ranking of 465th in India (out of a total of 640). The district has a population density of 498 inhabitants per square kilometer (1,290/sq mi) .Its



population growth rate over the decade 2001-2011 was 28.15%. Pakur has a sex ratio of 985 females for every 1000 males, and a literacy rate of 50.17%. Scheduled Castes and Scheduled Tribes make up 3.16% and 42.10% of the population respectively.



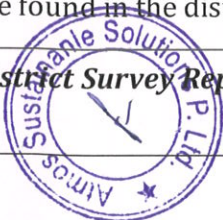
Figure no. 1.2: Location Index Map

Topography and Climate:

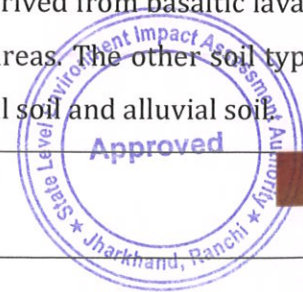
The district borders Sahibganj district to the north, Murshidabad and Birbhum districts of West Bengal to the east, and Dumka and Godda districts to the west. The west of the district contains the Rajmahal Hills, while the east of the district is mostly flat plain.

Topographically it is divided into three parts i.e. the hilly area, the rolling area, and the alluvial area. The hilly area includes the whole of Damini-i-koh from north corner of the district up to the Southwest touching the border of Birbhoom district of West Bengal. A narrow continuous strip of alluvial soil, lies between the Ganga feeder canal and the loop line of Eastern Railway, is very fertile. Rest of the part covers the rolling areas, which is less conducive for agricultural operation.

The major soil type of the district is the Rajmahal type soil which is derived from basaltic lava. These soils black in colour are very fertile and restricted to Rajmahal lava areas. The other soil types that are found in the district are Red soil, eroded scarp soil, foothill soils, Tal soil and alluvial soil.



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The river Ganges passes at a little distance away, along the north eastern boundary of the district. The other rivers of the district are Gumani, Torai, Bansloi and Brahmni. All the rivers flow from west to east direction except river Gumani which flows from SW to NE direction. The drainage pattern of the district is dendritic. All the rivers are tributaries of river Ganga and are seasonal in nature.

The district is characterized by humid to sub-humid climate. During summer the hot spell prevails from March to middle of June. Rainy season started from middle of June to end to September. Winter starts from the middle of November and continues till the end of February. The district experiences great heat from March to May, when the maximum temperature reaches up to 40°C. December is the coldest month when the minimum temperatures fall down up to 4°C. Typical tropical climate with hot summer prevails over the area with summer lasting from the months of March to June and winter from the months of November to February.

Drainage:

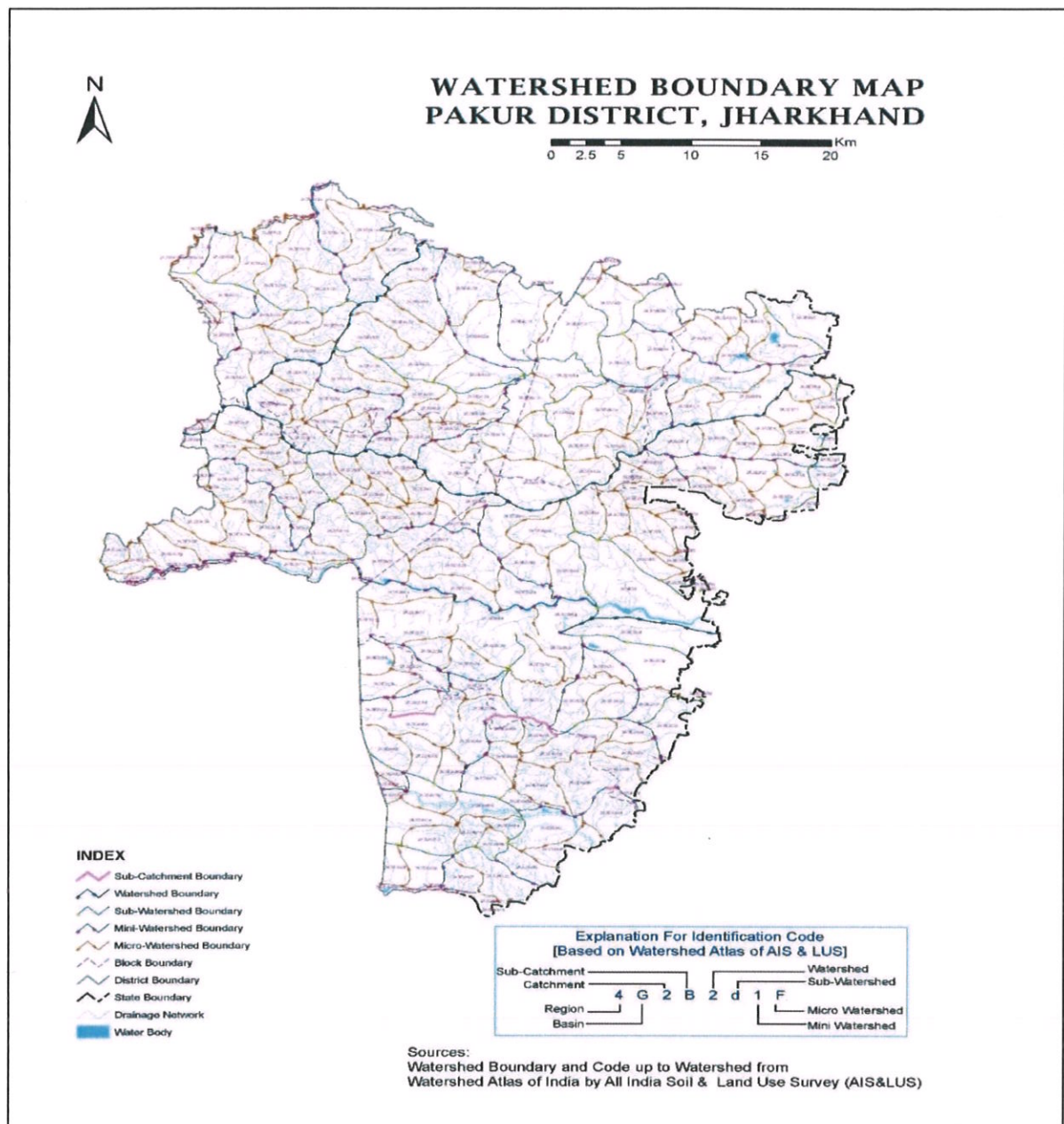
Drainage pattern of the district is dendritic. All the rivers are tributaries of river Ganga and are seasonal in nature. The main drainages of the district are Gumani nadi, Banshlai nadi. Gumani River is flowing on the northern part of the district and Banshlai River is flowing near the Maheshpur town. Other drainages of the district are Pagia nadi, Baru nadi which flows from NW to SE direction. Dheba nadi is flowing from West to East direction. Tirghana nadi is flowing from NW to SE part of the district. Torai nadi is flowing from West to East part of the district.



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Source: Jharkhand Space Application Centre

Figure no. 1.3: Watershed boundary map of Pakur district



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1.3 Connectivity:

Pakur is well connected to the rest of the state in India by rail and road connections.

The district is bounded on the north by Sahibganj district, on the south by Dumka district, on the west by Godda district, and on the east by the Murshidabad district of West Bengal. The west of the district contains the Rajmahal Hills, while the east of the district is mostly flat plain.

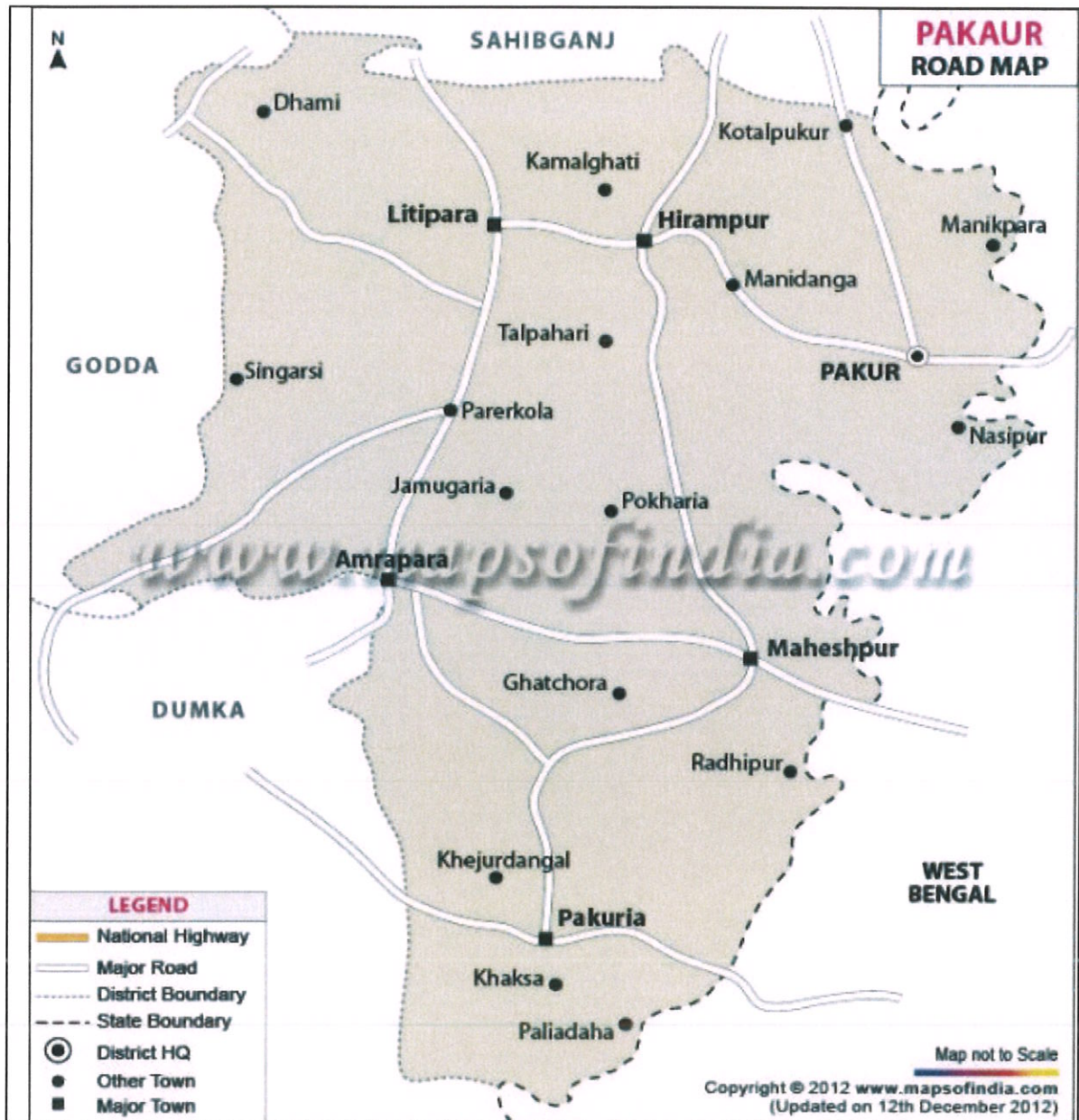
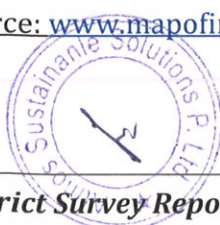


Figure no. 1.4, Road map of Pakur District

Source: www.mapsofindia.com



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Figure no. 1.5, Railway map of Pakur District

Source: www.mapsofindia.com



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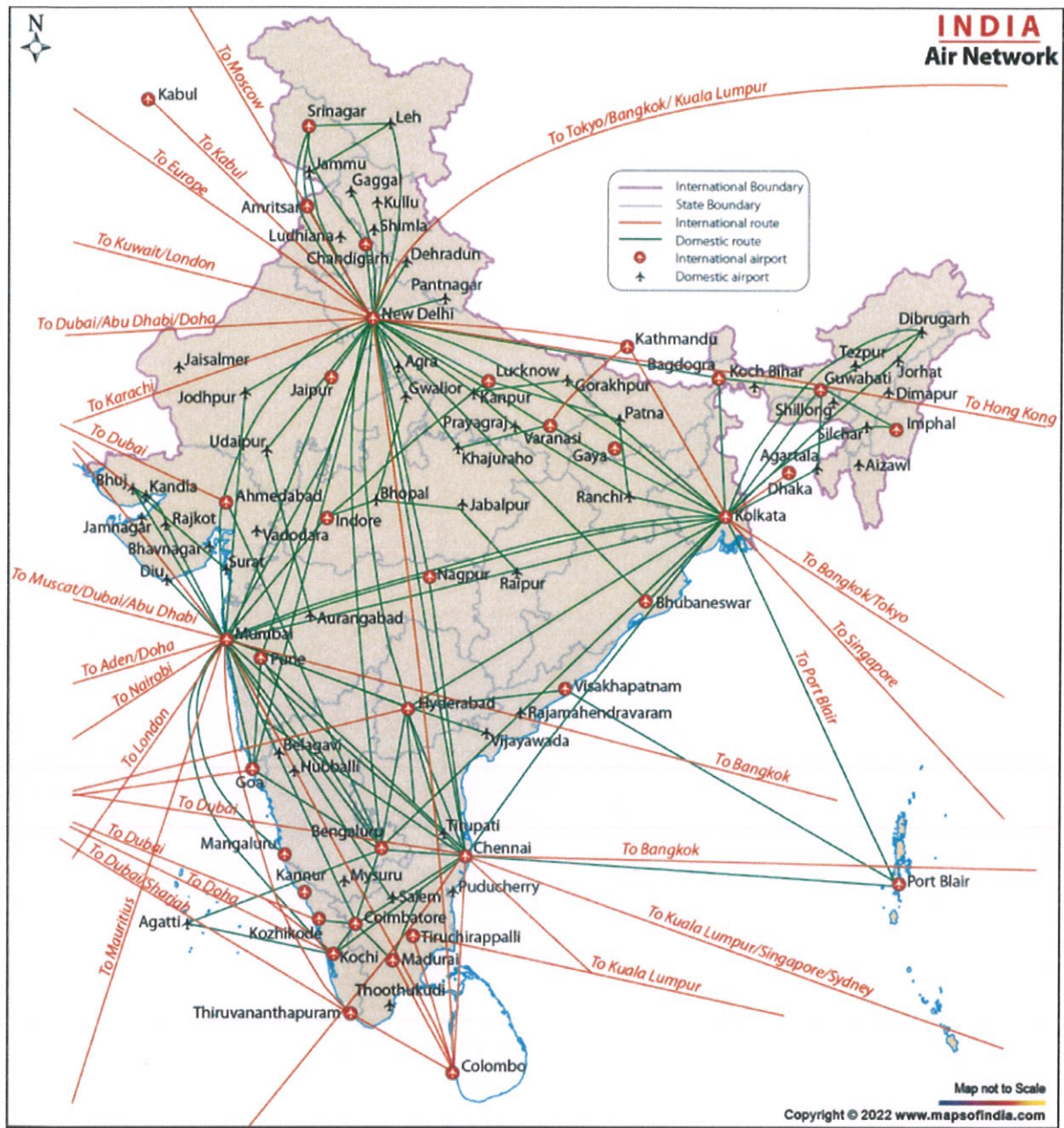


Figure no. 1.6, Air Network of India

Source: www.mapsofindia.com



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CHAPTER- 02

OVERVIEW OF MINING ACTIVITY IN THE DISTRICT

General Information:

Pakur in its emergence and inception had been a cluster of ponds and orchards surrounded by deep forest and hard rocks under the range of Rajmahal hills.

Pakur district is one of the twenty-four districts of Jharkhand state, India, and Pakur is the administrative headquarters of this district. Pakur sub-division of Sahibganj district was carved out on 28 January 1994 to constitute Pakur District. The district, with a population of 9, 00,422 (census 2011), and covering an area of 686.21 km², is situated on the north-eastern corner of Jharkhand state.

Pakur district is predominantly a hilly district with certain pockets of plain land. Topographically it is divided in to three parts, i.e. hilly area, the rolling area and alluvial area. The hilly area includes the whole of Damini-I-Koh from North corner of the district up to the south west touching the border of Birbhum district of West Bengal. A narrow continuous strip of alluvial soils which lies between the Ganges feeder canal and the loop line of Eastern Railway is very fertile and plain land.

Approach to Sand Mining:

River sand mining is a common practice as habitation concentrates along the rivers and the mining locations are preferred near the markets or along the transportation route, for reducing the transportation cost. River sand mining can damage private and public properties as well as aquatic habitats. Excessive removal of sand may significantly distort the natural equilibrium of a stream channel.

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 earlier times, the houses/buildings were constructed in form of small dwellings with walls made up of mud plaster, stone and interlocking provided with wooden frames and there were negligible commercial as well as developmental activities resulting in less demand of building material. However with the passage of time, new vistas of developmental activities were started. The quantity of minor minerals consumption in a particular area is a thermometer to assess the development of the area. Thus with the pace of development activities, the consumption of minor minerals also increased. As such the demand of minor minerals in the district has started an increasing trend. In order to meet the requirement of raw material for construction, the extraction of sand is being carried out exclusively from the river beds.

Main Objectives of Sustainable Sand Mining:

- To ensure that sand and gravel mining is done in environmentally sustainable and socially responsible manner.
- To ensure availability of adequate quantity of aggregate in sustainable manner.

- To improve the effectiveness of monitoring of mining and transportation of mined out material.
- Ensure conservation of the river equilibrium and its natural environment by protection and restoration of the ecological system.
- Avoid aggradations at the downstream reach especially those with hydraulic structures such as jetties, water intakes etc.
- Ensure that the rivers are protected from bank and bed erosion beyond its stable profile.
- No obstruction to the river flow, water transport and restoring the riparian rights and in stream habitats.
- Avoid pollution of river water leading to water quality deterioration.
- To prevent depletion of ground water reserves due to excessive draining out of ground water.
- To prevent ground water pollution by prohibiting sand mining on fissures where it works as filter prior to ground water recharge.
- To maintain the river equilibrium with the application of sediment transport principles in determining the locations, period and quantity to be extracted.
- Streamlining and simplifying the process for grant of environmental clearance (EC) for sustainable mining.



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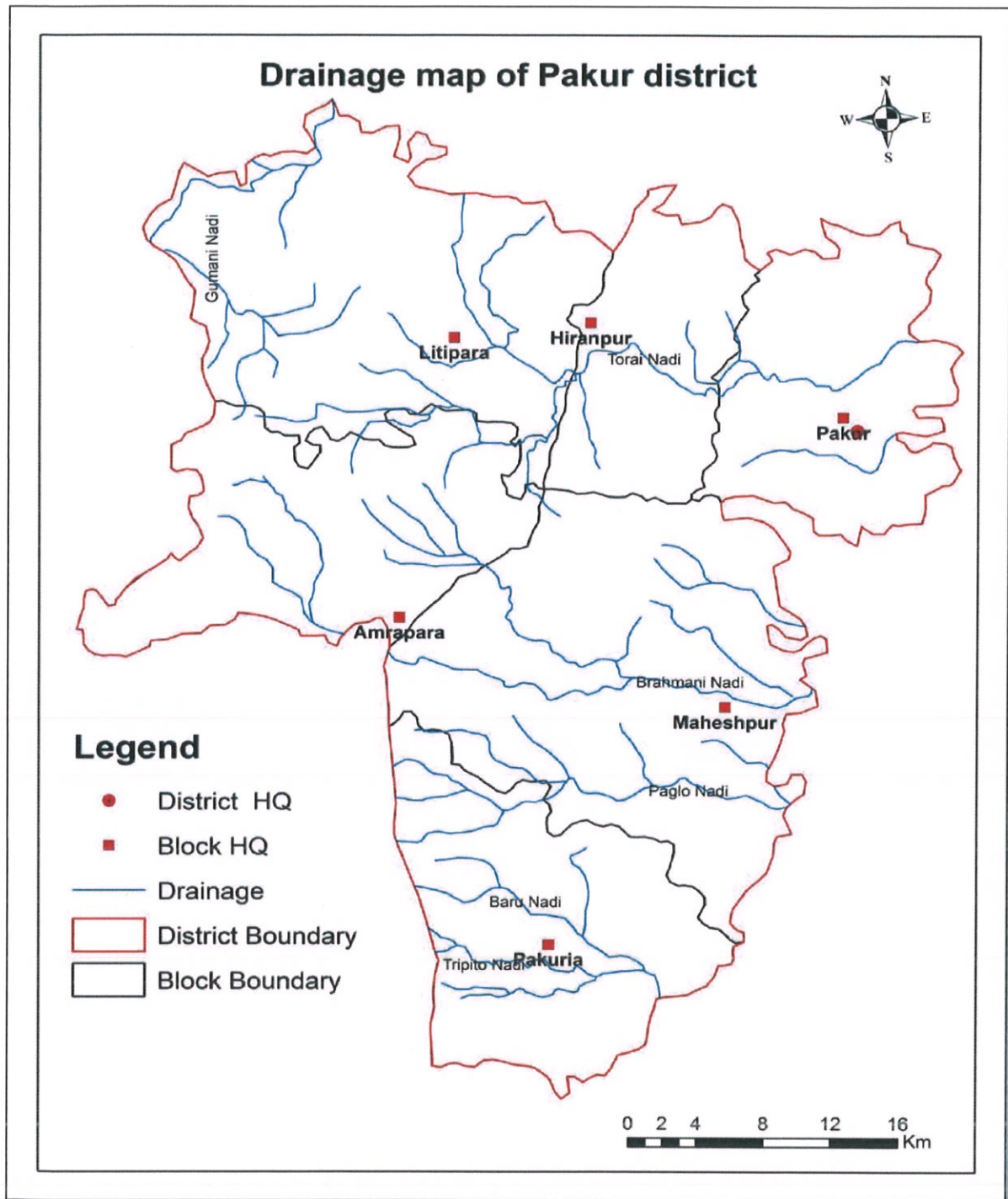


Figure no. 2.1, Drainage Map of Pakur

Source: www.cgwb.com



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CHAPTER- 03 GENERAL PROFILE OF THE DISTRICT

Pakur was earlier a Sub-Division of Santhal Parganas district of Bihar. It was upgraded to the status of district on 28 January 1994. Upon reorganization of Bihar state, India, in 2000 into two separate states, namely, Bihar and Jharkhand, Pakur district came under the administrative control of the Jharkhand state.

Pakur in its emergence and inception had been a cluster of ponds and orchards surrounded by deep forest and hard rocks under the range of Rajmahal hills. The district Pakur is located north – eastern part of the Jharkhand state.

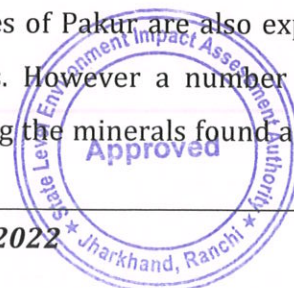
Pakur district is one of the twenty-four districts of Jharkhand state, India, and Pakur is the administrative headquarters of this district. Pakur sub-division of Sahibganj district was carved out on 28 January 1994 to constitute Pakur District. The district, with a population of 9, 00,422 (census 2011), and covering an area of 686.21 km², is situated on the north-eastern corner of Jharkhand state.

It exists between 24° 49' 45" N & 24° 14' 0" N latitude and between 87° 24' 0" E and 87° 55' 0" E longitudes. The district falls in Survey of India Toposheet nos. 72 P/ 5, P/ 6, P/9, P/10, P/ 11, P/ 14 and P/ 15. The district is bounded on the north by Sahibganj district, on the south by Dumka district, on the west by Godda district, and on the east by the Murshidabad district of West Bengal. The west of the district contains the Rajmahal Hills, while the east of the district is mostly flat plain.

The river Ganges passes at a little distance away, along the north eastern boundary of the district. The other rivers of the district are Gumani, Torai, Bansloi and Brahmni. All the rivers flow from west to east direction except river Gumani which flows from SW to NE direction.

Pakur, famous for stone and Beedi (Biri) making industry, is one of the important revenue-earning district of Jharkhand State. Its black stone chips have got Asiatic fame in constructional qualities. Pakur got elevated from sub-divisional Status to a district on 28th January 1994 vide Govt. of Jharkhand's notification no 19 (Personnel) dated 28.01.1994.

Pakur district is having a large number of stone mines and crushers. The quality of Pakur black stone chips is excellent for constructional purpose. Black stones of Pakur are also exported in the South Asian countries. Though Pakur is not rich in minerals. However a number of economic minerals occur here and there and are being worked out. Among the minerals found are coal, china



clay, fireclay, quartz, and silica sand and glass sand. However a lot of infra structural constrains stand in the way of development of the mineral industry

From the administrative point of view this district has been divided into One Sub-Division Pakur. The district consists of six C.D. blocks namely a) Litipara, b) Amrarpara, c) Maheshpur, d) Pakur, e) Hiranpur, f) Pakuria. There is total no. of 1250 villages in the district. The total no. of Gram Panchayats is 128. The district administration is headed by the Deputy Commissioner.

The district is characterized by humid to sub-humid climate. During summer the hot spell prevails from March to middle of June. Rainy season started from middle of June to end to September. Winter starts from the middle of November and continues till the end of February. The district experiences great heat from March to May, when the maximum temperature reaches up to 40°C. December is the coldest month when the minimum temperatures fall down up to 4°C.

Though Pakur is not rich in minerals. However a number of economic minerals occurred here & there being worked out. Among the minerals found here coal, china clay, fire clay, quarter, silica sand and glass sand. However a lot of infra structural constrains stand in the way of development of mineral industry. But in respect of mines Pakur is famous for stone industry.

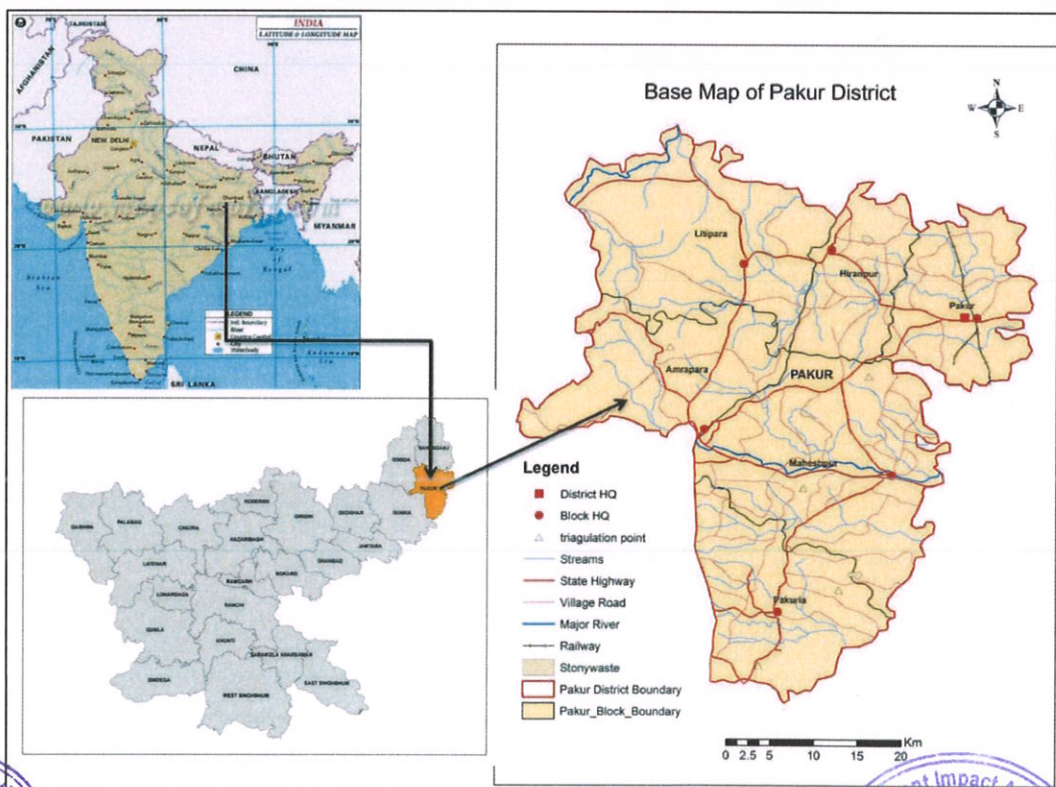
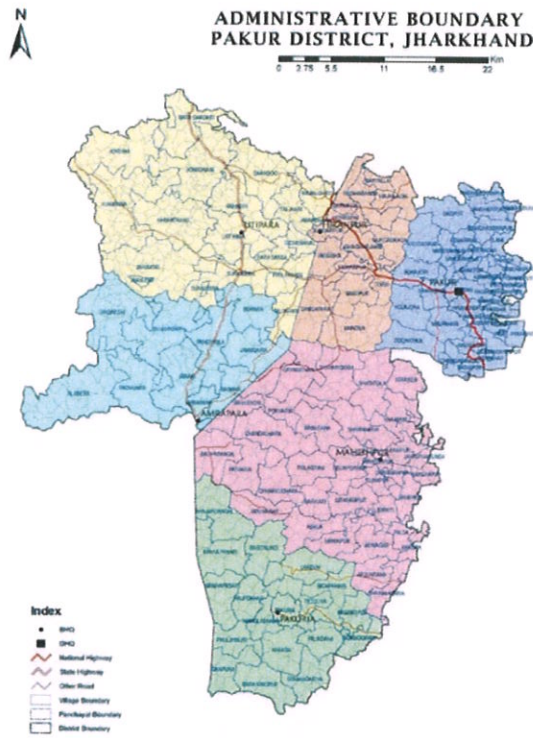


Figure No. 3.1: Location map of Pakur district, Jharkhand





Administrative Boundary map of Pakur district, Jharkhand

Source: JSAC



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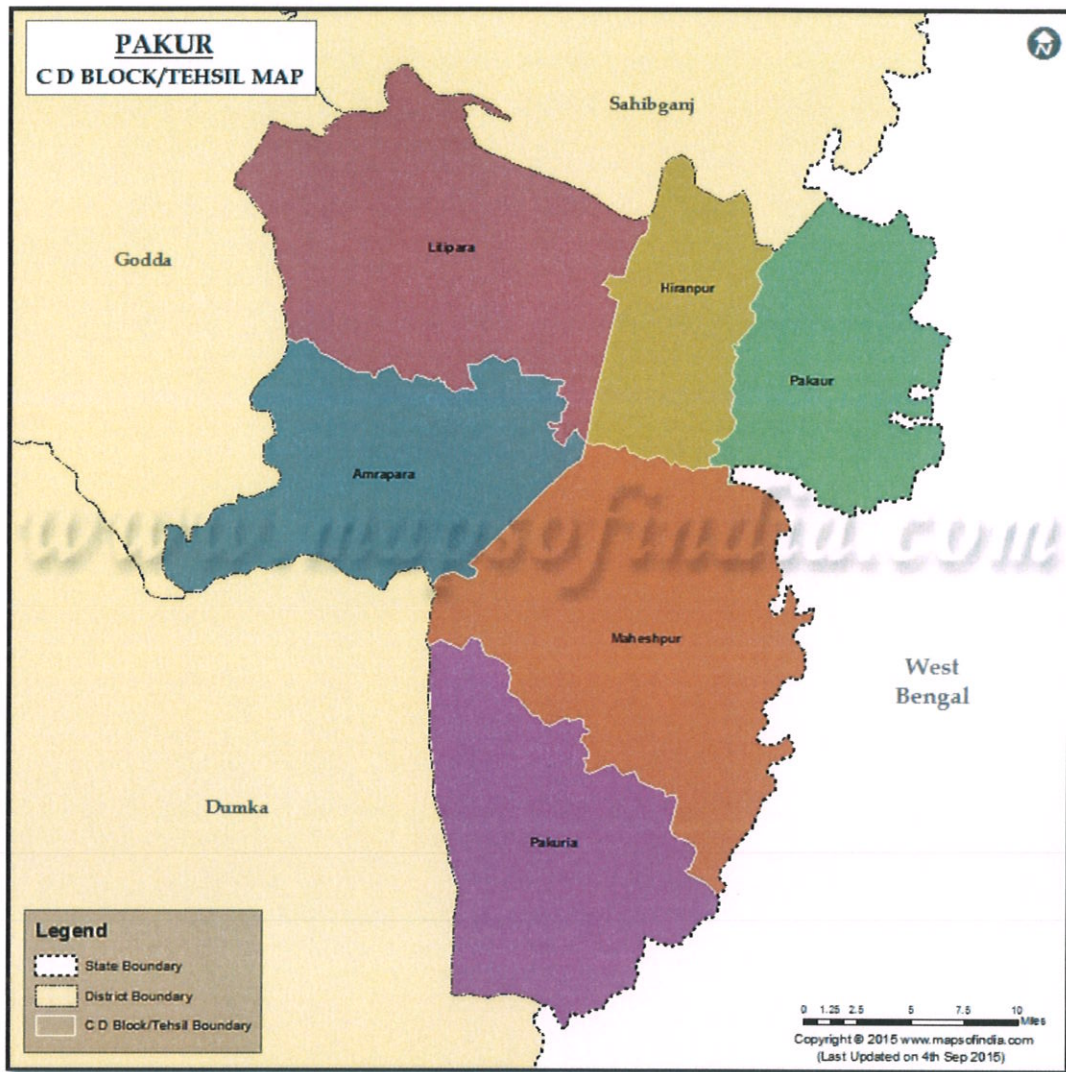


Figure No. 3.2: Block map of Pakur District, Jharkhand

a) Climate Condition

The district is characterized by humid to sub-humid climate. During summer the hot spell prevails from March to middle of June. Rainy season started from middle of June to end to September. Winter starts from the middle of November and continues till the end of February. The district experiences great heat from March to May, when the maximum temperature reaches up to 40°C. December is the coldest month when the minimum temperatures fall down up to 4°C.

Details of rainfall data of five years (from 2016 to 2020) is furnished in Table No.3.2.



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Table No. 3.2: Details of rainfall data of five years (from 2016 to 2020)

YEAR	JAN		FEB		MAR		APR		MAY		JUN	
	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP
2016	10.3	-29	0.0	-100	2.1	-86	14.2	-58	58.4	-32	124.7	-45
2017	1.3	-91	0.0	-100	9.0	-41	2.2	-94	66.1	-23	165.1	-28
2018	0.0	-100	1.6	-88	0.2	-99	36.6	7	64.3	-25	129.9	-43
2019	0.0	-100	25.7	101	0.6	-96	49.0	50	81.8	-8	32.3	-86
2020	21.1	241	6.8	-47	50.1	208	62.7	92	126.6	42	112.8	-51

JUL		AUG		SEPT		OCT		NOV		DEC	
R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP
260.1	-31	204.6	-40	250.4	-27	43.3	-70	0.0	-100	0.0	-100
514.4	36	342.5	1	256.4	-25	195.8	36	0.0	-100	3.0	-51
201.1	-47	151.2	-55	100.9	-70	121.4	-15	0.0	-100	14.6	136
286.9	-23	138.6	-57	291.5	-16	142.8	4	0.0	-100	0.0	-100
301.4	-19	223.6	-30	251.3	-28	50.4	-63	0.0	-100	0.0	-100



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b) Demography

As per census of 2011, the total population of the district was 9, 00,422 persons. The total urban population is 67,512 persons whereas the total rural population is 83, 2,910 persons.

Table No. 3.3: Demography

Subject	Information
No. of Sub Divisions	01
No. of Blocks	06 (Pakur, Maheshpur, Hiranpur, Amrapara, Littipara, Pakuria))
No. of Panchayats	128
Municipality	1 (Pakur Nagar Parishad))
Gram Panchayats	128
Total No. of village	1,250
Inhabitated Villages (Chiragi)	1,144
Uninhabitated Villages (Bechiragi)	106
Total Area	686.21 sq. km.
Total Forest Area	28425.74 Hec.
Reserve Forest Area	4671.33 Hec.
Longitudinal Extent	87.85° E longitude
Latitudinal Extent	24.63° N latitude
Total Population	900422
Total Male Population	452661
Total Female Population	447761
Total Literates	439586
Total Literacy Rate	48.82%
Male Literacy Rate	57.06%
Female Literacy Rate	40.52%
Total Population (0-6 Year)	177623
Percentage Decadal Growth (2001-2011)	28.33%
Sex Ratio	989
Density (persons per sq. km.)	498

Table No. 3.4: Block wise population of the district

Blocks	Population 2011	Male	Female	Households
Littipara	105,701	52,850	52,851	21,702
Amrapara	65,289	32,923	32,366	13,390
Hiranpur	84,079	42,506	41,573	16,212
pakur	327,915	165,217	162,698	63,318
Maheshpur	208,862	104,984	103,878	44,703



Pakuria	108,576	54,181	54,395	22,992
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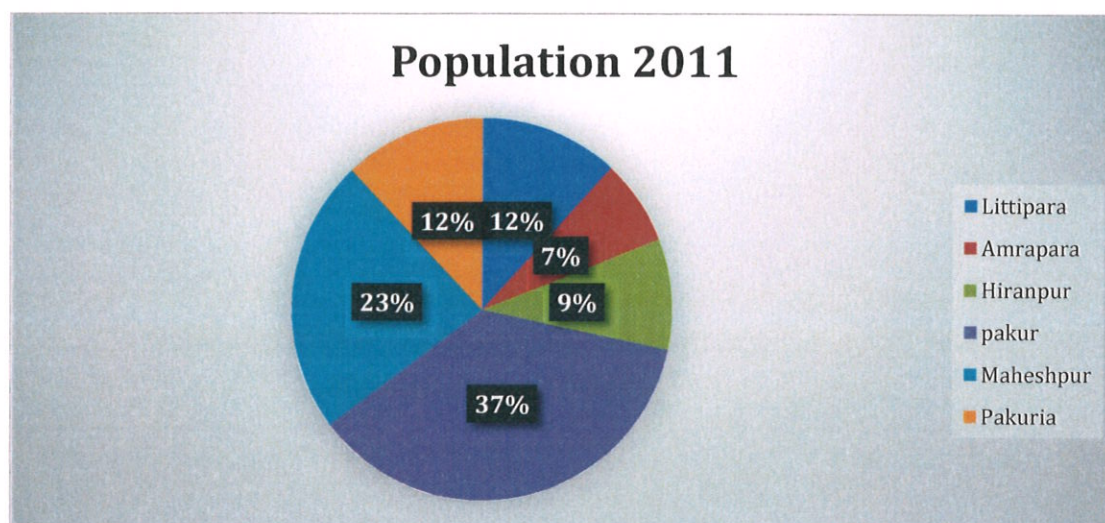


Figure No. 3.3: Pie Chart showing Block-wise population distribution of Pakur District

c) Cropping pattern

The major crops cultivated in the area are paddy, wheat, maize, gram, oil seeds, pulses and vegetable. The paddy is grown in all the three cropping season viz., Aghani, Bhadai and summer. Summer paddy is mainly cultivated in the low lying area along the river course where water is available for sufficient irrigation. Area under crop for the year 2015 – 16 of the district is presented in table.

d) Topography & Terrain

The district borders Sahibganj district to the north, Murshidabad and Birbhum districts of West Bengal to the east, and Dumka and Godda districts to the west. The west of the district contains the Rajmahal Hills, while the east of the district is mostly flat plain.

Topographically it is divided into three parts i.e. the hilly area, the rolling area, and the alluvial area. The hilly area includes the whole of Damini-i-koh form north corner of the district up to the Southwest touching the border of Birbhum district of West Bengal. A narrow continuous strip of alluvial soil, lies between the Ganga feeder canal and the loop line of Eastern Railway, is very fertile. Rest of the part covers the rolling areas, which is less conducive for agricultural operation.



The major soil type of the district is the Rajmahal type soil which is derived from basaltic lava. These soils black in colour are very fertile and restricted to Rajmahal lava areas. The other soil types that are found in the district are Red soil, eroded scarp soil, foothill soils, Tal soil and alluvial soil.

The river Ganges passes at a little distance away, along the north eastern boundary of the district. The other rivers of the district are Gumani, Torai, Bansloi and Brahmni. All the rivers flow from west to east direction except river Gumani which flows from SW to NE direction. The drainage pattern of the district is dendritic. All the rivers are tributaries of river Ganga and are seasonal in nature.

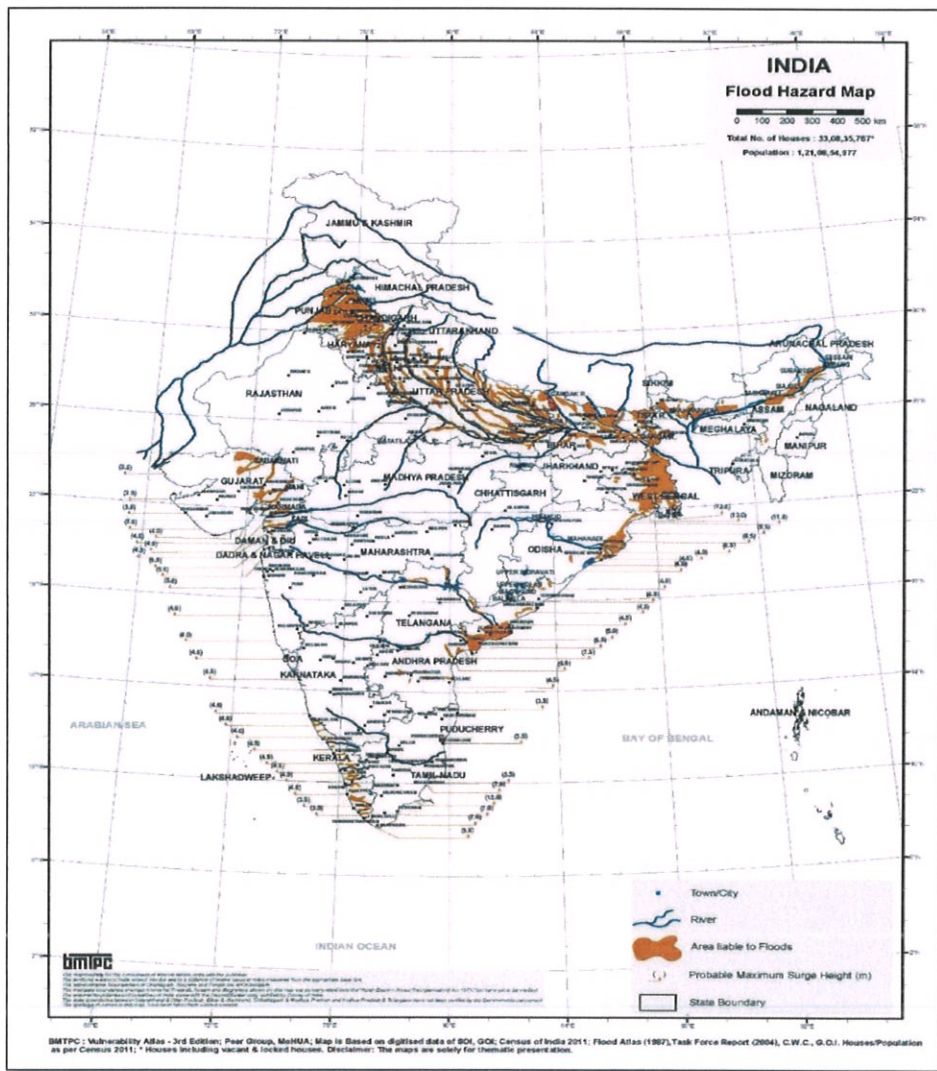


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e) Floods in district:

The state of Jharkhand is predominantly a hilly state where the problem of flooding was rare till sometime back. However, the erosion of embankments spread of population and general disturbance in ecology and inability of identifying the catchment areas, the incidence of Flash floods have become frequent. The floods have occurred in the following 11 districts of the state, Dumka, Godda, Deogarh, Sahebganj, Pakur, Dhanbad, East and West Singhbhum, Saraikela-Karsawan, Gumla and Hazaribagh during the years 2000-2004.



Source: BMPTC

Figure No. 3.4: Flood hazard map



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f) Seismicity

The state of Jharkhand falls in a region of low to high seismic hazard. As per the 2002 Bureau of Indian Standards (BIS) map, this state also falls in Zones II, III & IV. Historically, parts of this state have experienced seismic activity in the M5.0 range.

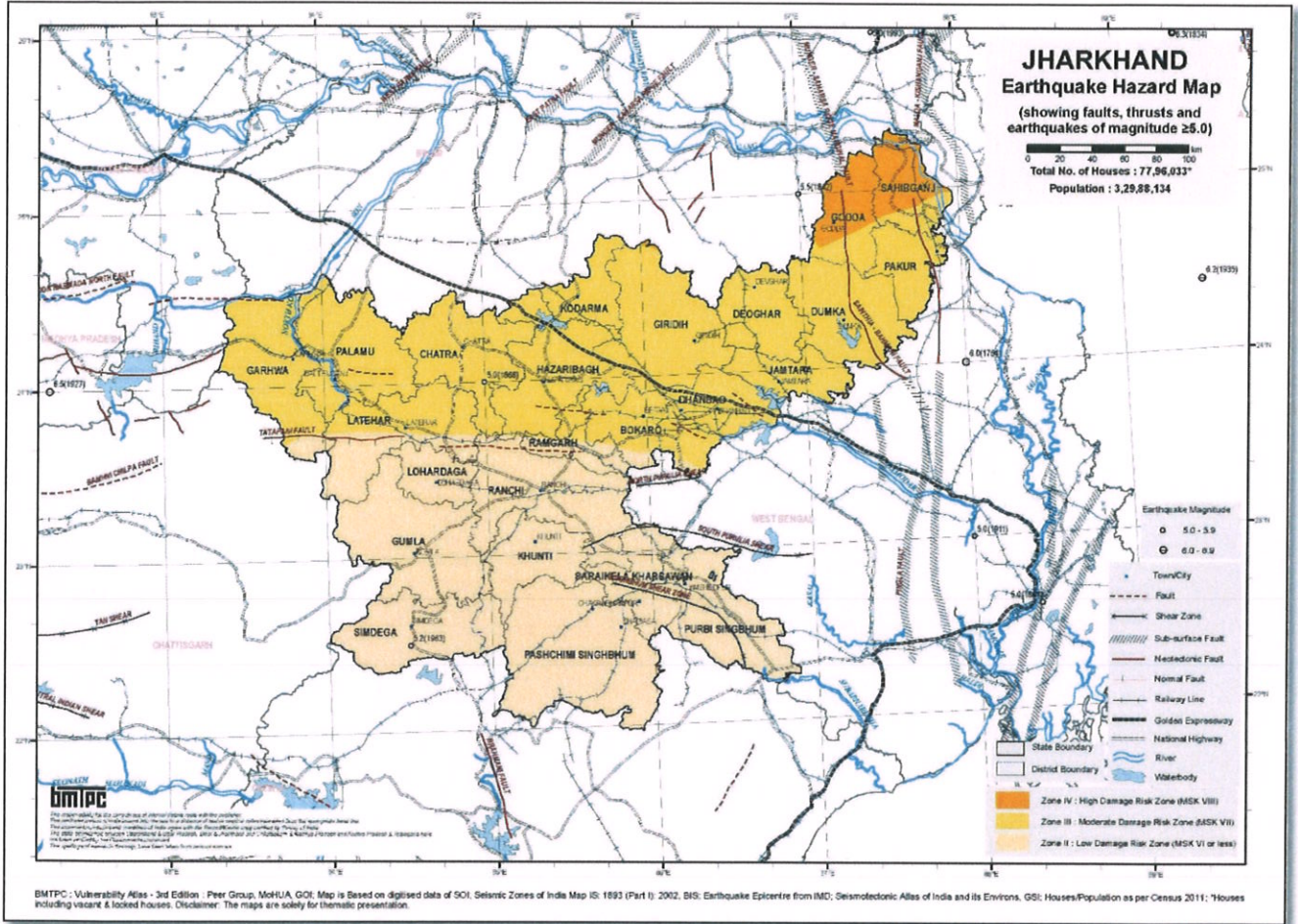


Figure No. 3.5: District Earthquake Map

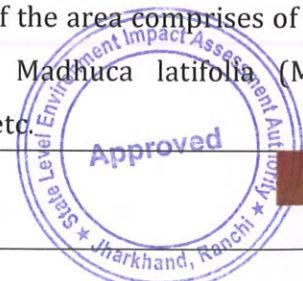
g) Flora

The area harbors mostly of moist tropical deciduous vegetation. There is very little or no vegetation seen scattered in the area. Species like Mahua, Sakua, Karanj, Karam, Kathal, etc. are found along the boundary. Species of Agave, Lantana, Malva, Lantana, Ricinus, etc. are of common occurrence along the roads. Ground vegetation mainly consists of grasses and small shrubs. Among the grasses, *Apluda varia* (*Dudhia sauri*) and *Arundinella setosa* (*Jharu/Motaminijhar*), *Panicum montana* (*Khrj*) *Saccharum munja* (*Munj*) saw growing in the moist areas. The flora of the area comprises of *Shorea robusta* (*Sal/Sakhua*), *Mango*, *Diospyros melanoxylon* (*Tendu*), *Madhuca latifolia* (*Mahua*), *Pterocarpus marsupium* (*Bia/Paisar*), *Anogeissus latifolia* (*Dhautha*) etc.



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Vegetation in and around human settlement: Vegetation pattern in villages and surrounding areas are slightly different from the rest of the areas. The common species grown near villages are mostly edible or useful plants such as *Mangifera indica*, *Madhuca indica*, *Artocarpus integrifolia* (Kathal), *Tamarindus indica* (Imli) etc.

h) Fauna

Wild life and avifauna of the area: A list of animals of the area has been prepared on the basis of local inquiry from the village people and from the available published literatures. The fauna of the area can be grouped in to aquatic and terrestrial as the area mostly comprises of aquatic fauna and the area provides shelter to the terrestrial animals.

Avian fauna: No bird's habitats like nesting, breeding and forging patterns are noticed in the area. Local birds are noticed in the area. No fixed pattern in migratory behavior is noticed.

Terrestrial fauna:

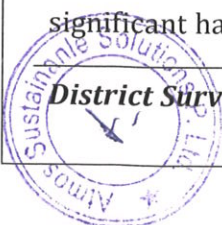
Mammals: Domesticated mammal species are reported during the field survey. Common grazing animals like cow, goat etc. are noticed in the area. Small mammals like Indian palm squirrel and field mouse are noticed in vicinity of village. Inquiry from village people regarding wild animals reveals that monkey, Indian hare, fruits bat, Wild boar, Indian Fox, jackal, etc. are often seen in the area.

Reptiles: The reptilians species commonly reported in buffer zone area are Red Sand Boa, Indian Cobra, King Cobra, Banded Krait, Common Krait, Indian Python, Rat Snake, Russell Viper, and among the lizards Chameleon, Indian House Gecko, Rock Lizard, Monitor Lizard are reported from the village people.

Aquatic Fauna:

Amphibian: Amphibians are commonly found at the places along the margin of aquatic and terrestrial systems. Due to presence of water bodies like river, nalas, etc. the study area is providing shelter to many amphibian species. Some of the commonly reported species are *Bufo melanostictus* (common Indian toad), *Euphlyctis cyanophlyctis* (Indian skipper frog), *Hoplobatrachus tigerinus* (Indian bull frog) etc.

Fishes: River Brahmini is seasonal river flowing from south west to north east does not support significant habitat for fish population. However the Bansloi River flowing from North West to north



east supports some fish population. The fish species which are commonly found in the proposed site are *Labeo bata* (Bhangan or Bata), *Gudusia chapara* (Chappera or Palla), *Labeo rohita* (Dumra or Dhambra), *Notopterus notopterus* (Pari or Battu), *Catla catla* (Theila), *Clarius batrachus* (mangur), etc.



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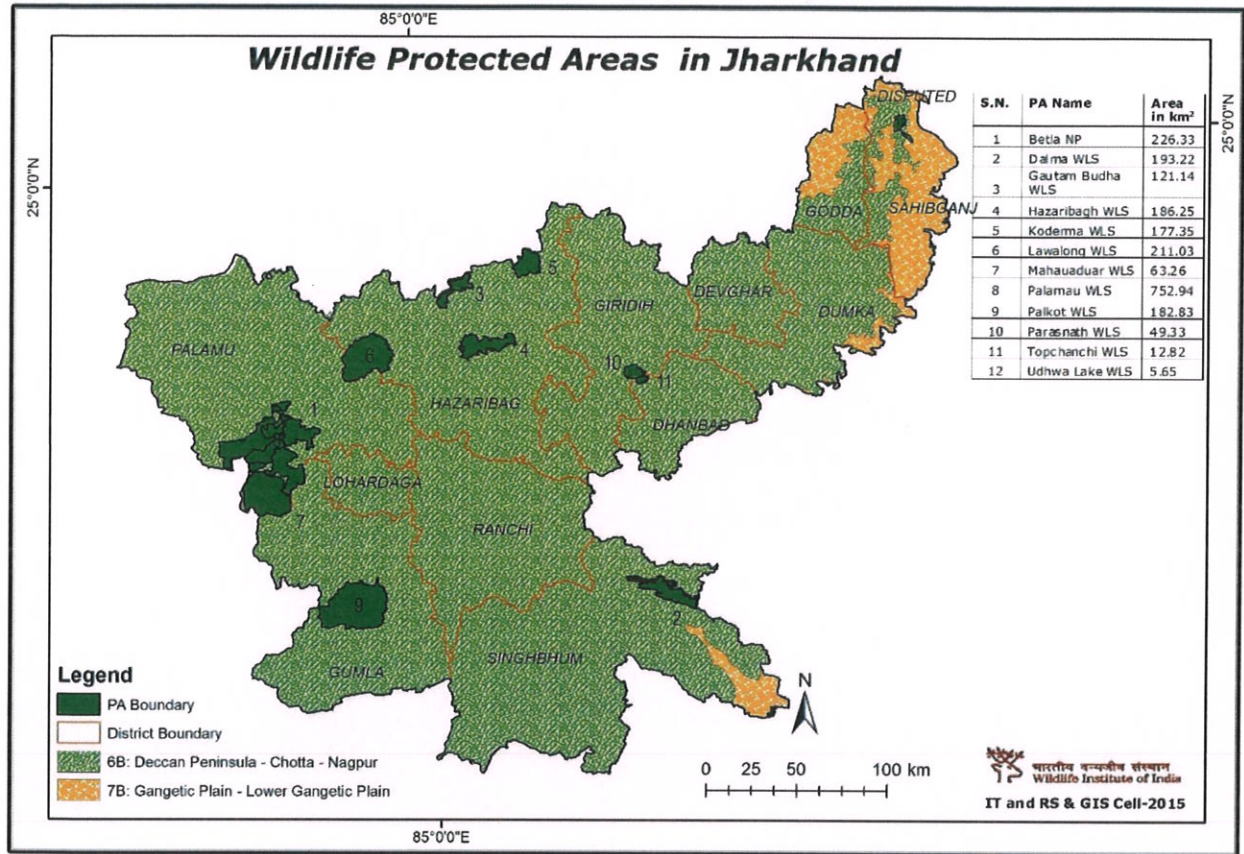


Figure No. 3.6: Wildlife Protected area in Jharkhand District



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CHAPTER- 04 GEOLOGY OF THE DISTRICT

The Pakur district is predominantly (about 98 %) covered by Rajmahal traps belonging to lower cretaceous with intertrapian beds. The traps are overlain by alluvium covering Eastern part of the district. The Rajmahal traps composed of basaltic lava flows with massive and vesicular units' basalt and forms multilayer system. Rajmahal traps are inter-bedded with intertrapian beds composed of calcareous sediments. The alluvium composed of clay and sand. Very few about 1.6 % of the area is covered by Gondwanas rocks and 0.04% by Gneisses rocks.

Geologically major part of the area is represented by Rajmahal traps having huge thickness of basaltic lava flows with intercalated shales and Clays. The Rajmahal Traps extend with a north-south trend for more than 120 kms through the districts of Santhal Parganas in Jharkhand (Sahebganj, Pakur, Dumka) and Birbhum in West Bengal (GSI, 1989). It consists of long flat topped hills The basaltic lava flows of the Rajmahal Trap of middle Jurassic to lower cretaceous age occupy the major part of the district.

It has been observed (GSI, 2006) that there are at least seven successive basaltic flows, each flow ranging in thickness between 20m and 75 m. Lithologically these traps are fine grained, amygdaloidal with quartz, agate and Chacedony filling, which on decomposition leave large exfoliated boulders. The weathering of these traps under favourable climatic conditions has resulted laterisation. These laterites form a wide spread cover over the underlying traps in the eastern part of the district. Rajmahal Traps are undererlain by Gondwana formations, represented by Dubrajpur Formation, and Barakar Formation. Rajmahal Traps are overlain by Laterites and Alluvium. A very small patch of older alluvium (comprising clay, silts and sand) and older flood plain deposits (comprising sand, silt and clay) occur in eastern part of the district.

The general geological succession as encountered in Pakur district (As per GSI, 2006) is given below



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Table No. 4.1: Geological of District

(Source: CGWB)

Lithology	Formation	Group/Super Group	Age
Alternating layers of Sands, Silts and Clays, oxidised	Older Flood Plain deposits (Ganga-Kosi Formation)	Quaternary	Holocene
Khaki Green Clay with Brown silts and Sands highly oxidized	Older Alluvium		Late Pleistocene to Early Holocene
Laterite & Lateritic Soil			Cenozoic
Rajmahal Trap- Basalt/Inter-trappean beds-Chert	Rajmahal Trap		Upper Jurrasic to Cretaceous
Sandstone and shale	Dubrajpur Formation	Gondwana Super Group	Triassic to Jurassic
Silt stone, sandstone and carbonaceous shale with Coal seams	Barakar Formation		Permian
Unclassified Granite gneiss with enclaves of metamorphic/Granite-Gneiss and Migmatite	Chotanagpur Granite-Chotanagapur Gneissic Complex		Archean to proterozoic



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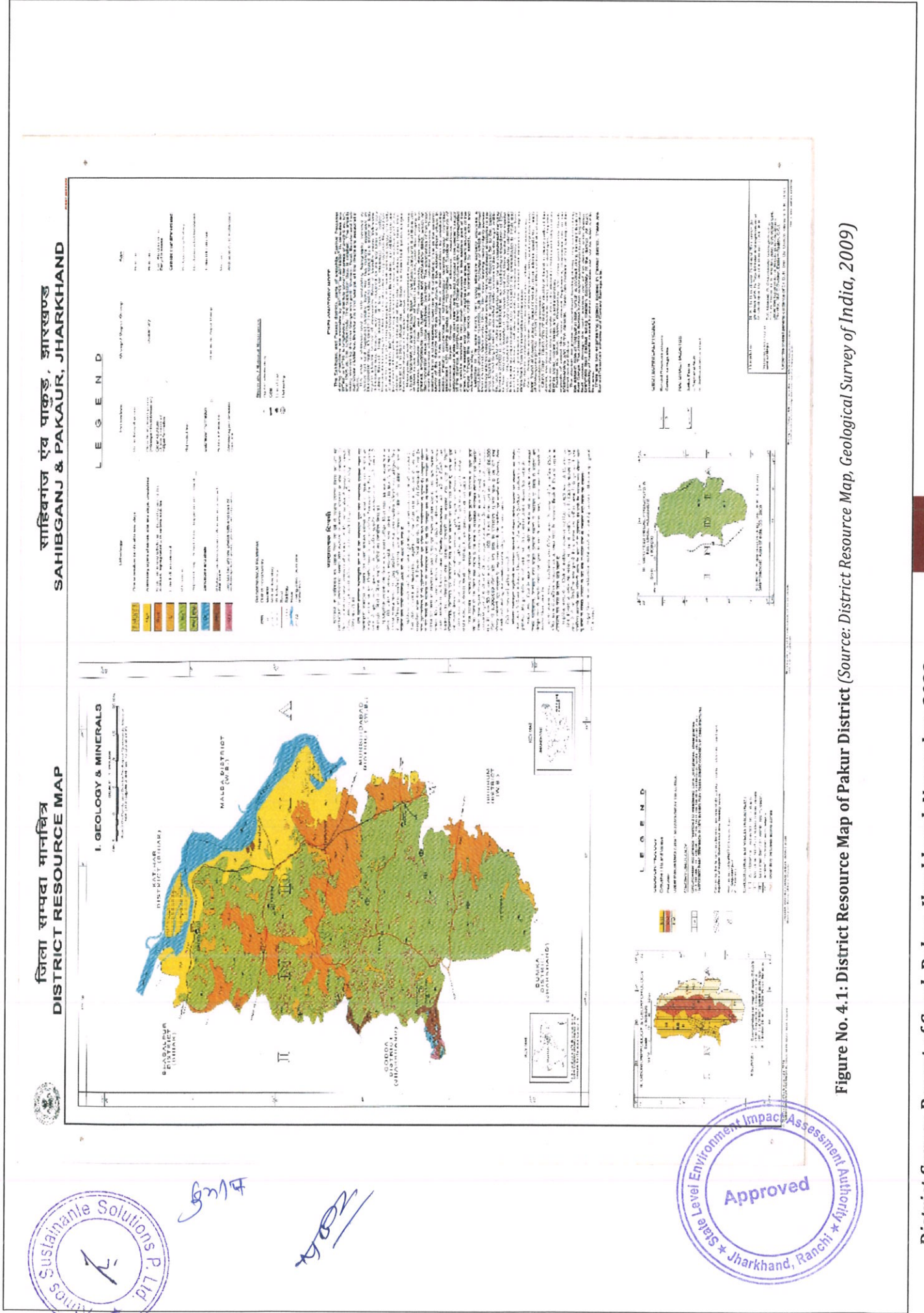
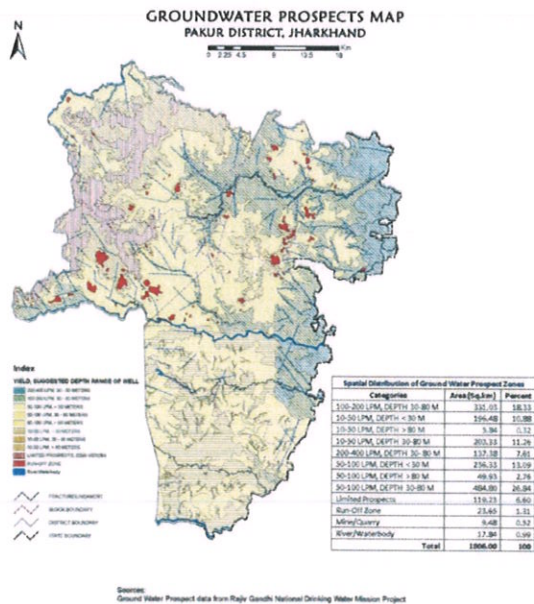


Figure No. 4.1: District Resource Map of Pakur District (Source: District Resource Map, Geological Survey of India, 2009)

CHAPTER- 05 DRAINAGE OF IRRIGATION PATTERN

The drainage pattern of the district is dendritic. All the rivers are tributaries of river Ganga and are seasonal in nature. The river Ganges passes at a little distance away, along the north eastern boundary of the district. The other rivers of the district are Gumani, Torai, Bansloi and Brahmni. All the rivers flow from west to east direction except river Gumani which flows from SW to NE direction.

Undulating topographic features characterize the district. The agricultural activity of the district is solely dependent upon the monsoon rainfall and the kharif crops mainly paddy and maize are grown extensively. Irrigational facilities are not adequate in the district. Dug well is the most common source of irrigation, but this is not very dependable source. The major part of the district being rocky, it is difficult to dig wells. Where there exists facility for irrigation during Rabi season from the ponds, wheat is the major crop grown in that area. The drainage map of the district is shown in **Fig No. 5.1**.



Source: JSAC

Figure No. 5.1: Groundwater Prospect map of district



Table No. 5.1: Details of major rivers of Pakur District

S. No.	Name of the River	Area drained (Sq. km)	% Area drained in the District
1	Brahamani Nadi	7.5	-
2	Deva Nala	9	-
3	Tirupatia Nadi	26	-
4	Baru Nadi	18	-
5	Surjudi Nala	11.5	-
6	Pagla Nadi	19	-
7	Bansloi Nadi	35.5	-
8	Bharatpur Nala	8.5	-
9	Kanadaha Nala	14.5	-
10	Soru Nala	12.5	-
11	Tantiduba Nala	10.5	-
12	Torai Nadi	49	-
13	Ranga Nala	18	-
14	Gohanda Nala	10.5	-
15	Devpur Nala	8	-
16	Kusma Danga Nala	8.5	-
17	Kanalai Nadi	6	-
18	Devtalla Nala	4.5	-
19	Gumani Nadi	10	-
20	Bara Ghagheri Nala	13	-
21	Rao Nala	9.5	-



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CHAPTER- 06
LAND UTILIZATION PATTERN IN THE DISTRICT: FOREST, AGRICULTURE, HORTICULTURAL, MINING ETC.

The hilly area have considerable forest cover but in plain peoples have depleted forest cover. Important trees are sal, mahua, semal, sisam, kathal etc. Important crops grown in the district are rice, wheat, maize and ragi. Most of the area grow single crop due to unavailability of irrigation facility. Major source of irrigation are tanks and wells.

Geographical features play a major role in land use pattern of the district. The land use pattern data of the area for the year 2014-15 is given below in table 6.1.

Table No. 6.1: Land Use details of Districts

Sl. No.	Land Use	Pakur Area (in hectares)
1.	Forest	14583
2.	Barren and uncultivableLand	27654
3.	Cultivable waste land	10735
4.	Permanent pastures & other grassing land	6860
5.	Land under miscellaneous Trees	4165
6.	Current fallow	41801
7.	Fallow land other than current fallow	39255
8.	Net area sown	35404
9.	Total cropped area	39957
10.	Total area (Hectare)	180557

(Source: District Environment plan, Pakur)

Land use map of the Pakur district has been prepared and shown in figure - 6.1.



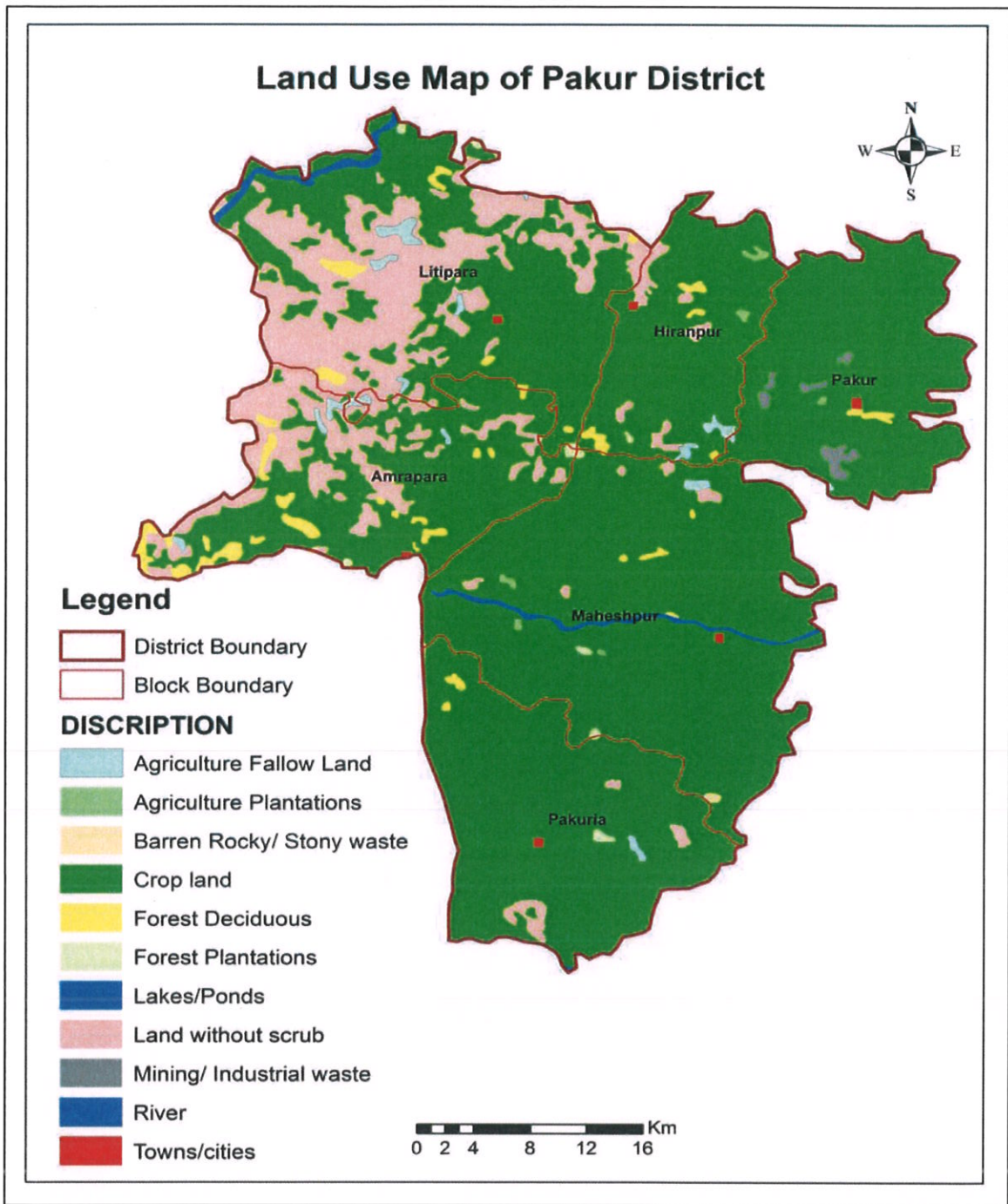


Figure No. 6.1: Land Use Map of Pakur District



a) Forest detail of the area

The district having a total geographical area of 1806 Km² out of which it has forest covers of 28425.74 hectares, comprises 4671.33 hectares of reserved forest area.

According to ISFR-2021 the State has a geographical area of 79,716 sq.km which constitutes 2.42% of the country's area. The total recorded forest area (RFA) of the state 23,721 sq.km which is nearly 29.76% of the geographical area of the state. Of the total recorded forest area, Reserved Forest constitute 18.58%, Protected Forests 81.28% and Unclassed Forests 0.14 % (ISFR-2019).

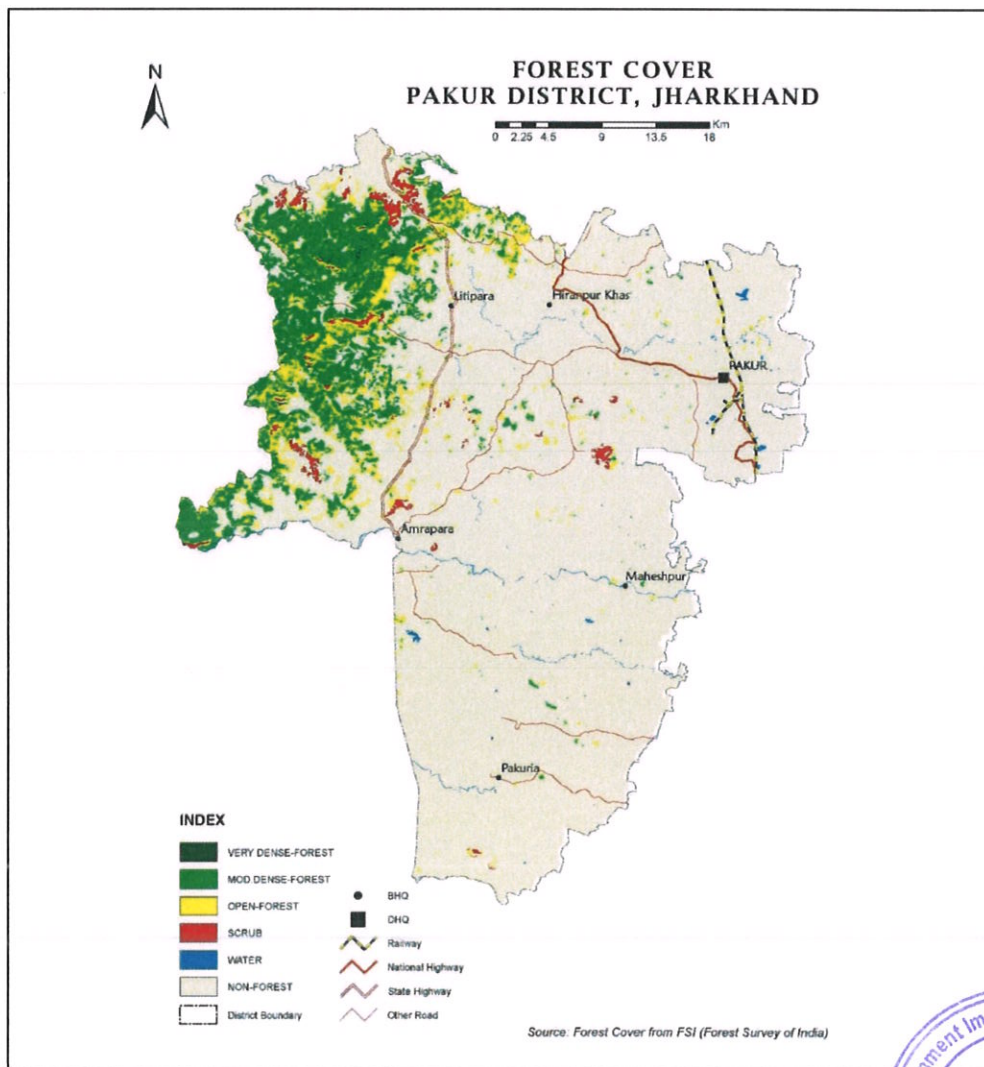
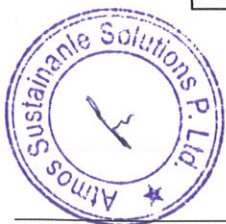


Figure No. 6.2: Forest cover Map of District



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b) Agriculture & Irrigation

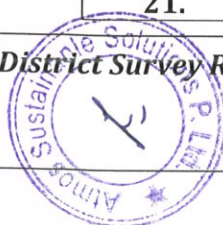
Paddy is the main crop of the district. Other major crops are Maize, Pulses, wheat, potato, onion, other vegetables, flowers, etc. The cropping is mainly dependent upon rain fed irrigation. Other sources of irrigation in the district are tube wells, canals and other wells.

S.N.	Item	Information
1	Major Farming system/enterprise	Rice-Fallow, Rice - Vegetable-Fishery Rice-Vegetable-Animal husbandry Rice-Animal husbandry
2	Agro-climatic Zone	VII
3	Agro ecological situation	Upland rainfed (Tanr I, II & III) Mid Land Rainfed (Don III) Mid Land Irrigated (Don II) Low Land Rainfed (Don I)
4	Soil type	Alfisols-71.4% Entisols-13.4% Inceptisols-12.8%

Source: Krishi Vigyan kendra, Pakur

Table No. 6.2: Area, Production and Productivity of major crops cultivated in the district

S. No.	Name of Crop	Area in Ha	Production in MT	Yield Kg/ha
1.	Rice	49226	116785.1	2388
2.	Wheat	7830	12528.0	1600
3.	Jowar	174	135.9	781
4.	Bajra	0	0.0	
5.	Maize	9720	15752.8	1717
6.	Ragi	0	0.0	
7.	S.Millet	0	0.0	
8.	Barley	12	9.6	800
9.	Coarse Millet	0	0.0	
10.	Tur	6852	5139.0	750
11.	Urd	1659	1350.4	814
12.	Mung	35	15.0	627
13.	Soybean	9	5.9	653
14.	Kulthi	927	544.1	587
15.	Sunflower	53	0.0	
16.	Rapeseed	8361	7524.9	900
17.	Linseed	1258	1006.4	800
18.	Safflower	8	3.2	400
19.	Groundnut	27	21.2	784
20.	Castor Oil	0	0.0	
21.	Sisemum	504	174.4	353



22.	Niger	0	0.0	
23.	Sugarcane	82	5128.3	62540
24.	Chickpea	9047	4290.9	850
25.	Lentil	4280	3210.0	750
26.	Pea	927	788.0	850
27.	Jute	725	2274.3	3137
28.	Total	101716	176687.4	82,081

Source: DAO, Pakur (Data is of year 2015-16)

c) Horticulture

In last two decades horticulture has emerged one of the best agricultural enterprises in state. It has two components i.e. Fruits and Vegetables.

Table No. 6.3: Area, Production and Productivity of major crops cultivated in the district

Crop	Area (ha)	Production (t)	Productivity (t/ha)
Beans (All including Lab-lab (Sem))	103	1996.1	19.38
Bitter Gourd	35.3	351	9.94
Bottle Gourd	20	254	12.70
Brinjal	651	9254	14.22
Cabbage	414.1	6462.6	15.61
Carrot	25	221	8.84
Cauliflower	451	5467	12.12
Green Chilly	1254	15641	12.47
Cucumber	31	341	11.00
Kaddu/Pumpkin	27	412	15.26
Okra/Ladies Finger	213	3268	15.34
Onion	715	11440	16.00
Peas (Green)	759.5	11305.5	14.86
Potato	465.6	6199	13.31
Radish	142	2541	17.89
Tomato	215	2354	10.95
Other Vegetables	811	14749.2	18.19
Sub Total	6332.5	92256.4	14.57

Source: District Horticulture Office, Pakur (Data is of year 2015-16)

d) Mining

The mineral resources of Pakur have played a great role in industrialization, social and economic development of the district.



Pakur is rich in minerals such as:

- Coal
- China Clay
- Fire clay
- Quartz
- Granite
- Gneiss
- Silica sand
- Glass sand
- Fuller's earth



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CHAPTER- 07

SURFACE WATER AND GROUND WATER SCENARIO OF THE DISTRICT

The occurrence and movement of ground water in the area is variable, which is broadly governed by geological frameworks i.e., nature of rock formations including their porosity (primary and secondary) and permeability. The principal aquifer in the area is Basalt, where the occurrence and movement of ground water primarily depends on the degree of interconnection of secondary pores/voids developed by fracturing and weathering. Rajmahal Traps in the area constitutes number of basaltic flows separated by intertrappean beds which are often agillaceous and arenaceous in nature. The intertrappean beds separates two flows occurs as impermeable beds. The distinctive hydrogeological features of the basaltic rocks is the significant primary porosity in the form of vesicles, cracks etc. The secondary porosity is developed due to fracturing during cooling of lavas, tectonic disturbances followed by weathering etc. Laterites are mainly of insitu-origin and have formed by subaerial erosion of underlying basalts under favorable climatic condition.

The study reveals that vesicular basalts, laterites, intertrappeans formation etc. form suitable condition for ground water storage. The alluvium occurs in the northern and eastern boundary of the district, which is composed mainly of sand and sub ordinate clay. Based on morpho-genetic, geological diversities and relative ground water potentialities of the aquifers, the district can be broadly divided into three Hydrogeological units: Consolidated or Fissured formations, Semi-Consolidated and unconsolidated or Porous formations.

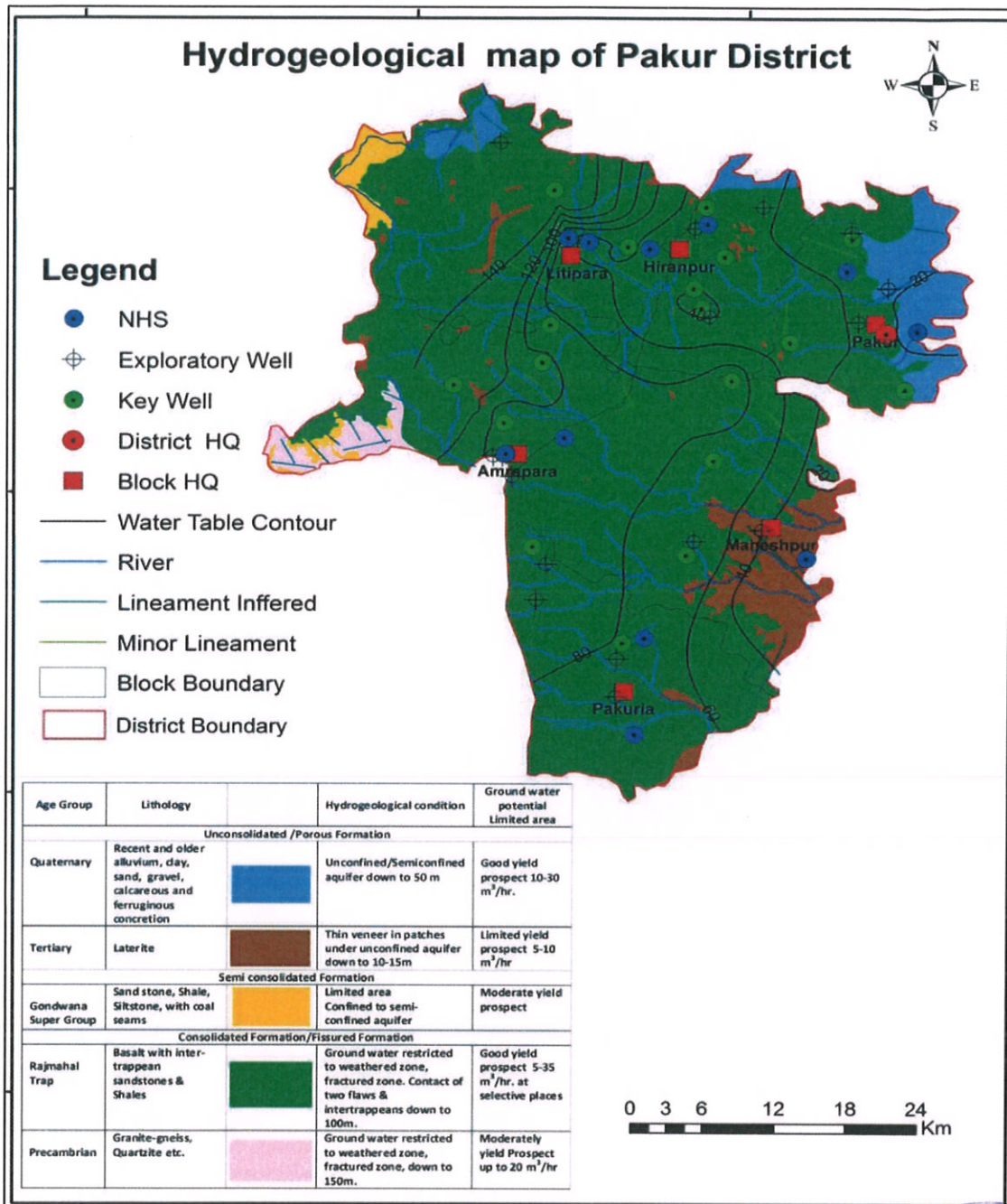
- Consolidated or Fissured formations - Precambrians and Rajmahal Trap
- Semi-Consolidated formations –Gondwanas
- Unconsolidated or Porous formations - Laterites and Alluvium



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Source: CGWB

Figure No. 7.1: Hydrogeological map of district



Ground Water Development of District:

The overall ground water development of the district is only 13.91%. Thus, there is sufficient scope for shallow as wells deep bore wells. State Govt. Agency has been constructed a large number of bore wells to mitigate the drinking water problem in the district. Central Ground Water Board has



been drilled 07 exploratory bore wells and 05 observation bore wells in the district. The yield of bore wells ranges between 1.08 – 30.00 m³/hr. The Transmissivity and Storativity value ranges from 2 to 86.29 m²/day and 01.30 x 10⁻⁵ to 06.6 x 10⁻⁴ respectively.

Depth to Water Level: -

There are 7 National Hydrograph Stations (NHS) have been established by Central Ground Water Board for the study of behavior of the water level and their fluctuation.

Pre monsoon depth to water level: - On the basis of the depth to water level of the year 2012 - 13 (table - 2), the pre monsoon depth to water level was monitored between 5.44 to 13.10 mbgl. About 42.86% of NHS showing rising trend of ground water while 57.14% of NHS showing falling trend for pre monsoon period. Pre monsoon depth to water level map (May 2012) is shown in fig.-7.2.

Post monsoon depth to water level: - On the basis of the depth to water level of the year 2012 - 13, the post monsoon depth to water level ranges between 1.80 to 7.03 mbgl. About 14.28 % of NHS showing rising trend of ground water while 85.72% of NHS showing falling trend for post monsoon period. Post monsoon depth to water level map (May 2012) is shown in fig.-7.3.

The long term water level trend is showing rising trend between 0.017 – 0.125, 0.437 and 0.011 – 0.287 m/ year for pre monsoon, post monsoon and all period respectively.

Similarly, the long term water level trend is showing falling trend between 0.062 – 0.223, 0.071 – 0.335 and 0.196 – 0.300 m/ year for pre monsoon, post monsoon and all period respectively.

Similarly, about 71.43 % of NHS showing rising trend and rest 28.27% showing declining trend for all seasons.

Seasonal Fluctuation: - From the pre monsoon and post monsoon depth to water level data collected during May 2012 and November 2012 respectively, water level fluctuations were computed for all HNS located in the district. The water level fluctuation of the district varies from 1.59 to 6.65 m.



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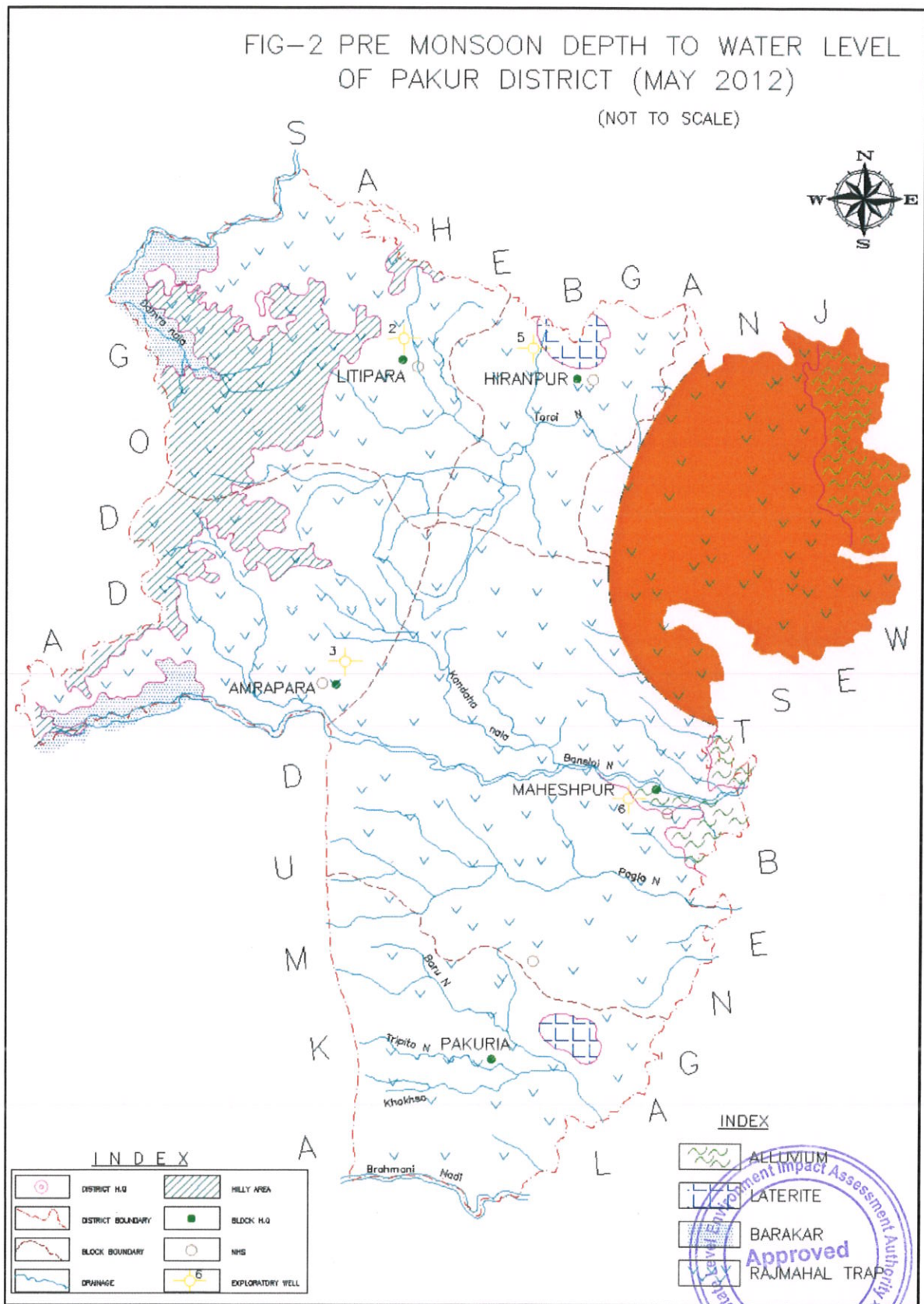
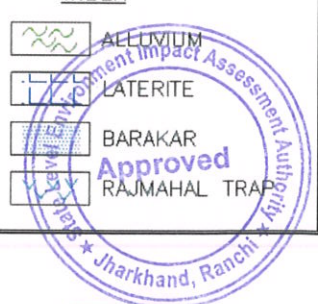
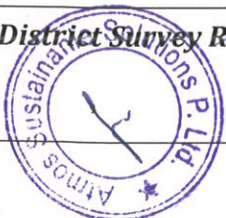
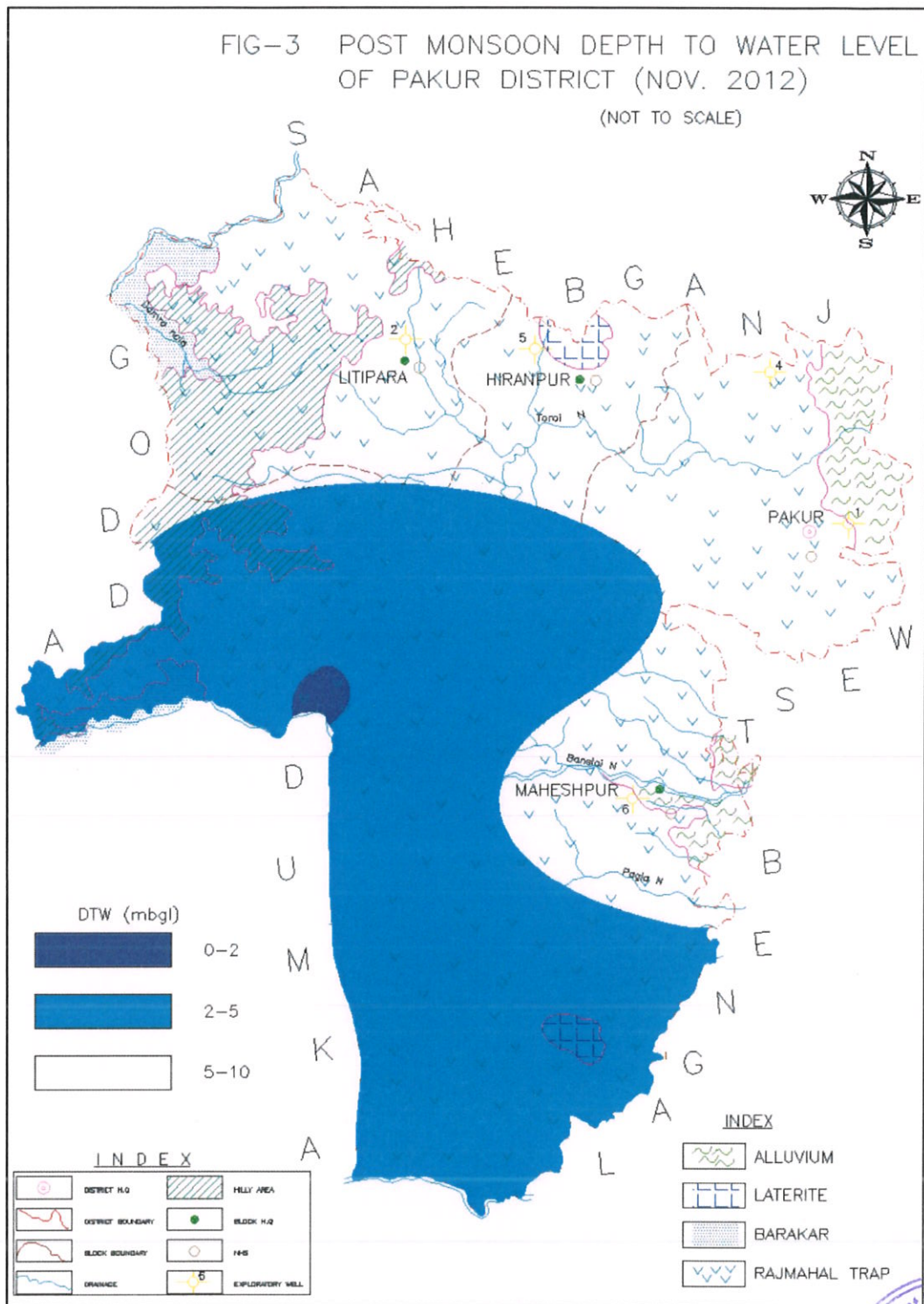


Fig. 7.2 Pre-Monsoon water level map





Source: CGWB

Fig. 7.6 Post Monsoon water level map



CHAPTER- 08

RAINFALL OF THE DISTRICT AND CLIMATE CONDITION

The district is characterized by humid to sub-humid climate. During summer the hot spell prevails from March to middle of June. Rainy season started from middle of June to end to September. Winter starts from the middle of November and continues till the end of February. The district experiences great heat from March to May, when the maximum temperature reaches up to 40°C. December is the coldest month when the minimum temperatures fall down up to 4°C.

Typical tropical climate with hot summer prevails over the area with summer lasting from the months of March to June and winter from the months of November to February. The area receives rainfall by South-West monsoon. Rainy season sets in the middle of June and lasts till September. The normal average rainfall in the district is 1399 mm.

Details of rainfall data of five years (from 2016 to 2020) is furnished in Table No 8.1

Table No. 8.1: Details of rainfall data of five years (from 2016 to 2020)

YEAR	JAN		FEB		MAR		APR		MAY		JUN	
	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP
2016	10.3	-29	0.0	-100	2.1	-86	14.2	-58	58.4	-32	124.7	-45
2017	1.3	-91	0.0	-100	9.0	-41	2.2	-94	66.1	-23	165.1	-28
2018	0.0	-100	1.6	-88	0.2	-99	36.6	7	64.3	-25	129.9	-43
2019	0.0	-100	25.7	101	0.6	-96	49.0	50	81.8	-8	32.3	-86
2020	21.1	241	6.8	-47	50.1	208	62.7	92	126.6	42	112.8	-51

JUL		AUG		SEPT		OCT		NOV		DEC	
R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP
260.1	-31	204.6	-40	250.4	-27	43.3	-70	0.0	-100	0.0	-100
514.4	36	342.5	1	256.4	-25	195.8	36	0.0	-100	3.0	-51
201.1	-47	151.2	-55	100.9	-70	121.4	-15	0.0	-100	14.6	136
286.9	-23	138.6	-57	291.5	-16	142.8	4	0.0	-100	0.0	-100
301.4	-19	223.6	-30	251.3	-28	50.4	-63	0.0	-100	0.0	-100



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CHAPTER- 09

THE LIST OF MINING LEASE IN THE DISTRICT WITH LOCATION, AREA AND PERIOD OF VALIDITY

Details of the mining leases in the district as per the following format:-

S. No.	Name of The Mineral	Name of the Lessee	Address & Contact No. of Lessee	Mining lease Order No. & date	Area of Mining lease (ha)	Period of Mining lease (Initial)	Period of Mining lease (Initial)		Period of Mining lease (1st/2nd...renewal)	
							From	To		
1	Sand	2	3	4	5	6	7	8	9	10
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Date of Commencement of Mining Operation	Status (Working/Non-Working/Temp. Working for Dispatch etc.)	Captive/ Non- Captive	Obtained Environmental Clearance (Yes/No), If Yes Letter No with date of grant of EC.	Location of the Mining lease (Latitude & Longitude)	Method of Mining (Opencast/Underground)
11	12	13	14	15	16
NA	NA	NA	NA	NA	NA

Total Mineral Reserve available in the district:

S. 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	Validity of Lol	Use (Captive/ Non-Captive)	Location of the Mining lease (Latitude & Longitude)



1	2	3	4	5	6	7	8	9
NA	NA	NA	NA	NA	NA	NA	NA	NA

**At Present time not any sand ghat operate in this District because hole lease has been expired.*



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CHAPTER- 10
DETAILS OF ROYALTY OR REVENUE RECEIVED IN LAST THREE YERAS

S.NO	YEARS	ROYALTY/REVENUE (IN LAKHS RS.)
01	2021-2022	00.0
02	2020-2021	00.0
03	2019-2020	00.0
TOTALS		00.0

** From Last three years revenue not generated from sand mining.*



CHAPTER- 11
DETAILS OF PRODUCTION OF SAND OR BAJRI OR MINOR MINERALS IN
LAST FIVE YERAS

S.NO	YEARS	PRODUCTION OF SAND IN CFT
01	2021-2022	00.0
02	2020-2021	00.0
03	2019-2020	00.0
04	2018-2019	925300.00
05	2017-2018	1711479.00
TOTALS		26,36,779.00

Source- Data from DMO Pakur



CHAPTER- 12
MINERAL MAP OF THE DISTRICT

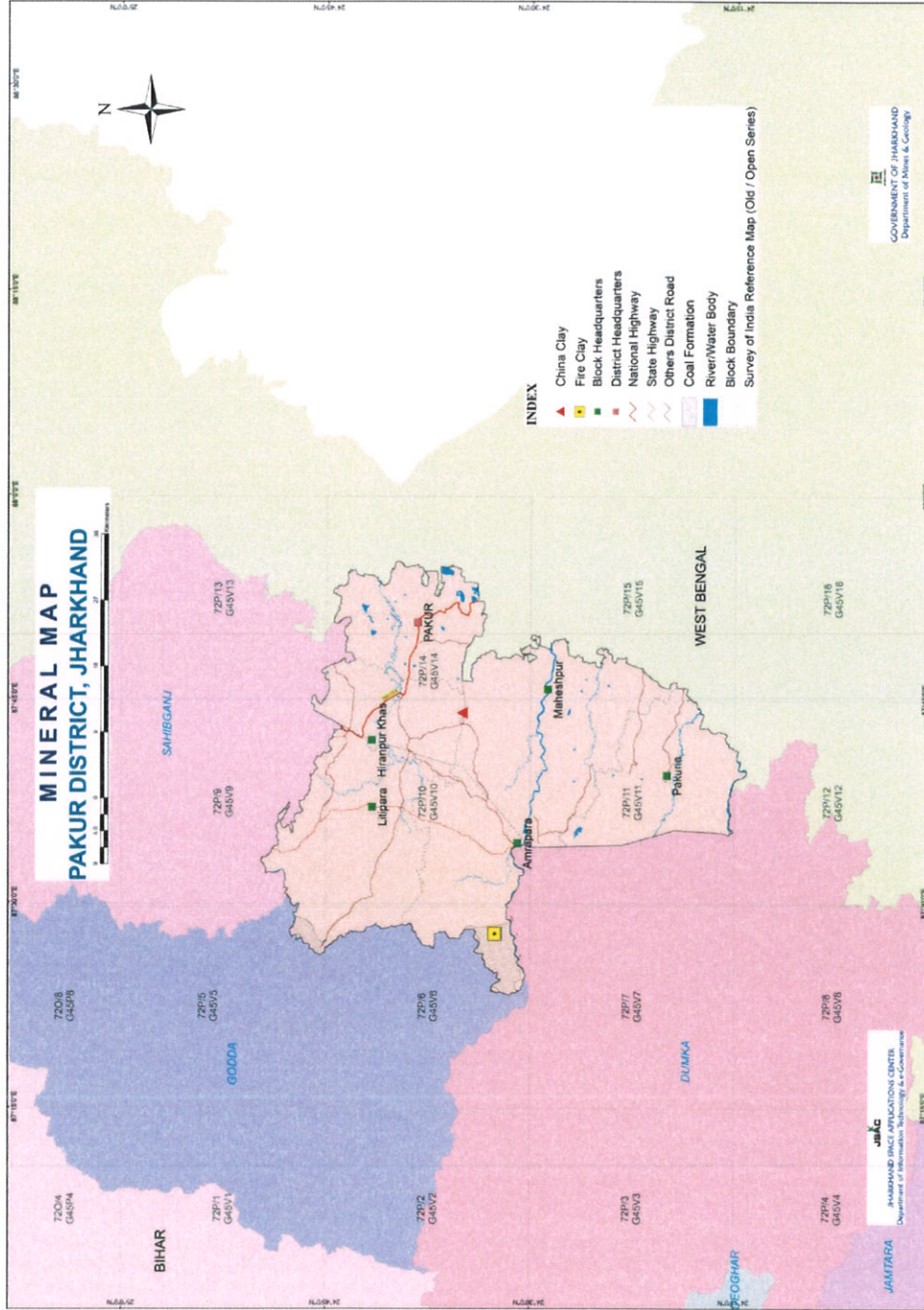


Fig. 12.1 Mineral map of Pakur District



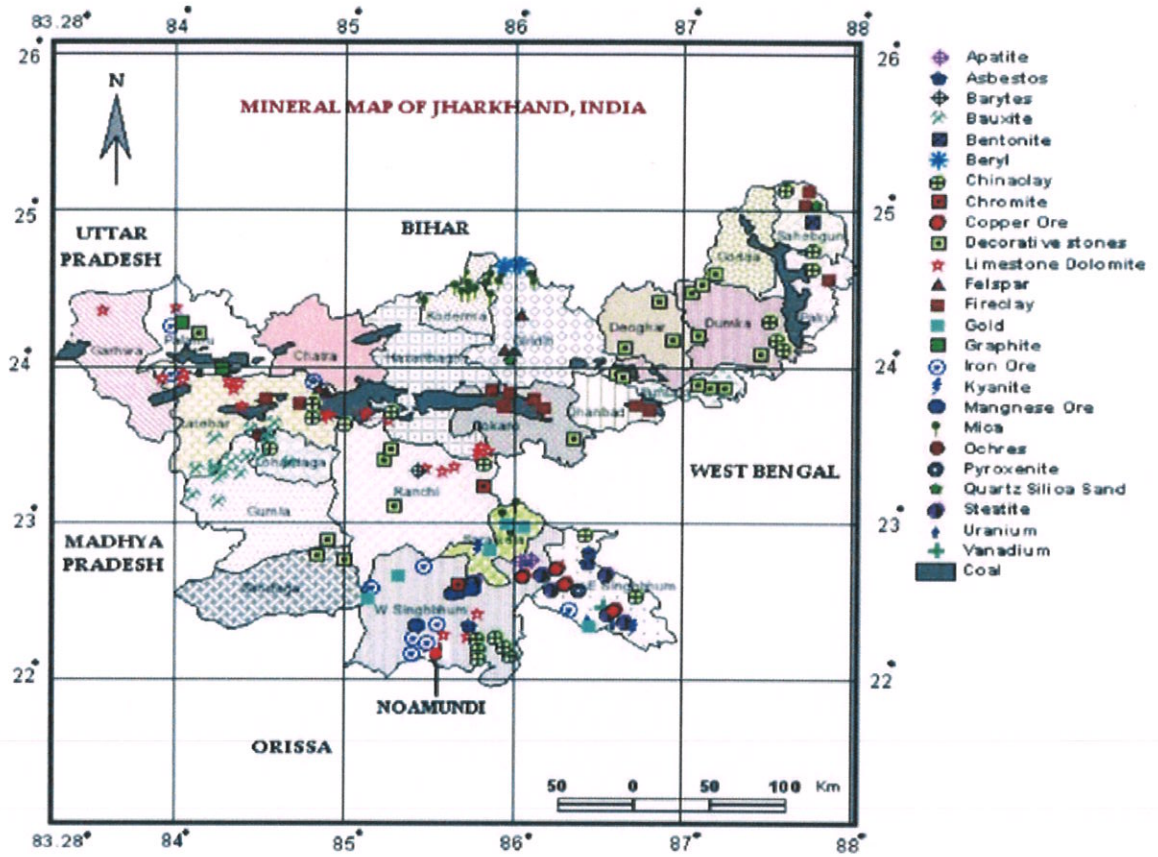
CHAPTER- 13
LIST OF LETTERS OF INTENT HOLDERS (LOI) IN THE DISTRICT WITH ITS VALIDITY

S. No.	Name of The Mineral	Name of the Lessee	Address & Contact No. of LOI Holder	Letter of Intent Grant Order No. & Date	Area of Mining Lease to be allotted (ha)	Validity of LOI	Use (Captive /Non-Captive)	Location of the Mining Lease (Latitude & Longitude)
	Sand	2	3	4	5	6		N E
1	NA	NA	NA	NA	NA	NA		9 NA
2								10 NA

- Letter of intent not issued at this time and last years.



CHAPTER- 14
TOTAL MINERAL RESERVE AVAILABLE IN THE DISTRICT



Source: researchgate.net



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CHAPTER- 15

QUALITY/GRADE OF MINERAL AVAILABLE IN THE DISTRICT

Pakur District is having a large number of stone mines and crushers. Approximately 150 mines and 250 crushers are in operation with the support of one lac labour force in Primary

sent time. The stone industry is paying eight to nine crore rupees per year as royalty to the Govt. in addition to commercial taxes. The quality of Pakur black stone chips is excellent for constructional purpose. Black stones of Pakur are also exported in the South Asian countries.

Though Pakur is not rich in minerals. However a number of economic minerals occur here and there and are being worked out. Among the minerals found are coal, china clay, fireclay, quartz, and silica sand and glass sand. However a lot of infra structural constrains stand in the way of development of the mineral industry

The mineral resources of Pakur have played a great role in industrialization, social and economic development of the district. Pakur is rich in minerals such as:

- ✚ Coal
- ✚ China Clay
- ✚ Fire clay
- ✚ Quartz
- ✚ Granite
- ✚ Gneiss
- ✚ Silica sand
- ✚ Glass sand
- ✚ Fuller's earth

This district, once known for its thick & extensive forests, is now bereft of much of its jungle wealth. The medicinal plants such as Sarp Gandha, Raigami or Dhama, Kazwa, Chiryaita etc. are now almost extinct. There has been large-scale destruction of forests in the past few years. So the Subsistent agro based economy, which was earlier supplemented by forest and forest produce, has been badly affected. But the Paharia people of this districts carry on their livelihood on the forest products like bamboo, sabai grass, tasser, silk cocoon, lac, simal cotton & kendu leaves.



CHAPTER- 16 USE OF MINERALS

Basalt is an extrusive igneous or volcanic rock that has a low silica content, dark in colour, and is very rich in iron and magnesium. Basalt rock is mainly composed of pyroxene, olivine, and plagioclase and is the most common rock on the earth's surface. The texture of basalt rocks is coarsely porous as those holes are left by gas bubbles. The specimens of these rocks are mostly fine-grained, glassy and compact. A large part of the ocean floors is made from basalt rocks. When erupted by volcanoes in ocean basins, it can lead to the formation of volcanic Islands. Basalt rocks have also built up huge plateaus on the surface of the land. Maria, the dark plains on the Moon and also volcanoes of Mars and Venus are known to be possibly made up of basalt.

A basalt dark in colour can be called the dark basalt. We find its applications in textile industries, fire protection. From these places, we get a clear idea that understanding basalt use is really important for us. In this article, we will understand what basalt is, the use of basalt, basalt type, and more about this in detail

USE OF BASALT:

Construction:

There are several uses of this rock in construction. For instance, crushed basalt is used in making the base for roads and pavements, as a part of concrete mixtures for constructing railroads, and as filter stones in drainage projects. The rock is also employed in slabs and sheets to create tiles, bricks, and other stone objects for constructing buildings and large monuments.

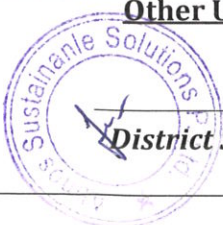
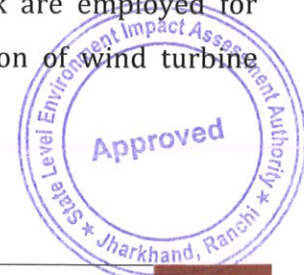
Agriculture:

Many farmers and gardeners employ basalt rock dust fertilizer because it is good for increasing the growth of plants while making it tough for weeds to spread in flowerbeds or other unwanted growing areas.

Industrial Manufacture:

The tensile strength of basalt is quite high, it is much greater than carbon fibre/fibreglass. Therefore, melted composites of the basalt rock are employed for manufacturing pipes and rebars that are used in the construction of wind turbine blades.

Other Uses:



Basalt rocks are used for construction purposes of buildings, blocks or are also used in the groundwork. These rocks are also used for making statues. Basalt rocks can inhibit crack propagation and also reinforce the concrete from a microscopic perspective. Basalt rocks are used for the toughness of concrete. With its high elastic modulus, it acts as a bridge at the cracks. Extruding and heating of these rocks get converted into stone wool which is potentially an excellent thermal insulator. Basalt rocks were also used for asphalt pavement, road base, railroad blast, and many other purposes.

Uses of Coal:

Coal is seemingly the cheapest and most essential source of energy. Here is a list of all the major uses of coal.

Generating Electricity

Production of Steel

Industries

Gasification and Liquefaction

Domestic Use

Use of China Clay:

China clay used in all Kind of ceramic product production and other products for its properties. Following are the primary uses of the china clay,

1. Used In Sanitaryware industry
2. Used in the tiles Production industry
3. Used in Refractory production
4. Used in the Paper industry as a filler
5. Used in Rubber industry as a raw material
6. Used in textiles industries
7. Used in the Dinnerware production process as a raw material
8. Used in pottery works, Etc

Use of Fire Clay:

Fire clay is a range of refractory clays used in the manufacture of ceramics, especially for fire brick.

Use of River Sand:

It falls under the fine quality of construction sands which are found near river banks



and streams. This sand is white-gray and is one of the fine-graded sands used in the construction of buildings. They are mainly used in concrete and masonry work. They can also be used for RCC, plastering, and many other brick or block works. This sand consists of a smoother texture and a better shape of grains. The river or natural sand demands very less water. River sand since naturally obtained is cheaper.



CHAPTER- 17
DEMAND AND SUPPLY OF THE MINERAL IN THE LAST FIVE YEARS

River sand is used as raw material in construction of building and infrastructure project, the demand of sand is increasing day by day. The requirement for the mineral is always high in the nearby cities and towns. Therefore there is always a good demand of the mineral in the domestic market. Its demand in industrial area of Pakur and nearby areas is increasing very fast. During last five in Financial Year(F.Y)-2017-2018-**17114779cft**, F.Y-2018-2019-**925300cft**, after that last three years F.Y 2019-2020, 2020-2021, 2021-2022, There is no production of sand due to non-settlement of sand ghats.

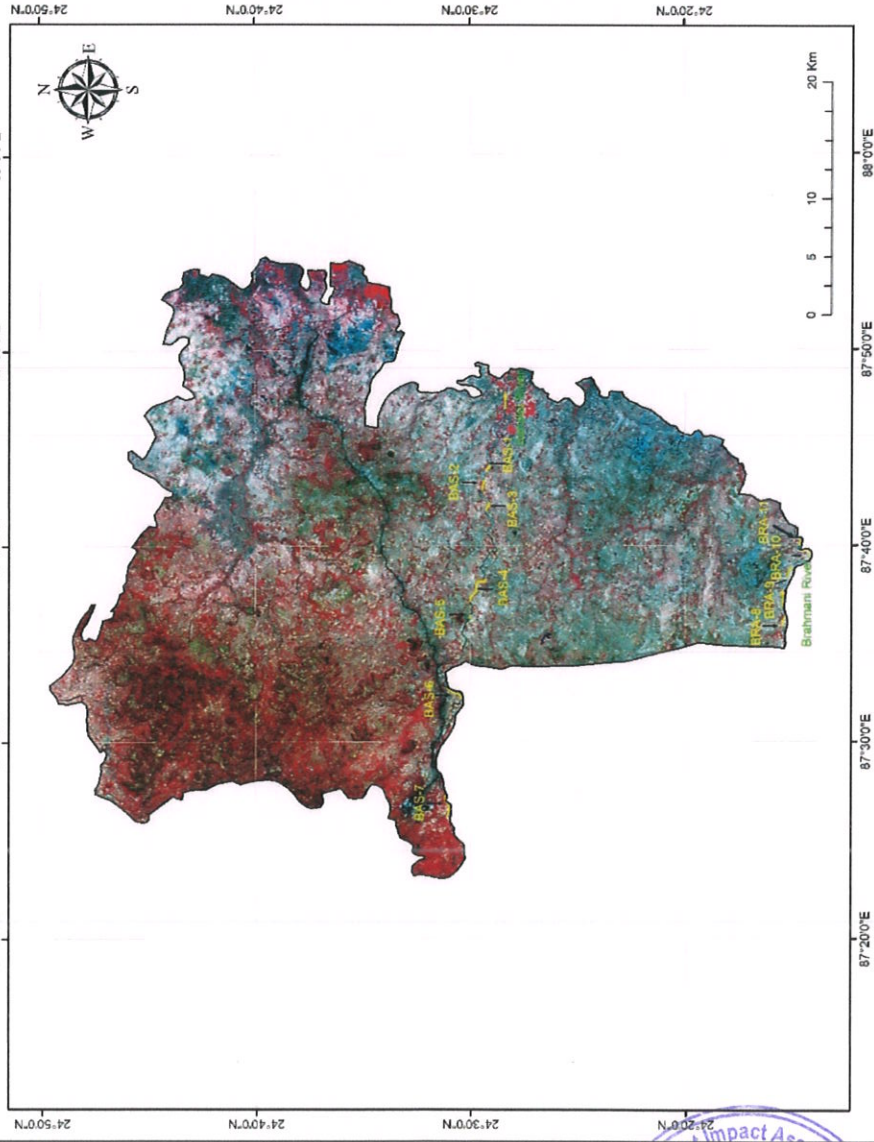
To fulfill the demand in the district, the sand ghats proposed for production of sand.



CHAPTER- 18
MINING LEASES MARKED ON THE MAP OF THE DISTRICT

PAKUR DISTRICT JHARKHAND STATE

False Colour Composite Map (FCC)
 Dr. Mansour
 Landsat 8 Data acquired on 26/01/2022



UIN	Area in Hectare (Ha)
1) BAS-1	6.57
2) BAS-2	9.21
3) BAS-3	8.09
4) BAS-4	27.20
5) BAS-5	1.63
6) BAS-6	11.20
7) BAS-7	13.00
8) BRA-8	6.00
9) BRA-9	11.60
10) BRA-10	7.75
11) BRA-11	3.60

Legend

- Shrub Area
- Waterbody
- Brahmani River and Bansloi River
- District Boundary
- Potential area of Sand

Source:
 Satellite Image Landsat8
 USGS Earth Explorer



CHAPTER- 19
RECOMMENDATION OF ENFORCEMENT & MONITORING GUIDELINES FOR
SAND MINING BY MOEF &CC-2020

INTRODUCTION

India is developing at a faster pace and much technological advancement has already been taken place in the surveillance and remote monitoring in the field of mining. Thus, it is prudent to utilize the technological advancement for the effective monitoring of the mining activities particularly sand mining in the country.

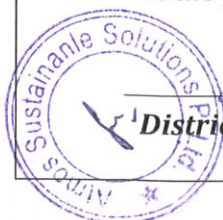
Following a series of orders by the National Green Tribunal in 2018, the Ministry of Environment, Forests and Climate Change has for the first time released guidelines to monitor and check illegal sand mining in the country. The Enforcement and Monitoring (EM) Guidelines for Sand Mining 2020 released by the Ministry include directions to states to carry out river audits, put detailed survey reports of all mining areas online and in the public domain, conduct replenishment studies of river beds, constantly monitor mining with drones, aerial surveys, ground surveys and set up dedicated task forces at district levels. The guidelines also push for online sales and purchase of sand and other riverbed materials to make the process transparent. They propose night surveillance of mining activity through night-vision drones.

While the MoEF&CC has already put in place the Sustainable Sand Management Guidelines 2016, which focus on the management of sand mining in India, that there is an urgent need to have guidelines for effective enforcement of regulatory provisions and their monitoring.

BACKGROUND

The Mines and Minerals (Development and Regulation) Act, 1957 has empowered state governments to make rules to prevent illegal mining, transportation and storage of minerals. "But in the recent past, it has been observed that there were a large number of illegal mining cases in the country and in some cases, many of the officers lost their lives while executing their duties to curb illegal mining. Illegal and uncontrolled illegal mining leads to loss of revenue to the State and degradation of the environment. The enforcement guidelines focus on the "effective monitoring of sand mining from the identification of sand mineral sources to its dispatch and end-use by consumers and the general public and looks at a uniform protocol for the whole country".

The need for replenishment study for river bed sand is also required in order to "nullify the adverse impacts arising due to excessive sand extraction". No riverbed mining will be allowed during the monsoon. In cases where rivers become district boundaries or state boundaries, the districts or states sharing the boundary shall constitute the combined task force for monitoring of mined materials, mining activity and participate in the preparation of District Survey Reports (DSR) by providing appropriate inputs.



The guidelines say the detailed survey needs to be carried out for quantification of minerals and the demand and supply of the riverbed material through market survey, including the future demand for the next five years.

The guidelines also push for the sale and purchase of sand and river bed material (RBM) online to make the process more transparent. "In order to curb illegal mining, it is very necessary that the general public is aware of the legal source of sand and RBM suppliers. It is suggested that the state government should develop an online portal for sale and purchase of sand and RBM. The state government will also decide the model of sale and the price of RBM. "It is suggested that the controlled price model is more effective in controlling illegal sand mining," the guidelines state.

This document will serve as a guideline for collection of critical information for enforcement of the regulatory provision(s) and also highlights the essential infrastructural requirements necessary for effective monitoring for Sustainable Sand Mining. The document is prepared in consideration of various orders/directions issued by Hon'ble NGT in matters pertaining to illegal sand mining and also based on the reports submitted by expert committees and investigation teams.

Further, this document is supplemental to the existing "Sustainable Sand Mining Management Guideline-2016" (SSMG-2016), and these two guidelines viz. "Enforcement & Monitoring Guidelines for Sand Mining" (EMGSM-2020) and SSMG-2016 shall be read and implemented in sync with each other. In case, any ambiguity or variation between the provisions of both these document arises, the provision made in "Enforcement & Monitoring Guidelines for Sand Mining-2020 "shall prevail.

OBJECTIVES OF GUIDELINE:

- Identification and Quantification of Mineral Resource and its optimal utilization.
- To regulate the Sand & Gravel Mining in the Country since its identification to its final end-use by the consumers and the general public.
- Use of IT-enabled services & latest technologies for surveillance of the sand mining at each step.
- Reduction in demand & supply gaps.
- Setting up the procedure for replenishment study of Sand.
- Post Environmental Clearance Monitoring.
- Procedure for Environmental Audit.
- To control the instance of illegal mining.



SLIENT FEATURE OF THE GUIDELINE:

- District Survey Report: The guidelines provide the procedure to be followed for identifying areas where mining can be allowed or prohibited. It provides guidelines for preparing a district survey report, which includes: Preparing a report before granting a mining lease, and Defining mining and no mining zones based on certain environmental and social factors.
- Preventing Illegal Mining: The guidelines suggest that sites can be monitored remotely by using unmanned artificial vehicles or drones. Drones can also be used for quantity estimation and land use monitoring. Further, the guidelines propose night surveillance of mining activity through night-vision drones. The environmental damages incurred due to illegal mining will be assessed by a committee constituted by the District Administration.
- Environmental Clearance: Environmental Clearance for mining is given by regulatory authorities after considering the potential environmental impact. However, it has been observed that often the Letter of Intent (LoI) is granted for a location which is not feasible for environment-friendly mining. The guidelines provide that LoIs should be granted for those locations which have the least possibility of an impact on the environment and nearby habitation.

The guidelines also push for online sales and purchase of sand and other riverbed materials to make the process transparent.

There are some important key points of EM guidelines for sand mining 2020:

a) Source to Destination Monitoring:

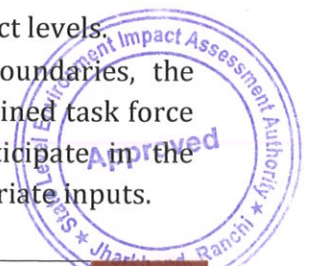
- The new set of guidelines focuses on the effective monitoring of sand mining from the identification of sand mineral sources to its dispatch and end-use by consumers and the general public and look at a uniform protocol for the whole country.
- Constantly monitor mining with drones and night surveillance of mining activity through night-vision drones.

b) Audits:

- States to carry out river audits put detailed survey reports of all mining areas in the public domain.

c) Enforcement:

- It gives directions to states to set up dedicated task forces at district levels.
- In cases where rivers become district boundaries or state boundaries, the districts or states sharing the boundary shall constitute the combined task force for monitoring of mined materials, mining activity and participate in the preparation of District Survey Reports (DSR) by providing appropriate inputs.



d)Sustainability:

- Conduct replenishment study for river bed sand in order to nullify the adverse impacts arising due to excessive sand extraction.
- No riverbed mining will be allowed during the monsoon.

Requirement for Monitoring & Enforcement

Sustainable Sand Mining Management Guidelines (SSMMG) 2016 and past experience suggest that the sources of sand in India are through:

- River (riverbed and flood plain),
- Lakes and reservoirs,
- Agricultural fields,
- Coastal / marine sand,
- Palaeo-channels and
- Manufactured Sand (M-Sand).

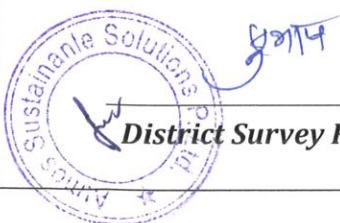
PREPARATION OF DISTRICT SURVEY REPORT:

“Sustainable Sand Mining Guidelines, 2016” issued by MoEF&CC requires preparation of District Survey Report (DSR), which is an important initial step before grant of mining lease/LoI. The guidelines emphasize detailed procedure to be followed for the purpose of identification of areas of aggradation/ deposition where mining can be allowed and identification of areas of erosion and proximity to infrastructural structures and installation where mining should be prohibited. Calculation of annual rate of replenishment, allowing time for replenishment after mining, identification of ways of scientific and systematic mining; identifying measures for protection of environment and ecology and determining measures for protection of bank erosion, benchmark (BM) with respect to mean Sea Level (MSL) should be made essential in mining channel reaches (MCR) below which no mining shall be allowed.

Therefore, preparation of District Survey Report is a very important step and sustainable sand mining in any part of the country will depends on the quality of District Survey Report.

Considering the importance of district survey report, the Ministry of Environment Forest and climate change, after consultation with experts dealing with mining-related matters, formulated the following guidelines for the preparation of comprehensive District Survey Report for sand mining.

1) District Survey Report for sand mining shall be prepared before the auction/ auction/grant of the mining lease/Letter of Intent (LoI) by Mining department or department dealing the mining activity in respective states.



2) The first step is to develop the inventory of the River Bed Material and Other sand sources in the District. In order to make the inventory of River Bed Material, a detailed survey of the district needs to be carried out, to identify the source of River Bed Material and alternative source of sand (M-Sand). The source will include rivers, de-siltation of reservoir/dams, Patta lands/Khatedari Land, M-sand etc.

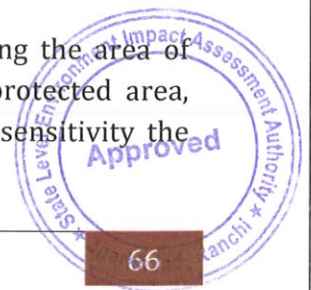
3) District Survey Report is to be prepared in such a way that it not only identifies the mineral-bearing area but also define the mining and no mining zones considering various environmental and social factors.

4) Identification of the source of Sand & M-Sand. The sources may be from Rivers, Lakes, Ponds, Dams, De-silting locations, Patta land/Khatedari lands. The details in case of Rivers such as [name, length of river, type (Perennial or Non-Perennial), Villages, Tehsil, District], in case of Lakes, Ponds, Dams, De-silting locations [Name, owned/maintained by (State Govt./PSU), area, Villages, Tehsil, District] in case of Patta land/Khatedari lands [Owner Name, Sy No, Area, Agricultural/Non-Agricultural, Villages, Tehsil, District], in case of M-Sand Plant [Owner Name, Sy No, Area, Quantity/Annum, Villages, Tehsil, District], needs to be recorded as per format given in Annexure-I.

5) Defining the sources of Sand/M-Sand in the district is the next step for identification of the potential area of deposition/aggradation wherein mining lease could be granted. Detailed survey needs to be carried out for quantification of minerals. The purpose of mining in the river bed is for channelization of rivers so as to avoid the possibility of flooding and to maintain the flow of the rivers. For this, the entire river stretch needs to be surveyed and original ground level (OGL) to be recorded and area of aggradation/deposition needs to be ascertained by comparing the level difference between the outside riverbed OGL and water level. Once the area of aggradation/deposition is identified, then the quantity of River Bed Material available needs to be calculated. The next step is channelization of the river bed and for this central $\frac{3}{4}$ th part of the river; width needs to be identified on a map. Out of the $\frac{3}{4}$ th part area, where there is a deposition/aggradation of the material needs to be identified. The remaining $\frac{1}{4}$ th area needs to be kept as no mining zone for the protection of banks. The specific gravity of the material also needs to be ascertained by analyzing the sample from a NABL accredited lab. Thus, the quantity of material available in metric ton needs to be calculated for mining and no mining zone.

6) The permanent boundary pillars need to be erected after identification of an area of aggradation and deposition outside the bank of the river at a safe location for future surveying. The distance between boundary pillars on each side of the bank shall not be more than 100 meters.

7) Identifying the mining and no mining zone shall follow with defining the area of sensitivity by ascertaining the distance of the mining area from the protected area, forest, bridges, important structures, habitation etc. and based on the sensitivity the area needs to be defined in sensitive and non-sensitive area.



8) Demand and supply of the Riverbed Material through market survey needs to be carried out. In addition to this future demand for the next 5 years also needs to be considered.

9) It is suggested that as far as possible the sensitive areas should be avoided for mining, unless local safety condition arises. Such deviation shall be temporary & shall not be a permanent feature.

10) The final area selected for the mining should be then divided into mining lease as per the requirement of State Government. It is suggested the mining lease area should be so selected as to cover the entire deposition area. Dividing a large area of deposition/aggradation into smaller mining leases should be avoided as it leads to loss of mineral and indirectly promote illegal mining.

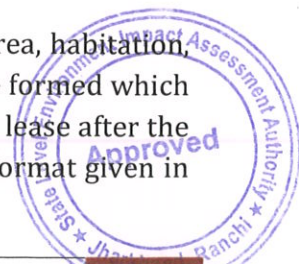
11) Cluster situation shall be examined. A cluster is formed when one mining lease of homogenous mineral is within 500 meters of the other mining lease. In order to reduce the cluster formation mining lease size should be defined in such a way that distance between any two clusters preferably should not be less than 2.5 Km. Mining lease should be defined in such a way that the total area of the mining leases in a cluster should not be more than 10 Ha.

12) The number of a contiguous cluster needs to be ascertained. Contiguous cluster is formed when one cluster is at a distance of 2.5 Km from the other cluster.

13) The mining outside the riverbed on Patta land/Khatedari land be granted when there is possibility of replenishment of material. In case, there is no replenishment then mining lease shall only be granted when there is no riverbed mining possibility within 5 KM of the Patta land/Khatedari land. For government projects, mining could be allowed on Patta land/Khatedari land but the mining should only be done by the Government agency and material should not be used for sale in the open market. Cluster situation as mentioned in para k above is also applicable for the mining in Patta land/Khatedari land.

14) The State Government should define the transportation route from the mining lease considering the maximum production from the mines as at this stage the size of mining leases, their location, the quantity of mineral that can be mined safely etc. is available with the State Government. It is suggested that the transportation route should be selected in such a way that the movement of trucks/tippers/tractors from the villages having habitation should be avoided. The transportation route so selected should be verified by the State Government for its carrying capacity.

15) Potential site for mining having its impact on the forest, protected area, habitation, bridges etc., shall be avoided. For this, a sub-divisional committee may be formed which after the site visit shall decide its suitability for mining. The list of mining lease after the recommendation of the Committee needs to be defined in the following format given in



as Annexure-II. The Sub-Divisional Committee after the site visit shall make a recommendation on the site for its suitability of mining and also records the reason for selecting the mining lease in the Patta land. The details regarding cluster and contiguous cluster needs to be provided as in Annexure-III. The details of the transportation need to be provided as in Annexure IV.

16) Public consultation-The Comments of the various stakeholders may be sought on the list of mining lease to be auctioned. The State Government shall give an advertisement in the local and national newspaper for seeking comments of the general public on the list of mining lease included in the DSR. The DSR should be placed in the public domain for at least one month from the date of publication of the advertisement for obtaining comments of the general public. The comments so received shall be placed before the sub-divisional committee for active consideration. The final list of sand mining areas [leases to be granted on riverbed & Patta land/Khatedari land, de-siltation location (ponds/lakes/dams), M-Sand Plants (alternate source of sand)] after the public hearing needs to be defined in the final DSR in the format as per Annexure-V. The details regarding cluster and contiguous cluster needs to be provided in Annexure-VI. The details of the transportation need to be provided in Annexure-VII.

No of Annexures	Details
Annexure -I	Details of Sand/ M-Sand Sources
Annexure -II	List of Potential Mining Leases (Existing & Proposed)
Annexure -III	Cluster & Contiguous Cluster details
Annexure -IV	Transportation Routes for individual leases and leases in Cluster
Annexure -V	Final List of Potential Mining Leases (Existing & Proposed)
Annexure -VI	Final List of Cluster & Contiguous Cluster
Annexure -VII	Final Transportation Routes for individual leases and leases in Cluster



Compliance to Enforcement and Monitoring Guidelines for Sand Mining- 2020

ANNEXURE-I

a) Rivers:

River Name/M-Sand Plant	Total Stretch of River (in KM)	Type of River (Perennial or Non-Perennial)
Bansloi River	46km	Perennial River
Gumani River	19km	Perennial River
Brahmani River	22km	Perennial River

b) De-Siltation Location: (Lakes/Ponds/Dams etc.)

Name of Reservoir/Dams	Maintain/Controlled by State Govt./PSUetc.	Location	District	Tehsil	Village	Size (Ha)
Nil	Nil	Nil	Nil	Nil	Nil	Nil

c) Patta Lands/Khatedari Land:

Owner	Sy. No	Area (Ha)	District	Tehsil	Village	Agricultural Land (Yes/No)
Nil	Nil	Nil	Nil	Nil	Nil	Nil

d) M-Sand Plants:

Plant Name	Owner	District	Tehsil	Village	Geo- location	Quantity Tonnes/Annum
Nil	Nil	Nil	Nil	Nil	Nil	Nil

Note: For inclusion of M-Sand Plant/Patta Land in DSR the plant/landowners need to submit the request to the Mining Department with complete details. Inclusion in DSR does not give them the right to operate the M-Sand Plant/Sand Mining lease.

ANNEXURE-II

List of Potential Mining Leases (existing & proposed)

1) Rivers

UIN	River Details	Lease Details	Area in (Ha)	Geo-Coordinate	Whether Distance of Project location from Reserved Forest/Protected Forest is 250m?	Mining leases within 500 Meters (if yes cluster area)	Total excavation in Tonnes /Annum considering digging depth max As 3meters	Mineral to be mined (Sand/Bajri/RBM etc.)	Existing /Proposed
BAS1	Bansloi River Category-II	1)Gram - Pathar Ghati, P.S - Maheshpur, Thana No.-164 District - Pakur Plot No. 01(P) 2)Gram - Singna, P.S. - Maheshpur,	6.57	1) 24°29'18.47"N 87°43'54.19"E 2) 24°29'15.37"N 87°43'50.47"E 3) 24°29'4.69"N 87°44'4.46"E 4) 24°29'7.31"N 87°44'7.07"E	NO	NO	136839	Sand	Proposed



District Survey Report, Pakur-November-2022

BAS2	Bansloi River Category-II	Thana No. - 163, District - Pakur Plot No. 1119(P), 1189(P), & 1190(P) 3)Gram-Sola Patiya, P.s-Maheshpur, Thana No.-166, District- Pakur. Plot No.-01(P) 4)Gram- Pathar Ghati, P.S.-Maheshpur, Thana No.-165 Distt-Pakur. Plot No.-197 (P) Toposheet No.-72P/11	1) 24°29'25.59"N 87°43'19.38"E 2) 24°29'21.29"N 87°43'21.37"E 3) 24°29'26.46"N 87°42'53.43"E 4) 24°29'30.29"N 87°42'53.16"E	9.21	YES	NO	191824	Sand	Proposed
BAS3	Bansloi River Category-II	1)Gram - Nurgitola, P.S - Maheshpur, Thana No. - 135, District - Pakur, Plot No. 2259(P) 2)Gram - Rolagram, P.S - Maheshpur,	1) 24°29'10.99"N 87°42'10.95"E 2) 24°29'6.09"N 87°42'10.77"E 3) 24°29'16.64"N 87°41'49.08"E 4) 24°29'20.26"N 87°41'49.74"E	8.09	YES	NO	62316	Sand	Proposed



District Survey Report, Pakur-November-2022

BAS4	Bansloi River Category-II	Thana No. - 134, District - Pakur, Plot No.- 2218(P) Toposheet No.- 72P/11	1) Gram - Lutibari, P.S - Maheshpur, Thana No. - 94, District - Pakur Plot No. 1451 (P)& 1729 (P) 2) Gram - Sahri, P.S.-Maheshpur, Thana No.-95, District-Pakur Plot No.-507(P) 3) Gram - Maldhara, P.S.-Maheshpur, Thana No.-103, District-Pakur Plot No.- 02(P) Toposheet No.-72P/11	27.20	1) 24°29'22.81"N 87°38'17.71"E 2) 24°29'20.60"N 87°38'18.35"E 3) 24°29'23.12"N 87°38'7.17"E 4) 24°29'42.40"N 87°38'7.37"E 5) 24°29'46.02"N 87°37'36.08"E 6) 24°30'1.03"N 87°37'13.74"E 7) 24°30'3.94"N 87°37'18.45"E 8) 24°29'47.86"N 87°37'42.55"E 9) 24°29'42.71"N 87°38'12.94"E	NO	NO	97969	Sand	Proposed
BAS5	Bansloi River Category-II	Gram - Dumriya, Thana - Maheshpur, Thana No. - 45, District - Pakur Plot No. 842 Mouza - Saharpur, Thana - Maheshpur, Thana No. - 46, District - Pakur Plot No. 1576(P) Toposheet No.- 72P/11 & 72P/10	1.63	1) 24°30'1.72"N 87°36'27.11"E 2) 24°30'0.05"N 87°36'27.04"E 3) 24°30'3.53"N 87°36'16.43"E 4) 24°30'4.49"N 87°36'17.08"E	YES	NO	1543	Sand	Proposed	



District Survey Report, Pakur-November-2022

BAS6	Bansloi River Category-II	Mauza-Baramasia , Thana- Amrapara, Thana No.-12, District- Pakur Plot No.-698 Toposheet No.-72P/10	11.20	1) 24°30'29.79"N 87°32'11.12"E 2) 24°30'27.75"N 87°32'10.71"E 3) 24°31'6.72"N 87°32'43.38"E 4) 24°31'8.43"N 87°32'42.15"E <i>Half River Divided Dumka District</i>	NO	NO	22801	Sand	Proposed
BAS7	Bansloi River Category-II	Mauza-Amjhari , Thana-Amrapara, Thana No.-22 District- Pakur Plot No.-394, 395, 390(P) Toposheet No.-72P/6	13.0	1) 24°31'12.11"N 87°27'16.82"E 2) 24°31'11.21"N 87°27'15.73"E 3) 24°30'59.68"N 87°26'36.12"E 4) 24°31'7.54"N 87°26'8.68"E 5) 24°31'9.74"N 87°26'8.62"E <i>Half River Divided Dumka District</i>	NO	NO	220709	Sand	Proposed
BRA8	Brahmani River Category-II	Mauza-Gunpura , Thana- Pakuriya, Thana No.-52 District- Pakur Plot No.-1411 Toposheet No.-72P/11	6.0	1) 24°15'32.77"N 87°35'54.60"E 2) 24°15'26.03"N 87°36'21.37"E 3) 24°15'23.64"N 87°36'20.96"E 4) 24°15'30.78"N 87°35'54.65"E <i>Half River Divided Dumka District</i>	YES	NO	58478	Sand	Proposed
BRA9	Brahmani River Category-II	Gram-Bara Singpur , P.s- Pakuriya, Thana No.-86 Dsitt- Pakur Plot No.-1417 Toposheet No.-72P/11	11.60	1) 24°15'19.91"N 87°38'20.67"E 2) 24°15'4.58"N 87°38'55.14"E 3) 24°15'3.21"N 87°38'53.26"E 4) 24°15'16.27"N 87°38'19.88"E <i>Half River Divided West Bengal</i>	YES	NO	128134	Sand	Proposed
BRA10	Brahmani River Category-II	Mauza- Benakundi , P.s.-Pakuriya, Thana No.-87 Dsitt- Pakur Plot No.-291P & 325 Toposheet No.-72P/12	7.75	1) 24°14'14.75"N 87°39'23.27"E 2) 24°14'13.42"N 87°39'22.51"E 3) 24°14'39.58"N 87°39'43.92"E 4) 24°14'39.35"N 87°39'42.27"E <i>Half River Divided West Bengal</i>	YES	NO	68225	Sand	Proposed
BRA11	Brahmani River Category-II	Mauza- Ghurni , P.s.-Pakuriya, Thana No.-88	3.60	1) 24°14'44.43"N 87°40'0.62" 2) 24°14'42.64"N 87°40'0.16" 3) 24°14'41.99"N 87°40'17.65"E	YES	NO	56240	Sand	Proposed



5/11/22

3/2/22

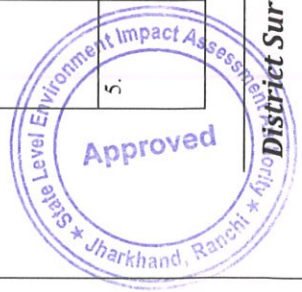


	Dsitt- Pakur Plot No.-1114(P) Toposheet No.-72P/12	4) 24°14'40.91"N 87°40'19.24"E <i>Half River Divided West Bengal</i>					
Total		105.85				1045078	

*Not any comments received from public side.

LIST OF SAND GHATS OPERATED BY PANCHAYAT

S.No.	River or Stream	Category	Geo-Coordinates of Sand Ghats	Portion of river or stream recommended for mineral concession	Area recommended for mineral concession (in Sqm)	Mineable mineral potential mineral concession (in Sqm) 60% of total potential
1.	Gumani River	Cat.-I	24°48'4.59"N 87°31'13.42"E	Mauza- Daradar Block- Lattipara Khata No. 33 Plot No. 01 Area- 1.06 Ha.	10600	6360
2.	Gumani River	Cat.-I	24°47'14.00"N 87°28'38.44"E	Mauza- Joridha Block- Lattipara Khata No. 41 Plot No. 498/812 & 498/813 Area- 2.83 Ha.	28300	16980
3.	Gumani River	Cat.-I	24°48'54.45"N 87°32'10.91"E	Mauza- Bara Ghagir Block- Lattipara Khata No. 57 Plot No. 01 Area- 2.50 Ha.	25000	15000
4.	Gumani River	Cat.-I	24°48'13.62"N 87°32'24.29"E	Mauza-Chota Ghagir Block- Lattipara Khata No. 57 Plot No. 01 Area- 3.80 Ha.	38000	22800
5.	Gumani River	Cat.-I	24°47'11.07"N 87°29'48.73"E	Mauza- Chota kutlu Block- Lattipara Khata No. 26 Plot No. 01	31500	18900

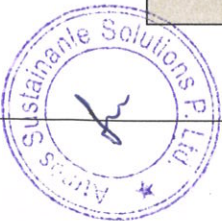


6.	Gumani River	Cat.-I	24°47'35.73"N 87°28'1.37"E	Area- 3.15 Ha. Mauza- Jordiha Block- Lattipara Khata No. 41 Plot No. 1/811 & 357 Area- 4.09 Ha.	40900	24540
7.	Brahmani River	Cat.-I	24°15'32.87"N 87°37'5.05"E	Mauza- Phulpani Block- Pakuria Khata No. 49 Plot No. 1796 Area- 2.27 Ha.	22700	13620
8.	Bansloi River	Cat.-I	24°28'29.81"N 87°46'40.72"E	Mauza- Shivrampur Block- Maheshpur Khata No. 80 Plot No. 224 Area- 3.91 Ha.	39100	23460
9.	Bansloi River	Cat.-I	24°28'19.73"N 87°47'9.46"E <u>Near Garbari Bridge 120Mtr</u>	Mauza- Rampur Block- Maheshpur Khata No. Plot No. 224 Area- 2.50 Ha.	25000	15000
10.	Bansloi River	Cat.-I	24°28'32.07"N 87°46'19.81"E	Mauza- Dhamkapara Block- Maheshpur Khata No. Plot No. 712 Area- 2.50 Ha.	25000	15000
11.	Bansloi River	Cat.-I	24°29'31.16"N 87°42'42.84"E <u>Near BAS2</u>	Mauza- Taliapokhar Block- Maheshpur Khata No. 39 Plot No. 01 Area- 4.50 Ha.	45000	27000
12.	Bansloi River	Cat.-I	24°31'14.64"N 87°30'47.10"E	Mauza- Maheshpur Block- Maheshpur Khata No. Plot No. 1012 Area- 4.81 Ha.	48100	28860



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

Owner	Sy.No/UI N	Area (In Ha)	District	Anchal	Village	Total Reserve (MT)	Total Mineral to be Mined 60% (MT)	Existing /Proposed
JSMDC	BAS-1	6.57	Pakur	Maheshpur	Patharghati, Signa & Sola Patia	228064	136839	Proposed
JSMDC	BAS-2	9.21	Pakur	Maheshpur	Babudaha & Longbehra	319707	191824	Proposed
JSMDC	BAS-3	8.09	Pakur	Maheshpur	Nurgitola & Rolagram	103859	62316	Proposed
JSMDC	BAS-4	27.20	Pakur	Maheshpur	Lutibari, Sahri & Maldhara	163282	97969	Proposed
JSMDC	BAS-5	1.63	Pakur	Maheshpur	Dumriya & Saharpur	2572	1543	Proposed
JSMDC	BAS-6	11.20	Pakur	Amrapara	Baramasia	38002	22801	Proposed
JSMDC	BAS-7	13.0	Pakur	Amrapara	Amjhari	367848	220709	Proposed
JSMDC	BRA-8	6.0	Pakur	Pakuria	Gunpur	97464	58478	Proposed
JSMDC	BRA-9	11.60	Pakur	Pakuria	Barasinghp ur	213556	128134	Proposed
JSMDC	BRA-10	7.75	Pakur	Pakuria	Benakundi	113708	68225	Proposed
JSMDC	BRA-11	3.60	Pakur	Pakuria	Ghurni	93733	56240	Proposed
Total Area						1741795	1045078	



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

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

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

Plant Name	Owner	District	Tehsil	Village	Geo-location	QuantityTonnes/A nnum	Existing/Proposed
NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL

ANNEXURE-III

Cluster & Contiguous Cluster details

1) Clusters:

River Name	ClusterNo.	Lease No	Location (Riverbed /Patta Land)	Village	Area (in Ha)	Total Excavation (Ton)	Total Mineral Excavation(Ton)
Bansloi River	NA	NA	NA	NA	NA	NA	NA
Gumari River	NA	NA	NA	NA	NA	NA	NA



Brahmani River	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
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2) Contiguous Clusters:

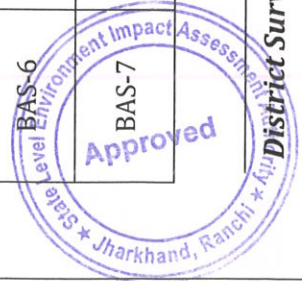
River Name	Contiguous Cluster No.	Cluster No	Number of leases in the cluster	Location (Riverbed /Patta Land)	Distance between clusters	Village	Area of Cluster (Ha)	Total Mineral Excavation (Ton)
Bansloi River	NA	NA	NA	NA	NA	NA	NA	NA
Gumani River	NA	NA	NA	NA	NA	NA	NA	NA
Brahmani River	NA	NA	NA	NA	NA	NA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



ANNEXURE-IV

Transportation Routes for individual leases and leases in Cluster

Lease No	Transportation RouteNo	Number of tractors /day of lease	Number of tractor /dayof allthe lease on route	Length of Route in KM	Type of Road (Black Topped/ unpaved)	Recommend ation for road(Black Topped/ unpaved)	The roadwill be Construc ted byGovt/ Lease Owner	Route Map & Location
BAS-1	01	171	171	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
BAS-2		240	240	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
BAS-3	02	78	78	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
BAS-4	03	122	122	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
BAS-5	04	2	2	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
BAS-6	05	29	29	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
BAS-7	06	276	276	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached



BRA-8	07	73	73	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
BRA-9	08	160	160	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
BRA-10	09	85	85	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
BRA-11	09	70	70	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached

Transportation Routes of sand Ghat from Village to MDR/SH/NH

UIN NO.	Distance	Village Name/Road Name
BAS1	Village road-1.96 km	Patharchali - Nandanpara
	MDR 245	Amrapara - Maheshpur-Murarai Road
BAS2	Village road- 2.14 km	Longbehra - Solapetia
	MDR 245	Amrapara – Maheshpur - Murarai Road
BAS3	Village road- 4.21 km	Nurgitola - Chandalmara
	MDR 245	Amrapara – Maheshpur - Murarai Road
BAS4	Village road-0.66 km	Sahari
	MDR 245	Amrapara – Maheshpur - Murarai Road
BAS5	Village road-6.00 km	Saharpur - Dumaria - Klaipara - Kalkipara
	MDR	Chhotapaharpur - Pachaibera Road
BAS6	Village road- 2.21 km	Baramasia



BAS7	SH 18	Dumka - Sahebganj Road
	Village road- 3.84 km	Amjhari - alubera
BRA8	MDR	Bishunpur - Baramasia Road
	Village road- 1.58 km	Gunpur - Ganpura
BRA9	MDR	Bara Sapadaha -Kajladah Road
	Village road-3.38 km	Bara Singpur - Babuijhuti
BRA10	MDR	Kajladah - Khaksa Road
	Village road- 4.52	Ghurni - Bandigha
BRA11	MDR	Pakuria - Narayanpur Road
	Village road-4.17 km	Ghurni- Bandigha
	MDR	Pakuria - Narayanpur Road



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ANNEXURE-VI

FINAL LIST OF SAND GHAT (EXISTING & PROPOSED)

River Name	Lease Details	Name of Sand Ghat	Khata No. & Plot No.	Geo-Coordinates	Mining Leases within 500m (if yes Cluster area)	Area in Ha.	Dimension of Sand Ghat (L x W x D) m	Sp. Gravity of Sand	Total Excavation in Cum	Total Excavation in Ton	Total Mining Area of 90% in Ton
Bansloi River	Mauza - Pathar Ghati, Singna, Sola Patiya, Anchal- Maheshpur District - Pakur	Pathar Ghati, Singna, Sola Patiya Sand Ghat	Plot No. 01(P), 1119(P), 1189(P), & 1190(P), 01(P), 197(P)	1) 24°29'18.47"N 87°43'54.19"E 2) 24°29'15.37"N 87°43'50.47"E 3) 24°29'4.69"N 87°44'4.46"E 4) 24°29'7.31"N 87°44'7.07"E	No	6.57	521.18 x 126.06 x 1.33	2.61	87381	228064	136839
Bansloi River	Mauza - Babudaha, Longbehra, Anchal- Maheshpur District - Pakur	Babudaha, & Longbehra, Sand Ghat	Plot No. 995(P), 1(P)	1) 24°29'25.59"N 87°43'19.38"E 2) 24°29'21.29"N 87°43'21.37"E 3) 24°29'26.46"N 87°42'53.43"E 4) 24°29'30.29"N 87°42'53.16"E	No	9.21	869.75 x 105.89 x 1.33	2.61	122493	319707	191824
Bansloi River	Mauza - Nurgitola Rolagram Anchal- Maheshpur District - Pakur	Nurgitola Rolagram Sand Ghat	Plot No. 2259(P), 2218(P)	1) 24°29'10.99"N 87°42'10.95"E 2) 24°29'6.09"N 87°42'10.77"E 3) 24°29'16.64"N 87°41'49.08"E 4) 24°29'20.26"N 87°41'49.74"E	No	8.09	627.35 x 128.96 x 0.49	2.62	39641	103859	62316
Bansloi River	Mauza- Lutbari, Sahri & Maldhara Anchal- Maheshpur District- Pakur	Lutbari, Sahri & Maldhara Sand Ghat	Plot No. 1451(P), 1729(P), 507(P) & 02(P)	1) 24°29'22.81"N 87°38'17.71"E 2) 24°29'20.60"N 87°38'18.35"E 3) 24°29'23.12"N 87°38'17.17"E 4) 24°29'42.40"N 87°38'17.37"E 5) 24°29'46.02"N 87°37'36.08"E 6) 24°30'1.03"N 87°37'13.74"E 7) 24°30'3.94"N 87°37'18.45"E 8) 24°29'47.86"N 87°37'42.55"E 9) 24°29'42.71"N 87°38'12.94"E	No	27.20	2631.73 x 103.35 x 0.23	2.61	62560	163282	97969
Bansloi River	Mauza- Dumriya, &	Dumriya & Saharpur	Plot No. 842 &	1) 24°30'1.72"N 87°36'27.11"E 2) 24°30'0.05"N 87°36'27.04"E	No	1.63	349.63 x 46.62 x 0.06	2.63	978	2572	1543

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Saharpur, Anchal- Maheshpur District- Pakur	Sand Ghata	1576(P)	3) 24°30'3.53"N 87°36'16.43"E 4) 24°30'4.49"N 87°36'17.08"E	No	11.20	$\frac{1488.56 \times 75.24}{0.13} \times$	2.61	14560	38002	22801
Bansloi River	Baramasia Sand Ghat	Plot No.- 698	1) 24°30'29.79"N 87°32'11.12"E 2) 24°30'27.75"N 87°32'10.71"E 3) 24°31'6.72"N 87°32'43.38"E 4) 24°31'8.43"N 87°32'42.15"E	No	13.0	$\frac{2088.56 \times 62.24}{1.08} \times$	2.62	140400	367848	220709
Bansloi River	Amjhari Sand Ghat	Plot No.- 394, 395, 390(P)	1) 24°31'12.11"N 87°27'16.82"E 2) 24°31'11.21"N 87°27'15.73"E 3) 24°30'59.68"N 87°26'36.12"E 4) 24°31'7.54"N 87°26'8.68"E 5) 24°31'9.74"N 87°26'8.62"E	No	6.0	$\frac{699.75 \times 85.74}{0.62} \times$	2.62	37200	97464	58478
Brahmani River	Gunpura Sand Ghat	Plot No.- 1411	1) 24°15'32.77"N 87°35'54.60"E 2) 24°15'26.03"N 87°36'21.37"E 3) 24°15'23.64"N 87°36'20.96"E 4) 24°15'30.78"N 87°35'54.65"E	No	11.60	$\frac{1206.93 \times 96.11}{0.7} \times$	2.62	81200	213556	128134
Brahmani River	Bara Singpur Sand Ghat	Plot No.- 1417	1) 24°15'19.91"N 87°38'20.67"E 2) 24°15'4.58"N 87°38'55.14"E 3) 24°15'3.21"N 87°38'53.26"E 4) 24°15'16.27"N 87°38'19.88"E	No	7.75	$\frac{1511.01 \times 51.29}{0.56} \times$	2.62	43400	113708	68225
Brahmani River	Benakura Sand Ghat	Plot No.- 291P & 325	1) 24°14'14.75"N 87°39'23.27"E 2) 24°14'13.42"N 87°39'22.51"E 3) 24°14'39.58"N 87°39'43.92"E 4) 24°14'39.35"N 87°39'42.27"E	No	3.60	$\frac{529.96 \times 67.92}{0.99} \times$	2.63	35640	93733	56240
Brahmani River	Ghurni Sand Ghat	Plot NO.- 1114(P)	1) 24°14'44.43"N 87°40'0.62"E 2) 24°14'42.64"N 87°40'0.16"E 3) 24°14'41.99"N 87°40'17.65"E 4) 24°14'40.91"N 87°40'19.24"E	No						
Total								665453	1741795	1045078



**REPORT FROM CIRCLE OFFICER, DIVISIONAL FOREST OFFICE & WILD LIFE
NOC FROM DIFFERENT COMPETENT AUTHORITY**

District	Anchal	Village/Mauza	Khata & Plot No	क्या अवैदित भूमि सर्वे खतियान यथा रजिस्टर II में जंगल झाड़ी के रूप में दर्ज है? (Yes or No)	Whether Distance of Project location from reserved Forest/Protected Forest if 250m?	IN ANY ECO SENSITIVE ZONE?
Pakur	Maheshpur	Pathar Ghati	PlotNo.-01(P), 197(P)	No Letter.No.-10/रि. Date-12.01.2023	Letter No.-248 Date- 04.02.2023	NO
		Singna	Plot No.-1119(P), 1189(P),1190(P)	No Letter.No.-10/रि. Date-12.01.2023	Letter No.-248 Date- 04.02.2023	NO
		Sola Patia	Plot No.-1(P)	No Letter.No.-10/रि. Date-12.01.2023	Letter No.-248 Date- 04.02.2023	NO
		Babudaha	Plot No.-995(P)	No Letter.No.-10/रि. Date-12.01.2023	Letter No.-252 Date- 04.02.2023	NO
		Longbehra	Plot No.-1(P)	No Letter.No.-10/रि. Date-12.01.2023	Letter No.-252 Date- 04.02.2023	NO
		Nurgitola	Plot No.-2259(P)	No Letter.No.-10/रि. Date-12.01.2023	Letter No.-263 Date- 06.02.2023	NO
		Rolagram	Plot No.-2218(P)	No Letter.No.-10/रि. Date-12.01.2023	Letter No.-263 Date- 06.02.2023	NO



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Pakur	Amrapara	Lutibari	Plot No.-1451(P), 1729(P)	No Letter.No.-10/RTI. Date-12.01.2023	Letter No.-249 Date- 04.02.2023	NO
		Sahri	Plot No.-507(P)	No Letter.No.-10/RTI. Date-12.01.2023	Letter No.-249 Date- 04.02.2023	NO
		Maldhara	Plot No.-2(P)	No Letter.No.-10/RTI. Date-12.01.2023	Letter No.-249 Date- 04.02.2023	NO
		Dumriya	Plot No.-842	No Letter.No.-10/RTI. Date-12.01.2023	Letter No.-255 Date- 04.02.2023	NO
		Saharpur	Plot No.-1576(P)	No Letter.No.-10/RTI. Date-12.01.2023	Letter No.-255 Date- 04.02.2023	NO
		Baramasia	Plot No.-698	No Letter.No.-28/RTI. Date-17.01.2023	Letter No.-266 Date- 06.02.2023	NO
		Amijhari	Plot No.-390(P) ,394, 395	No Letter.No.-28/RTI. Date-17.01.2023	Letter No.-265 Date- 06.02.2023	NO
		Gunpura	Plot No.-1411	No Letter.No.-16/RTI. Date-09.01.2023	Letter No.-253 Date- 04.02.2023	NO
		Bara Singpur	Plot No.-1417	No Letter.No.-16/RTI. Date-09.01.2023	Letter No.-251 Date- 04.02.2023	NO
		Bena Kunda	Plot No.-291(P) ,325	No Letter.No.-16/RTI. Date-09.01.2023	Letter No.-256 Date- 04.02.2023	NO



	Ghurni	Plot No.-1114(P)	No Letter.No.-16/RT. Date-09.01.2023	Letter No.-250 Date- 04.02.2023	NO
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ANNEXURE-VII

Final Transportation Routes for individual leases and leases in Cluster

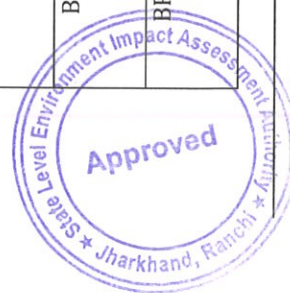
Lease No	Transportation RouteNo	Number of tippers /dayof lease	Number of tippers /dayof allthe lease on route	Length of Route in KM	Type of Road (Black Topped/ unpaved)	Recommend action for road(Black Topped/ unpaved)	The roadwill be Constructed by Govt/ Lease Owner	RouteMap & Location
BAS-1	01	171	171	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
BAS-2	01	240	240	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
BAS-3	02	78	78	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
BAS-4	03	122	122	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
BAS-5	04	2	2	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
BAS-6	05	29	29	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
BAS-7	06	276	276	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
BAS-8	07	73	73	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
BRA-9	08	160	160	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
BRA-10	09	85	85	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached



BRA-11	09	70	70	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
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Transportation Routes of sand Ghat from Village to MDR/SH/NH

UIN NO.	Distance	Village Name/Road Name
BAS1	Village road-1.96 km	Patharchali - Nandanpara
BAS2	MDR 245	Amrapara - Maheshpur-Mururai Road
BAS3	Village road- 2.14 km	Longbehra - Solapetia
BAS4	MDR 245	Amrapara - Maheshpur - Mururai Road
BAS5	Village road- 4.21 km	Nurgitola - Chandalmara
BAS6	MDR 245	Amrapara - Maheshpur - Mururai Road
BAS7	Village road-0.66 km	Sahari
BAS8	MDR 245	Amrapara - Maheshpur - Mururai Road
BAS9	Village road-6.00 km	Saharpur - Dumaria - Klaipara -Kalkipara
BAS10	MDR	Chhotapaharpur - Pachaibera Road
BRA11	Village road- 2.21 km	Baramasia
BRA12	SH 18	Dumka - Saheganj Road
BRA13	Village road- 3.84 km	Amjhari - alubera
BRA14	MDR	Bishunpur - Baramasia Road
BRA15	Village road- 1.58 km	Gunpur - Ganpura
BRA16	MDR	Bara Sapadaha -Kajladah Road
BRA17	Village road-3.38 km	Bara Singpur - Babuijhuti
BRA18	MDR	Kajladah - Khaksa Road
BRA19	Village road- 4.52	Ghurni - Bandigha
BRA20	MDR	Pakuria - Narayanpur Road



BRA11	Village road-4.17 km	Ghurmi- Bandigha
	MDR	Pakuria - Narayanpur Road



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GOOGLE IMAGE OF SAND GHAT WITH POTENTIAL AREA

BAS-1



BAS-2



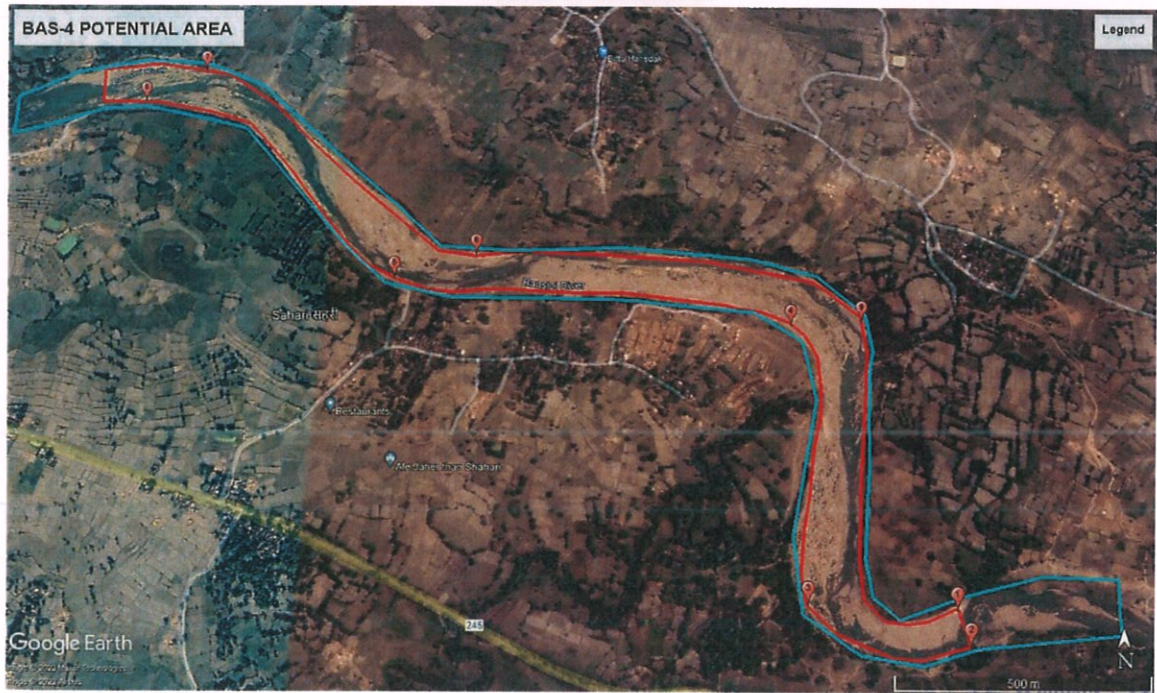
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BAS- 3



BAS- 4



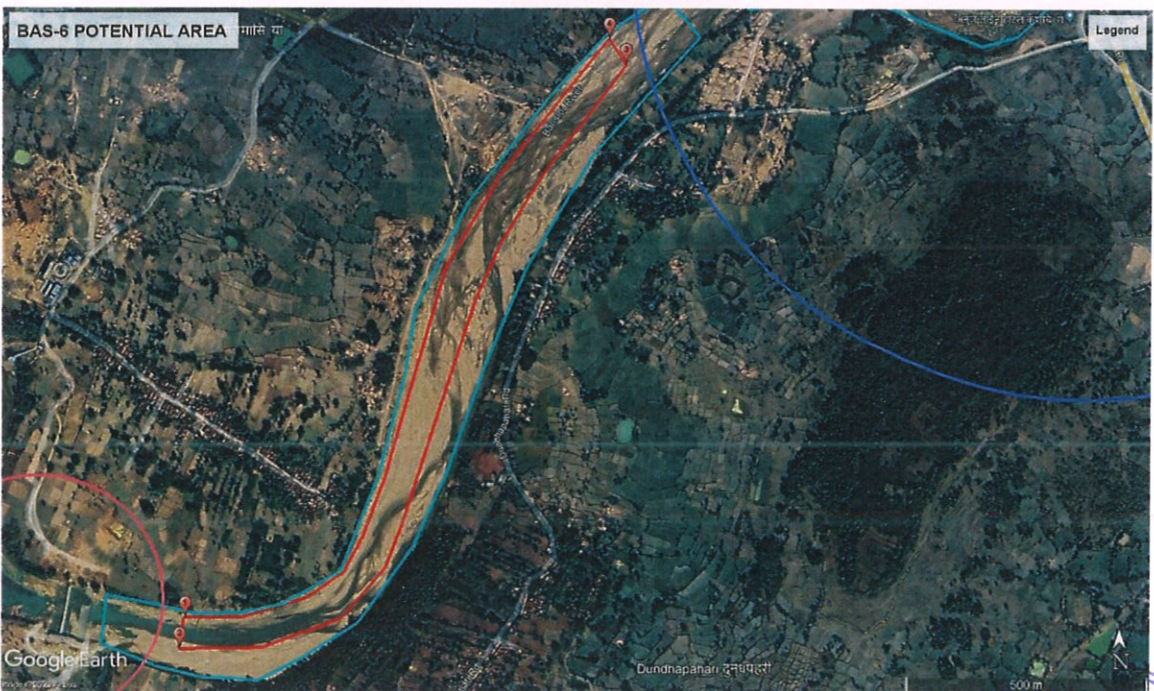
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BAS- 5



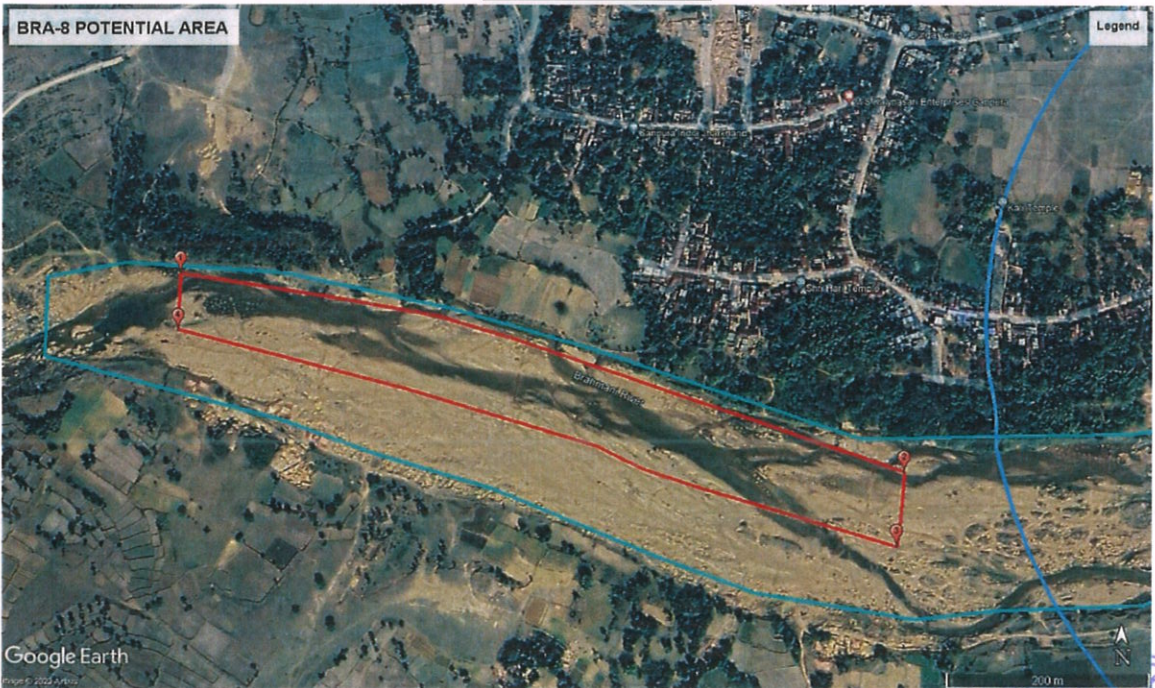
BAS-6



BAS-7



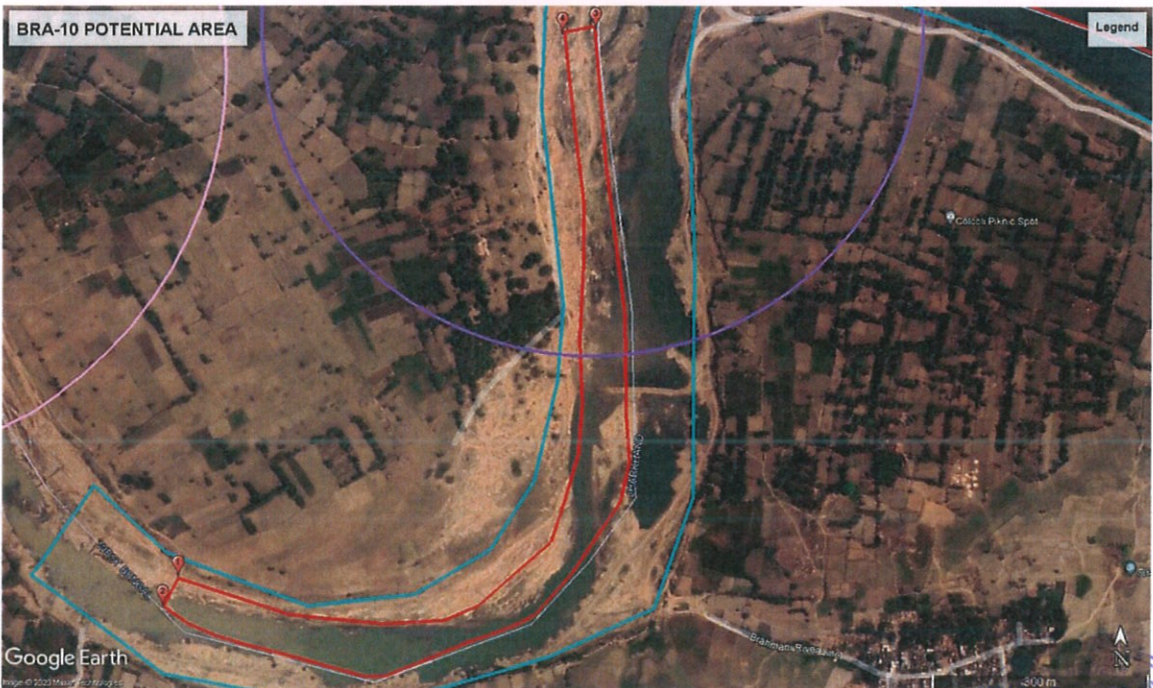
BRA-8

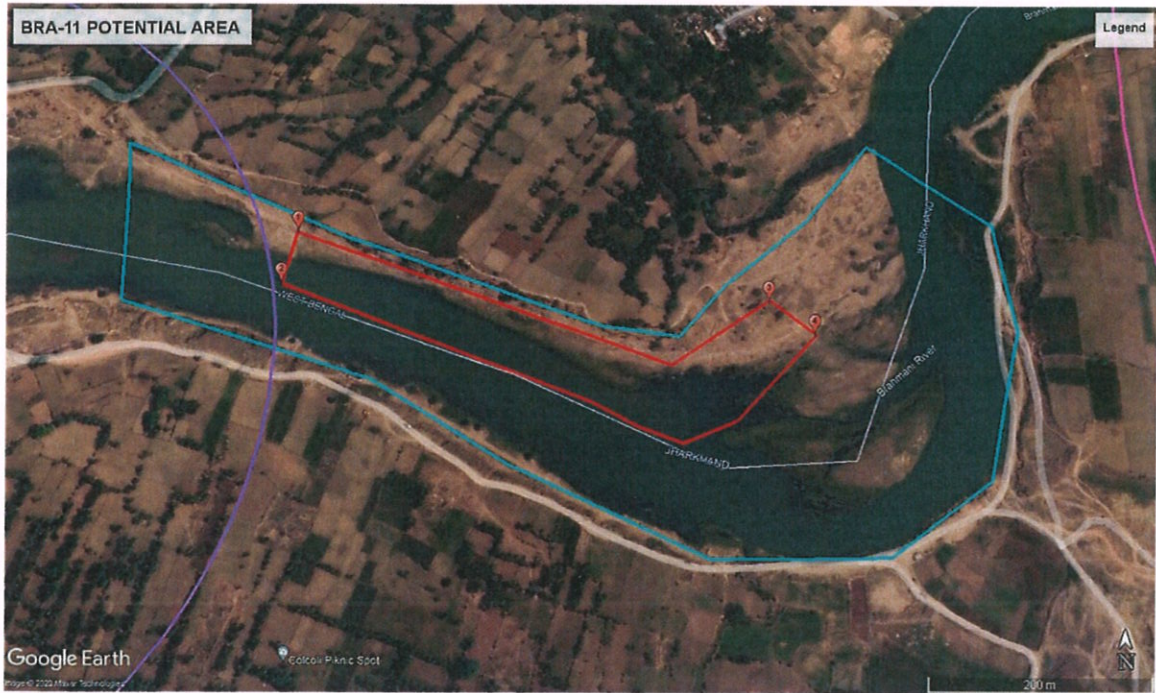


BRA- 9

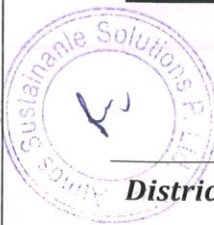


BRA- 10



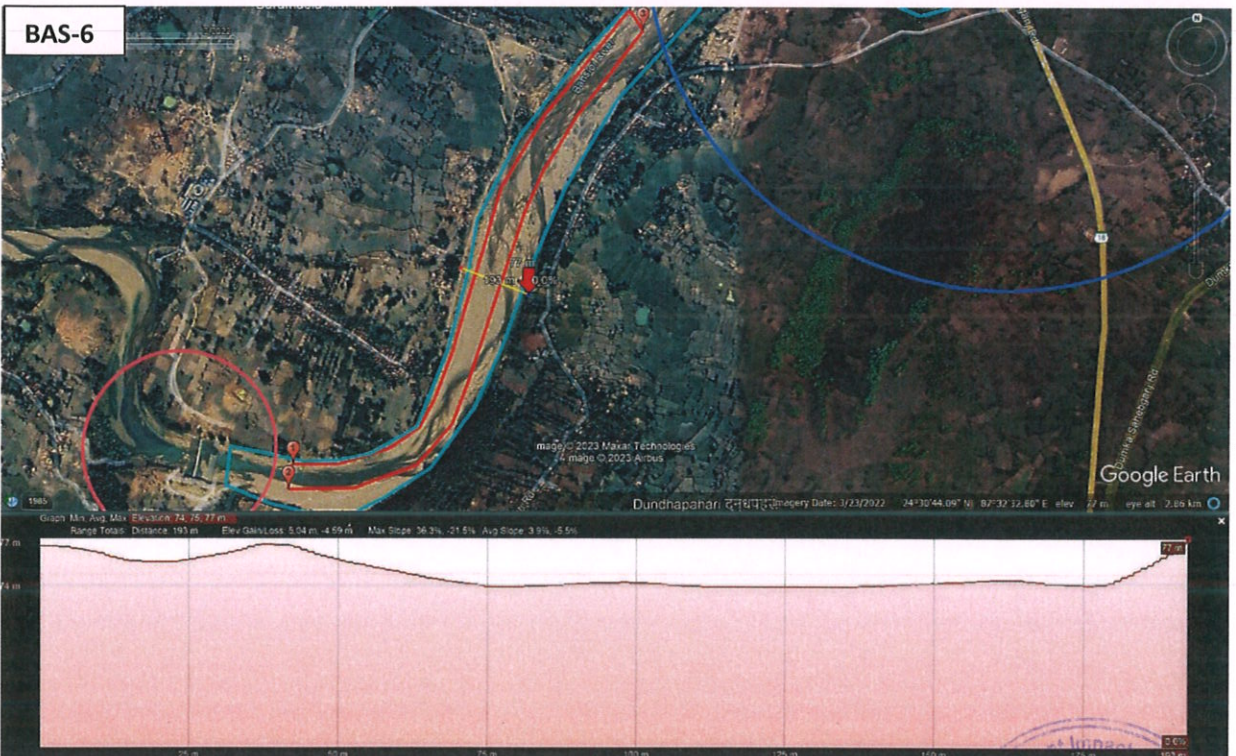


CROSS SECTION OF BANSLOI RIVER OF EACH POTENTIAL AREA



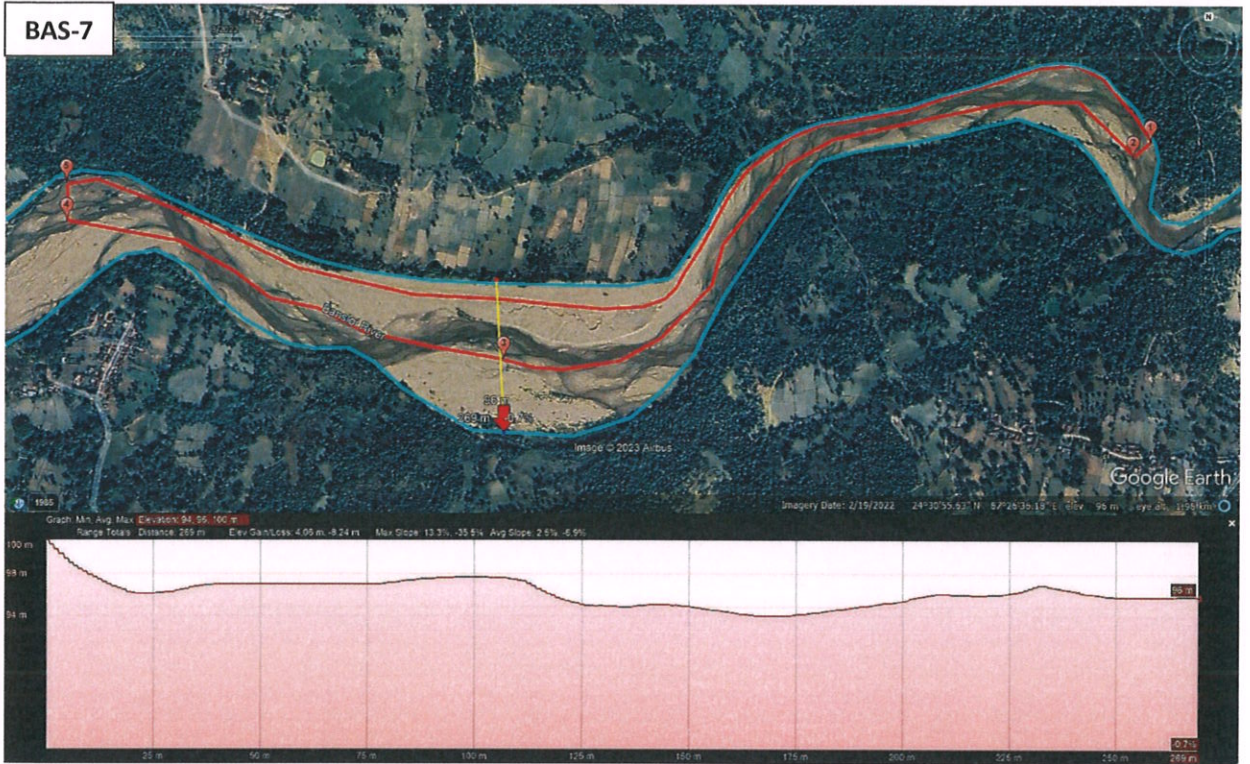


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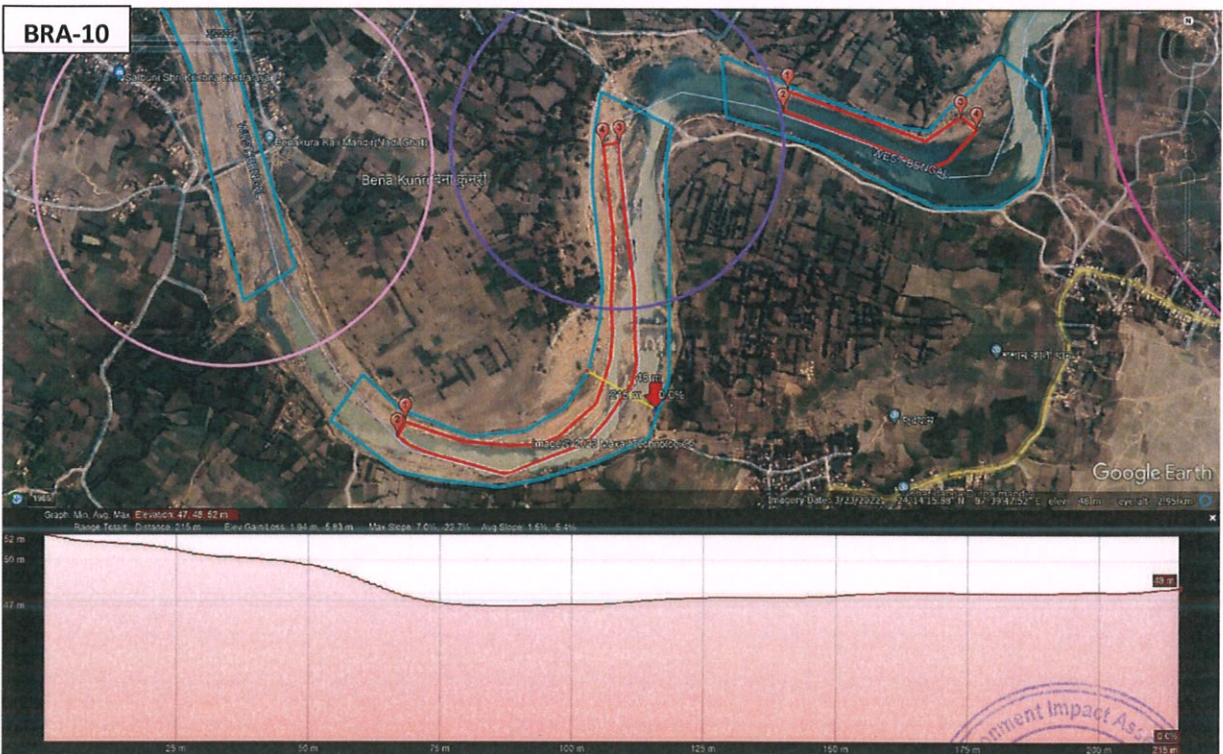
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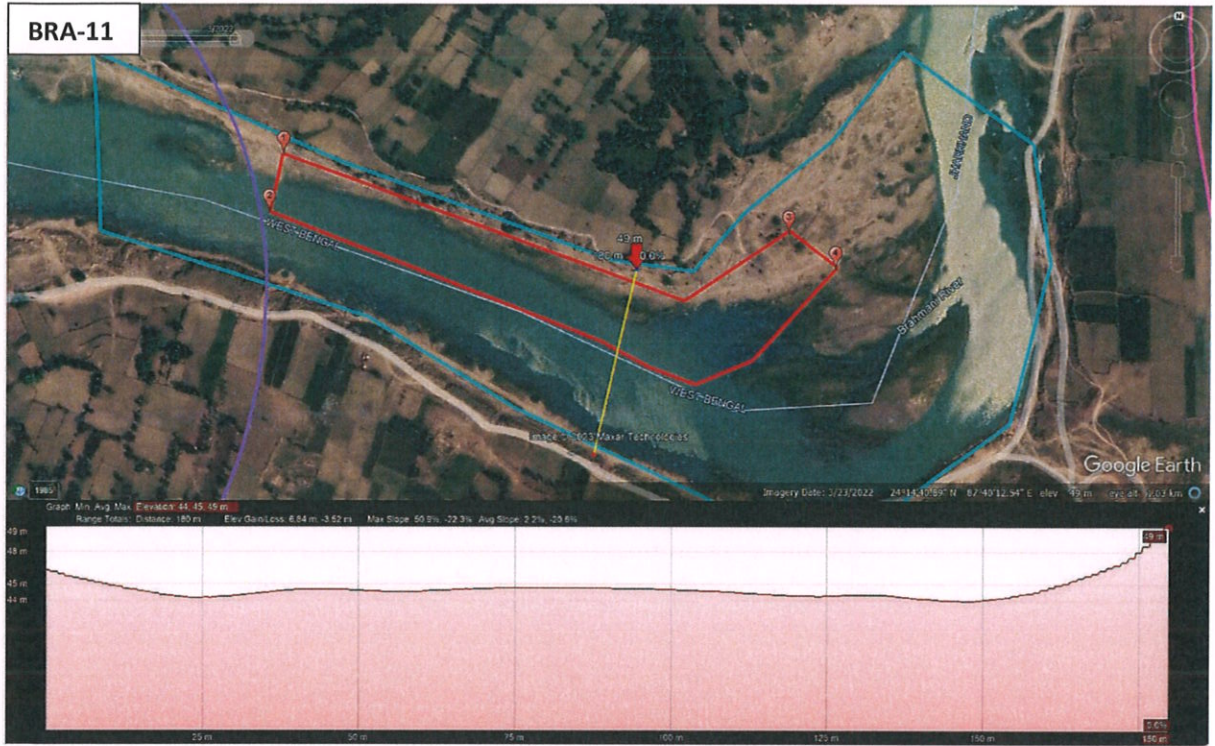
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CHAPTER- 20 PROCESS OF DEPOSITION OF SEDIMENTS IN THE RIVERS OF THE

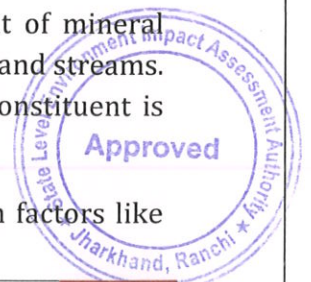
Sediment refers to the conglomerate of materials, organic and inorganic, that can be carried away by water, wind or ice. While the term is often used to indicate soil-based, mineral matter (e.g. clay, silt and sand), decomposing organic substances and inorganic biogenic material are also considered sediment. Most mineral sediment comes from erosion and weathering, while organic sediment is typically detritus and decomposing material such as algae. Sediment particles come in different sizes and can be inorganic or organic in origin. These particulates are typically small, with clay defined as particles less than 0.00195 mm in diameter, and coarse sand reaching up only to 1.5 mm in diameter. However, during a flood or other high flow event, even large rocks can be classified as sediment as they are carried downstream. Sediment is a naturally occurring element in many bodies of water, though it can be influenced by anthropogenic factors.

In an aquatic environment, sediment can either be suspended (floating in the water column) or bedded (settled on the bottom of a body of water). In other words, water flow tries to scour its surface whenever it flows in the channel. Silt or gravels even larger boulders are detached from its bed or banks. The moving water sweeps these detached particles in downstream along its flow. Silting and scouring is not very uncommon and must be avoided by proper designs. It reduces supply level of water. The channel section gets reduced by silt and reduces discharging capacity. Sediments seriously threaten various projects due to silt carried out by rivers up to point of interceptions. Sediment is also threatening denudation of forests. Sediment is a major obstruction on the flow line. It shortens longevity of channel. It causes soil erosion. Therefore data base must be needed for policy making and planning.

The mineral potential is calculated based on field investigation and geology of the catchment area of the river/ streams. As per the policy of the State and location, depth of minable mineral is defined. The area for removal of mineral in a river or stream can be decided depending on geomorphology and other factors, it can be 50% to 60% of the area of a particular river/stream, e.g. in river mineral constituents like sand up to a depth of three meter are considered as resource mineral. Other constituents like clay and silt are excluded as waste while calculating the mineral potential of particular river/ stream.

The specific gravity of each mineral constituent is different. The percent of mineral constituent like boulder, river Bajri, and sand also varies for different river and streams. While calculating the mineral potential, the percentage of each mineral constituent is taken as 25-30% for sand and 5- 10% for silt and clay.

The quantum of deposition varies from stream to stream depending upon factors like



catchment lithology, discharge, river profile and geomorphology of the river course. There are certain geo- morphological features developed in the river beds such as channel bar, point bar etc. where annual deposition is more even two to three meters.

PROCESS OF DEPOSITION:

Sediment is a naturally occurring material that is broken down by processes of weathering and erosion, and is subsequently transported by the action of wind, water and/or by the force of gravity acting on the particles. Sediments are most often transported by water. Sediment is transported based on the strength of the flow that carries it and its own size, volume, density, and shape. Stronger flows will increase the lift and drag on the particle, causing it to rise, while larger or denser particles will be more likely to fall through the flow.

Deposition is the processes where material being transported by a river is deposited. Deposition occurs when a river loses energy. This can be when a river enters a shallow area (this could be when it floods and comes into contact with the flood plain) or towards its mouth where it meets another body of water.

Deposition is the geological process in which sediments, soil and rocks are added to a landform or land mass. Wind, ice, and water, as well as sediment flowing via gravity, transport previously eroded sediment, which, at the loss of enough kinetic energy in the fluid, is deposited, building up layers of sediment.

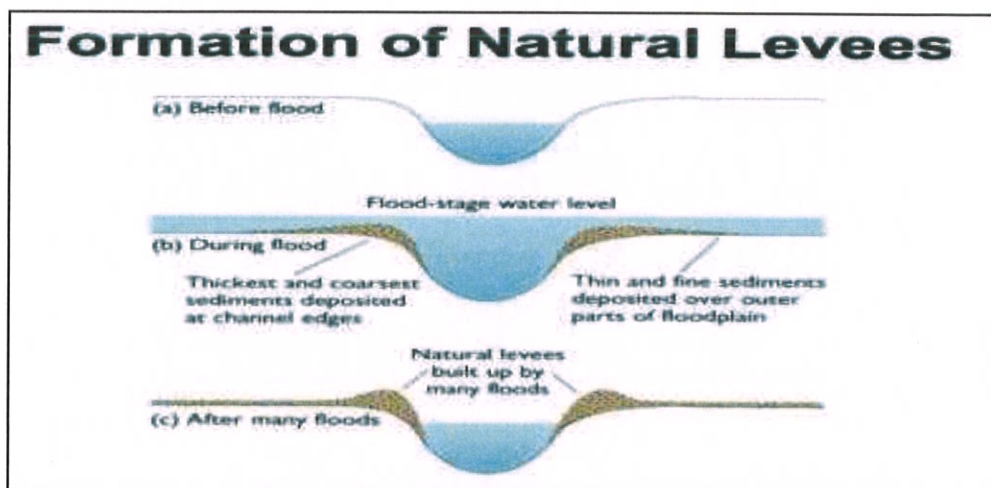
Rivers flood on a regular basis. The area over which they flood is known as the floodplain and this often coincides with regions where meanders form. Meanders support the formation of flood plainsthrough lateral erosion.

When river floods the velocity of water slows. As the result of this the river's capacity to transport material is reduced and deposition occurs. This deposition leaves a layer of sediment across the whole floodplain. After a series of floods, layers of sediment form along the floodplain.



SMIT



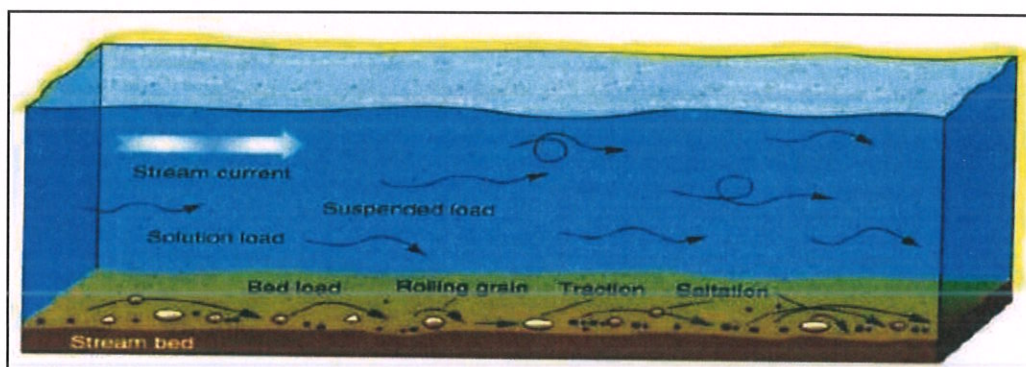


Formation of Natural Levees Due to Floods

Modes of Sediment Transport

The sediment load of a river is transported in various ways although these distinctions are to some extent arbitrary and not always very practical in the sense that not all of the components can be separated in practice:

- ✓ Dissolved load
- ✓ Suspended load
- ✓ Intermittent suspension (saltation) load
- ✓ Wash load
- ✓ Bed load



Methods of Sediment Transport in Stream

The sand deposits being an integral part of the dynamic river system to which it belongs. Therefore, as a part of natural cycle, the monsoon flow of every river carries with it replenishment of silt and washed out soil and clay from upstream areas in the catchment. This silt shall be removed during the sieving of sand before it is loaded into truck/tipper/trailer to carry to the consumers.

Sand mining is critical to infrastructure development around the globe. Sand is an essential minor mineral used extensively across the country as a useful construction constituent and variety of other uses in sports, agriculture, glass making (a form of sand with high silica content) etc. The rivers are the most important source of Sand. It acts as source of transportation and deposition of sand etc.

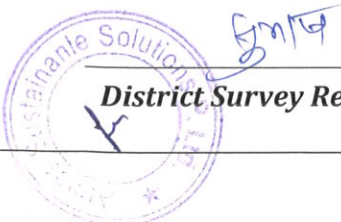
Annual Replenishment of Mineral in River Bed Area/ Sedimentation

The deposition in a river bed is more pronounced during rainy season although the quantum of deposition varies from stream to stream depending upon numbers of factors such as catchment, lithology, discharge, river profile and geomorphology of the river course where annual deposition is one meters, but it is noticed that during flood season whole of the pit so excavated is completely filled up and as such the excavated area is replenished with new harvest of minerals.

In order to calculate the mineral deposits in the stream beds, the mineral constituents have been categorized as clay, silt, sand, Bajri and boulder. However, during present calculation, the waste material i.e. silt which varies from 10 to 20% in different streams has also been included in the total production. Further, the Survey of India Topo-Sheets has been used as base map to know the extent of river course. The mineral reserves have been calculated only upto 1.00meter depth although there are some portions in the river beds such as channel bars, point bars and central islands where the annual deposition is raising the level of river bed thus causing shifting of the rivers towards banks resulting in to cutting of banks and at such locations, removal of this material upto the bed level is essential to control the river flow in its central part to check the bank cutting. While calculating the mineral potentials, the mineral deposits lying in the sub-tributaries of that particular stream/river has not been taken into consideration. Since these mineral deposits are adding annually.

Sedimentation is generally considered by geologists in terms of the textures, structures, and fossil content of the deposits lay down in different geographic and geomorphic environments. The factors which affect the "Computation of Sediment":

- Geomorphology & Drainage Pattern: The following geomorphic units plays important role:
 - Structural Plain
 - Structural Hill
 - Structural Ridge
 - Denudation Ridge & Valley
 - Plain & Plateau
 - Highly Dissected pediment
 - Undissected pediment
- Distribution of Basin Area River wise
- Drainage System/Pattern of the area, Rainfall & Climate: Year wise Rainfall data



REPLENISHMENT STUDY:

The need for replenishment study for river bed sand is required in order to nullify the adverse impacts arising due to excess sand extraction. Mining within or near riverbed has a direct impact on the stream's physical characteristics, such as channel geometry, bed elevation, substratum composition and stability, in-stream roughness of the bed, flow velocity, discharge capacity, sediment transport capacity, turbidity, temperature etc. Alteration or modification of the above attributes may cause an impact on the ecological equilibrium of the riverside regime, disturbance in channel configuration and flow-paths. This may also cause an adverse impact on in stream biota and riparian habitats.

The effects of sediment replenishment are investigated for cross section bed deposition, flow velocity, grain size distribution, water quality and organisms.

Methodology Adopted for Replenishment study

The methodology adopted for the study is an integrated approach involving:

1) Field data collection followed by cross section survey over the sections of fixed intervals along the river showing river bed material (RBM) with present elevations.

2) Remote sensing was used for identification of watershed area relevant to the mine lease along the river at different coordinates.

3) Estimation of catchment yield and bed load transport: The catchment yield has been computed using the Strange's runoff method for the runoff coefficient. The Iso-pluvial maps of IMD have been used for estimation of catchment yield and peak flood discharge for the study area by various methods like Dickens, Jarvis, and Rational formula at 25, 50 and 100 years return period.

ESTIMATION OF CATCHMENT YIELD:

The replenishment estimation is based on a theoretical empirical formula with the estimation of bed load transport comprising of analytical models to calculate the replenishment estimation. The iso-pluvial maps of IMD can be used for estimation of rainfall. Catchment yield is computed using different standard empirical formulas relevant to the geographical and channel attributes.

Climate:

There is no IMD meteorological station near the study area, the nearest stations being at Ranchi, which are about 350 km from center of the study area. However, the climatic conditions are not much different than recorded at Ranchi.

Date Taken from CRIS(Customized Rainfall Information System)



STRANGE'S RUN-OFF:

Strange's Monsoon runoff curves for runoff coefficient. Peak flood discharge for the study area can be calculated by using Dickens, Jarvis and Rational formula at 25, 50 and 100 years return period. The estimation of bed load transport using Ackers and White Equation is made. For estimation of surface run off coefficient, we considered a particular value of peak rainfall.

The dependability has been calculated on the basis of last 20 years rainfall, where water availability has been considered for arriving at 50% dependability.

In absence of non-availability, peak storm water has been estimated as under:

Table 20.1: Rainfall Data (Arranged in Descending Order, Mentioning Serial Number /Order Number m) of each Year's Rainfall

Sr. No. i.e Order Number (m)	Rainfall in Descending Order (in mm)
1	1595.8
2	1555.8
3	1513.2
4	1489.4
5	1323.4
6	1322.6
7	1295.8
8	1267.3
9	1234.9
10	1203.7
11	1123.3
12	1123.1
13	1056.2
14	1049.4
15	1031
16	1013.4
17	968
18	956.2



19	923.3
20	821.7

Table: Calculation of Order Number (m)

	Rainfall Dependability Percentage
	p=50%
m=	N x p/100
	N= 20, p = 50
m=	10

Here,

m = Order number

N = the available rainfall data of the past N years is first of all arranged in the descending order of magnitude

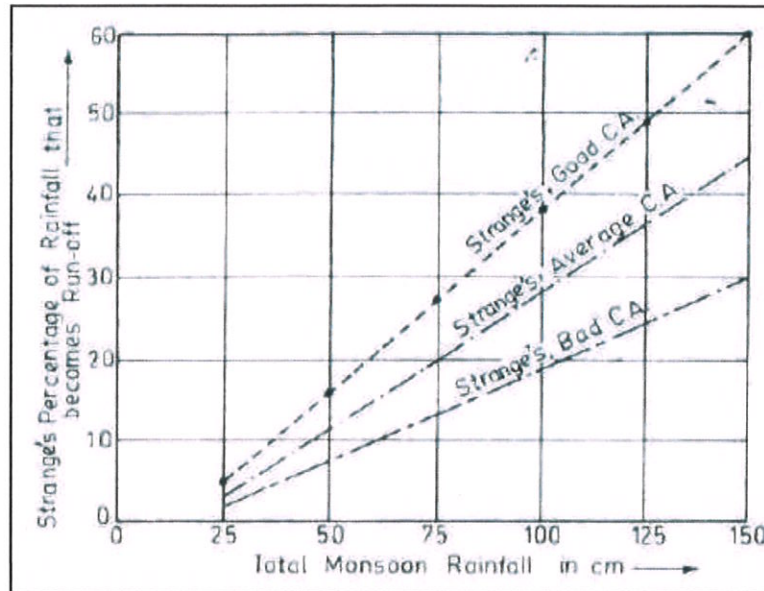
p = Dependability percentage

The rainfall value tabulated above in Table, the **Order No. 10** has the values of **1203.7 mm**. So, P50% = **120.37 cm**

Average value of Strange's Run off percentage is calculated from Strange's monsoon rainfall- runoff curves considering the catchment area as good and the Runoff % for the area is:

Runoff % at 50% dependability of rainfall = 46%





Strange's Monsoon Rainfall-runoff Curves

DANDY - BOLTON EQUATION:

Dandy Bolton formula is often used to calculate the sedimentation yield. It provide a quick, rough approximation of mean sediment yields on a regional basis for preliminary watershed planning. Computed sediment yields normally would be low for highly erosive areas and high for well stabilized drainage basins with high plant density because the equations are derived from average values. The equations express the general relationships between sediment yield, runoff, and drainage area. Many variables influence sediment yield from a drainage basin. They include climate, drainage area, soils, geology, topography, vegetation and land use. The effect of any of these variables may vary greatly from one geographic location to another, and the relative importance of controlling factors often varies within a given land resource area

Runoff data are translated to inches per year per unit area and sediment deposition data to tons per year per square mile of net drainage area. Net drainage area is defined as the sediment-contributing area and normally excluded areas above upstream reservoirs or other structures that were effective sediment traps.



Combined effect of drainage area and run off on sediment yield

Dandy- Bolton determined the combined influence of runoff and drainage area on sediment yield to compute the sediment yield. They developed two equations i.e. for run off less than 2 inch and for run off more than 2 inch, which are given below:-

For run off less than 2 inches

$$(Q < 2 \text{ in}) S = 1280 * (Q)^{0.46} * [1.43 - 0.26 \text{ Log } (A)]$$

For run off more than 2 inches

$$(Q > 2 \text{ in}): S = 1958 * (e^{-0.055 * Q}) * [1.43 - 0.26 \text{ Log } (A)]$$

Where: S = Sediment yield (M. tons/sq. km/yr.)

Q = Mean Annual runoff (mm)

A = Net drainage area in sq. km

S.no	Factors		Probable Replenishment
Bansloi River			
i.	Catchment Area (sq.km)	2.769 sq. km	72.32 Metric tons / sq. km /year 200.25 M. ton/year
ii.	Mean Annual Runoff	1203.45 mm	
*Sediment yield formula $(Q > 2 \text{ in}): S = 1958 * (e^{-0.055 * Q}) * [1.43 - 0.26 \text{ Log } (A)]$: here: Q = Mean Annual runoff (mm)= 1203.45 A = Catchment Area= 2.769 sq. km Sediment yield S= (Metric tons / sq. km /year)			
Brahmani River			
i.	Catchment Area (sq. km)	1.314 sq. km	76.6 Metric tons / sq. km /year 100.65 M. ton/year
ii.	Mean Annual Runoff	1203.45 mm	
*Sediment yield formula $(Q > 2 \text{ in}): S = 1958 * (e^{-0.055 * Q}) * [1.43 - 0.26 \text{ Log } (A)]$: here: Q = Mean Annual runoff (mm)= 1203.45 A = Catchment Area= 1.3149 sq. km Sediment yield S= (Metric tons / sq. km /year)			
*Source:- Calculation of sediment yield by the Dandy-Bolton formula ponce.sdsu.edu/onlinedendybolton.php			



Table 20.3: Sediment Yield of the River

River	Mean Annual Run-off (mm)	Catchment Area (Sq. km)	Sediment Yield (M. tons /year)
Bansloi river	1203.45	2.769	200.25
Brahmani River		1.314	100.65

Volume Estimation of Replenished Material for Respective Sandghats:

Physical Survey of Study Areas: Field Survey has been done by going through following stages given below which includes data acquisition related to elevation profiles for particular sandghats with the help of DGPS Survey, Garmi eTrex 10 GPS and meter stick for the collection of data related to elevation and measurement of depth for specific locations, respectively. The surface plan with sections has been made with the help of E-Survey CAD, GIS, Global Mapper and AutoCAD softwares. The cross-section surveys have been done across the river at the places on 10x10 m grid ground levels are given in **Annexure**.

Following stages are given below on temporal basis for field survey:

1) Primary Data Collection: Although, field data collection is an integral part of DSR. The pre-monsoon data has been collected from District Mining Office, Pakur and same has been validated from satellite imaginary map.

RIVER NAME: BANSLOI RIVER		
UIN SAND BAR CODE	AREA IN SQM	AVG. INITIAL LEVEL IN AMSL
PAK_BAS_PRE_01	569471	44.01
PAK_BAS_PRE_02	557679	48.22
PAK_BAS_PRE_03	418382	60.69
PAK_BAS_PRE_04	132966	65.36
PAK_BAS_PRE_05	124841	68.82
PAK_BAS_PRE_06	91671	76.15
PAK_BAS_PRE_07	190432	77.19
PAK_BAS_PRE_08	268510	82.79
PAK_BAS_PRE_09	415669	101.73

RIVER NAME: BRAHMANI RIVER		
UIN SAND BAR CODE	AREA IN SQM	AVG. INITIAL LEVEL IN AMSL
PAK_BRA_PRE_01	274144	60.29
PAK_BRA_PRE_02	91027	59.2
PAK_BRA_PRE_03	459633	52.98
PAK_BRA_PRE_04	293640	49.48
PAK_BRA_PRE_05	196026	48.32



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2) The second survey is at the time of closing of mines for monsoon season, this survey provides the quantity of the material excavated before the offset of monsoon (**As per EMGSM 2020**). Second survey had been done in November-2022 to January-2023 with the help of DGPS and used in different software such as E-Survey, Auto Cad, Remote Sensing.

RIVER NAME: BANSLOI RIVER		
UIN SAND BAR CODE	AREA IN SQM	AVG. INCREASED LEVEL IN AMSL
PAK_BAS_POS_01	569473	45.34
PAK_BAS_POS_02	557682	48.71
PAK_BAS_POS_03	418389	60.92
PAK_BAS_POS_04	132968	65.42
PAK_BAS_POS_05	124842	68.88
PAK_BAS_POS_06	91674	76.23
PAK_BAS_POS_07	190435	77.28
PAK_BAS_POS_08	268511	82.92
PAK_BAS_POS_09	415670	102.81

RIVER NAME: BRAHMANI RIVER		
UIN SAND BAR CODE	AREA IN SQM	AVG. INCREASED LEVEL IN AMSL
PAK_BRA_POS_01	274145	60.91
PAK_BRA_POS_02	91029	60.11
PAK_BRA_POS_03	459635	53.68
PAK_BRA_POS_04	293642	50.04
PAK_BRA_POS_05	196028	49.31

3) The third survey needs to be carried out after the monsoon period to know the quantum of material deposited/replenished in the mining lease.

Third survey have not completed so the third survey of sand ghat will be done April-2023

4) The fourth survey at the end of March to know the quantity of material excavated during the financial year.

Fourth survey have not completed so the fourth survey of sand ghat will be done March-2024



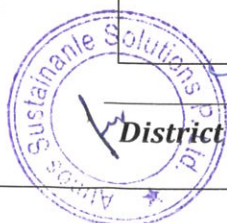
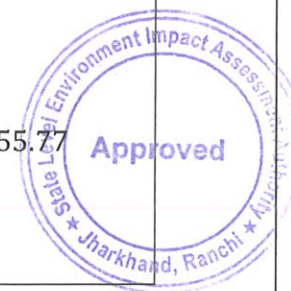
Comparison between Avg. Residual Level and Avg. Increased Level

Comparison between Initial Level and After Erosion Increased Level

Sand Bar Code	AMSL Observed (Pre monsoon)	AMSL Observed (Post monsoon)
BANSLOI RIVER		
PAK_BAS_PRE_01	44.01	45.34
PAK_BAS_PRE_02	48.22	48.71
PAK_BAS_PRE_03	60.69	60.92
PAK_BAS_PRE_04	65.36	65.42
PAK_BAS_PRE_05	68.82	68.88
PAK_BAS_PRE_06	76.15	76.23
PAK_BAS_PRE_07	77.19	77.28
PAK_BAS_PRE_08	82.79	82.92
PAK_BAS_PRE_09	101.73	102.81
BRAHMANI RIVER		
PAK_BRA_PRE_01	60.29	60.91
PAK_BRA_PRE_02	59.2	60.11
PAK_BRA_PRE_03	52.98	53.68
PAK_BRA_PRE_04	49.48	50.04
PAK_BRA_PRE_05	48.32	49.31

ZONE WISE DETAILS OF PAKUR DISTRICT

Sand Bar Code	GEO-COORDINATES OF ZONE BOUNDARY (X,Y,Z)	AREA IN HA
BANSLOI RIVER		
PAK_BAS_ZONE_01	X-24°29'3.89"N Y-87°44'15.50"E, Z-44	56.95
	X-24°28'59.43"N Y-87°44'13.76"E, Z- 45	
	X-24°29'23.37"N Y-87°42'30.05"E Z-48	
	X-24°29'23.26"N Y-87°42'25.05"E Z-47	
PAK_BAS_ZONE_02	X-24°29'18.25"N Y-87°42'22.93"E Z-49	55.77
	X-24°29'16.73"N Y-87°42'27.57"E Z-46	
	X-24°29'7.12"N Y-87°40'32.71"E	



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	Z-52	
	X-24°29'10.16"N Y-87°40'30.63"E Z-51	
PAK_BAS_ZONE_03	X-24°29'24.74"N Y-87°38'29.36"E Z-60	41.84
	X-24°29'21.22"N Y-87°38'29.09"E Z-59	
	X-24°29'58.12"N Y-87°37'3.13"E Z-64	
	X-24°30'1.32"N Y-87°37'2.84"E Z-63	
PAK_BAS_ZONE_04	X-24°29'59.71"N Y-87°36'43.76"E Z-63	13.30
	X-24°29'55.56"N Y-87°36'43.47"E Z-66	
	X-24°30'11.45"N Y-87°36'5.24"E Z-65	
	X-24°30'14.38"N Y-87°36'6.38"E Z-66	
PAK_BAS_ZONE_05	X-24°30'17.77"N Y-87°35'18.57"E Z-68	12.48
	X-24°30'15.00"N Y-87°35'19.39"E Z-69	
	X-24°30'17.60"N Y-87°34'48.56"E Z-70	
	X-24°30'20.82"N Y-87°34'50.94"E Z-71	
PAK_BAS_ZONE_06	X-24°30'47.35"N Y-87°34'7.97"E Z-74	9.17
	X-24°30'47.48"N Y-87°34'10.39"E Z-73	
	X-24°31'14.43"N Y-87°34'0.86"E	



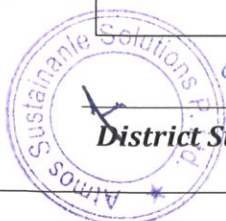
District Survey Report, Pakur-November-2022

	Z-78	
	X-24°31'13.05"N Y-87°33'57.68"E Z-81	
PAK_BAS_ZONE_07	X-24°31'25.50"N Y-87°33'49.18"E Z-79	19.04
	X-24°31'21.79"N Y-87°33'48.42"E Z-80	
	X-24°31'10.40"N Y-87°32'52.44"E Z-82	
	X-24°31'14.15"N Y-87°32'51.15"E Z-81	
PAK_BAS_ZONE_08	X-24°31'11.37"N Y-87°32'46.22"E Z-79	26.85
	X-24°31'8.57"N Y-87°32'48.80"E Z-81	
	X-24°30'28.11"N Y-87°32'4.94"E Z-83	
	X-24°30'31.29"N Y-87°32'5.33"E Z-85	
PAK_BAS_ZONE_09	X-24°31'21.26"N Y-87°27'33.77"E Z-102	41.57
	X-24°31'18.80"N Y-87°27'36.25"E Z-103	
	X-24°30'57.96"N Y-87°26'0.67"E Z-108	
	X-24°31'0.74"N Y-87°25'57.85"E Z-106	
BRAHMANI RIVER		
PAK_BRA_ZONE_01	X-24°15'32.56"N Y-87°35'49.69"E Z-62	27.41
	X-24°15'29.90"N Y-87°35'49.79"E Z-61	



District Survey Report, Pakur-November-2022

	X-24°15'32.07"N Y-87°36'59.93"E Z-63	
	X-24°15'28.63"N Y-87°36'59.40"E Z-60	
PAK_BRA_ZONE_02	X-24°15'33.01"N Y-87°37'17.73"E Z-60	9.10
	X-24°15'29.17"N Y-87°37'18.00"E Z-60	
	X-24°15'23.48"N Y-87°37'38.33"E Z-61	
	X-24°15'26.98"N Y-87°37'39.40"E Z-59	
PAK_BRA_ZONE_03	X-24°15'20.56"N Y-87°38'14.02"E Z-54	45.96
	X-24°15'15.41"N Y-87°38'14.02"E Z-55	
	X-24°14'28.31"N Y-87°39'12.26"E Z-51	
	X-24°14'25.40"N Y-87°39'7.35"E Z-50	
PAK_BRA_ZONE_04	X-24°14'18.78"N Y-87°39'19.13"E Z-52	29.36
	X-24°14'14.76"N Y-87°39'16.06"E Z-53	
	X-24°14'41.13"N Y-87°39'49.11"E Z-51	
	X-24°14'44.21"N Y-87°39'42.15"E Z-48	
PAK_BRA_ZONE_05	X-24°14'47.56"N Y-87°39'54.07"E Z-51	19.60
	X-24°14'42.09"N Y-87°39'54.54"E Z-49	

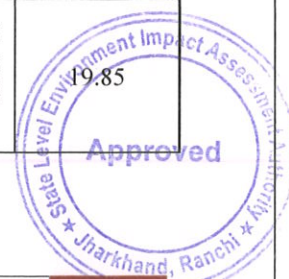


District Survey Report, Pakur-November-2022

	X-24°14'44.75"N Y-87°40'25.97"E Z-49	
	X-24°14'47.64"N Y-87°40'21.61"E Z-50	

NO MINING ZONE DETAILS OF PAKUR DISTRICT WITH BRIDGE NAME AND GEO-COORDINATES

NO MINING ZONE DETAILS OF PAKUR				
PLATE NO.	RIVER NAME	BRIDGE NAME/NEAREST VILLAGE	GEO-COORDINATES	AREA IN HA.
1	BANSLOI RIVER	DUMKA - SAHEBGANJ	1. 24°31'5.39"N 87°32'45.42"E 2. 24°31'10.44"N 87°32'44.07"E 3. 24°31'25.96"N 87°33'47.76"E 4. 24°31'21.35"N 87°33'49.34"E	27.91
2	BANSLOI RIVER	AMARPARA-MAHESHPUR-MURARI RD. BRIDGE	1. 24°29'12.03"N 87°41'38.31"E 2. 24°29'16.31"N 87°41'35.46"E 3. 24°29'15.87"N 87°40'36.00"E 4. 24°29'5.10"N 87°40'31.23"E	35.58
3	BANSLOI RIVER	BASMATI BRIDGE	1. 24°30'21.56"N 87°34'36.53"E 2. 24°30'26.55"N 87°34'38.41"E 3. 24°30'23.53"N 87°35'44.73"E 4. 24°30'18.39"N 87°35'45.94"E	31.54
4	BRAHMANI RIVER	GUNPURA BRIDGE	1. 24°15'26.81"N 87°36'24.88"E 2. 24°15'21.61"N 87°36'26.73"E 3. 24°15'28.88"N 87°37'2.53"E 4. 24°15'33.23"N 87°37'2.09"E	16.09
5	BRAHMANI RIVER	SALBUNI BENAKURA BRIDGE	1. 24°14'22.48"N 87°39'16.53"E 2. 24°14'20.41"N 87°39'11.14"E 3. 24°14'53.35"N 87°38'57.53"E 4. 24°14'55.02"N 87°39'3.82"E	19.85



District Survey Report, Pakur-November-2022

6	BRAHMANI RIVER	NARAYANPUR BRIDGE	1. 24°14'55.92"N 87°41'41.45"E 2. 24°14'51.70"N 87°41'42.22"E 3. 24°14'52.41"N 87°40'31.59"E 4. 24°14'56.48"N 87°40'32.46"E	30.65
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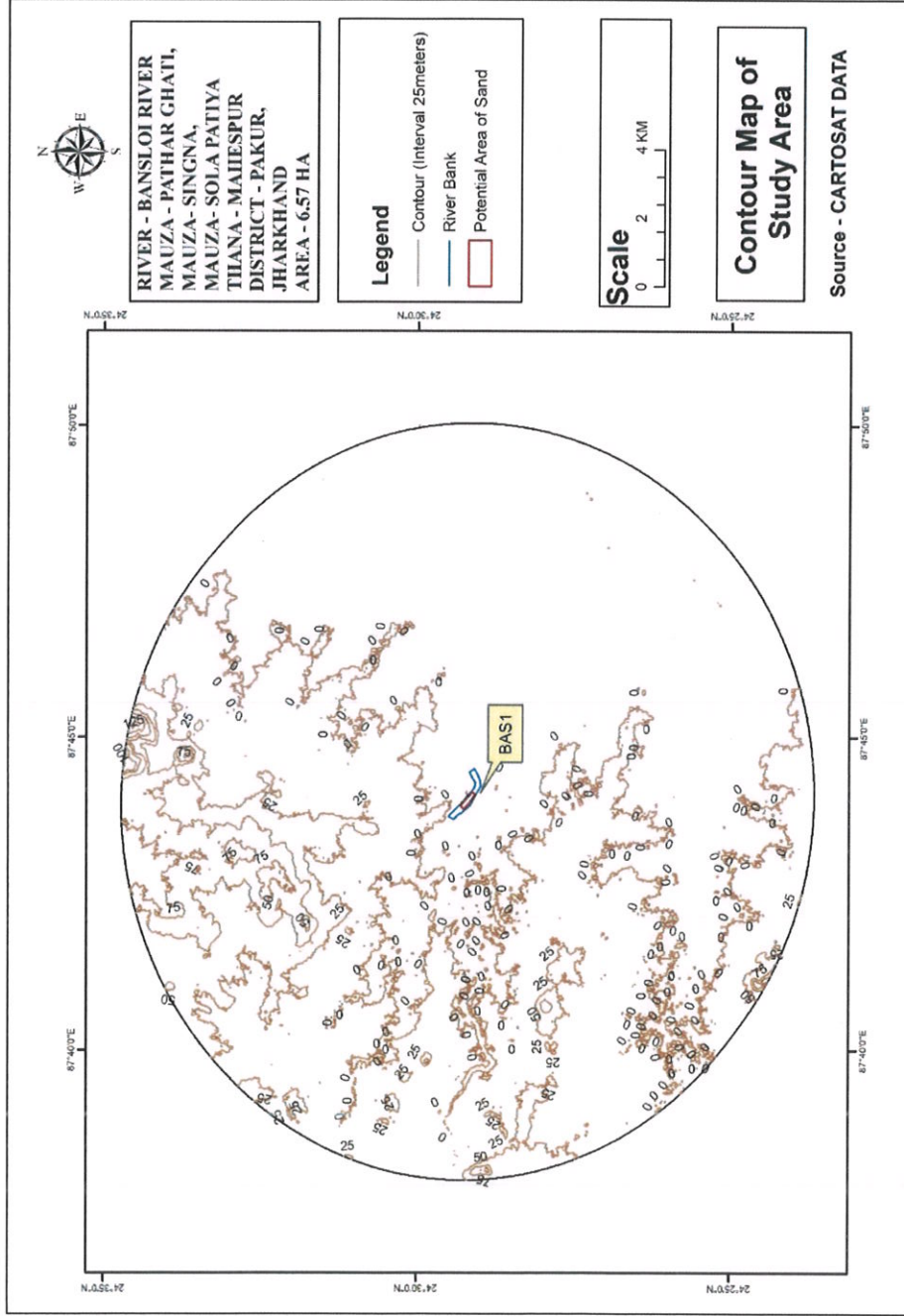
Estimated Executable Quantity as per Replenishment Study
The executable quantity of River Bed Material (RBM) has been estimated on the basis of data collected from various field surveys which includes premonsoon and post-monsoon period.

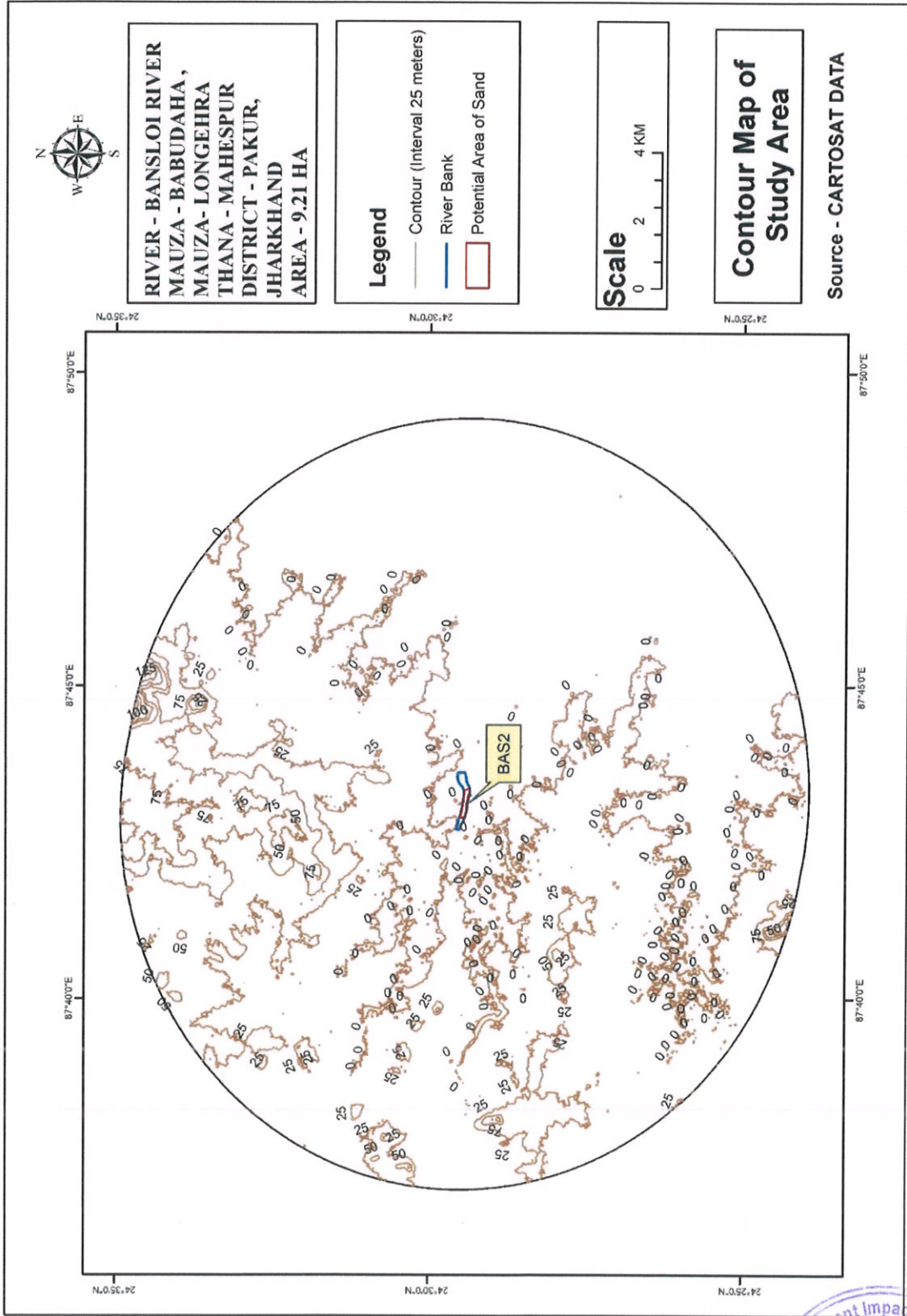
Annual Deposition of Executable River Bed Material (RBM)

BANSLOI RIVER OF PAKUR DISTRICT										
PRE MONSOON(APRIL-2022)					POST MONSOON(NOV-DEC-2022)					
S.NO	UIN SAND BAR	AMSL	AREA IN SQM	VOLUME IN CUM	UIN SAND BAR	AMSL	AREA IN SQM	THICKNESS OF SAND IN MTR	VOLUME IN CUM	RATE OF REPLENISHMENT%
1	PAK_BAS_PRE_01	44.01	569471	454439	PAK_BAS_POS_01	45.34	569473	1.33	757399	66.67
2	PAK_BAS_PRE_02	48.22	557679	169423	PAK_BAS_POS_02	48.71	557682	0.49	273264	61.29
3	PAK_BAS_PRE_03	60.69	418382	60624	PAK_BAS_POS_03	60.92	418389	0.23	96229	58.73
4	PAK_BAS_PRE_04	65.36	132966	5744	PAK_BAS_POS_04	65.42	132968	0.06	7978	38.89
5	PAK_BAS_PRE_05	68.82	124841	5693	PAK_BAS_POS_05	68.88	124842	0.06	7491	31.58
6	PAK_BAS_PRE_06	76.15	91671	5280	PAK_BAS_POS_06	76.23	91674	0.08	7334	38.89
7	PAK_BAS_PRE_07	77.19	190432	10968	PAK_BAS_POS_07	77.28	190435	0.09	17139	56.25
8	PAK_BAS_PRE_08	82.79	268510	24085	PAK_BAS_POS_08	82.92	268511	0.13	34906	44.93
9	PAK_BAS_PRE_09	101.73	415669	251397	PAK_BAS_POS_09	102.81	415670	1.08	448924	78.57
			2769621	987653			2769644		1650664	
BRAHMANI RIVER OF PAKUR DISTRICT										
PRE MONSOON(APRIL-2022)					POST MONSOON(NOV-DEC-2022)					
S.NO	UIN SAND BAR	AMSL	AREA IN SQM	VOLUME IN CUM	UIN SAND BAR	AMSL	AREA IN SQM	THICKNESS OF SAND IN MTR	VOLUME IN CUM	RATE OF REPLENISHMENT%
1	PAK_BRA_PRE_01	60.29	274144	90084	PAK_PRE_POS_01	60.91	274145	0.62	169970	88.68
2	PAK_BRA_PRE_02	59.2	91027	43488	PAK_PRE_POS_02	60.11	91029	0.91	82836	90.48
3	PAK_BRA_PRE_03	52.98	459633	196264	PAK_PRE_POS_03	53.68	459635	0.7	321745	63.93
4	PAK_BRA_PRE_04	49.48	293640	102775	PAK_PRE_POS_04	50.04	293642	0.56	164440	60.00
5	PAK_BRA_PRE_05	48.32	196026	116440	PAK_PRE_POS_05	49.31	196028	0.99	194068	66.67
			1314470	549051			1314479		933058	



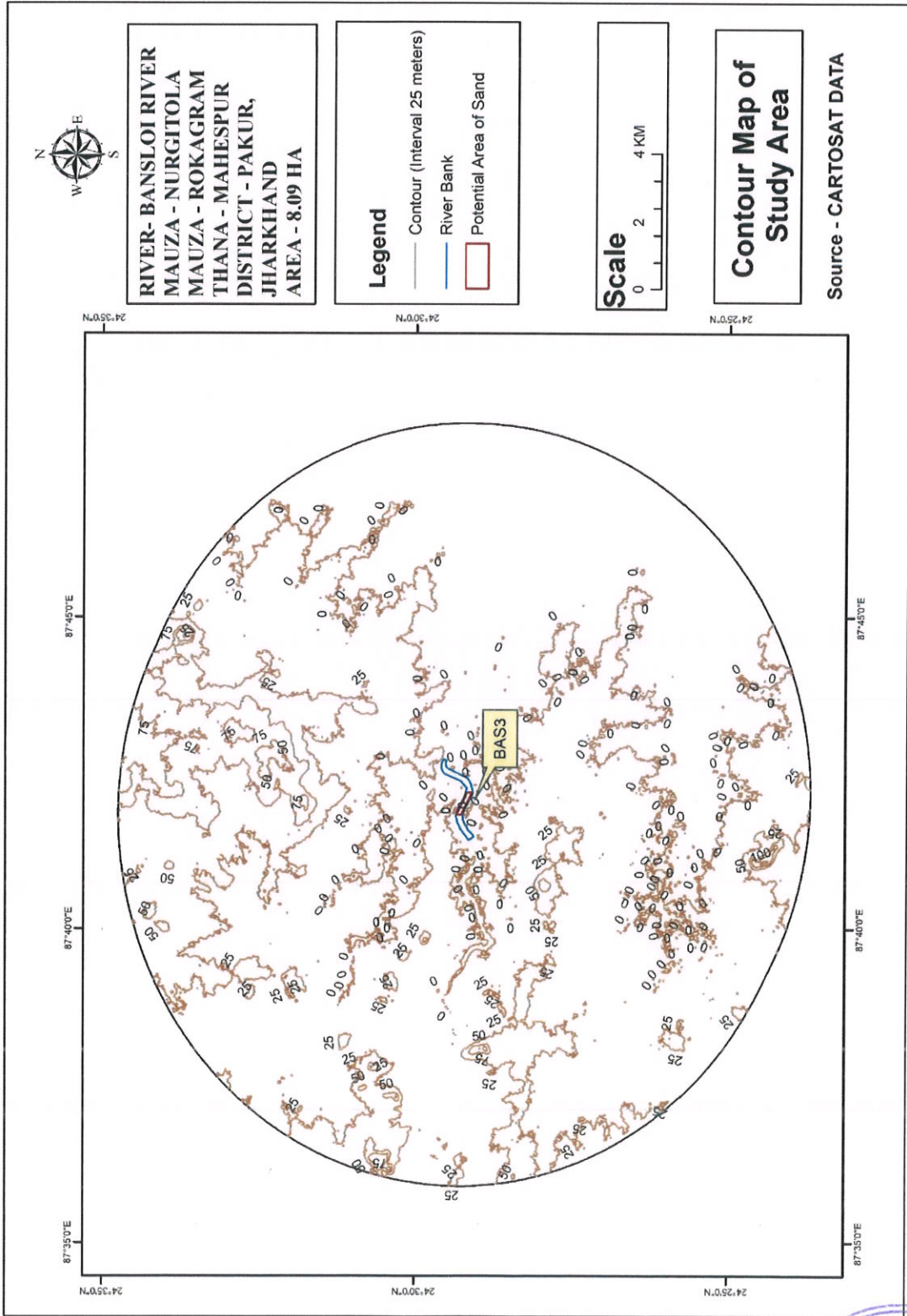
CONTOUR MAP OF PROPOSED POTENTIAL AREA OF SAND DEPOSIT

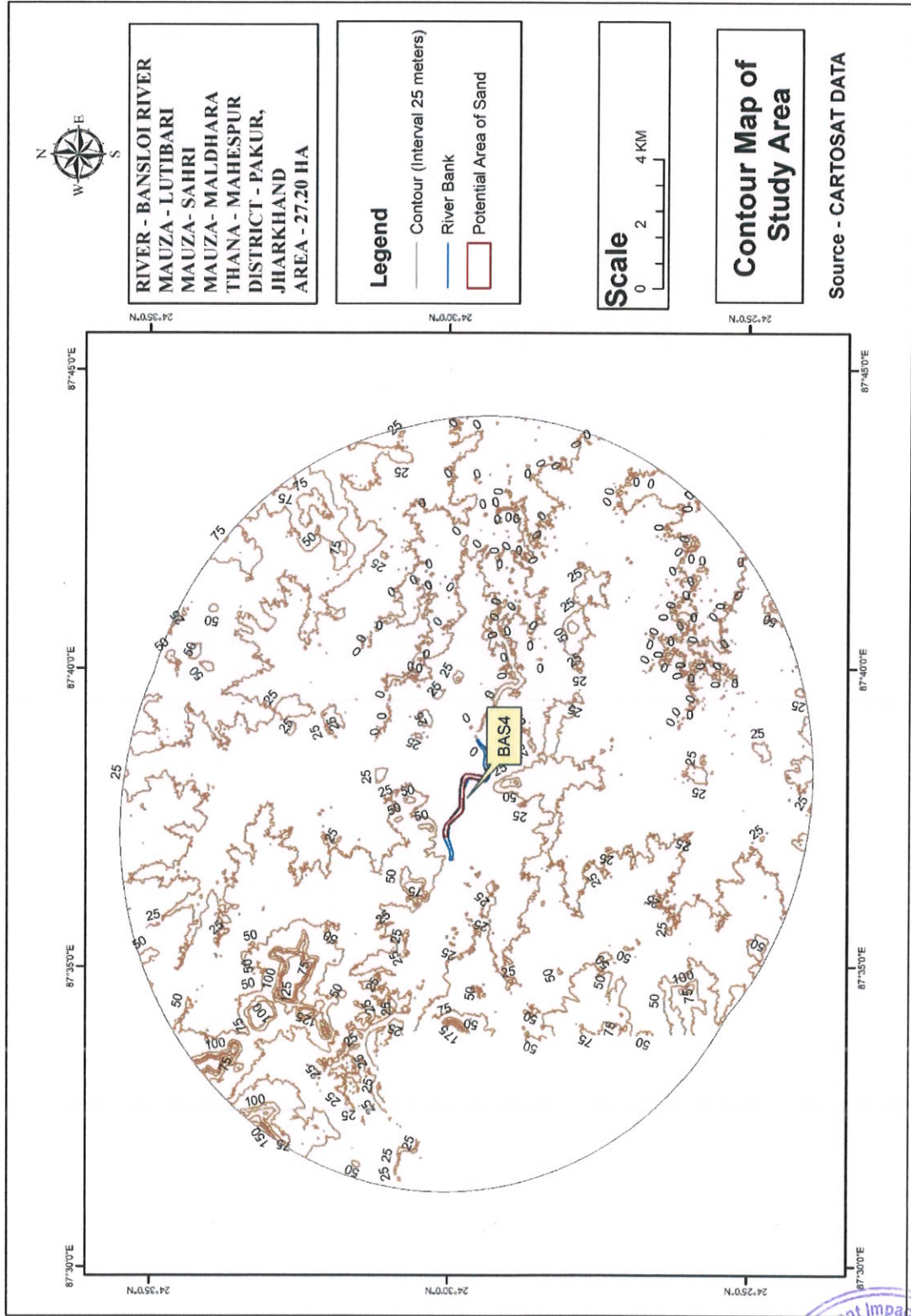


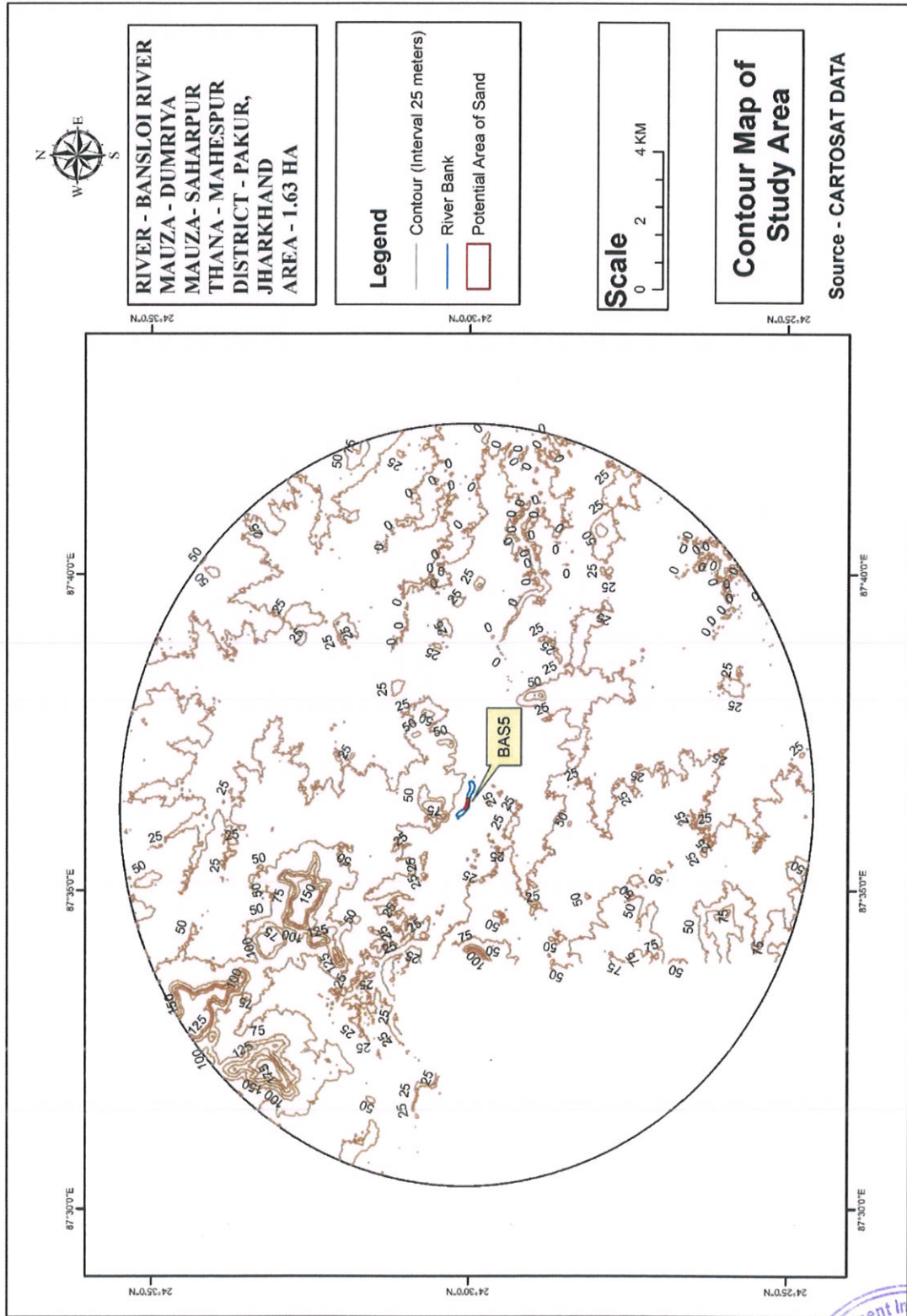


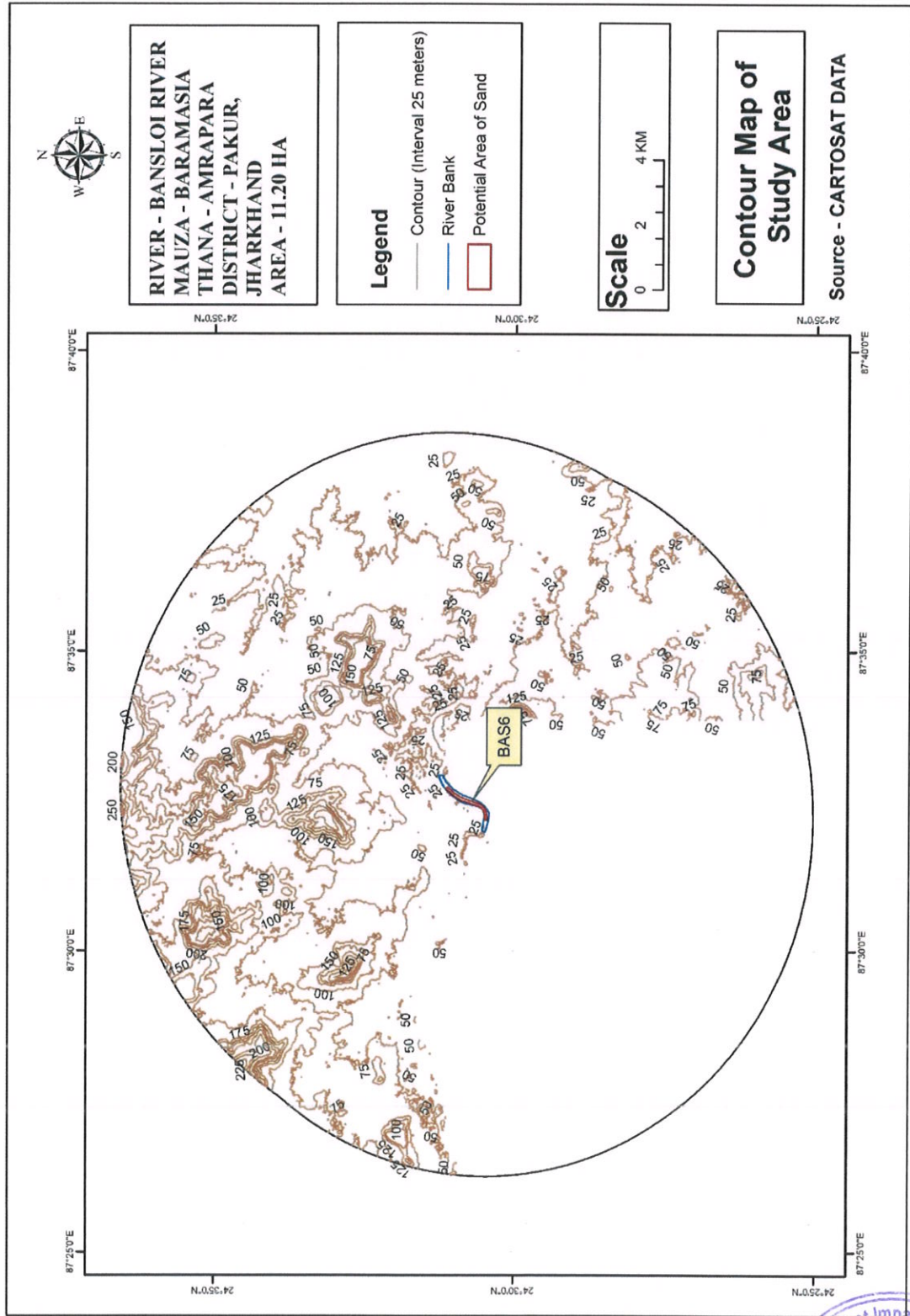
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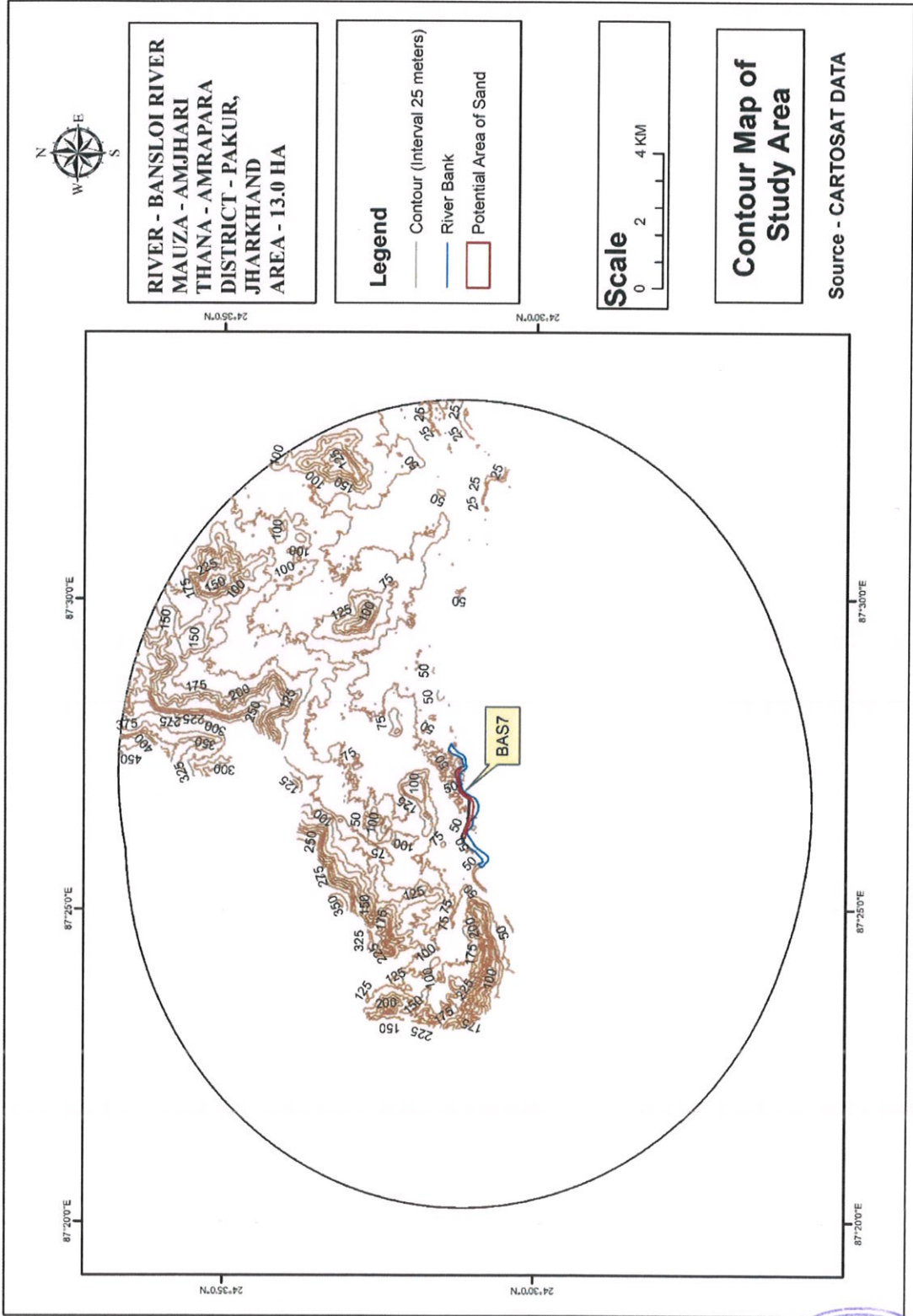






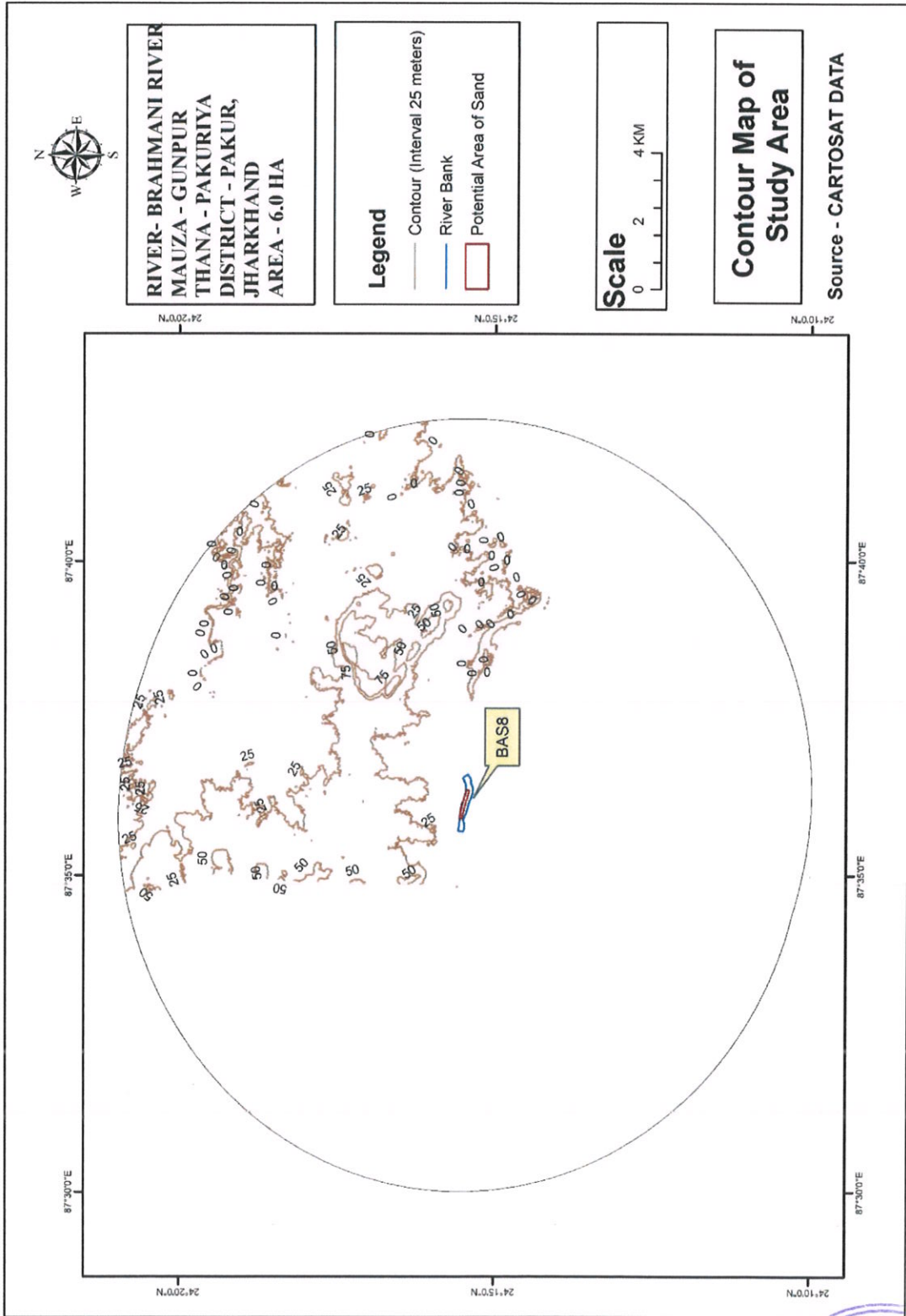


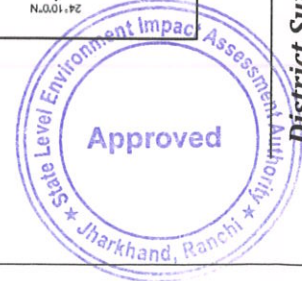
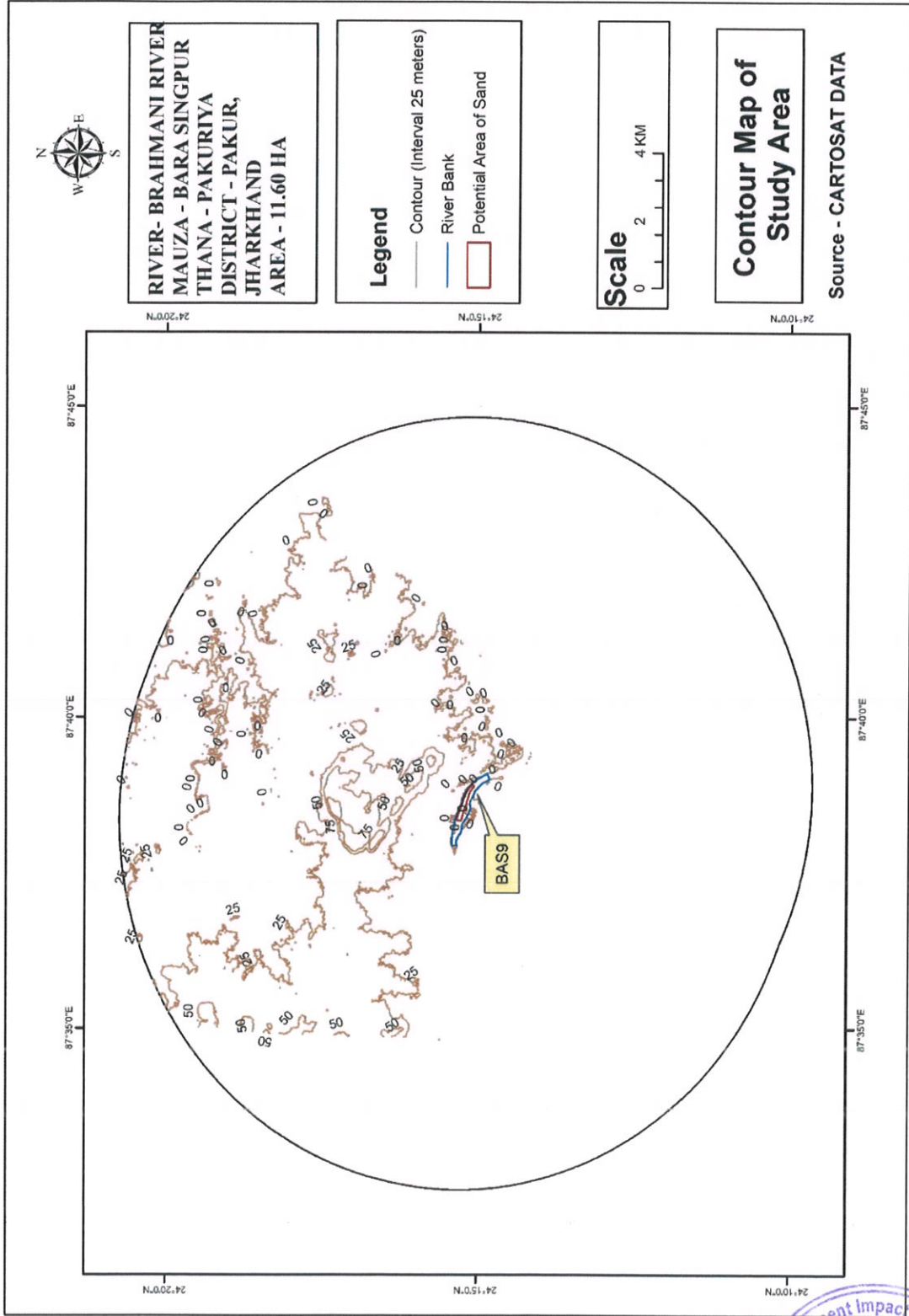


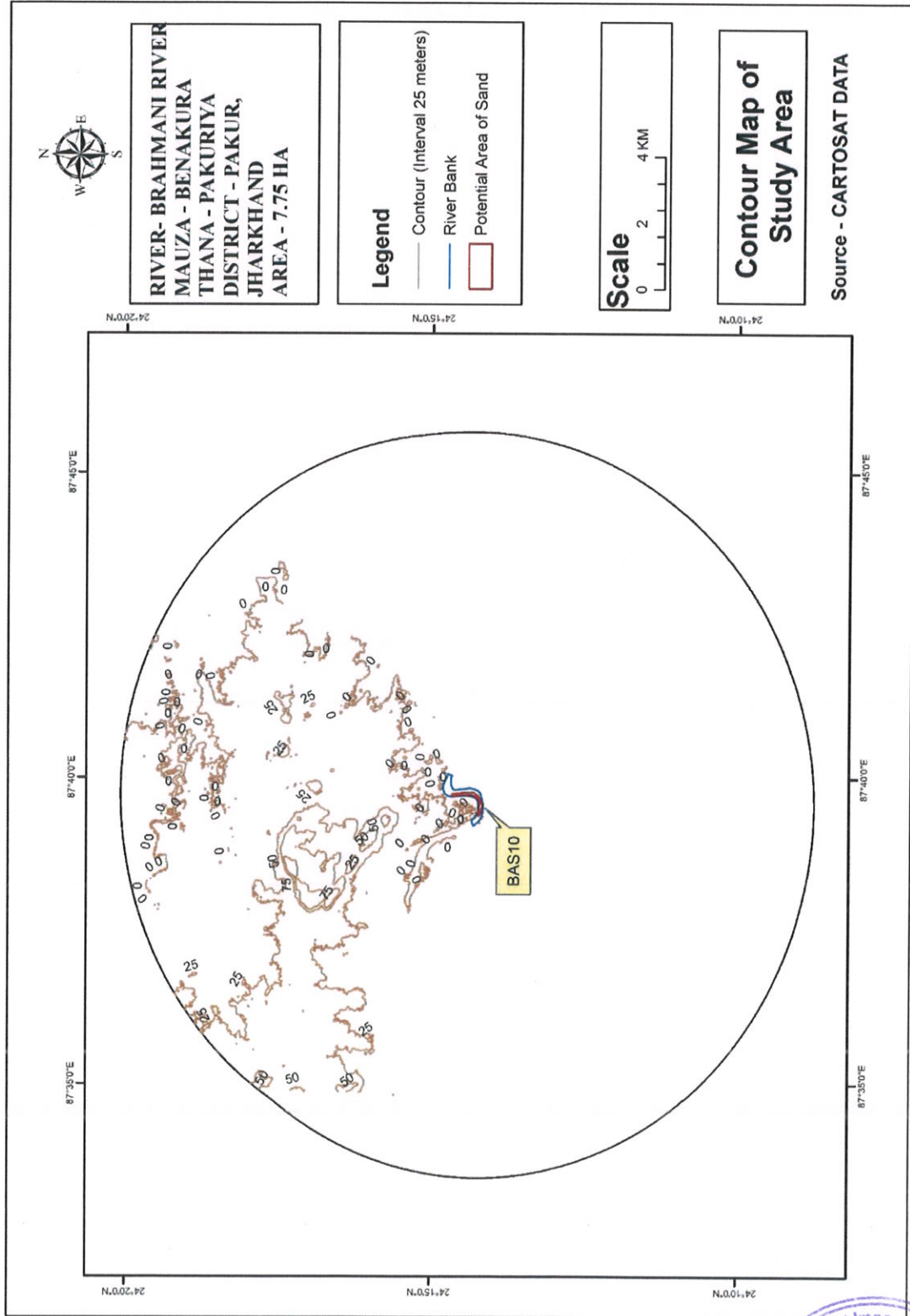


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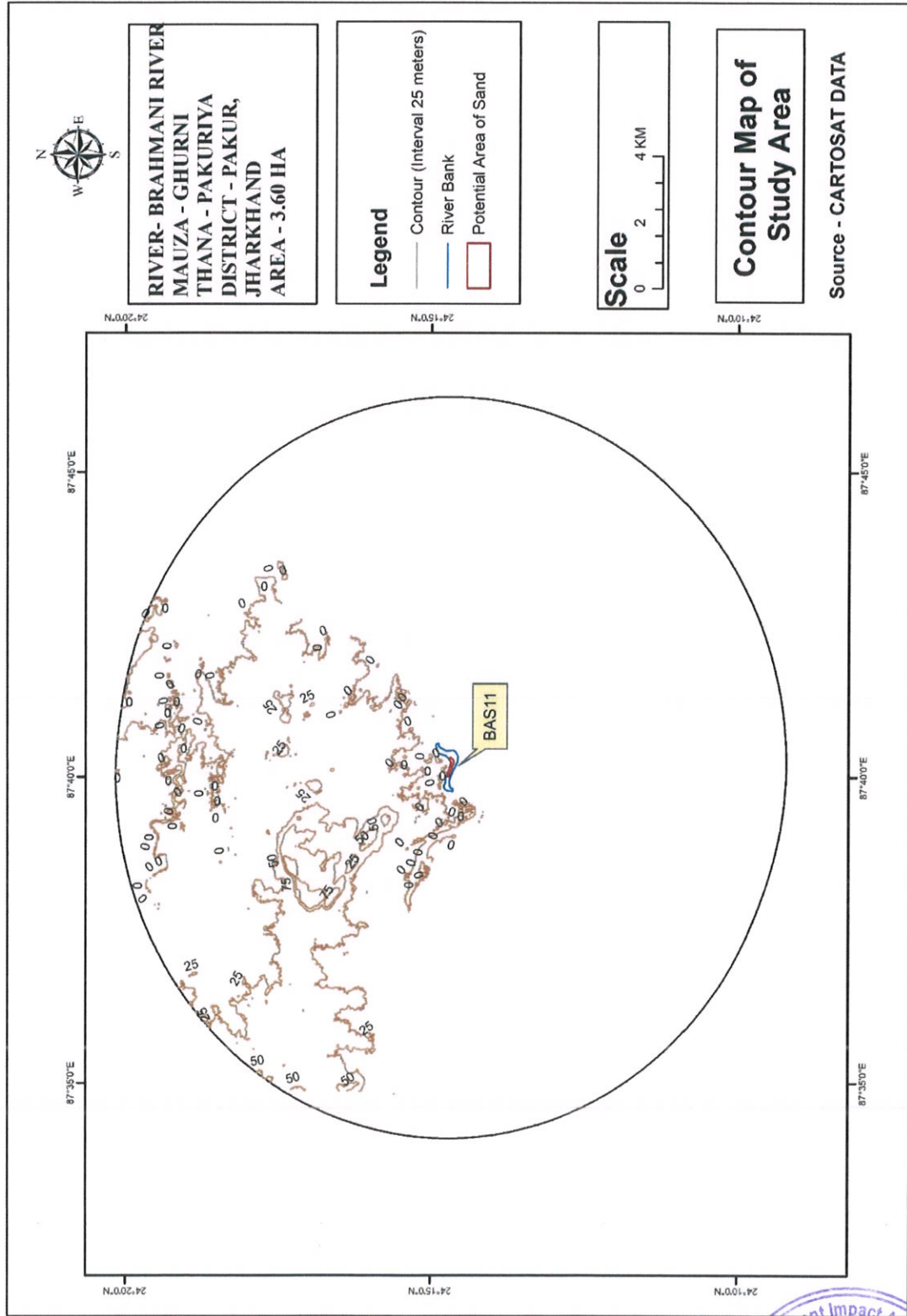




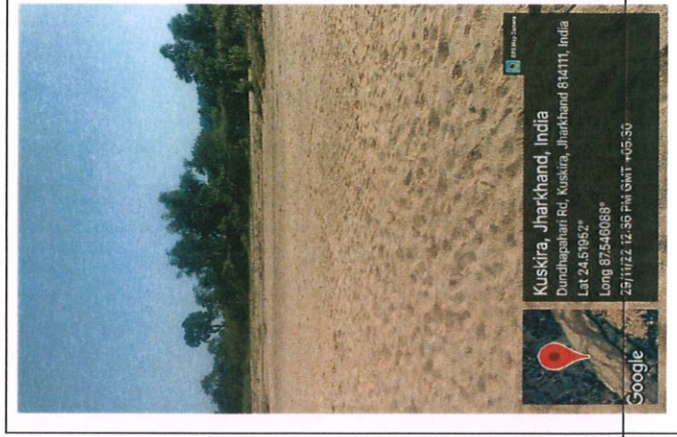
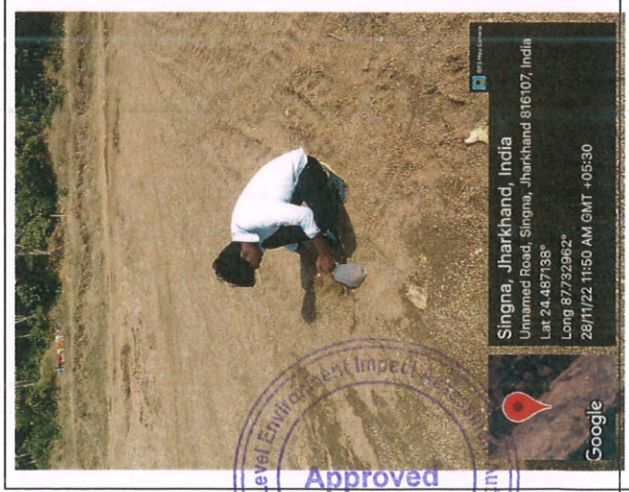
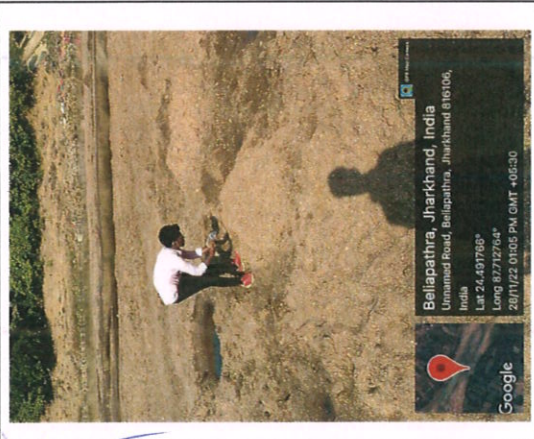


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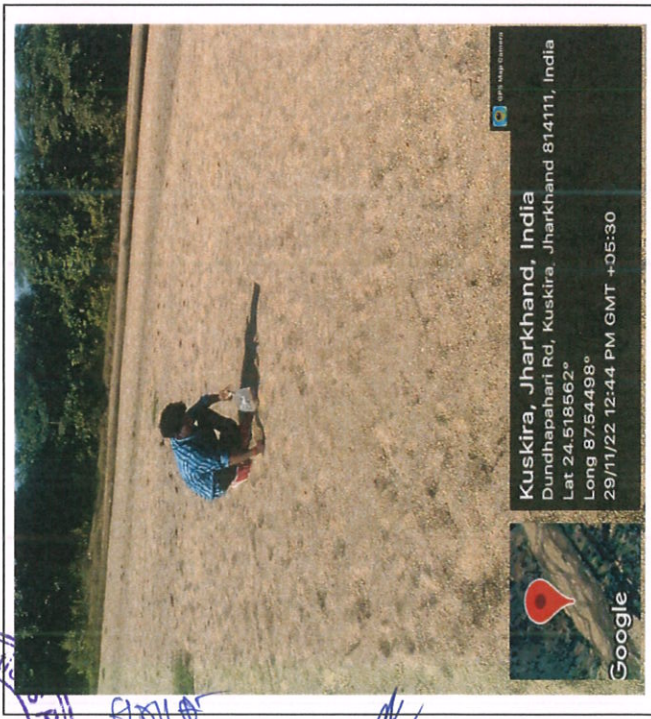


SITE SURVEY OF SAND GHATS WITH DGPS





District Survey Report, Pakur-November-2022



CHAPTER- 21 DETAILS OF ECO-SENSITIVE AREA, IF ANY, IN THE DISTRICT

Elephants are frequently met with in the forests of this district and their number seems to be on the increase. Wild elephants are common in the jungles on the Dalma range in the north of the district. Heavy damage is caused mainly in rains to cultivation, young bamboo clumps and regeneration areas. In drier periods of the year they confine themselves to damp valleys. Bisions are present but in more interior areas except in the rains when they are seen roaming about in open areas. Sasangda plateau of Karampada block may be mentioned in this respect where all kinds of animals may be seen roaming about especially by the end of rains.

Tigers and panthers are present but make very rare appearance. At times they do attack village cattle and in stray cases human beings. Bears are present in large number and attack at times human being and do heavy damage to crops and fruits. Pigs are present in fairly large number and cause damage to cultivation. Wild dogs are seen frequently.

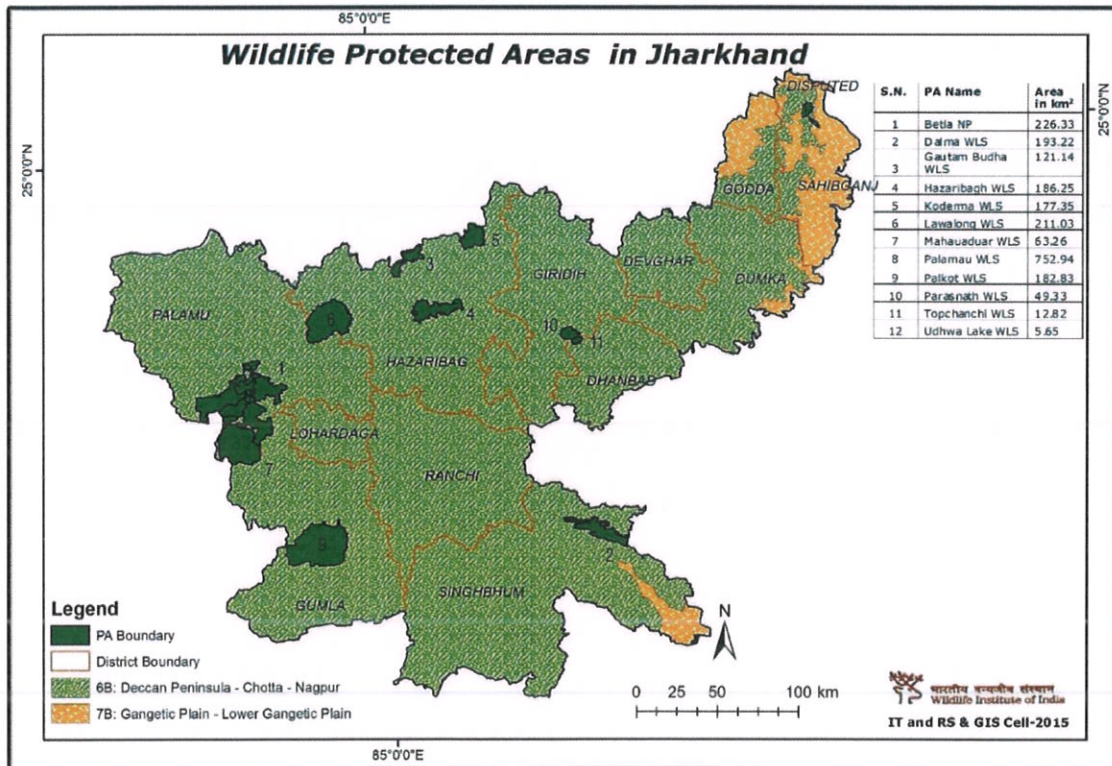


Figure No. 21.1: Wildlife Protected area in Jharkhand



CHAPTER- 22 IMPACT ON THE ENVIROMENT

(Air, Water, Noise, Soil, Flora & Fauna, Land use, Etc.) Due to mining activity

Impact on Environment due to mining activities varies based on the quantum of production rate proposed. The different activities involved before & during mining are narrated below, which helps to assess the impact on environment.

Population growth, economic development and environmental degradation are interlinked with each-other. The high growth in population speeds-up economic activities. Meanwhile, it also deteriorates environment as for the high level of economic development, plenty of natural resources are exploited. Similarly, mining activities have considerable impacts on environment.

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.

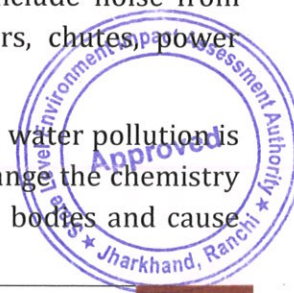
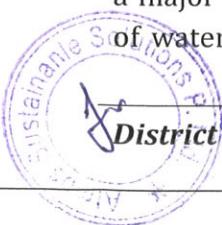
Mining and quarrying, either open cast or underground, destroys landscape and forest ecosystems.

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.

Air pollution, due to dust from the mines, is a common environmental problem in mines and quarries especially open cast operations. Stone Mining activities are normally associated with different types of pollution. Air pollution is regarded as the most notable one, where particulate matter (dust) are generated and found in the surrounding areas of such activities. Particles with aerodynamic diameters of less than 50 μ m (termed Total Suspended Particulate matter, or TSP) can become suspended in the atmosphere, and those with aerodynamic diameters of less than 10 μ m termed PM10 (inhalable particles) can be transported over long distances, and enter the human respiratory system.

Noise pollution is associated with many types of equipment used in mining operations, but blasting is considered the major source. Loud sound disturbed the vegetable nearby the area. It also affects stability of infrastructures, buildings, and homes of people living near to these working sites. In this regard, noise pollution may include noise from vehicle engines, loading and unloading of rock into steel dumpers, chutes, power generation, and other sources.

Sand Mining operations impact the environment in several ways, and water pollution is a major concern in such operations. For instance quarry dust can change the chemistry of water resources by dissolving in them, it can also settle in water bodies and cause



pollution. Furthermore, these operations disrupt the existing movement of surface water and groundwater; they interrupt natural water recharge and can lead to reduced quantity and quality of drinking water for residents and wildlife near or downstream from a quarry site.

The pollution potential of the proposed project, it is possible impacts on the surrounding environment during pre-operational and operational phases and the necessary management actions proposed for control and abatement of pollution are furnished here under.

Impact on some component of the environment is as below:

Air environment:

Although mining does not cause any direct change in air environment, transportation etc. In sand mining operations, the source of air pollution may cause deterioration of air quality due to the fugitive dust emission during excavation, loading-unloading operations and transportation. Loading and unloading of mineral would be associated with the fugitive emission in the active area whereas fugitive emission during transportation would affect the areas/villages situated adjacent to road side. Another source of air pollution would be emission from the trucks/tractor/other vehicles to be used for transportation of soil

Water environment:

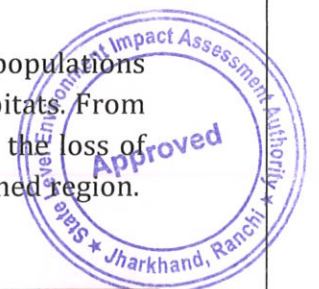
As far as impact on surface water is concerned, during mining and transportation, there are chances of contamination of surface water resources (pond, well etc.) with dust or by other means. As sand mining is on bed of river, there may adverse impact on flow pattern, surface hydrology and ground water regime. The labourers working in sand mining come from neighboring districts and colonies in the surrounding areas with inadequate facilities for waste disposal.

Noise environment:

As far as noise pollution is concerned, blasting is considered the major source of noise Pollution but in sand mining there is no provision of blasting. The Machinery used in mining of sand mineral creates sound and vibrates. As well as vehicles used for transport, loading-unloading of mineral etc. put impact on noise environment. Noise level in the working environment should be compared with the standards prescribed by Central Pollution.

Flora and Fauna:

The sand mining may lead to Short-term disturbance in habitats of wildlife populations from noise (impacts usually local and short-term) & to the local aquatic habitats. From the last few years the mining rate has increased several times. It results in the loss of biodiversity of both flora and fauna and physiographic features of the concerned region.



CHAPTER- 23

REMEDIAL MEASURES TO MITIGATE THE IMPACT OF THE MINING ON THE ENVIRONMENT

1.1 Air Environment:

Mitigation Measures

a) For Fugitive Dust Emission:

- All trucks should be covered by tarpaulin sheet to prevent dust emission.
- Water spraying should be there in haul road, crusher and mining area.
- Dust extractor should be used to reduce dust generation
- Plantation will be carried out on approach roads.

b) For Vehicular Emission

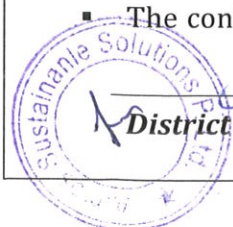
- Overloading of trucks and trolleys should be prevented.
- Vehicular emission can pose serious health hazard. During the earth mining extraction, tractor/truck should be used for transportation. Tractor/truck comprises of diesel engine produce particles are dangerously fine of PM10 & PM2.5. It is well known fact that combustion of diesel generates small particulate matter, nitrogen oxides and sulphur dioxide.
- Ultra-low Sulphur diesel should be used in vehicle. CPCB prescribed emission Standards for the vehicle would be followed.
- Monitoring of dust fall at land located nearby the mining area.
- Deploying PUC certified vehicles to reduce their noise emission.



1.2 Water environment: -

Mitigation measures

- No diversion will be done. There will not be any adverse impact on flow pattern, surface hydrology and ground water regime.
- Safeguards will be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation.
- Laborers should not be allowed to through trashes in water bodies.
- Utmost care should be taken to minimize or control oil spills or leakage from vehicles used for soil transportation.
- Water Quality Monitoring for the, ground water should be carried out seasonally to ensure that the water quality is not affected by the project activities.
- Safety barrier zone will be left from both sides of river, which will minimize the chances of bank failure
- The contractor should adhere all guidelines and rules for proper and scientific method



of mining during the period of extracting of minerals that the project activities should not have any adverse effect on the physical components of the environment including recharge of ground waters or water quality.

1.3 Land Environment:

Mitigation measures

- Foreign materials like polythene bag, jute bag and useless articles should not be allowed to remain/spill on the land, or no pits/pockets should be allowed to be filled with such material.
- Mining should not exceed beyond the agreed extraction depth.
- Quantities will be strictly limited so that sand accumulation rates are sufficient to avoid extended impacts on channel morphology.
- Loss of habitat is minimized because the river bed mining will be carried only in dry bed which will not disturb the riverine ecosystem

1.4 Noise Environment:

Mitigation measures

- Well maintained vehicles should be used in order to reduce the noise during movement of vehicles.
- Regular and proper maintenance of transportation vehicles (trucks, tractor etc.) should be ensured.
- Proper and timely maintenance of machineries
- The noise levels from all these sources are periodical and restricted to particular operation.

1.5 Flora and Fauna:

Mitigation measures

- Sediment and erosion control by planting native trees and shrubs to stabilize degraded farming land.
- Regular monitoring of plants and animals on site.
- Establishing and maintaining habitat corridors.
- Stabilize all slopes, re-vegetating with native species to reduce/avoid erosion.



CHAPTER- 24
RECLAMATION OF MINED OUR AREA

(Best practice already implemented in the district, requirements as per rules and regulation, proposed reclamation plan).

It is river bed sand mining the volume of sand extracted in each year will be re-deposited in subsequent years during rainy season.

This DSR are prepared of sand mining from river bed mining (RBM) the mineral will be extract from RBM. It is a drift deposit of sand every year sand replenished by flood and rainy session. This is natural phenomena reclamation of exhaust area.



CHAPTER- 25

RISK ASSESSMENT AND DISASTER MANAGEMENT PLAN

Risk analysis is the systematic study of risks encountered during various stages of mining operation. Risk analysis seek to identify the risks involved in mining operations, to understand how and when they arise, and estimate the impact (financial or otherwise) of adverse outcomes. The sand mining operation in the district is mainly done manually.

IDENTIFICATION OF RISK DUE TO RIVER SAND MINING:

There is no land degradation due to mining activities as mining is done only on river bed dry surface. There will be no OB or waste generation as the sand is exposed in the river bed and is completely sealable. There will be neither any stacking of soil nor creation of OB dumps. The mining activity will be carried out up to a maximum depth of 3m below the surface level. So, there is no chance of slope failure, bench failure in the mines. However, there are some identified risk in the mining activity which are as below:

1. Accident during sand loading and transportation
2. Inundation/ Flooding
3. Quick Sand Condition



Mitigation measures

Measures To Prevent Accidents During Loading And Transportation:

- During the loading truck would be brought to a lower level so that the loading operation suits to the ergonomic condition of the workers.
- The workers will be provided with gloves and safety shoes during loading.
- Opening of the side covers of the truck should be done carefully and with warning to prevent injury to the loaders.
- Mining Operations will be takes place during daylight only.
- The truck will be covered with tarpaulin and maintained to prevent any spillage.
- To avoid danger while reversing the trackless vehicles especially at the embankment and tipping points, all areas for reversing of Lorries should be made man free as far as possible.



- All transportation within the main working will be carried out directly under the supervision and control of the management.
- Overloading should not be permitted and the maximum permissible speed limit should be ensured.
- There will be regular maintenance of the trucks and the drivers will have valid driving license.

MEASURES TO PREVENT INCIDENTS DURING INUNDATION/ FLOODING:

To minimize the risk of flooding/ inundation following measures will be undertaken:

- Mining will be completely closed during the monsoon months.
- Proper weather information particularly on rain should be kept during the operational period of mines so that precautionary measures will be undertaken.

Measures for mitigation to quick sand condition:

- Quick sand zone and deep water zone will be clearly demarcated and all the mines workers will made aware of the location.
- Mining will be done strictly as per the approved mining plan.

DISASTER MANAGEMENT PLAN:

As the depth of mining will be maximum of 3m below the surface level considering local condition, the risk related to mining activity is much less. The mining operation will be carried out under the supervision experienced and qualified Mines Manager having Certificate of Competency to manage the mines granted by DGMS. All the provisions of Mines Act 1952, MMR 1961 and Mines Rules 1955 and other laws applicable to mine will strictly be complied. During heavy rainfall and during the monsoon season the mining activities will be closed. Proper coordination with Irrigation Department should be maintained so that at the time of releasing water, if any, from the dam suitable warning/information is given in advance. Special attention and requisite precautions shall be taken while working in areas of geological weakness like existence of slip, fault etc. The mining site will be supplied with first-aid facilities and the entire mines worker will have access to that.

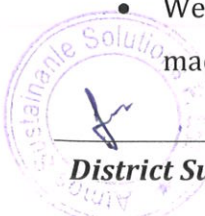


UTILIZATION OF SAND

The most prolific user of sand is the construction industry where it is almost vital for almost every aspect of a building project. Sand is used in everything from cement and concrete to plastering, roofing, grouting and paint. It's even used to help defend buildings from flooding when it's in sandbags. So it's pretty safe to say that if it wasn't for sand you're house probably wouldn't be standing. From beds to flood plains to coastlines- we can find the sand at almost everywhere. The robustness of sand has played a significant role in everyday life. We use sand practically every other day.

In the real world, there are a lot of situations where we can find uses of sand. Followings are the common sand uses.

- We can use sand to filter water; it works like an abrasive.
- We can use sand to give a grip to our painting or wall art by combining 2 cups of paint with a $\frac{3}{4}$ cup of sand.
- People make sandpaper by gluing sand to a paper.
- While bunging metal, we can mix sand with clay binder for frameworks used in the foundries.
- Sand can be used for cleaning up oil leak or any spill by dredging sand on that spill. The material will form clumps by soaking up, and we can quickly clean the mess.
- Sand can be used as a road base which is a protective layer underneath all roads
- Industrial sand is used to make glass, as foundry sand and as abrasive sand.
- One creative usage of sand is serving as a candle holder. We can try putting some sand before pouring tea light or any candle in a glass. It holds the candle still and refrain the candle from rolling by giving it an excellent decoration.
- Adds texture and aesthetic appeal to space.
- Sand is mostly pure to handle, promptly available and economically wise.
- We can make children's sandpit to keep the play areas safer. It is quite inexpensive as well.
- We use sand in aquariums, fabricating artificial fringing reefs, and in human-made beaches



- Sandy soils are ideal for growing crops, fruits and vegetables like watermelon, peaches, peanuts, etc.
- Sand can light a path by filling mason jars with sand and tea light which is another inexpensive way to make a walkway glow.
- We can keep a small scuttle of sand near a charcoal grill for inundating flare-ups.
- Sand can be used for cleaning narrow neck receptacle by putting a little sand and warm soapy water in the container.
- We can keep an item steady which needs repairing by using sand. Burying the broken pieces under sand grains helps to hold the elements together while gluing.
- Sand helps to improve resistance (and thus traffic safety) in icy or snowy conditions.
- We need sand in the beaches where tides, storms or any form of preconceived changes to the shoreline crumble the first sand.
- Sand containing silica is used for making glass in the automobile and food industry- even household products for the kitchen.
- Sand is a strong strand which is used for plaster, mortar, concrete, and asphalt.
- The usual bricks formulated of clay only is way weaker and lesser in weight than blocks made of clay mixed with sand.



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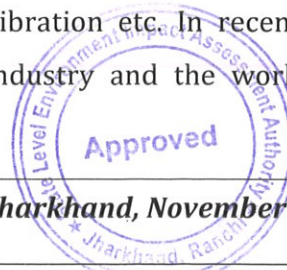
CHAPTER- 26

DETAILS OF THE OCCUPATIONAL HEALTH ISSUES IN THE DISTRICT

(Last five-years data of number of patients of silicosis & Tuberculosis is also needs to be submitted).

Occupational Health Hazard and Remedial Measures:

Occupational injuries cause major health problems that all developed, developing, and underdeveloped nations worldwide are facing. The majority of the workforce is deprived of occupational health services. The estimated economic loss due to work-related injuries and diseases is equivalent to 4% of the world's gross national product. The impact is much higher in developing countries. According to Leigh et al, 100 million occupational injuries occur throughout the world each year. Mine workers are subjected to a number of subtly harmful risks to health and safety, such as a high concentration of mechanical equipment in a confined space. As a result, mine workers are often exposed to a high risk of work-related musculoskeletal injuries, according to the US Bureau of Labor Statistics. A large number of laborers in India work in the stone crushing and mining industries. Mining is a tedious physical work, and involves exposure to colloidal silica and particulate matter. Workers are more prone to dental injuries due to a limited working area. Due to the tedious working schedule, workers develop the habit of alcohol consumption and tobacco use, which leads to deterioration of their oral health. Most of the mine workers are malnourished, have ill health, and suffer from physical impairments due to accidents at mining areas. According to the Mines and Geology Department, the Government of Rajasthan, the average life expectancy of a mine worker is 49 years. This is 10 years less than the life expectancy of workers who work outside the mines. In the workplace, workers are exposed to biological, chemical, and physical agents, which can result in adverse effects ranging from simple discomfort and irritation to debilitating occupational diseases such as lung fibrosis, neuropathy, deafness, organ damage, lung diseases (such as silicosis, tuberculosis, silicotuberculosis, and asthma), and cancers of various sites. 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 District Survey Report of Pakur District for Minor Mineral (Stone) 69 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 1. Silicosis 2. Pneumoconiosis 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. (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.



gms



The district has to make serious efforts to improve health facilities. It is yet to take effective measures to enlarge the coverage of immunisation programmes. Only 15 per cent of the children are fully immunised in the district. Most of the child births have taken place at home with the help of untrained Dais. Facilities for safe deliveries and immunisation must be made available by strengthening the central government's Accredited Social Health Activists (ASHA) programme. Campaign for immunization should also be intensified.

Pakur district is situated in the north-eastern corner of Jharkhand state of India. Census Results, 2001 - The district had poor health facilities as per the 2001 Census. Only 17 per cent of villages had primary health centre (PHC) within 5 km. Just 6 per cent villages had maternal and child care centers at a distance of 5 km and 17 per cent villages had allopathic hospitals at a distance of 5 km. Data reveals that on an average, there are less than 2 allopathic hospitals per lakh population in the district, which is less than the state average.



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CHAPTER- 27

PLANTATION AND GREEN BELT DEVELOPMENT IN RESPECT OF LEASES ALREADY GRANTED IN THE DISTRICT

The basic approach to green belt / plant growth in the lease area is to provide an esthetic look, reduce fugitive pollution, and monitor noise effect, etc.

Green Belt will be developed based on the following principles:

- Protect natural or semi-natural environments;
- Improve air quality within urban areas;
- Protect the unique character of rural communities that might otherwise be absorbed by expanding suburbs.
- Plants that grow fast should be preferred
- Preference for high canopy covers plants with local varieties
- Perennial and evergreen plants should be preferred
- Plants having a high Air Pollution Tolerance Index (APTI) should be preferred.

The green belt has many benefits for people:

- Walking, camping, and biking areas close to the cities and towns.
- Contiguous habitat network for wild plants, animals and wildlife.
- Cleaner air and water.
- Better land use of areas within the bordering cities.

Greenbelt Development & Plantation Programme:

- Plantation should be developed at 2 m x 2 m spacing, the rate of survival should be aimed at 80% by regular watering & fencing to keep plants safe from animal grazing. Local species will be planted in consultation with local horticulturist. Diseased plants should be replaced by planting new saplings.
- Recommendation for Green Belt Development
- It is strongly recommended to create greenbelt around the project site or in case lease failed the authority should take proper action to stop mining operation or revoke mining permission with necessary action.



CHAPTER- 28
CONCLUSION

The District Survey Report of sand will be granted for producing sand material for making road and building. This is a part of Govt. of India's policy to develop maximum infrastructure facility in India. This making of road will generate direct and indirect employment to the local people.

The lease owner will undertake mining activity as per the mining plan and Environment Clearance with proper taking care of environmental aspects i.e. without disturbing the ambient condition.

The determined values of various methods as adopted for replenishment study gives a comparable value and in all cases the values are found to be much more as compared to the capping limit (60%) as suggested in the Enforcement & Monitoring Guidelines for Sand Mining (EMGSM) January 2020, Issued by Ministry of Environment, Forest and Climate Change (MoEF & CC) 2020.

It is suggested to have a periodical review under the guidance of SEIAA & SEAC Committee along with field data acquisition during pre and post monsoon periods to record the seasonal variance of the sedimentation rate on annual basis and update this DSR in case of any abnormal findings.



Handwritten signature

Handwritten signature



ANNEXURE-01

CIRCLE OFFICER





अंचल कार्यालय, पाकुड़िया (पाकुड़)।

पत्रांक 16 / रा0

प्रेषक,

अंचल अधिकारी,
पाकुड़िया।

सेवा में,

जिला खनन पदाधिकारी,
पाकुड़।

पाकुड़िया, दिनांक 09/01/23

विषय :-

पाकुड़ जिला के पाकुड़िया अंचलान्तर्गत चिन्हित बालू घाटों के भूमि संबंधी प्रतिवेदन उपलब्ध कराने के संबंध में।

प्रसंग :-

भवदीय पत्रांक 22/एम0, दिनांक 04.01.2023

महाशय,

उपर्युक्त विषयक प्रारंभिक पत्र के क्रम में कहना है कि पाकुड़िया अंचल अन्तर्गत Category-II के प्रस्तावित बालू घाटों पर निम्न बिन्दुओं पर प्रतिवेदन की मांग की गई है। संबंधित राजस्व उप निरीक्षक, अंचल अमीन एवं प्रभारी अंचल निरीक्षक द्वारा जाँच प्रतिवेदन उपलब्ध कराया गया है। जिसे मूल में इस पत्र के साथ संलग्न कर आवश्यक कार्रवाई हेतु उपलब्ध कराया जा रहा है।

कृपया प्राप्ति स्वीकार की जाय।

अनुलग्नक :- यथोक्त।

विश्वासमाजन्

09/01/23

अंचल अधिकारी,
पाकुड़िया।

09/01/23

11/01/23


11.1.2023



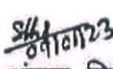
पाकुड़िया अंचल अन्तर्गत पडने वाले Catogery-II के बालू घाट संबंधी बिन्दुवार जाँच प्रतिवेदन।

मौजा- गणपुरा, थाना- पाकुड़िया, थाना सं०- 52, दाग सं०- 1411, रकबा- 6.0 एकड

1. क्या प्रस्तावित भूमि की कोटि सर्वे-खतियान यथा रजिस्टर- II में जंगल झाड़ी के रूप में दर्ज है? नहीं है।
2. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर कोई मानव बसाहट स्थित है? यदि है तो कुल मकान एवं आवादी की संख्या तथा प्रस्तावित स्थल से वास्तविक दूरी क्या है? मानव बसाहट लगभग 80 मीटर की दूरी पर स्थित है। 500 मीटर की दूरी के अन्दर 100 से अधिक मकान हैं एवं आवादी 300-350 से अधिक हैं।
3. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर जलीय निकाय (Dam/Reservoir) स्थित है? नहीं है।
4. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर कोई शैक्षणिक संस्थान स्थित है? नहीं है।
5. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर कोई चिकित्सालय (Hospital) स्थित है? नहीं है।
6. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर कोई राष्ट्रीय धरोहर/पुरातात्विक महत्व के स्थल स्थित है? नहीं है।
7. क्या प्रस्तावित भूमि के 10 कि०मि० की परिधि में कोई अन्तर्राज्यीय सीमा है? हाँ है। (पं.नं.)


अंचल अमीन,
पाकुड़िया।


9/11/2023
राजस्व उप निरीक्षक,
पाकुड़िया।


8/11/23
प्रभारी अंचल निरीक्षक,
पाकुड़िया।


8/11/23
अंचल अधिकारी,
पाकुड़िया।



पाकुड़िया अंचल अन्तर्गत पडने वाले Catogery-II के बालू घाट संबंधी विन्दुवार जाँच प्रतिवेदन।

मौजा- बडासिंहपुर, थाना- पाकुड़िया, थाना सं०- 86, दाग सं०- 1417, रकवा- 11.60 एकड

1. क्या प्रस्तावित भूमि की कोटि सर्वे-खतियान यथा रजिस्टर- II में जंगल झाड़ी के रूप में दर्ज है? नहीं है।
2. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर कोई मानव बसाहट स्थित है? यदि है तो कुल मकान एवं आवादी की संख्या तथा प्रस्तावित स्थल से वास्तविक दूरी क्या है? जंगल 140 मीटर में मानव बसाहट स्थित है। 500 मीटर की दूरी के अन्दर 200 मकान के अधिका है एवं आवादी 600 से अधिका है।
3. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर जलीय निकाय (Dam/Reservoir) स्थित है? नहीं है।
4. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर कोई शैक्षणिक संस्थान स्थित है? हाँ है।
5. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर कोई चिकित्सालय (Hospital) स्थित है? हाँ है।
6. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर कोई राष्ट्रीय धरोहर/पुरातात्विक महत्व के स्थल स्थित है? नहीं है।
7. क्या प्रस्तावित भूमि के 10 कि०मि० की परिधि में कोई अन्तर्राज्यीय सीमा है? हाँ है।

अमीन
09/11/23
अंचल अमीन,
पाकुड़िया।

HC
9/11/2023
राजस्व उप निरीक्षक,
पाकुड़िया।

SH
09/11/23
प्रमारी अंचल निरीक्षक,
पाकुड़िया।

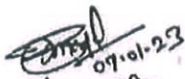
SH
09/11/23
अंचल अधिकारी,
पाकुड़िया।



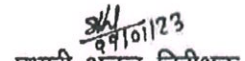
पाकुड़िया अंचल अन्तर्गत पडने वाले Catogery-II के बालू घाट संबंधी विन्दुवार जॉच प्रतिवेदन।

मौजा-बेनाकुड़ा, थाना- पाकुड़िया, थाना सं०- 87, दाग सं०- 291P & 325, रकबा- 7.75 एकड़

1. क्या प्रस्तावित भूमि की कोटि सर्वे-खतियान यथा रजिस्टर- II में जंगल झाड़ी के रूप में दर्ज है? **नहीं।**
2. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर कोई मानव बसाहट स्थित है? यदि है तो कुल मकान एवं आवादी की संख्या तथा प्रस्तावित स्थल से वास्तविक दूरी क्या है?
500 मीटर की दूरी के अन्दर कोई मानव बसाहट स्थित नहीं है।
3. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर जलीय निकाय (Dam/Reservoir) स्थित है? **नहीं है।**
4. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर कोई शैक्षणिक संस्थान स्थित है?
नहीं है।
5. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर कोई चिकित्सालय (Hospital) स्थित है? **नहीं है।**
6. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर कोई राष्ट्रीय धरोहर/पुरातात्विक महत्व के स्थल स्थित है? **नहीं है।**
7. क्या प्रस्तावित भूमि के 10 कि०मि० की परिधि में कोई अन्तर्राज्यीय सीमा है? **होई (पं.क.)**


09.01.23
अंचल अमीन,
पाकुड़िया।


09/01/2023
राजेश उप निरीक्षक,
पाकुड़िया।


09/01/23
प्रमारी अंचल निरीक्षक,
पाकुड़िया।


09/01/23
अंचल अधिकारी,
पाकुड़िया।




पाकुड़िया अंचल अन्तर्गत पडने वाले Catogery-II के बालू घाट संबंधी बिन्दुवार जाँच प्रतिवेदन।

मौजा- घुरनी, थाना- पाकुड़िया, थाना सं०- 88, दाग सं०- 1114(P), रकबा- 3.60 एकड़

1. क्या प्रस्तावित भूमि की कोटि सर्वे-खतियान यथा रजिस्टर- II में जंगल झाड़ी के रूप में दर्ज है? **नहीं है।**
2. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर कोई मानव बसाहट स्थित है? यदि है तो कुल मकान एवं आवादी की संख्या तथा प्रस्तावित स्थल से वास्तविक दूरी क्या है? **मानव बसाहट लगभग 380 मीटर की दूरी पर स्थित है। 500 मीटर की दूरी के अन्दर 25 मकान है अधिद है एवं आवादी 60-70 है अधिद है।**
3. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर जलीय निकाय (Dam/Reservoir) स्थित है? **नहीं है।**
4. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर कोई शैक्षणिक संस्थान स्थित है? **हां है।**
5. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर कोई चिकित्सालय (Hospital) स्थित है? **नहीं है।**
6. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर कोई राष्ट्रीय धरोहर/पुरातात्विक महत्व के स्थल स्थित है? **नहीं है।**
7. क्या प्रस्तावित भूमि के 10 कि०मि० की परिधि में कोई अन्तर्राज्यीय सीमा है? **हां है (प.दं०)**


अंचल अमीन,
पाकुड़िया।


राजस्व उप निरीक्षक,
पाकुड़िया।


प्रभारी अंचल निरीक्षक,
पाकुड़िया।


अंचल अधिकारी,
पाकुड़िया।



कार्यालय अंचल अधिकारी, महेशपुर

पत्रांक./10./रा0.

प्रेषक,

अंचल अधिकारी,
महेशपुर।

सेवा में,

जिला खनन पदाधिकारी,
पाकुड़।

महेशपुर, दिनांक 12/01/23

विषय:-

महेशपुर अंचल अन्तर्गत चिन्हीत वालू घाटों के भूमि संबंधी प्रतिवेदन उपलब्ध कराने के सम्बन्ध में।

प्रसंग:-

भवदीय पत्रांक 20/एम0, दि0 04.01.2023।

महाशय,

उपर्युक्त विषय एवं प्रसंग के आलोक में विभाग द्वारा प्राप्त Empanelled Agency, M/s Atmos Sustainable Solution India Pvt. Ltd. के सर्वेक्षण रिपोर्ट के आलोक में महेशपुर अंचल अन्तर्गत पड़ने वाले वालू घाटों का विन्दूवार प्रतिवेदन-सह-ट्रेश नक्शा/मानचित्र पत्र के संलग्न कर आवश्यक कार्रवाई हेतु भेजा जा रहा है।

अनु0:- 1. जॉच प्रतिवेदन पाँच प्रति में एवं
2. ट्रेश नक्शा/मानचित्र

विश्वासभाजन

(Signature)
12/01/23

अंचल अधिकारी,

महेशपुर।

12/01/23

(Signature)
19/1/23

(Signature)
17/01/2023




महेशपुर अंचल अंतर्गत पड़ने वाले Category-II के बालू घाट संबंधी विन्दुवार जॉच प्रतिवेद

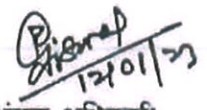
गौजा-पत्थरघाटी, थाना सं०-164, दाग सं०-01/पी० एवं गौजा-सिंगना थाना सं०-163 दाग सं०-1119/पी०, 1189/ एवं 1190/पी०, गौजा-रोलपटिया, थाना सं०-166, दाग सं०-01/पी०, गौजा-पत्थरघाटी, थाना सं०-165, दाग सं०-197/पी०, रकबा- 6.57 एकड़ थाना-महेशपुर

1. क्या प्रस्तावित भूमि की कोटि सर्वे-खतियान यथा रजिस्टर-2 में जंगल-झाडी के रूप में दर्ज है? नहीं है।
2. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अंदर कोई मानव बसाहट स्थित है? यदि है तो कुल मक, आवादी की संख्या तथा प्रस्तावित स्थल से वास्तविक दूरी क्या है?
लगभग 150 मीटर की दूरी पर मानव बसाहट स्थित है, 500 मीटर की दूरी के अंदर 80-90 से अधिक मकान अवस्थित है एवं 300 से अधिक आवासीय है।
3. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अंदर जलीय निकाष (Dam/Reservoir) स्थित है? नहीं है।
4. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अंदर कोई शैक्षणिक संस्थान स्थित है? हाँ है। (आंगनवाड़ी)
5. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अंदर कोई चिकित्सालय (Hospital) स्थित है? नहीं है।
6. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अंदर कोई राष्ट्रीय धरोहर/पुरातात्विक महत्व के र है? नहीं है।
7. क्या प्रस्तावित भूमि के 10 कि०मी० की परिधि में कोई अन्तर्राज्यीय सीमा है? नहीं है।


अंचल अमीन
महेशपुर


राजस्व उप निरीक्षक
महेशपुर


अंचल निरीक्षक
महेशपुर


अंचल अधिकारी
महेशपुर




महेशपुर अंचल अंतर्गत पडने वाले Category-II के बालू घाट संबंधी बिन्दुवार जाँच प्रतिवेदन।

मोजा-बाबुदाह, थाना सं-137 दाग सं-995/पी0 एवं मोजा-संगवहरा थाना सं-167 दाग सं-01/पी0
रकबा- 921 एकड़ थाना-महेशपुर

1. क्या प्रस्तावित भूमि की कोटे सर्वे-खतियान यथा रजिस्टर-2 में जंगल-झाड़ी के रूप में दर्ज है? नहीं है।
2. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अंदर कोई मानव बसाहट स्थित है? यदि है तो कुल गकान आबादी की संख्या तथा प्रस्तावित स्थल से वास्तविक दूरी क्या है?
नो। 65 मीटर की दूरी पर मानव बसाहट स्थित है, 500 मीटर की दूरी के अंदर 150 से अधिक गकान आबादी है एवं 400 से अधिक आबादी है।
3. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अंदर जलीय निकाय (Dam/Reservoir) स्थित है? नहीं है।
4. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अंदर कोई शैक्षणिक संस्थान स्थित है? नहीं है।
5. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अंदर कोई चिकित्सालय (Hospital) स्थित है? नहीं है।
6. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अंदर कोई राष्ट्रीय धरोहर/पुरातात्विक महत्व के स्थल है? नहीं है।
7. क्या प्रस्तावित भूमि के 10 कि०मी० की परिधि में कोई अल्ट्राज्वाय सीमा है? नहीं है।


अंचल अभियंता
महेशपुर


राजस्व उप निरीक्षक
महेशपुर


अंचल निरीक्षक
महेशपुर



अंचल अधिकारी
महेशपुर



महेशपुर अंचल अंतर्गत पड़ने वाले Category-II के बालू घाट संबंधी बिन्दुवार जाँच प्रतिवेदन।

गौजा-नारगीटोला, थाना सं०-135, दाग सं०-2259/पी० एवं गौजा-रोलाग्राम, थाना सं०-134 दाग सं०-2218/पी०
रकबा- 8.09 एकड़ थाना-महेशपुर

1. क्या प्रस्तावित भूमि की कोटि सर्वे-खतियान यथा रजिस्टर-2 में जंगल-झाड़ी के रूप में दर्ज है? नहीं है।
2. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अंदर कोई मानव बसाहट स्थित है? यदि है तो कुल मकान आवादी की संख्या तथा प्रस्तावित स्थल से वास्तविक दूरी क्या है?
नहीं है। 100 मीटर की दूरी पर मानव बसाहट स्थित है। 500 मीटर की दूरी के अंदर 60-70 से अधिक मकान अवस्थित हैं एवं 200 से अधिक आवादी हैं।
3. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अंदर जलीय निकाय (Dam/Reservoir) स्थित है? नहीं है।
4. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अंदर कोई शैक्षणिक संस्थान स्थित है? हाँ है।
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6. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अंदर कोई राष्ट्रीय धरोहर/पुरातात्विक महत्व के स्थल स्थित है? नहीं है।
7. क्या प्रस्तावित भूमि के 10 कि०मी० की परिधि में कोई अन्तर्राज्यीय सीमा है? नहीं है।


अंचल अमान
महेशपुर


राजस्व उप निरीक्षक
महेशपुर


अंचल निरीक्षक
महेशपुर


अंचल अधिकारी
महेशपुर




महेशपुर अंचल अंतर्गत पड़ने वाले Category-II के बालू घाट संबंधी बिन्दुवार जाँच प्रतिवेदन।

मौजा-लुतिवाडी, थाना सं0-94 दाग सं0-1451/पी0 एवं 1729/पी0, मौजा-शहरी थाना सं0-95 दाग सं0-507/पी0
मौजा-मालधारा, थाना सं0-103, दाग सं0-02/पी0, रकबा- 27.20 एकड़ थाना-महेशपुर

1. क्या प्रस्तावित भूमि की कोटि सर्वे-खतियान यथा रजिस्टर-2 में जंगल-झाड़ी के रूप में दर्ज है? नहीं है।
2. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अंदर कोई मानव बसाहट स्थित है? यदि है तो कुल मकान एवं आवादी की संख्या तथा प्रस्तावित स्थल से वास्तविक दूरी क्या है?
लगभग 145 मीटर की दूरी पर मानव बसाहट स्थित है, 500 मीटर की दूरी के अंदर 50 से अधिक मकान उपस्थित हैं एवं 150 से अधिक आवादी हैं।
3. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अंदर जलीय निकाय (Dam/Reservoir) स्थित है? नहीं है।
4. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अंदर कोई शैक्षणिक संस्थान स्थित है? हाँ है।
5. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अंदर कोई चिकित्सालय (Hospital) स्थित है? नहीं है।
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7. क्या प्रस्तावित भूमि के 10 कि0मी0 की परिधि में कोई अन्तर्राज्यीय सीमा है? नहीं है।


अंचल अमीन
महेशपुर


राजस्व उप निरीक्षक
महेशपुर


अंचल निरीक्षक
महेशपुर



अंचल अधिकारी
महेशपुर

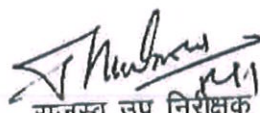


महेशपुर अंचल अंतर्गत पड़ने वाले Category-II के बालू घाट संबंधी बिन्दुवार जाँच प्रतिवेदन।

मौजा-डुमरिया, थाना सं0-45 दाग सं0-842, मौजा-शहरपुर, थाना सं0-46 दाग सं0-1576/पी0, रकबा- 1.63 ए०
थाना-महेशपुर

1. क्या प्रस्तावित भूमि की कोटि सर्वे-खतियान यथा रजिस्टर-2 में जंगल-झाड़ी के रूप में दर्ज है? नहीं है।
2. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अंदर कोई मानव बसाहट स्थित है? यदि है तो कुल मकान आवादी की संख्या तथा प्रस्तावित स्थल से वास्तविक दूरी क्या है?
500 मीटर दूरी के अंदर कोई मानव बसाहट स्थित नहीं है।
3. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अंदर जलीय निकाय (Dam/Reservoir) स्थित है? नहीं है।
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5. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अंदर कोई चिकित्सालय (Hospital) स्थित है? नहीं है।
6. क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अंदर कोई राष्ट्रीय धरोहर/पुरातात्विक महत्व के स्थल स्थित है? नहीं है।
7. क्या प्रस्तावित भूमि के 10 कि०मी० की परिधि में कोई अन्तर्राज्यीय सीमा है? नहीं है।


अंचल अमीन
महेशपुर


राजस्व उप निरीक्षक
महेशपुर


अंचल निरीक्षक
महेशपुर


अंचल अधिकारी
महेशपुर



कार्यालय, अंचल अधिकारी, अमड़ापाड़ा।

पत्रांक.....28...../रा0

17/01/23
4000

प्रेषक :-

अंचल अधिकारी,
अमड़ापाड़ा।

सेवा में,

जिला खनन पदाधिकारी,
पाकड़।

अमड़ापाड़ा, दिनांक 17-01-2023

विषय :- अमड़ापाड़ा अंचल अन्तर्गत चिन्हित बालु घाटों के भूमि संबंधि प्रतिवेदन का प्रेषण।

प्रसंग :- भवदीय पत्रांक 21/एम0, दिनांक 04.01.2023.

महाशय,

उपर्युक्त विषयक एवं प्रासंगिक पत्र के आलोक में अमड़ापाड़ा अंचल में पड़ने वाले Catogary-II के प्रस्तावित बालु घाटों की सूची एवं नक्शा के आधार पर अंचल अमीन, राजस्व उप निरीक्षक एवं अंचल निरीक्षक के द्वारा स्थलीय जाँच कर याचित बिंदुओं पर प्रतिवेदन समर्पित कि गयी है जो निम्न प्रकार है:-

क्र0	वांछित प्रतिवेदन	मौजा	जाँच प्रतिवेदन
01	क्या प्रस्तावित भूमि की कोटि सर्वे खतियान यथा राजिस्टर 2 में में जंगल झाड़ी के रूप में दर्ज है?	बरमसिया	प्रस्तावित भूमि दाग सं0-698 खतियान/राजिस्टर 2 में जंगल झाड़ी के रूप में दर्ज नहीं है।
		आमझारी	प्रस्तावित भूमि दाग सं0-390, 394 एवं 395 खतियान/राजिस्टर 2 में जंगल झाड़ी के रूप में दर्ज नहीं है।
02	क्या प्रस्तावित भूमि के 500 मीटर के अन्दर की दूरी के अन्दर कोई मानव बसाहट स्थित है? यदि है तो कुल मकान एवं आबादी की संख्या तथा प्रस्तावित स्थल से वास्तविक दूरी क्या है?	बरमसिया	प्रस्तावित भूमि के 500 मीटर के अन्दर मानव बसाहट स्थित है कुल मकानों की संख्या 150 एवं आबादी लगभग 850 है।
		आमझारी	प्रस्तावित भूमि के 500 मीटर के अन्दर मानव बसाहट स्थित है कुल मकानों की संख्या 139 एवं आबादी लगभग 710 है।
03.	क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर कोई जलीय निकाय (Dam/Reservoir) स्थित है?	बरमसिया	प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर कोई जलीय निकाय (Dam/Reservoir) स्थित नहीं है। लिट्टीपाड़ा जलापूर्ति योजना के तहत Intake well एवं नदी किनारे WTP अधिष्ठापित है।
		आमझारी	प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर कोई जलीय निकाय (Dam/Reservoir) स्थित नहीं है।

बल
17/01/2023



04.	क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर कोई शैक्षणिक संस्थान स्थित है?	बरमसिया आमझारी	प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर प्राथमिक विद्यालय स्थित है।
05.	क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर कोई चिकित्सालय (Hospital) स्थित है?	बरमसिया आमझारी	प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर कोई चिकित्सालय स्थित नहीं है।
06.	क्या प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर कोई राष्ट्रीय धरोहर/पुरातात्विक महत्व के स्थल स्थित है?	बरमसिया आमझारी	प्रस्तावित भूमि के 500 मीटर की दूरी के अन्दर कोई राष्ट्रीय धरोहर/पुरातात्विक महत्व के स्थल स्थित नहीं है।
07.	क्या प्रस्तावित भूमि के 10 कि०मी० की परिधि में कोई अन्तर्राज्यीय सीमा है?	बरमसिया आमझारी	प्रस्तावित भूमि के 10 कि०मी० की परिधि में कोई अन्तर्राज्यीय सीमा नहीं है।

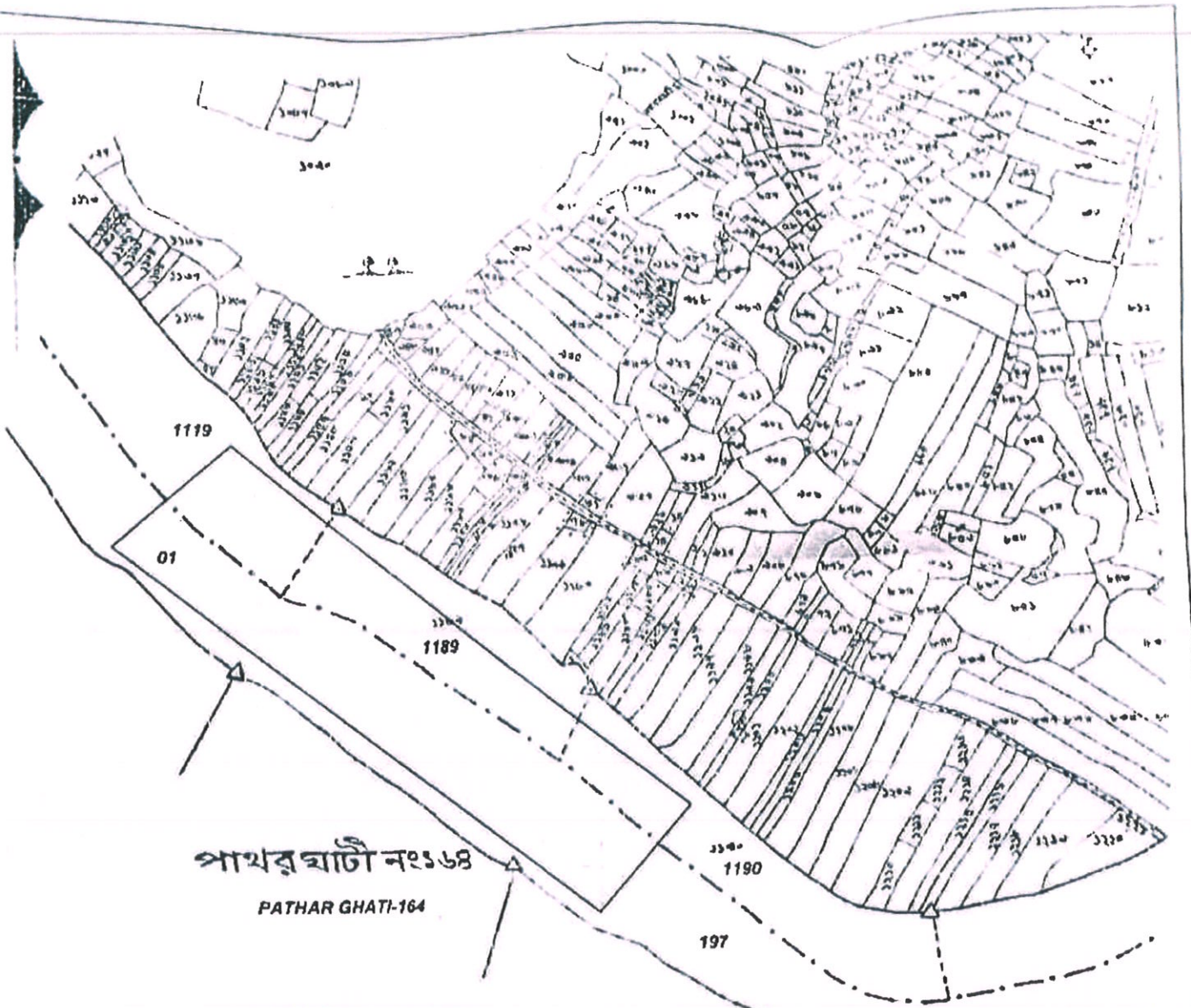
ज्ञातव्य हो कि बासलोई नदी पर मौजा बरमसिया एवं आमझारी में 7 Series Check Dams है। जो वृहद जलापूर्ति योजना से संबंधित है।

अनुलग्नक - नक्शा मूल रूप में दो प्रति।

विश्वासभाजन

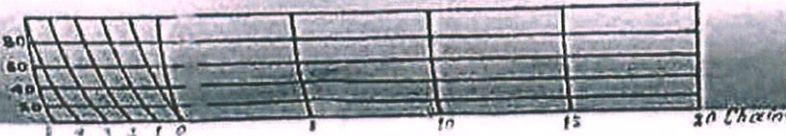
[Signature]
अंचल अधिकारी,
अमड़ापाड़ा।





পাথরঘাটা নং ১৬৪
PATHAR GHATI-164



Scale 1/8 inches = 1 Mile



গ্রাম - পাথরঘাটা থানা - ১৬৪
প.স - পাথরঘাটা থানা - ১৬৫
প্লট নং - ১৯৭/৪

GRAM - PATHAR GHATI,
P.S - MAHESHPUR, THANA NO.-164
DISTRICT - PAKUR
PLOT NO. 01 (P) ~~১৯৭/৪~~
GRAM - SINGNA,
P.S - MAHESHPUR, THANA NO.-163
DISTRICT - PAKUR
PLOT NO. 1119(P), 1189(P), & 1190(P)
TOTAL AREA - 6.37 HA.

INDEX

-  PROPOSED POTENTIAL AREA OF SAND
-  OTHER PLOTS

স্কেল ১/৮" ইঞ্চি = ১ মাইল
সন ১৯২৬ — ২৭ ই:

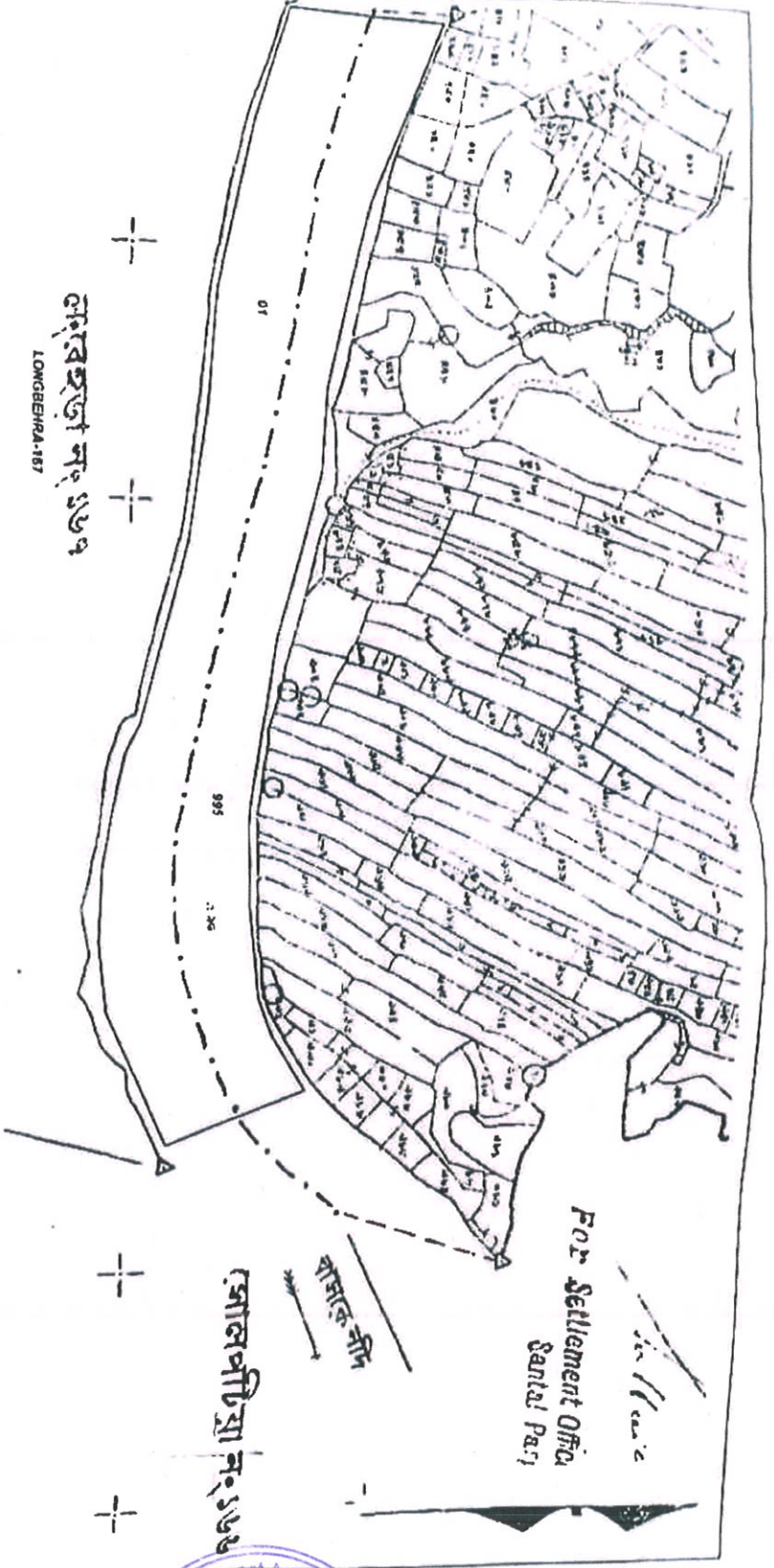
অমল আমীন
মহেশপুর

লুৎফুল্লাহ
রাজেন্দ্র ডব নিরীক্ষক

অমল নিরীক্ষক
মহেশপুর

অমল
মহেশপুর





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PROPOSED POTENTIAL AREA

OTHER PLOTS

GRAM-KHEBODIA
P.S. MAHESHBER
THANA NO. 13, DISTRICT - PARJ, JHARKHAND
PLOT NO. 995/1
GRAM - LONGBERHA
P.S. MAHESHBER
THANA NO. - 13, DISTRICT - PARJ
PLOT NO. - 119
AREA - 97 HA.

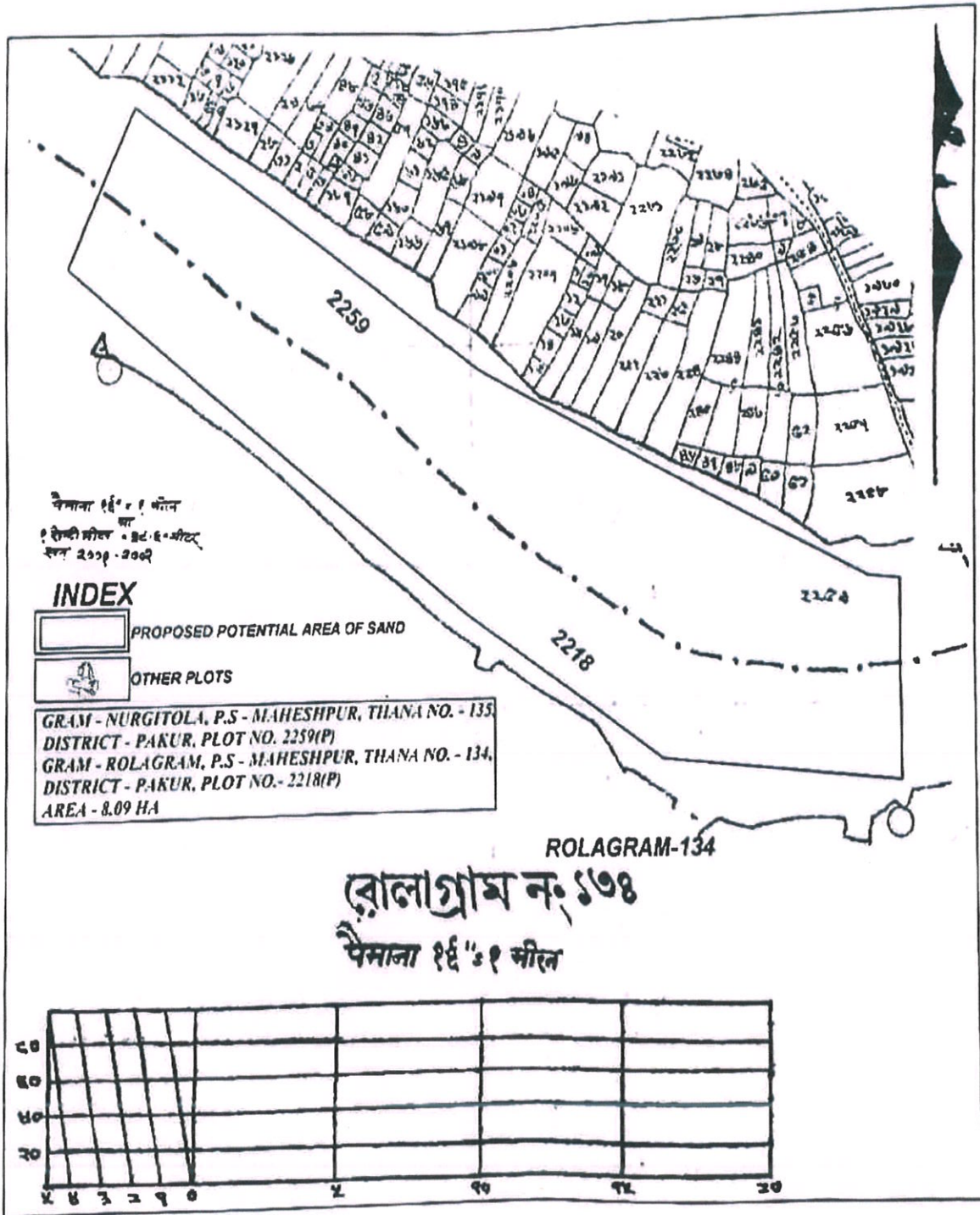


সমালপাড়া
নং ১৮৭
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নং ১৮৭
সমালপাড়া



11.01.23
 अंचल अमीन
 महेशपुर

राजस्व उप निरीक्षक
 महेशपुर

अंचल निरीक्षक
 महेशपुर

अंचल आधिकारी
 महेशपुर



SANTAL PARGANAS.

সনতপাড়া

গ্রাম

চলিত নাম

শিল্প

সংখ্যা ১৫

লাংগুয়া

সংখ্যা ১৫

সংখ্যা ১৫

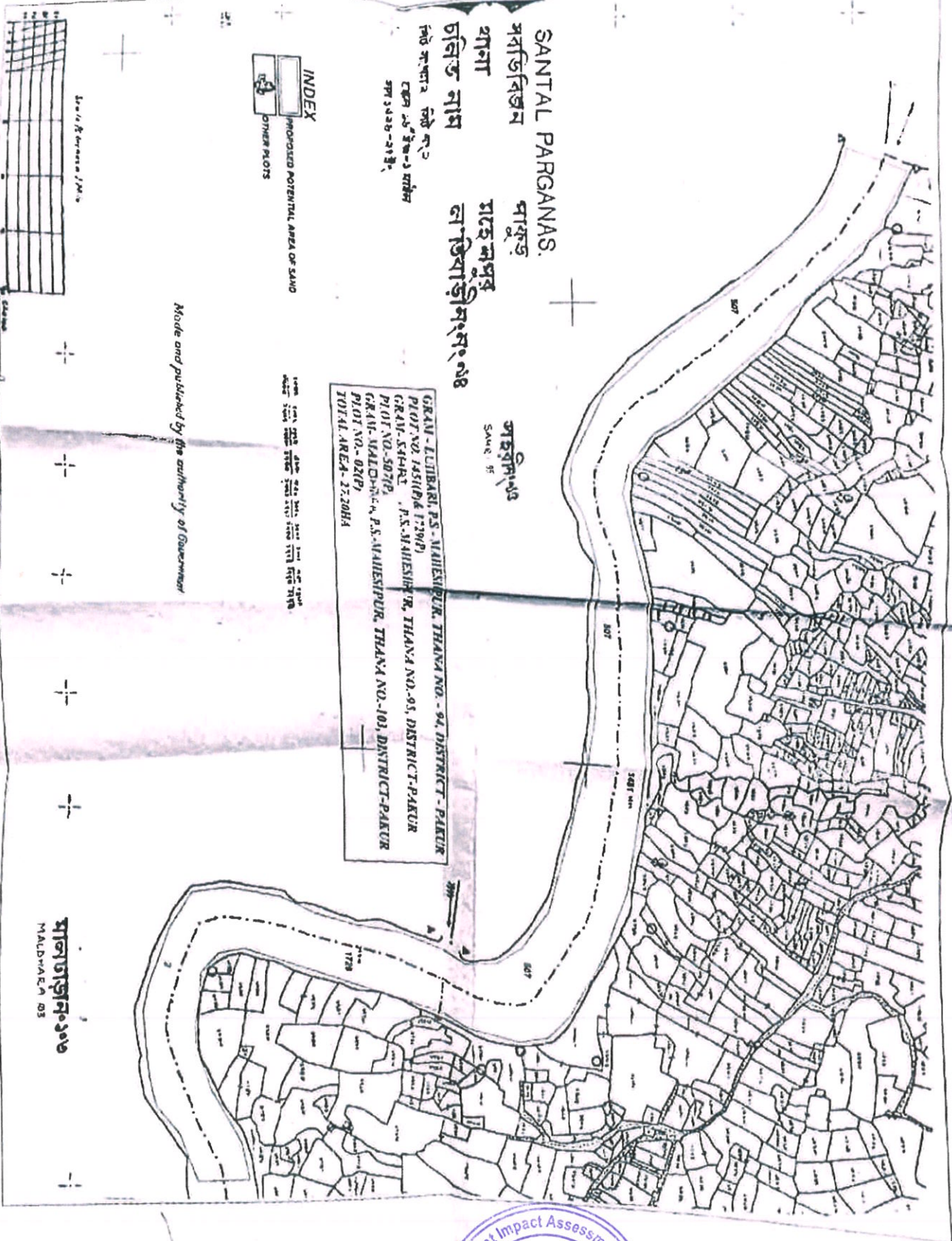
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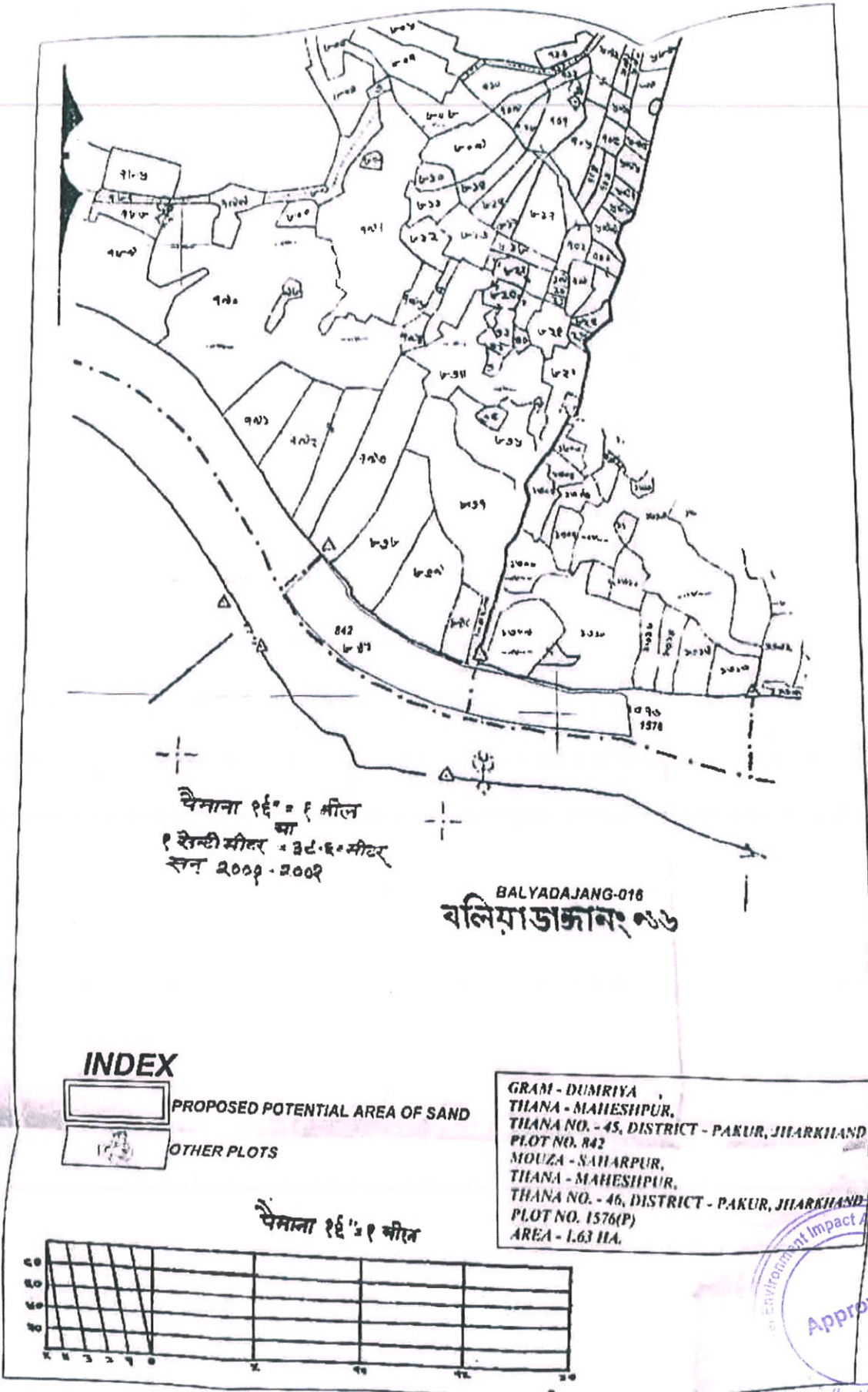
PROPOSED POTENTIAL AREA OF SAND	১
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GRAN-LEUBARI P.S.-MAHESHPUR, THANA NO.- 94, DISTRICT-PAKUR
 PLOT NO 1451(P/4 1796P)
 GRAN-SAMRAI, P.S.-MAHESHPUR, THANA NO.-95, DISTRICT-PAKUR
 PLOT NO-507P
 GRAN-MALDAN, P.S.-MAHESHPUR, THANA NO.-101, DISTRICT-PAKUR
 PLOT NO.-02(P)
 TOTAL AREA- 27.20HA

Made and published by the authority of Government

মালদহ জেলা
MALDAH 03

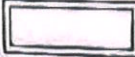





पैमाना १ ई' = १ मीटर
 वा
 १ सेंटीमीटर = ३६.६ मीटर
 सन २००९-२००९

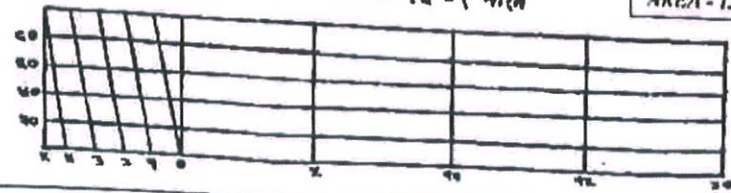
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 THANA - MAHESHPUR,
 THANA NO. - 46, DISTRICT - PAKUR, JHARKHAND
 PLOT NO. 1576(P)
 AREA - 1.63 HA.

पैमाना १ ई' = १ मीटर



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 आचल आमीन
 गढ़वापुर

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 राजेश ३९ निरीक्षक

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 अचल निरीक्षक
 गढ़वापुर

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 अचल आचमरी
 गढ़वापुर

SANTAL PARGANAS

मंत्रप्रतिष्ठान भाकुड

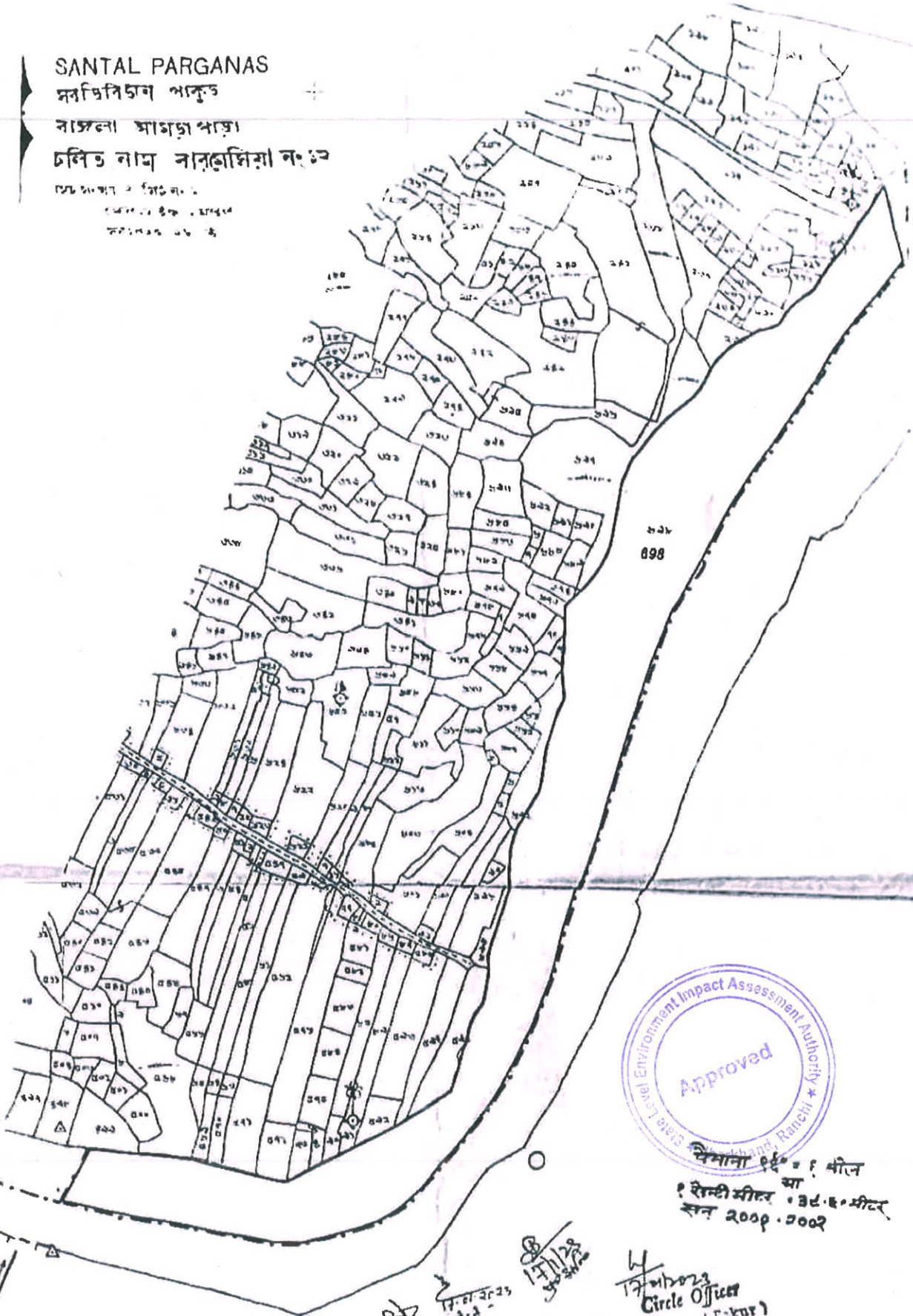
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दलित नाम नानुदामिना नं. १२

एच.ए.आर. नं. १२

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२००१-०२ ई.स. २००२-०३

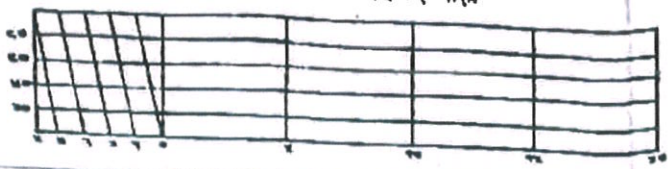


विमाना १६' x ९ मीटर
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Circle Officer
 (Pakur)

मि. व. २०२३
 ११-३-०२
 ११/३/०२

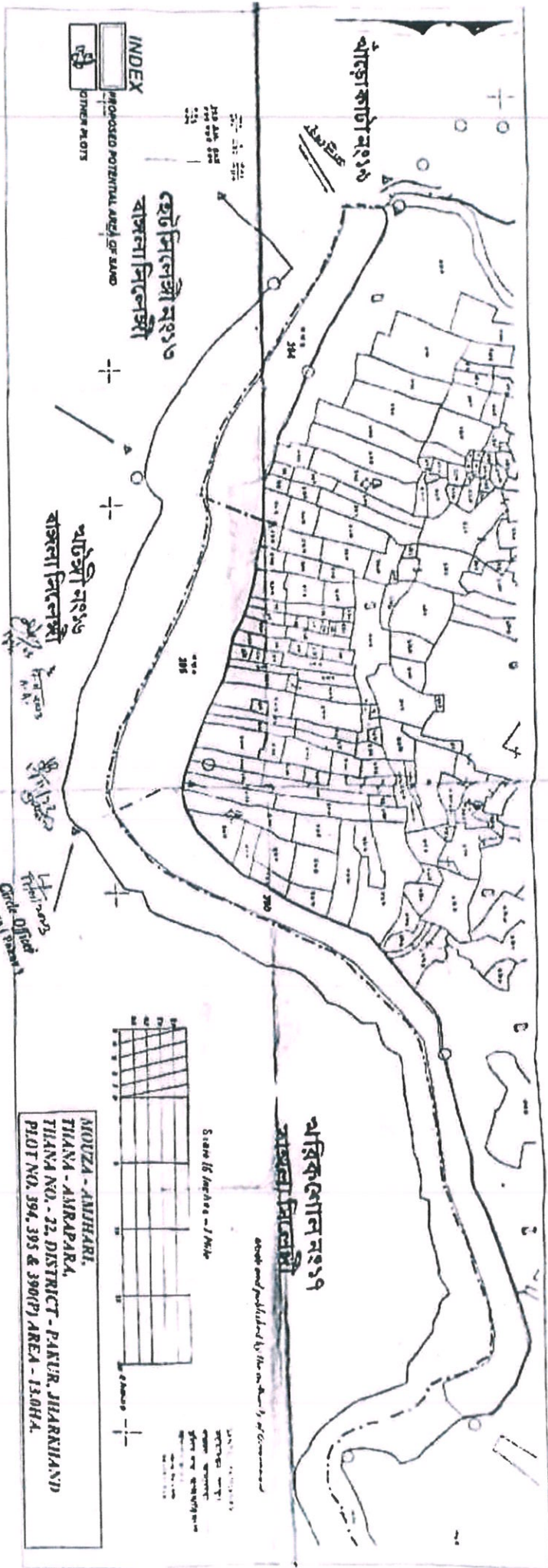
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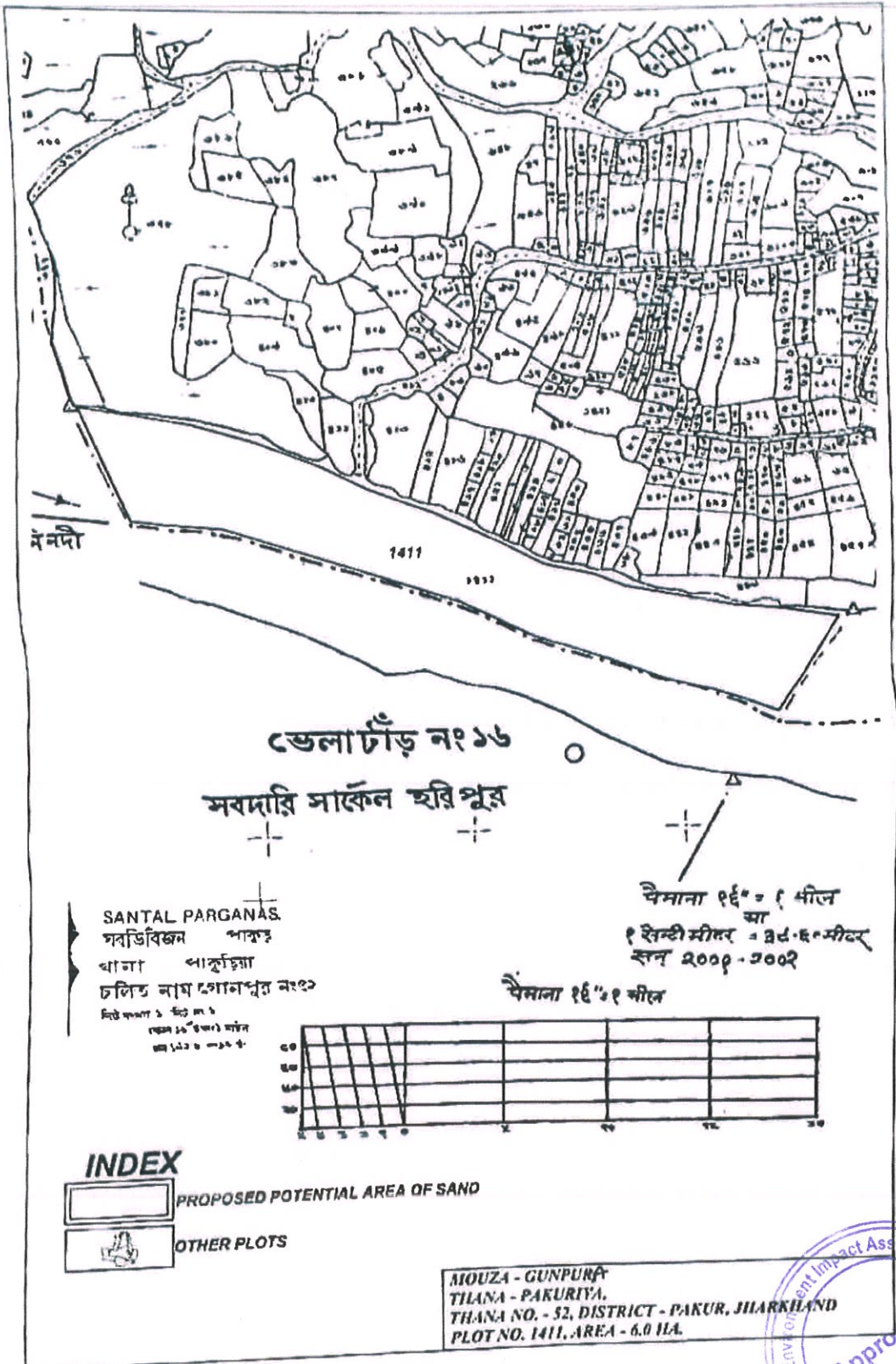
MOUZA - BARMANSI,
 THANA - AMRAPARA,
 THANE NO. - 12, DISTRICT - PAKUR, JHARHAND
 PLOT NO. 898, AREA - 11.29 HA.



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 TIANA - AMRABARA,
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5/11/25

अधीन इलाहाबाद
पाकुड़िया

11/11/25
अधीन इलाहाबाद
पाकुड़िया

अधीन इलाहाबाद
अधीन इलाहाबाद
पाकुड़िया

अधीन इलाहाबाद
अधीन इलाहाबाद
पाकुड़िया

GRAU - BARASINGHUR,
 P.S - PAATERIA,
 THANA NO. - 26, DISTRICT - PALER, JHARKHAND
 PLOT NO. 141 : AREA - 1160 HA.

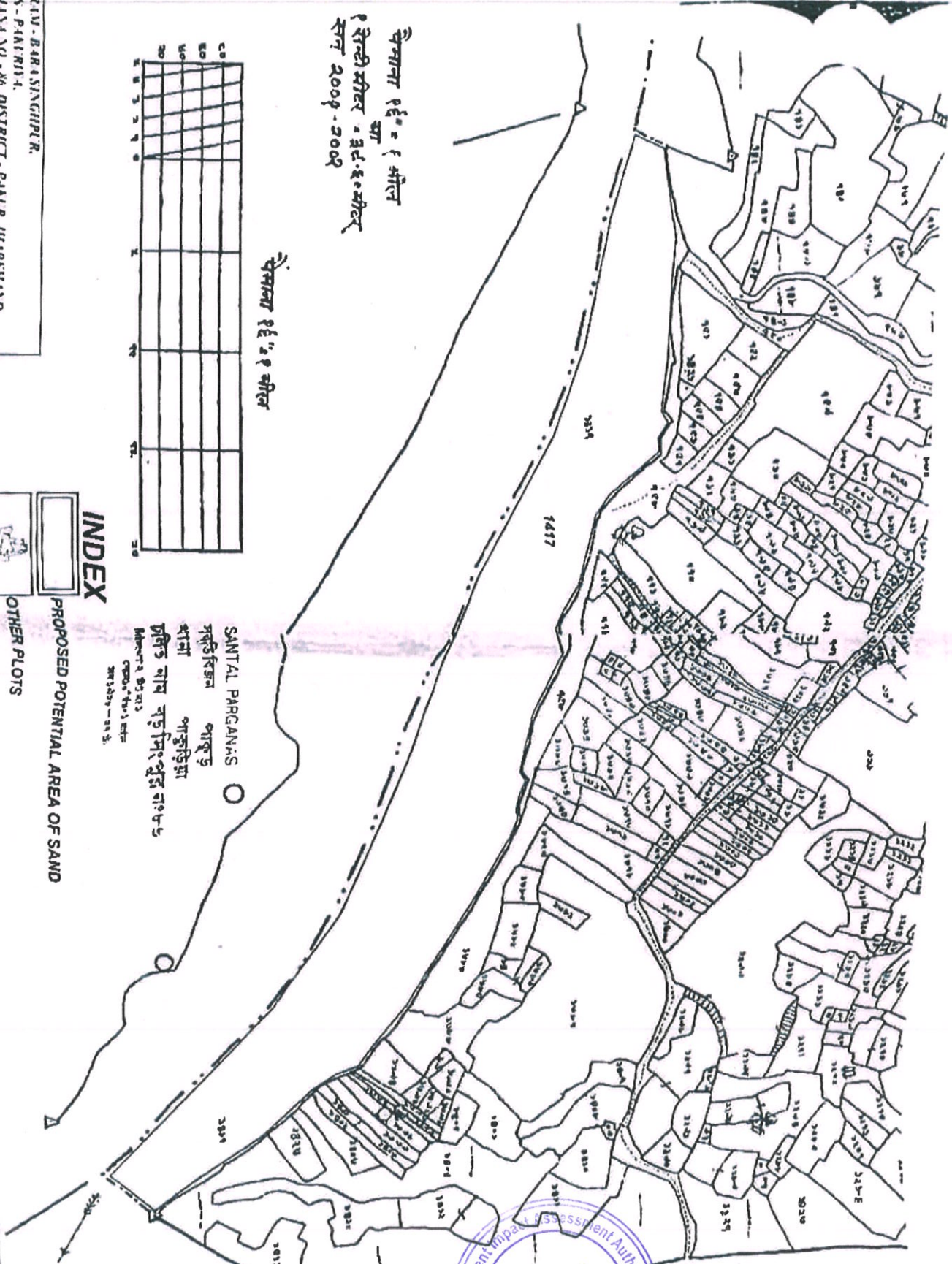
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 १ सेन्टीमीटर = ३६.६०मीटर
 स्का २००१ - २००१

विमानत १६" x १ मीटर

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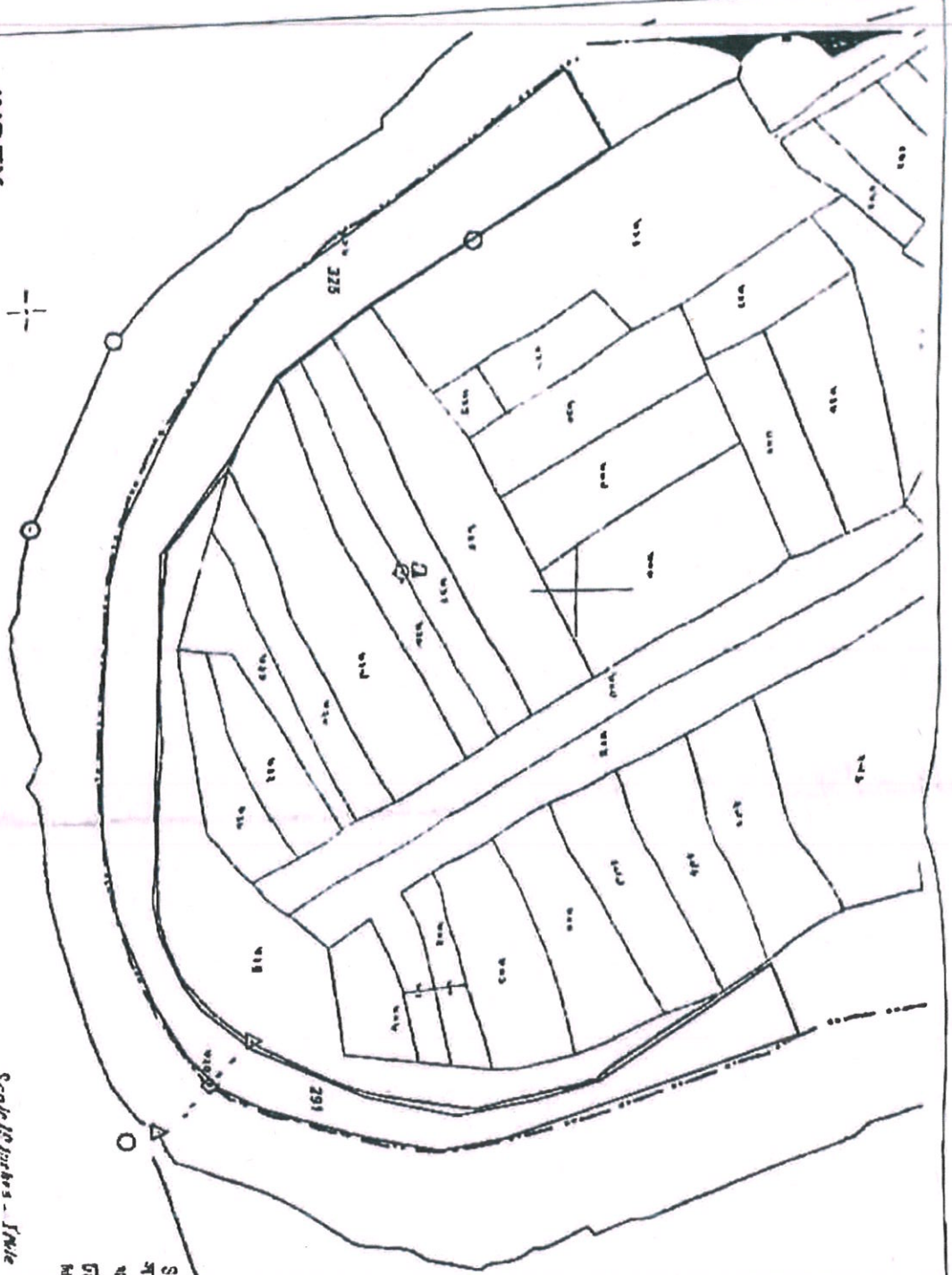
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 खाना गुरुकुल
 टिकिस नाम नरुमिगुनर गुरुकुल
 141/1
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 26/03/2011
 26/03/2011
 26/03/2011
 26/03/2011

नारायणपुर नर ७
 थाना रामपुर हाट
 जेना सिरहुमा



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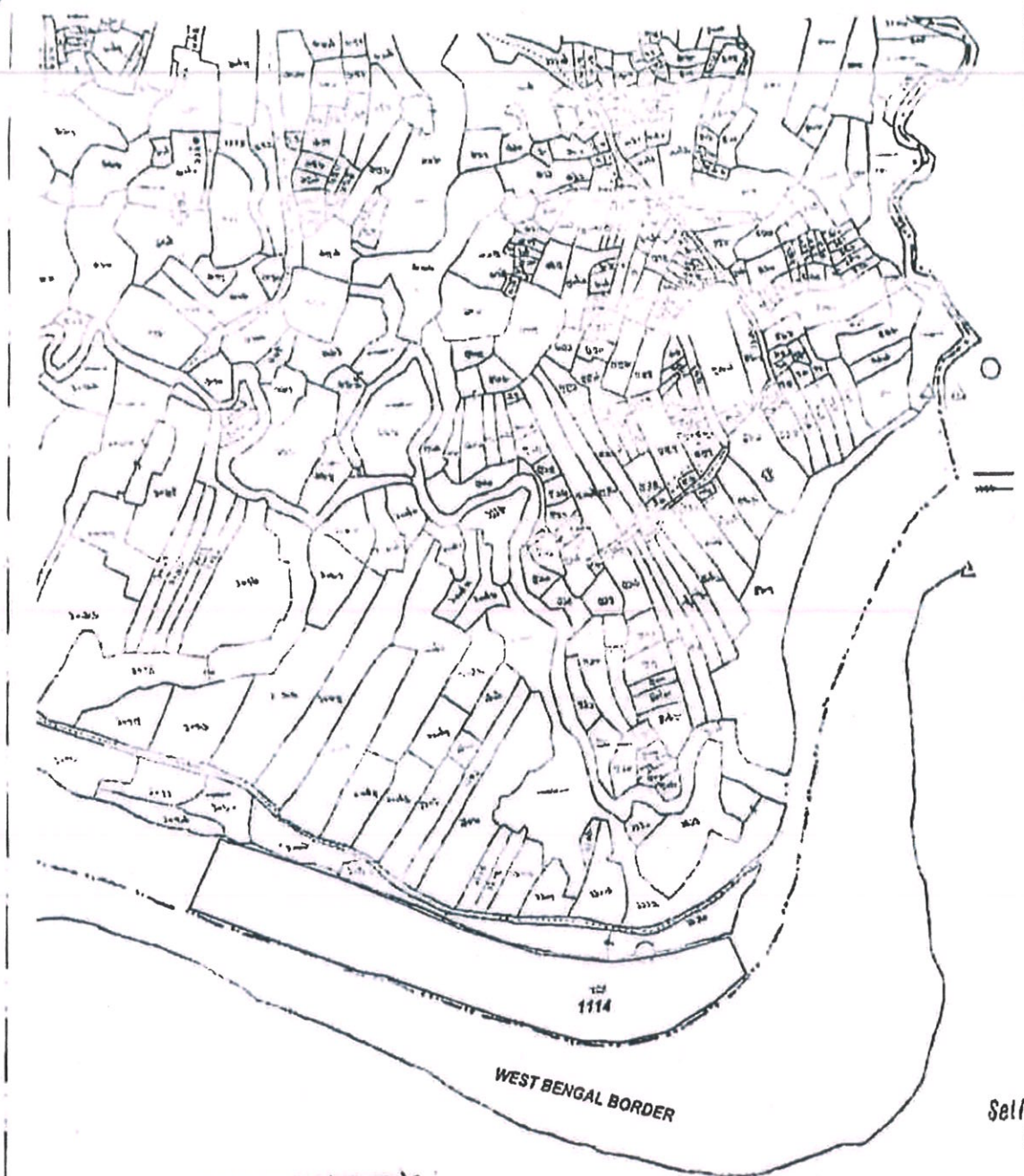
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 P.S. - PAHARI,
 THANA NO. - 8, DISTRICT - PALAMU (JHARKHAND)
 PLOT NO. 225 & 291 (P). AREA - 2.5314.

Scale 10 meters - 1/5000

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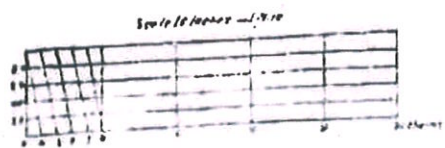
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 धरमपुर
 जिला नारायणपुर
 थाना रामपुर
 प्लॉट नं. 225 & 291
 क्षेत्रफल 2.5314 हे.

Prepared by: [Signature]
 Checked by: [Signature]
 Approved by: [Signature]



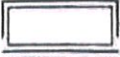

নারায়ণপুর নং ৩
 খানা স্থান পুকুর হাট
 জেলা বীরভূম

SANTAL PARGANAS.
 নবডি বিজন পাকুড়
 খানা পাকুড়িয়া
 চলিত নাঘ ঘূর্নী নং ৮৮
 প্লট নং ১ পিট নং ১



SHAHA NU. - 66, DISTRICT - FARUK, JHARKHAND
 PLOT NO. 1114P, AREA - 3.60 HA.

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 পাকুড়িয়া

[Signature]
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 পাকুড়িয়া

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 ২৬/১০/১০
 পাকুড়িয়া

[Signature]
 অঞ্চল অধীক্ষক
 পাকুড়িয়া

ANNEXURE-02

COPY OF DFO LETTER



Annexure-I- Report Format

Distance from notified Forest, National park, Sanctuary & Eco Sensitive Zone

Name of Applicant: DISTRICT MINING OFFICE PAKUR

Organization Name:- DISTRICT MINING OFFICE PAKUR ACK No.-SWSFST11012023a7985

Email ID: dmo-pakur@jharkhandmail.gov.in Contact: 7979883519

Location of Proposed Land: PATHAR GHATI, SINGNA, SOLAPATIYA, PATHARGHATI

Latitude of Battery Point :- 24.23846384, 24.48760278, Longitude of Battery Point:- 87.73171944,
24.48463611, 24.48536389 87.73068611, 87.73457222, 87.73829722

District: PAKUR

Name of the Circle: MAHESHPUR

Thana Name: PAKUR

Thana No: 164, 163, 166, 165

Plot/Khesra No: 01P,1119P,1189P,1190P, 01P, 197P

Khata No: NA

S.L.	Checkpoint	Division Forest Office	Ranger Forest Office
1	Whether Distance of Project location from Reserved Forest/Protected Forest is 250m ?	No	No
2	Whether Project Location come under No Mining Zone ?	No	No
3	Is there any National Park situated within a radius of 10 km from the battery point?	No	No
4	Is there any Wild Life Sanctuary situated within a radius of 10 km from the battery point?	No	No
5	Is the proposed project situated in any Eco Sensitive Zone?	No	No
6	Is there any notified Bio-Diversity area within a radius of 10 km from the battery point?	No	No

Note: (1) This report is based on the documents made available by applicant. Responsibility of any discrepancy in report will lie on the applicant. Further it is stated that the distance from the forest Land is based on the report of the Online report of Range Officer, Pakur and also available maps and current working plan in Division office.

(2) If the status land as per revenue records is Jungal Jhari, then as per Honb'le Supreme Court's Judgment passed in WP. 202/1995, it will attract provisions of Forest Conservation Act 1980 to carry out non-forestry activities. If in future the legal status of adjoining land is changed from non-forest land to forest land by a government order/ notification, fresh certificate will have to be obtained.

(3) Currently Large Number of Crusher are already operating in different parts of the District and thereby causing large scale air and water pollution there should be an upper limit for the number of quarrying and so crusher units to be permitted in the district. Because of the operation of large scale Stone quarrying and crushing operation causing a great hindrance in the movement of wild animals in General and Elephants in particular and that may led to increase in Man-Animal conflict.

Division- PAKUR FOREST DIVISION

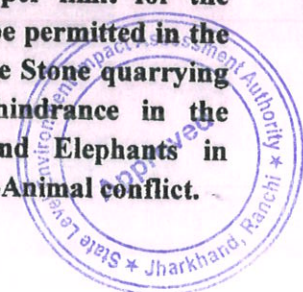
Letter No. 248

Date of Issue 04.02.2023

Signature.....

Divisional Forest Officer
Pakur Forest Division
Pakur

[Handwritten Signature]



Annexure-I- Report Format

Distance from notified Forest, National park, Sanctuary & Eco Sensitive Zone

Name of Applicant: DISTRICT MINING OFFICE PAKUR

Organization Name:- DISTRICT MINING OFFICE PAKUR ACK No.-SWSFST11012023ebd7a

Email ID: dmo-pakur@jharkhandmail.gov.in Contact: 7979883519

Location of Proposed Land: BABUDAHA AND LONGBEHRA

Latitude of Battery Point :- 24.49044167, 24.48924722, Longitude of Battery Point:- 87.7220500,
24.49068333, 24.49174722 87.72260278, 87.71484167, 87.71476667

District: PAKUR

Name of the Circle: MAHESHPUR

Thana Name: PAKUR

Thana No: 137, 167

Plot/Khesra No: 995P, 1P

Khata No: NA

S.L.	Checkpoint	Division Forest Office	Ranger Forest Office
1	Whether Distance of Project location from Reserved Forest/Protected Forest is 250m ?	Yes	Yes
2	Whether Project Location come under No Mining Zone ?	No	No
3	Is there any National Park situated within a radius of 10 km from the battery point?	No	No
4	Is there any Wild Life Sanctuary situated within a radius of 10 km from the battery point?	No	No
5	Is the proposed project situated in any Eco Sensitive Zone?	No	No
6	Is there any notified Bio-Diversity area within a radius of 10 km from the battery point?	No	No

Note: (1) This report is based on the documents made available by applicant. Responsibility of any discrepancy in report will lie on the applicant. Further it is stated that the distance from the forest Land is based on the report of the Online report of Range Officer, Pakur and also available maps and current working plan in Division office.

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Division- PAKUR FOREST DIVISION

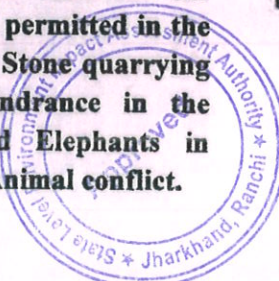
Letter No.....252.....

Date of Issue.....04.02.2023.....

Signature.....

Divisional Forest Officer
Pakur Forest Division
Pakur

Suresh



Annexure-I- Report Format

Distance from notified Forest, National park, Sanctuary & Eco Sensitive Zone

Name of Applicant: DISTRICT MINING OFFICE PAKUR

Organization Name:- DISTRICT MINING OFFICE PAKUR ACK No.-SWSFST12012023886a7

Email ID: dmo-pakur@jharkhandmail.gov.in Contact: 7979883519

Location of Proposed Land: NURGITOLA & ROLARGRAM

Latitude of Battery Point :- 24.48638611, 24.48502500, Longitude of Battery Point:- 87.70304167,
24.48795556, 24.48896111, 87.70299167, 87.69696667, 87.69715000

District: PAKUR

Name of the Circle: MAHESHPUR

Thana Name: PAKUR

Thana No: 135, 134

Plot/Khesra No: 2259P,2218P

Khata No: NA

S.L.	Checkpoint	Division Forest Office	Ranger Forest Office
1	Whether Distance of Project location from Reserved Forest/Protected Forest is 250m ?	Yes	Yes
2	Whether Project Location come under No Mining Zone ?	No	No
3	Is there any National Park situated within a radius of 10 km from the battery point?	No	No
4	Is there any Wild Life Sanctuary situated within a radius of 10 km from the battery point?	No	No
5	Is the proposed project situated in any Eco Sensitive Zone?	No	No
6	Is there any notified Bio-Diversity area within a radius of 10 km from the battery point?	No	No

Note: (1) This report is based on the documents made available by applicant. Responsibility of any discrepancy in report will lie on the applicant. Further it is stated that the distance from the forest Land is based on the report of the Online report of Range Officer, Pakur and also available maps and current working plan in Division office.

(2) If the status land as per revenue records is Jungal Jhari, then as per Honb'le Supreme Court's Judgment passed in WP. 202/1995, it will attract provisions of Forest Conservation Act 1980 to carry out non-forestry activities. If in future the legal status of adjoining land is changed from non-forest land to forest land by a government order/ notification, fresh certificate will have to be obtained.

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Division- PAKUR FOREST DIVISION

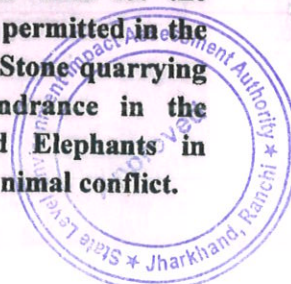
Letter No..... 263

Date of Issue..... 06.02.2023

Signature.....

Divisional Forest Officer
Pakur Forest Division

Pakur



Annexure-I- Report Format

Distance from notified Forest, National park, Sanctuary & Eco Sensitive Zone

Name of Applicant: DISTRICT MINING OFFICE PAKUR

Organization Name:- DISTRICT MINING OFFICE PAKUR ACK No.-SWSFST120120232a0ac

Email ID: dmo-pakur@jharkhandmail.gov.in

Contact: 7979883519

Location of Proposed Land: LUTIBARI SAHRI & MALDHARA

Latitude of Battery Point :- 24.48966944, 24.48905556, 24.48975556, 24.49511111, 24.49611667, 24.50028611, 24.50109444, 24.49662778

Longitude of Battery Point:- 87.63825278, 87.63843056, 87.63532500, 87.63538056, 87.62668889, 87.62048333, 87.62179167, 87.62848611

District: PAKUR

Name of the Circle: MAHESHPUR

Thana Name: PAKUR

Thana No: 94,95,103

Plot/Khesra No: 1451P, 1729P, 507P, 02P

Khata No: NA

S.L.	Checkpoint	Division Forest Office	Ranger Forest Office
1	Whether Distance of Project location from Reserved Forest/Protected Forest is 250m ?	No	No
2	Whether Project Location come under No Mining Zone ?	No	No
3	Is there any National Park situated within a radius of 10 km from the battery point?	No	No
4	Is there any Wild Life Sanctuary situated within a radius of 10 km from the battery point?	No	No
5	Is the proposed project situated in any Eco Sensitive Zone?	No	No
6	Is there any notified Bio-Diversity area within a radius of 10 km from the battery point?	No	No

Note: (1) This report is based on the documents made available by applicant. Responsibility of any discrepancy in report will lie on the applicant. Further it is stated that the distance from the forest Land is based on the report of the Online report of Range Officer, Pakur and also available maps and current working plan in Division office.

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Division- **PAKUR FOREST DIVISION**

Letter No..... **249**

Date of Issue..... **04.02.2023**

Signature.....

Divisional Forest Officer
Pakur Forest Division
Pakur

Suresh

Annexure-I- Report Format

Distance from notified Forest, National park, Sanctuary & Eco Sensitive Zone

Name of Applicant: DISTRICT MINING OFFICE PAKUR

Organization Name:- DISTRICT MINING OFFICE PAKUR ACK No.-SWSFST1201202344a5a

Email ID: dmo-pakur@jharkhandmail.gov.in Contact: 7979883519

Location of Proposed Land: DUMRIYA & SAHARPUR

Latitude of Battery Point :- 24.5004778, 24.50001389, Longitude of Battery Point:- 87.50753056,
24.50098056, 24.50124722, 87.60751111, 87.6045389, 87.6047444

District: PAKUR

Name of the Circle: MAHESHPUR

Thana Name: PAKUR

Thana No: 45, 46

Plot/Khesra No: 842, 1576P

Khata No: NA

S.L.	Checkpoint	Division Forest Office	Ranger Forest Office
1	Whether Distance of Project location from Reserved Forest/Protected Forest is 250m ?	Yes	Yes
2	Whether Project Location come under No Mining Zone ?	No	No
3	Is there any National Park situated within a radius of 10 km from the battery point?	No	No
4	Is there any Wild Life Sanctuary situated within a radius of 10 km from the battery point?	No	No
5	Is the proposed project situated in any Eco Sensitive Zone?	No	No
6	Is there any notified Bio-Diversity area within a radius of 10 km from the battery point?	No	No

Note: (1) This report is based on the documents made available by applicant. Responsibility of any discrepancy in report will lie on the applicant. Further it is stated that the distance from the forest Land is based on the report of the Online report of Range Officer, Pakur and also available maps and current working plan in Division office.

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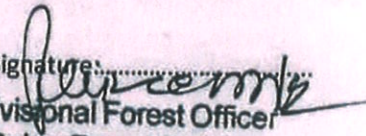
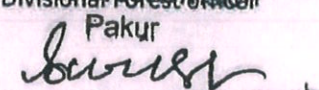
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Division- **PAKUR FOREST DIVISION**

Letter No..... **255**

Date of Issue..... **04.02.2023**

Signature: 
Divisional Forest Officer
Pakur Forest Division
Pakur


Annexure-I- Report Format

Distance from notified Forest, National park, Sanctuary & Eco Sensitive Zone

Name of Applicant: DISTRICT MINING OFFICE PAKUR

Organization Name:- DISTRICT MINING OFFICE PAKUR ACK No.-SWSFST1101202318f8c

Email ID: dmo-pakur@jharkhandmail.gov.in

Contact: 7979883519

Location of Proposed Land: AMJHARI

Latitude of Battery Point :- 24.52003056, 24.51978056,
24.51657778, 24.51876111, 24.51937222

Longitude of Battery Point:- 87.45467222,
87.45736944, 87.44336667, 87.43574444,
87.43572778

District: PAKUR

Name of the Circle: AMARAPARA

Thana Name: AMARAPARA

Thana No: 22

Plot/Khesra No: 394, 395, 390P

Khata No: NA

S.L.	Checkpoint	Division Forest Office	Ranger Forest Office
1	Whether Distance of Project location from Reserved Forest/Protected Forest is 250m ?	No	No
2	Whether Project Location come under No Mining Zone ?	No	No
3	Is there any National Park situated within a radius of 10 km from the battery point?	No	No
4	Is there any Wild Life Sanctuary situated within a radius of 10 km from the battery point?	No	No
5	Is the proposed project situated in any Eco Sensitive Zone?	No	No
6	Is there any notified Bio-Diversity area within a radius of 10 km from the battery point?	No	No

Note: (1) This report is based on the documents made available by applicant. Responsibility of any discrepancy in report will lie on the applicant. Further it is stated that the distance from the forest Land is based on the report of the Online report of Range Officer, Amarapara and also available maps and current working plan in Division office.

(2) If the status land as per revenue records is Jungal Jhari, then as per Honb'le Supreme Court's Judgment passed in WP. 202/1995, it will attract provisions of Forest Conservation Act 1980 to carry out non-forestry activities. If in future the legal status of adjoining land is changed from non-forest land to forest land by a government order/ notification, fresh certificate will have to be obtained.

(3) Currently Large Number of Crusher are already operating in different parts of the District and thereby causing large scale air and water pollution there should be an upper limit for the number of quarrying and so crusher units to be permitted in the district. Because of the operation of large scale Stone quarrying and crushing operation causing a great hindrance in the movement of wild animals in General and Elephants in particular and that may led to increase in Man-Animal conflict.



Division- **PAKUR FOREST DIVISION**

Letter No. 265

Date of Issue 06.02.2023

Signature.....

[Signature]
Divisional Forest Officer

Divisional Forest Officer

Pakur Forest Division

Pakur

[Signature]

Annexure-I- Report Format

Distance from notified Forest, National park, Sanctuary & Eco Sensitive Zone

Name of Applicant: DISTRICT MINING OFFICE PAKUR

Organization Name:- DISTRICT MINING OFFICE PAKUR

ACK No.-SWSFST1101202399d16

Email ID: dmo-pakur@jharkhandmail.gov.in

Contact: 7979883519

Location of Proposed Land: BARMASIA

Latitude of Battery Point :- 24.50827500, 24.50770833,
24.5185333, 24.51900833

Longitude of Battery Point:- 87.53364444,
87.53690833, 87.54538333, 87.54504167

District: PAKUR

Name of the Circle: AMARAPARA

Thana Name: BARMASIA

Thana No: 12

Plot/Khesra No: 698

Khata No: NA

S.L.	Checkpoint	Division Forest Office	Ranger Forest Office
1	Whether Distance of Project location from Reserved Forest/Protected Forest is 250m ?	No	No
2	Whether Project Location come under No Mining Zone ?	No	No
3	Is there any National Park situated within a radius of 10 km from the battery point?	No	No
4	Is there any Wild Life Sanctuary situated within a radius of 10 km from the battery point?	No	No
5	Is the proposed project situated in any Eco Sensitive Zone?	No	No
6	Is there any notified Bio-Diversity area within a radius of 10 km from the battery point?	No	No

Note: (1) This report is based on the documents made available by applicant. Responsibility of any discrepancy in report will lie on the applicant. Further it is stated that the distance from the forest Land is based on the report of the Online report of Range Officer, Amarapara and also available maps and current working plan in Division office.

(2) If the status land as per revenue records is Jungal Jhari, then as per Honb'le Supreme Court's Judgment passed in WP. 202/1995, it will attract provisions of Forest Conservation Act 1980 to carry out non-forestry activities. If in future the legal status of adjoining land is changed from non-forest land to forest land by a government order/ notification, fresh certificate will have to be obtained.

(3) Currently Large Number of Crusher are already operating in different parts of the District and thereby causing large scale air and water pollution there should be an upper limit for the number of quarrying and so crusher units to be permitted in the district. Because of the operation of large scale Stone quarrying and crushing operation causing a great hindrance in the movement of wild animals in General and Elephants in particular and that may led to increase in Man-Animal conflict.



Division- **PAKUR FOREST DIVISION**

Letter No. 266

Date of Issue 06.02.2023

Signature.....

[Signature]
Divisional Forest Officer

Pakur Forest Division

Pakur

[Signature]

Annexure-I- Report Format

Distance from notified Forest, National park, Sanctuary & Eco Sensitive Zone

Name of Applicant: DISTRICT MINING OFFICE PAKUR

Organization Name:- DISTRICT MINING OFFICE PAKUR

ACK No.-SWSFST1101202392e1e

Email ID: dmo-pakur@jharkhandmail.gov.in

Contact: 7979883519

Location of Proposed Land: GUNPUR RIVER-BRAHMANI

Latitude of Battery Point :- 24.25910278, 24.25723050,

Longitude of Battery Point:- 87.59850000,

24.25656667, 24.25855000,

87.60596311, 87.60582222, 87.59851389

District: PAKUR

Name of the Circle: PAKURIA

Thana Name: PAKUR

Thana No: 52

Plot/Khesra No: 1411

Khata No: NA

S.L.	Checkpoint	Division Forest Office	Ranger Forest Office
1	Whether Distance of Project location from Reserved Forest/Protected Forest is 250m ?	Yes	Yes
2	Whether Project Location come under No Mining Zone ?	No	No
3	Is there any National Park situated within a radius of 10 km from the battery point?	No	No
4	Is there any Wild Life Sanctuary situated within a radius of 10 km from the battery point?	No	No
5	Is the proposed project situated in any Eco Sensitive Zone?	No	No
6	Is there any notified Bio-Diversity area within a radius of 10 km from the battery point?	No	No

Note: (1) This report is based on the documents made available by applicant. Responsibility of any discrepancy in report will lie on the applicant. Further it is stated that the distance from the forest Land is based on the report of the Online report of Range Officer, Pakur and also available maps and current working plan in Division office.

(2) If the status land as per revenue records is Jungal Jhari, then as per Honb'le Supreme Court's Judgment passed in WP. 202/1995, it will attract provisions of Forest Conservation Act 1980 to carry out non-forestry activities. If in future the legal status of adjoining land is changed from non-forest land to forest land by a government order/ notification, fresh certificate will have to be obtained.

(3) Currently Large Number of Crusher are already operating in different parts of the District and thereby causing large scale air and water pollution there should be an upper limit for the number of quarrying and so crusher units to be permitted in the district. Because of the operation of large scale Stone quarrying and crushing operation causing a great hindrance in the movement of wild animals in General and Elephants in particular and that may led to increase in Man-Animal conflict.



Division- **PAKUR FOREST DIVISION**

Letter No..... **253**

Date of Issue..... **04.02.2023**

Signature.....
Divisional Forest Officer
Pakur Forest Division
Pakur

(Handwritten Signature)

Annexure-I- Report Format

Distance from notified Forest, National park, Sanctuary & Eco Sensitive Zone

Name of Applicant: DISTRICT MINING OFFICE PAKUR

Organization Name:- DISTRICT MINING OFFICE PAKUR

ACK No.-SWSFST1101202327e44

Email ID: dmo-pakur@jharkhandmail.gov.in

Contact: 7979883519

Location of Proposed Land: BARA SINGPUR

Latitude of Battery Point :- 24.25553056, 24.25127222,
24.25089167, 24.25451944,

Longitude of Battery Point:- 87.63907500,
87.4865000, 87.64812778, 87.63885556

District: PAKUR

Name of the Circle: PAKURIA

Thana Name: PAKUR

Thana No: 86

Plot/Khesra No: 1417

Khata No: NA

S.L.	Checkpoint	Division Forest Office	Ranger Forest Office
1	Whether Distance of Project location from Reserved Forest/Protected Forest is 250m ?	Yes	Yes
2	Whether Project Location come under No Mining Zone ?	No	No
3	Is there any National Park situated within a radius of 10 km from the battery point?	No	No
4	Is there any Wild Life Sanctuary situated within a radius of 10 km from the battery point?	No	No
5	Is the proposed project situated in any Eco Sensitive Zone?	No	No
6	Is there any notified Bio-Diversity area within a radius of 10 km from the battery point?	No	No

Note: (1) This report is based on the documents made available by applicant. Responsibility of any discrepancy in report will lie on the applicant. Further it is stated that the distance from the forest Land is based on the report of the Online report of Range Officer, Pakur and also available maps and current working plan in Division office.

(2) If the status land as per revenue records is Jungal Jhari, then as per Hon'ble Supreme Court's Judgment passed in WP. 202/1995, it will attract provisions of Forest Conservation Act 1980 to carry out non-forestry activities. If in future the legal status of adjoining land is changed from non-forest land to forest land by a government order/ notification, fresh certificate will have to be obtained.

(3) Currently Large Number of Crusher are already operating in different parts of the District and thereby causing large scale air and water pollution there should be an upper limit for the number of quarrying and so crusher units to be permitted in the district. Because of the operation of large scale Stone quarrying and crushing operation causing a great hindrance in the movement of wild animals in General and Elephants in particular and that may led to increase in Man-Animal conflict.



Division- **PAKUR FOREST DIVISION**

Letter No. **251**.....

Date of Issue **04.02.2023**.....

Signature.....
Divisional Forest Officer
Pakur Forest Division
Pakur
Sushant

Annexure-I- Report Format

Distance from notified Forest, National park, Sanctuary & Eco Sensitive Zone

Name of Applicant: DISTRICT MINING OFFICE PAKUR

Organization Name:- DISTRICT MINING OFFICE PAKUR ACK No.-SWSFST11012023a0c22

Email ID: dmo-pakur@jharkhandmail.gov.in Contact: 7979883519

Location of Proposed Land: BENAKURA

Latitude of Battery Point :- 24.23743056, 24.2370611, Longitude of Battery Point:- 87.65646389,
24.24432778, 24.24426389 87.656252278, 87.66220000, 87.6174167

District: PAKUR

Name of the Circle: PAKURIA

Thana Name: PAKUR

Thana No: 87

Plot/Khesra No: 291P, 316P, 325

Khata No: NA

S.L.	Checkpoint	Division Forest Office	Ranger Forest Office
1	Whether Distance of Project location from Reserved Forest/Protected Forest Is 250m ?	Yes	Yes
2	Whether Project Location come under No Mining Zone ?	No	No
3	Is there any National Park situated within a radius of 10 km from the battery point?	No	No
4	Is there any Wild Life Sanctuary situated within a radius of 10 km from the battery point?	No	No
5	Is the proposed project situated in any Eco Sensitive Zone?	No	No
6	Is there any notified Bio-Diversity area within a radius of 10 km from the battery point?	No	No

Note: (1) This report is based on the documents made available by applicant. Responsibility of any discrepancy in report will lie on the applicant. Further it is stated that the distance from the forest Land is based on the report of the Online report of Range Officer, Pakur and also available maps and current working plan in Division office.

(2) If the status land as per revenue records is Jungal Jhari, then as per Honb'le Supreme Court's Judgment passed in WP. 202/1995, it will attract provisions of Forest Conservation Act 1980 to carry out non-forestry activities. If in future the legal status of adjoining land is changed from non-forest land to forest land by a government order/ notification, fresh certificate will have to be obtained.

(3) Currently Large Number of Crusher are already operating in different parts of the District and thereby causing large scale air and water pollution there should be an upper limit for the number of quarrying and so crusher units to be permitted in the district. Because of the operation of large scale Stone quarrying and crushing operation causing a great hindrance in the movement of wild animals in General and Elephants in particular and that may led to increase in Man-Animal conflict.



Division- **PAKUR FOREST DIVISION**

Letter No..... **256**

Date of Issue..... **04.02.2023**

Signature.....
Divisional Forest Officer
Pakur Forest Division
Pakur

Annexure-I- Report Format

Distance from notified Forest, National park, Sanctuary & Eco Sensitive Zone

Name of Applicant: DISTRICT MINING OFFICE PAKUR

Organization Name:- DISTRICT MINING OFFICE PAKUR ACK No.-SWSFST11012023a509ec

Email ID: dmo-pakur@jharkhandmail.gov.in

Contact: 7979883519

Location of Proposed Land: GHURNI

Latitude of Battery Point :- 24.24567500, 24.24517778,
24.24499722, 24.24469722

Longitude of Battery Point:- 87.66683889,
87.766671111, 87.67156944, 87.67201111

District: PAKUR

Name of the Circle: PAKURIA

Thana Name: PAKUR

Thana No: 88

Plot/Khesra No: 1114P

Khata No: NA

S.L.	Checkpoint	Division Forest Office	Ranger Forest Office
1	Whether Distance of Project location from Reserved Forest/Protected Forest is 250m ?	Yes	Yes
2	Whether Project Location come under No Mining Zone ?	No	No
3	Is there any National Park situated within a radius of 10 km from the battery point?	No	No
4	Is there any Wild Life Sanctuary situated within a radius of 10 km from the battery point?	No	No
5	Is the proposed project situated in any Eco Sensitive Zone?	No	No
6	Is there any notified Bio-Diversity area within a radius of 10 km from the battery point?	No	No

Note: (1) This report is based on the documents made available by applicant. Responsibility of any discrepancy in report will lie on the applicant. Further it is stated that the distance from the forest Land is based on the report of the Online report of Range Officer, Pakur and also available maps and current working plan in Division office.

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Division- **PAKUR FOREST DIVISION**

Letter No. 250

Date of Issue. 04.02.2023

Signature.....

Divisional Forest Officer
Pakur Forest Division

Pakur

ANNEXURE-03

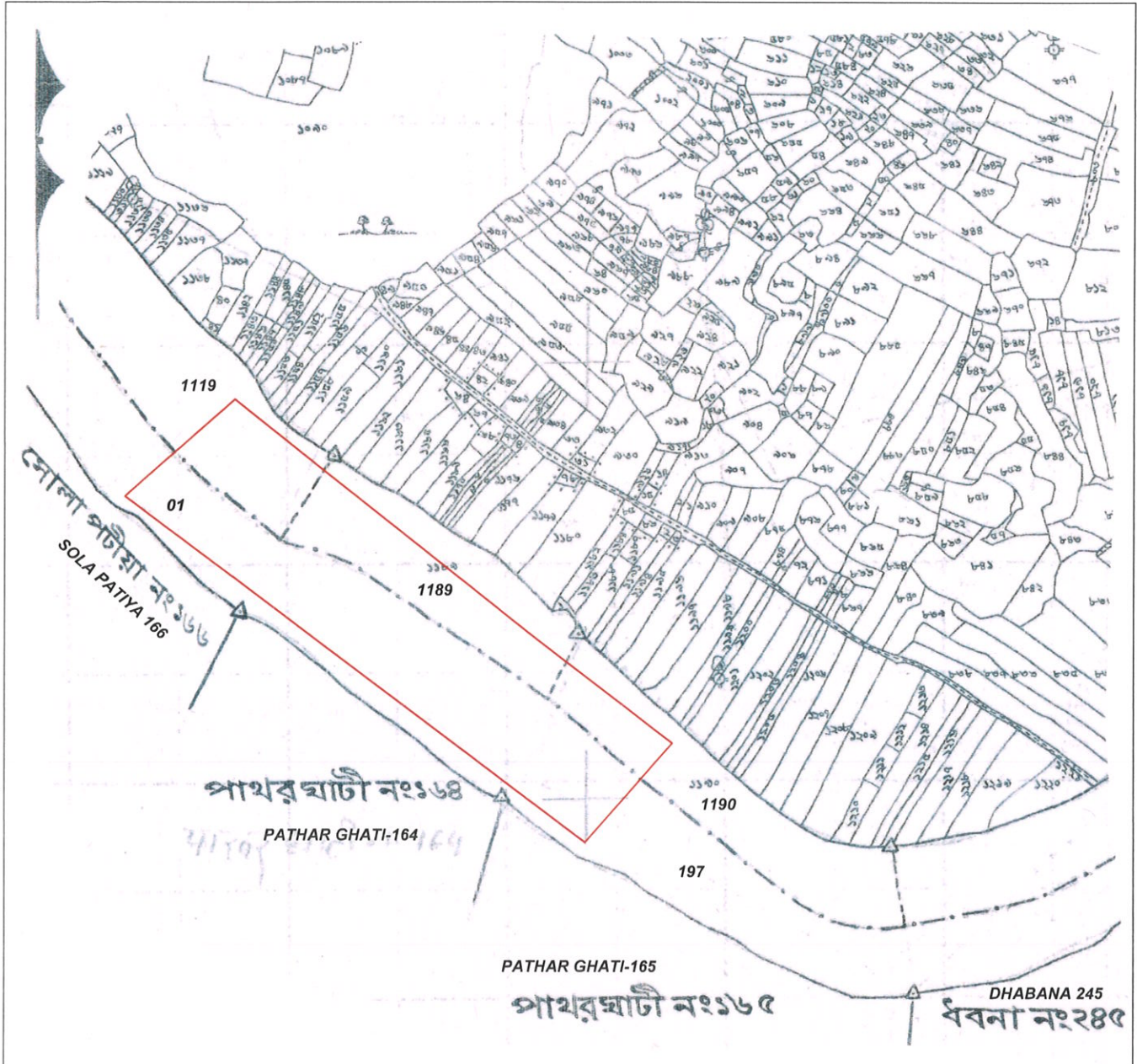
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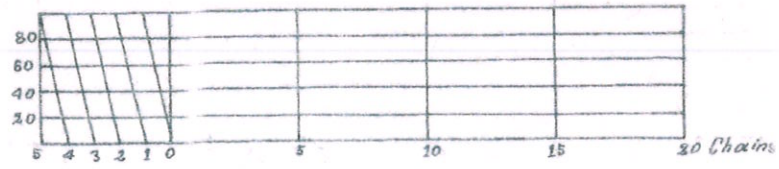
ANNEXURE-04

CADASTRAL MAP OF **POTENTIAL AREA OF SAND**





Scale 16 inches = 1 Mile



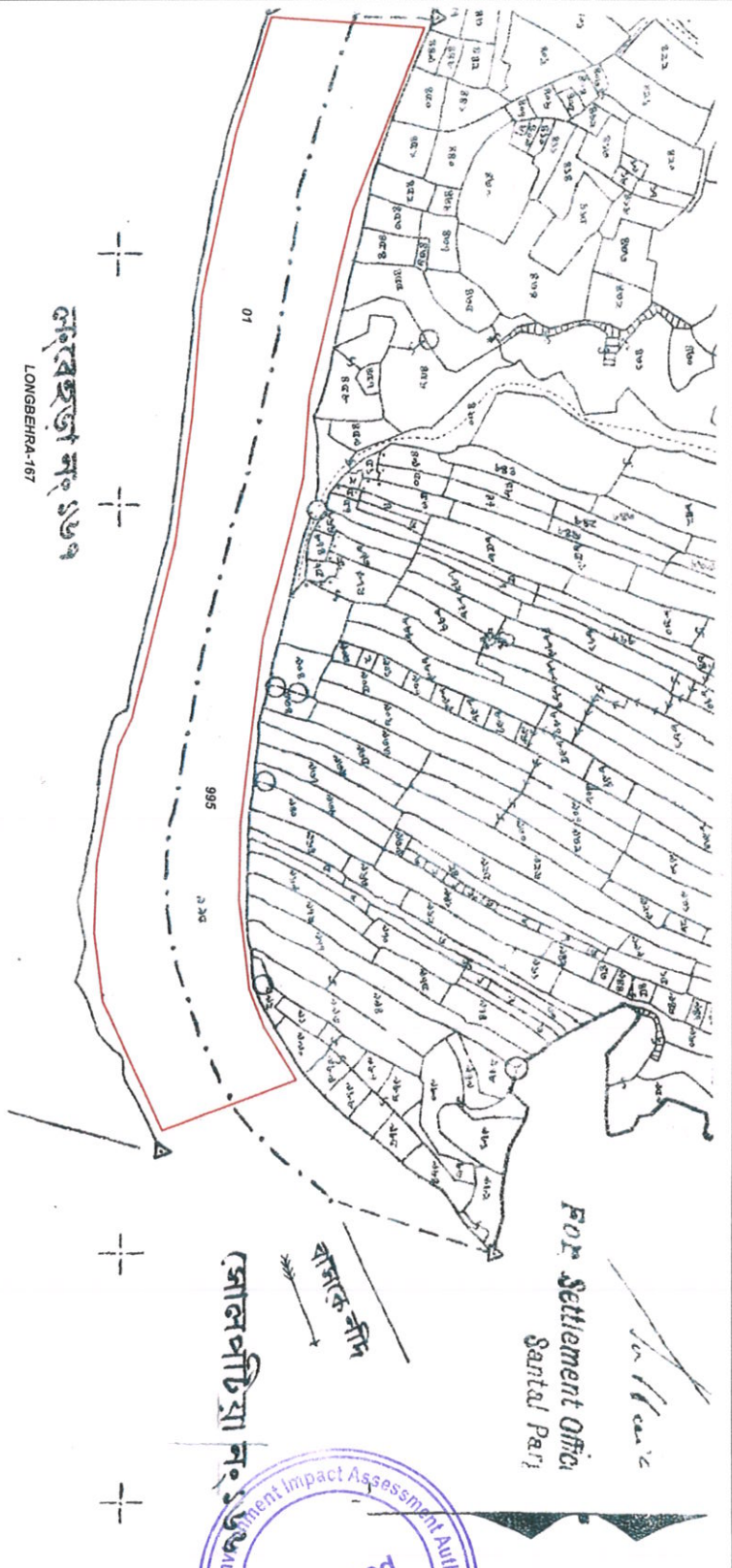
স্কেল ১৬" ইঞ্চি = ১ মাইল
সন ১৯২৬ — ২৭ই

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GRAM - PATHAR GHATI,
P.S - MAHESHPUR, THANA NO.-164
DISTRICT - PAKUR
PLOT NO. 01(P)
GRAM - SOLA PATIYA,
P.S - MAHESHPUR, THANA NO.-166
DISTRICT - PAKUR
PLOT NO. 01(P)
GRAM - PATHAR GHATI,
P.S - MAHESHPUR, THANA NO.-165
DISTRICT - PAKUR
PLOT NO. 197(P)
TOTAL AREA - 6.57 HA.





Approved
 State Level Environment Impact Assessment Authority
 Jharkhand, Ranchi

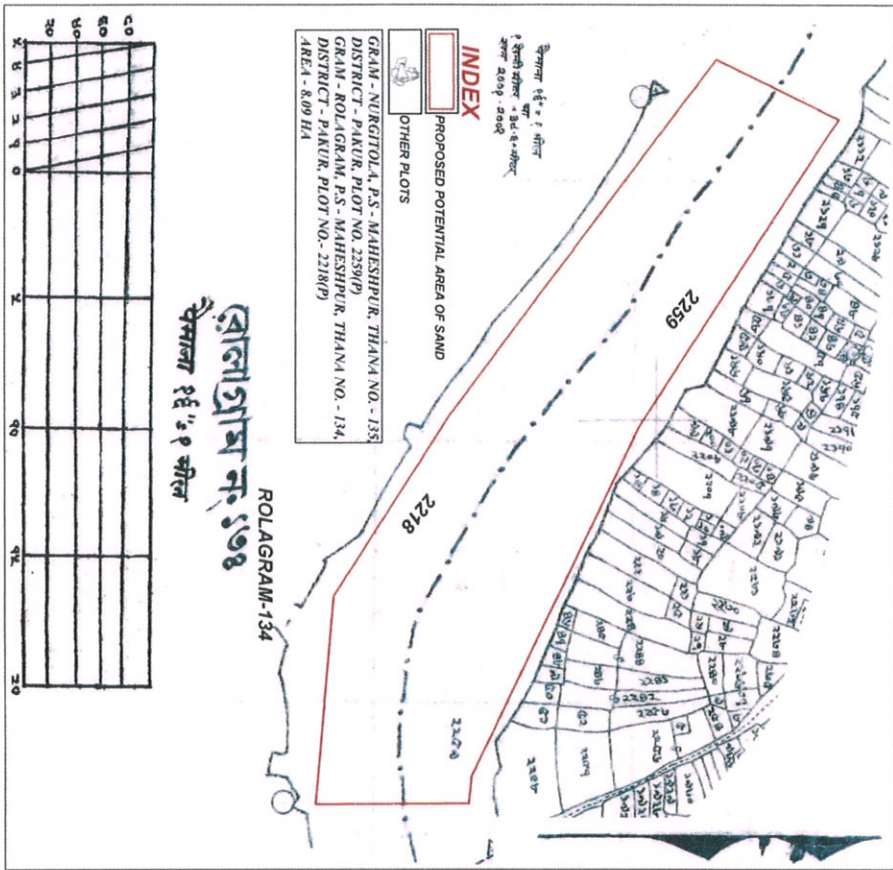
लम्बेखत नं. १७७
 LONGBEHRA-167

Scale 1:10,000 = 1 Mile

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60					
40					
20					
0	0	5	10	15	20 Chakras

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 PLOT NO. 995(P)
 GRAM - LONGBEHRA,
 P.S. - MAHESHPUR,
 THANA NO. - 167, DISTRICT - PAKUR
 PLOT NO. - 100
 AREA - 9.21 HA.



चिह्नित क्षेत्र २.१ मीटर
 १ सेमी प्रति १ कि.मी. स्केल पर
 क्षेत्र २००१.००००

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 DISTRICT - PAKUR, PLOT NO. - 2218(P)
 AREA - 809 HA

रोलग्राम-134
 बालाग्राम नं. १७४
 क्षेत्रफल १६६.२९ बीघर

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SANTAL PARGANAS.

সবভিবিজন

পাকুড়

থানা

মাহেশপুর

চরিত নাম

লাতিয়ারীমং-৯৪

সিট সংখ্যা-২

কেন্দ্র ১৬ ইঞ্চি=১ মাইল

সাল ১৯২৮-২৯ইং

SAHRI-95

সহরীমং-৯৫

GRAM - LUTIBARI, P.S. - MAHESHPUR, THANA NO. - 94, DISTRICT - PAKUR
 PLOT NO. 1451(P) & 1729(P)
 GRAM- SAHRI, P.S.-MAHESHPUR, THANA NO.-95, DISTRICT-PAKUR PLOT
 NO.-507(P)
 GRAM- MALDHARA, P.S.-MAHESHPUR, THANA NO.-103, DISTRICT-PAKUR
 PLOT NO.- 02(P)
 TOTAL AREA- 27.20HA

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PROPOSED POTENTIAL AREA OF SAND



OTHER PLOTS



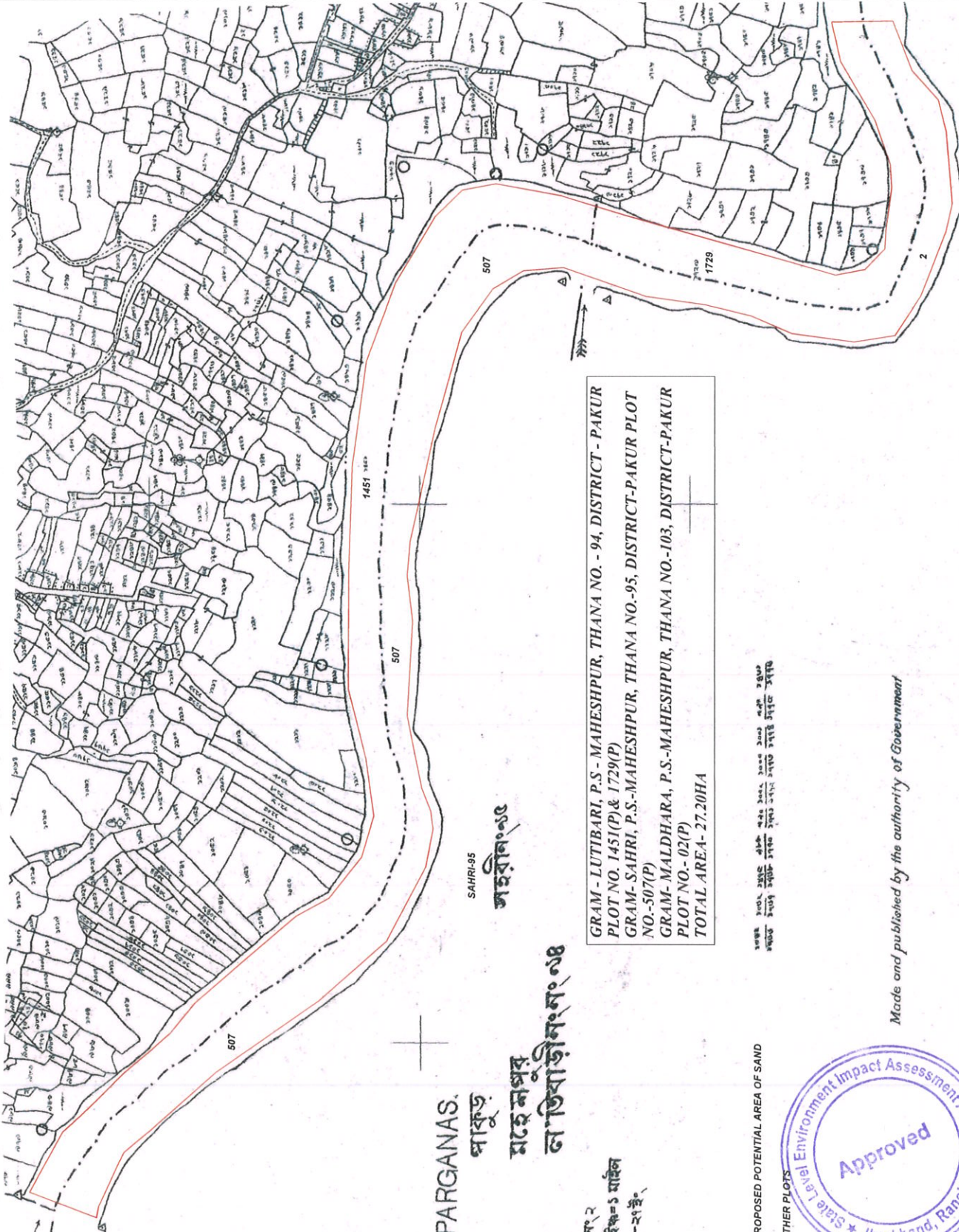
Made and published by the authority of Government

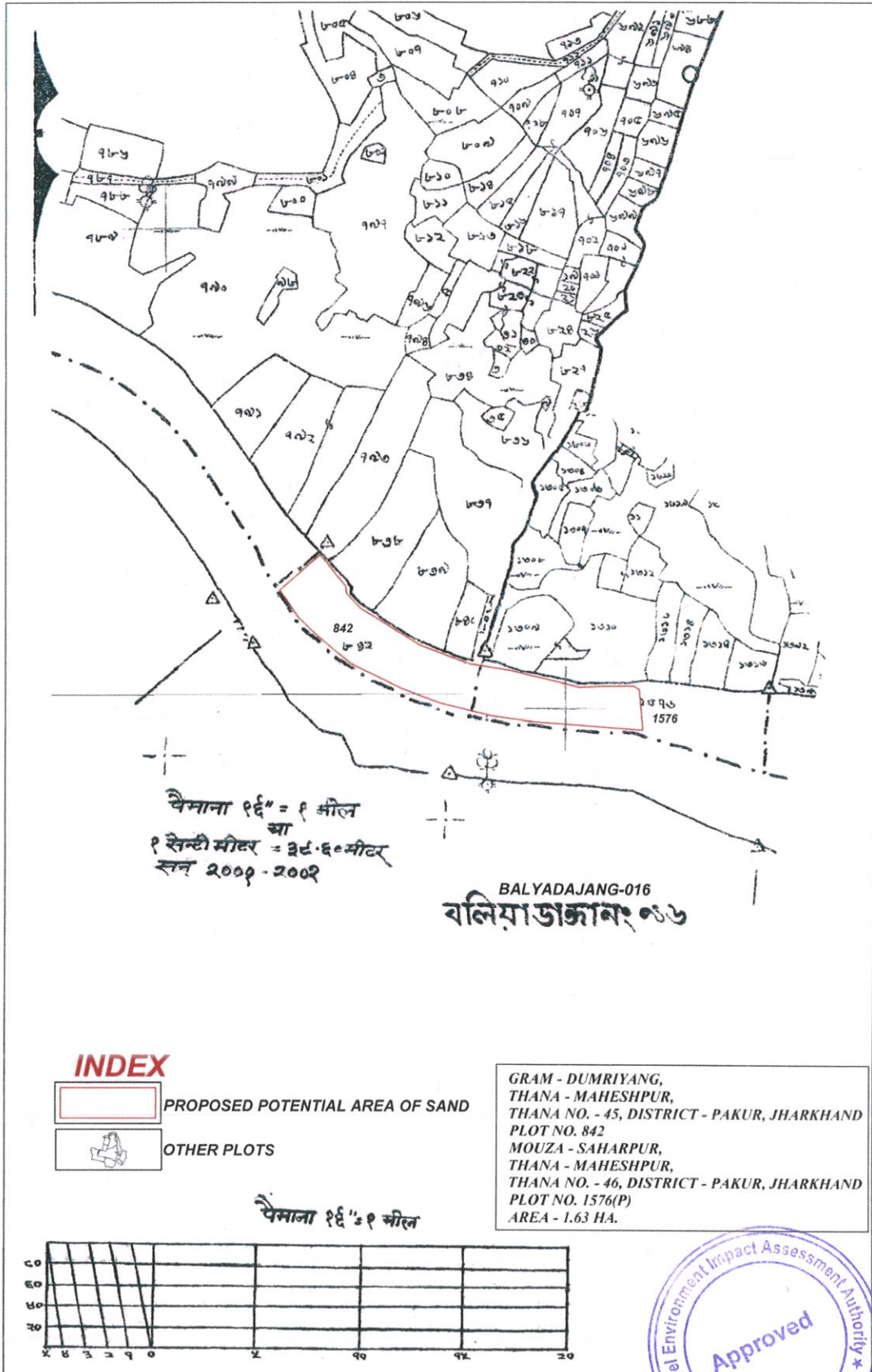
Scale 1/6 Inches = 1 Mile



MALDHARA-103

মালদহারীমং-১০৩





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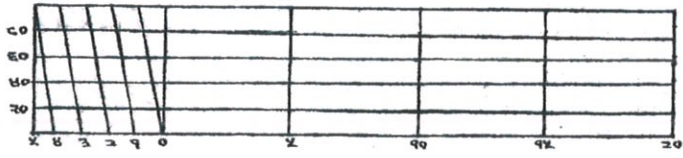
BALLYADAJANG-016
 बलियाडाजान् ०१६

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 MOUZA - SAHARPUR,
 THANA - MAHESHPUR,
 THANA NO. - 46, DISTRICT - PAKUR, JHARKHAND
 PLOT NO. 1576(P)
 AREA - 1.63 HA.

पैमाना १:६" = १ मील



SANTAL PARGANAS

मंत्रालय पत्रिका

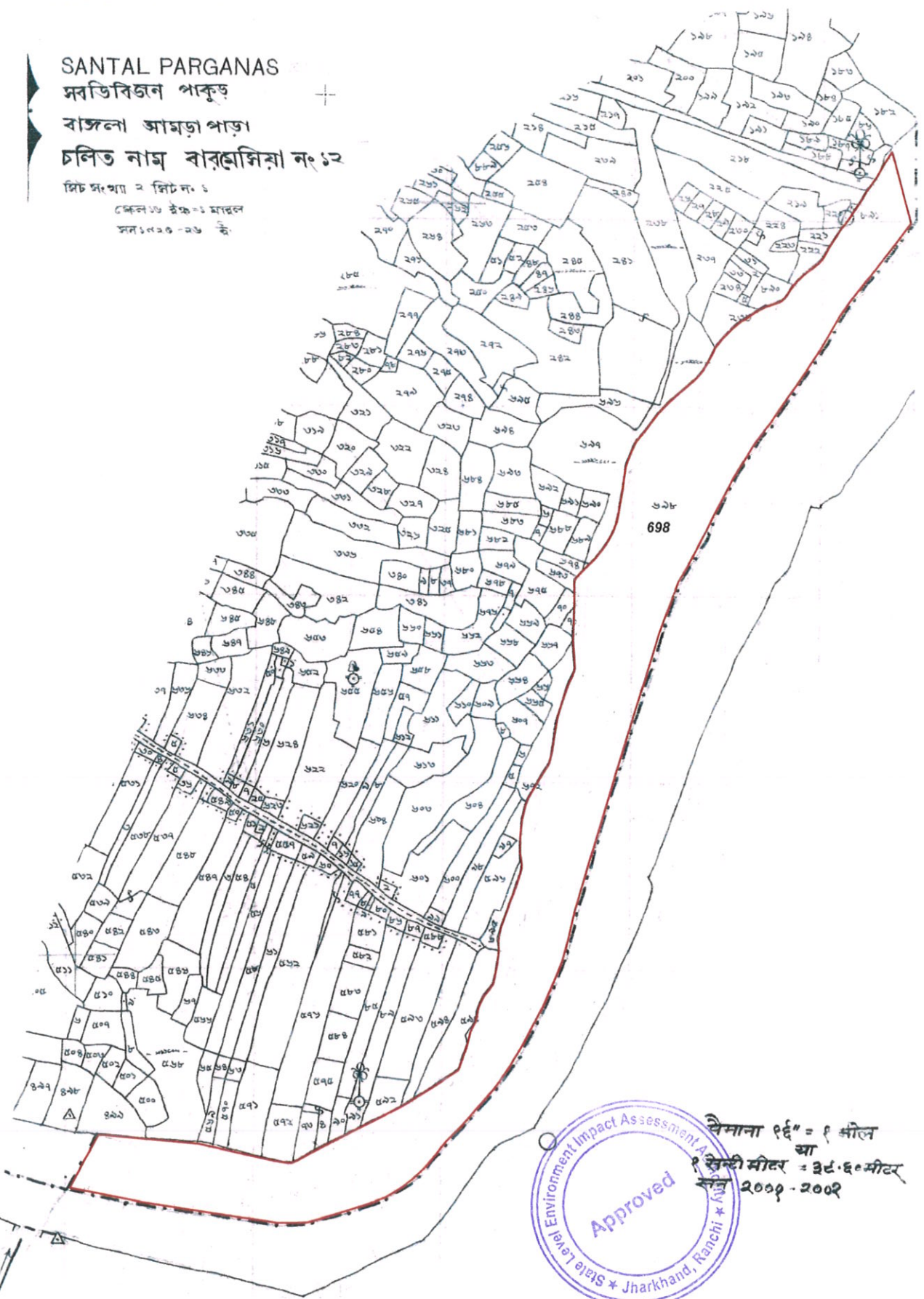
बाजना आमतु पाठ

चलित नाम बारहामिसा नं. १२

प्लॉट संख्या २ प्लॉट नं. ६

कैलन १७ ई. १-१ मारुल

सन १९२६-२७ ई.

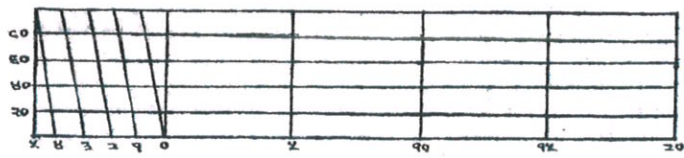


698



वेमाना १६" = १ मीटर
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 सन २००१-२००२

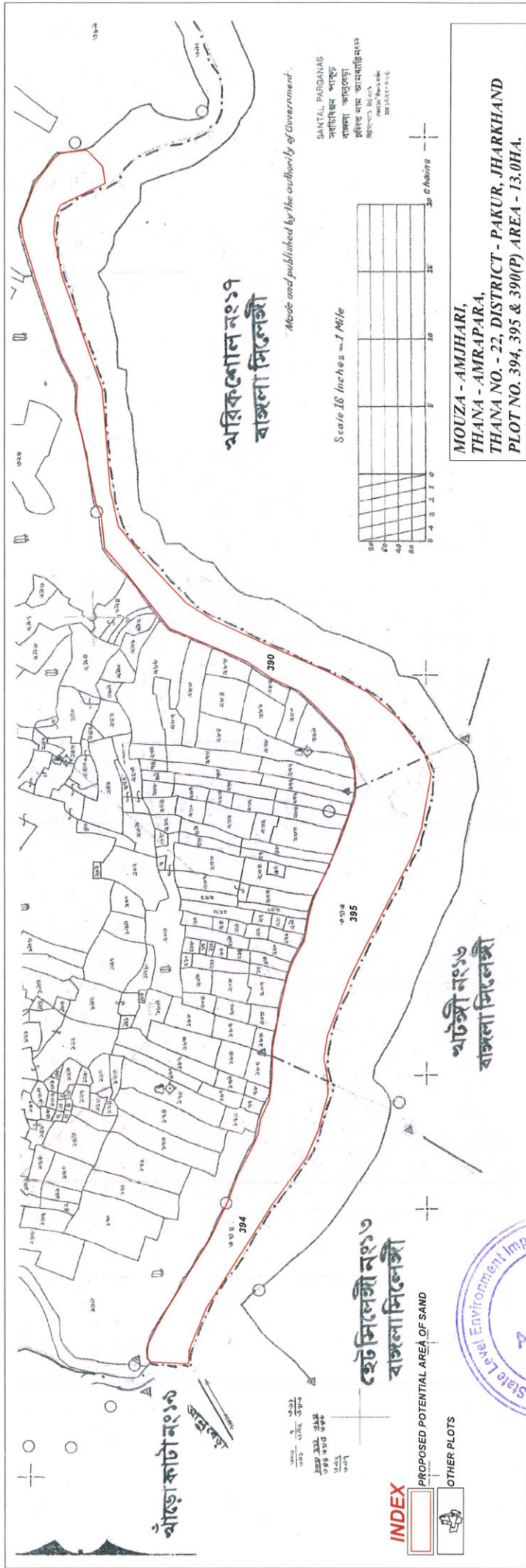
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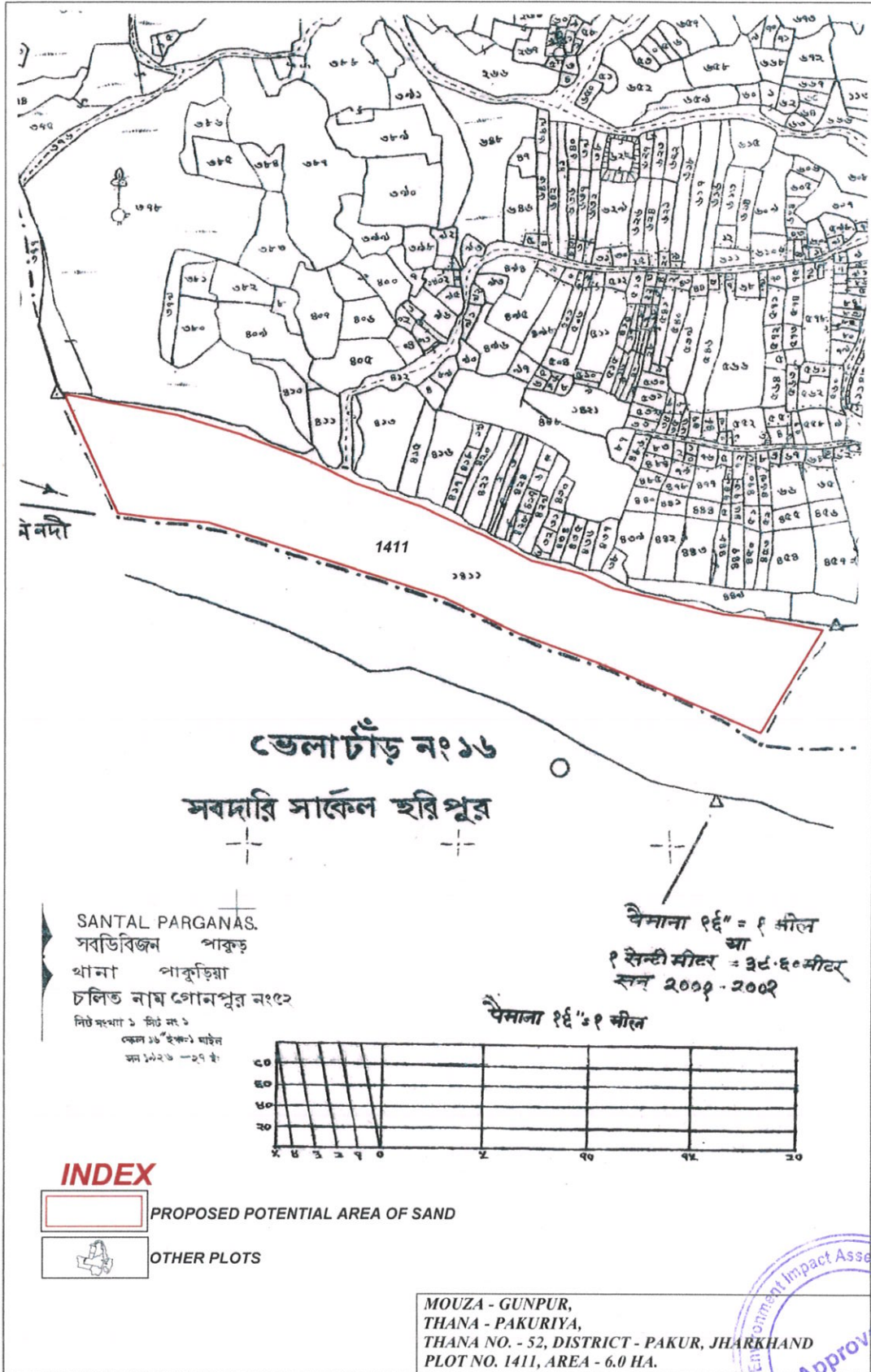


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- OTHER PLOTS

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 THANA - AMRAPARA,
 THANA NO. - 12, DISTRICT - PAKUR, JHARKHAND
 PLOT NO. 698, AREA - 11.20 HA.





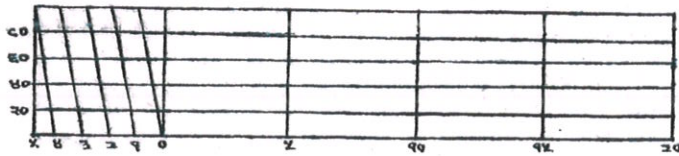
ভেলাটাড় নং ১৬

সবদারি সার্কেল হরিপুর


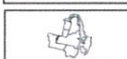
SANTAL PARGANAS.
 সবডিবিজন পাকুর
 থানা পাকুরিয়া
 চলিত নাম গোনপুর নং ৫২
 নিট নংখা ১ নিট নং ১
 ফোল ১৬ ইঞ্চি-১ ঘাইন
 সন ১৯২৩ - ২৭ ই:

বৈমানা ১৬" = ১ মীল
 আ
 ১ সেন্টি মীল = ৩৫.৬০ মীল
 সন ২০০১ - ২০০২

বৈমানা ১৬" = ১ মীল



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MOUZA - GUNPUR,
 THANA - PAKURIYA,
 THANA NO. - 52, DISTRICT - PAKUR, JHARKHAND
 PLOT NO. 1411, AREA - 6.0 HA.

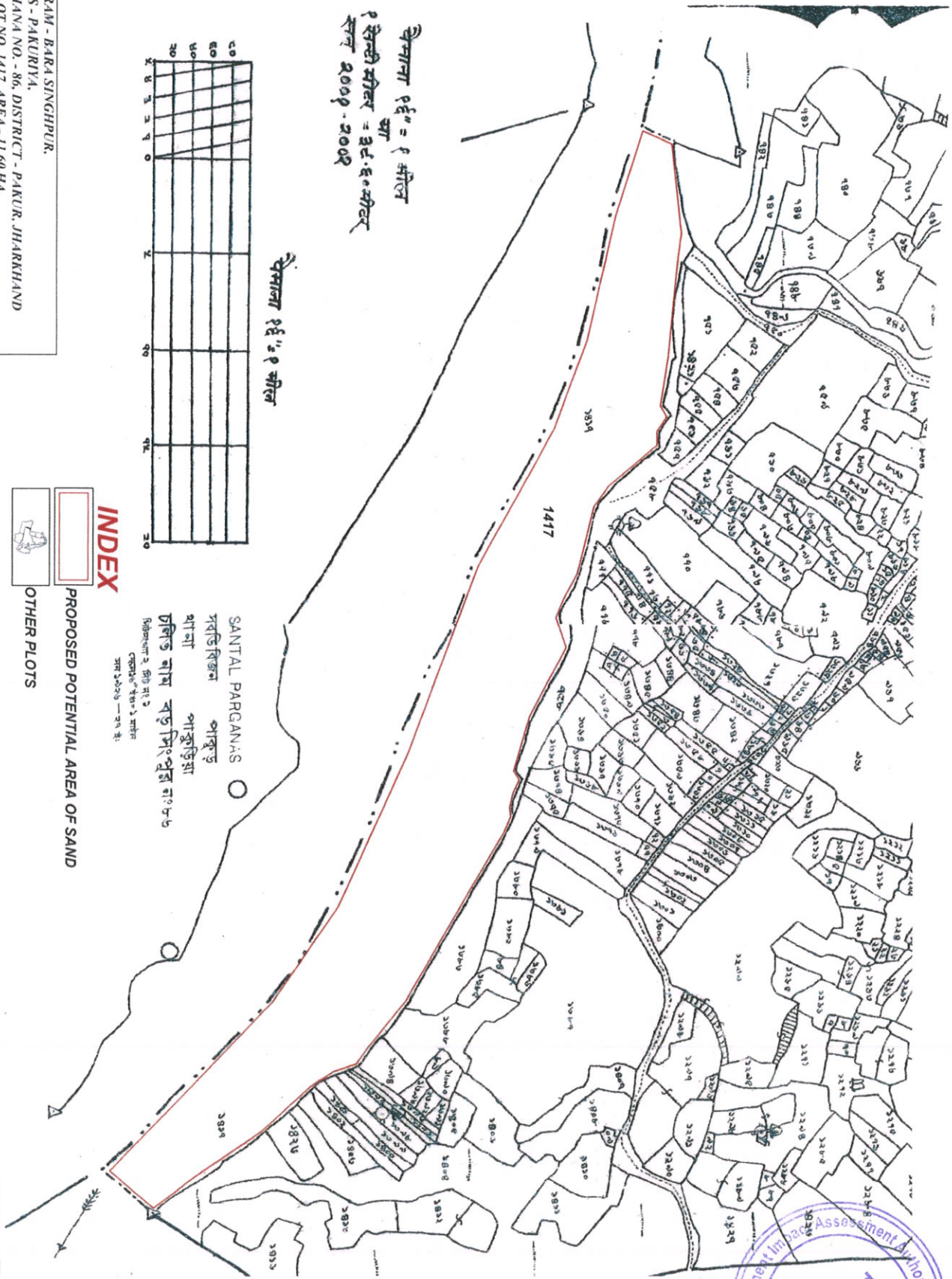


GRAM - BARA SINGHPUR.
 P.S. - PAKURIA,
 THANA NO. - 86, DISTRICT - PAKUR, JHARKHAND
 PLOT NO. 1417, AREA - 11.60 HA.

विमाना १६" = १ मीटर
 १ सेंटीमीटर = ३६.६० मीटर
 स्केल २००० - २०००

विमाना १६" = १ मीटर

0	10	20	30	40	50	60	70	80	90	100
0	10	20	30	40	50	60	70	80	90	100



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PROPOSED POTENTIAL AREA OF SAND



OTHER PLOTS

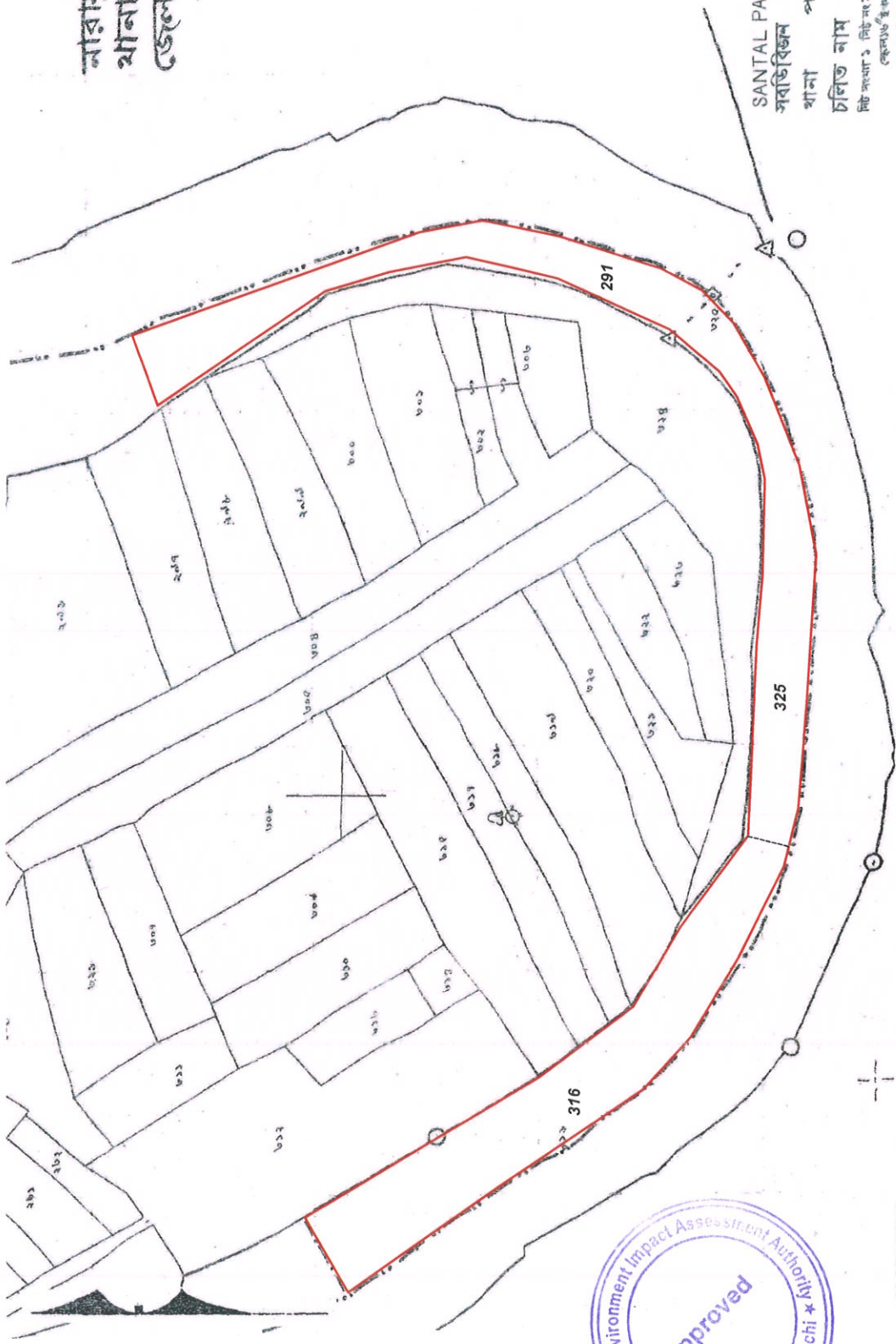
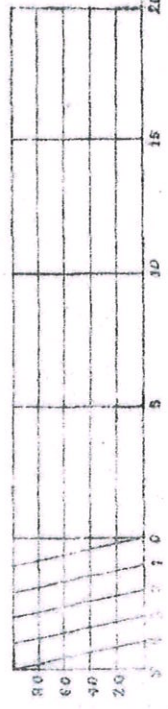
SANTAL PARGANAS
 प्रदक्षिणा
 भागा
 टिकित भाग चर्च विंग अर गा-८८
 विमाना १६" = १ मीटर
 स्केल २००० - २०००



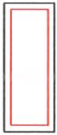
নারায়ণপুর নগর
থানা রামপুর হাট
জেলা ঝারসুন্দর

SANTAL PARGANAS.
সবডিবিজন পাকুড়া
থানা পাকুড়িয়া
চলিত নাম বেনাকুড়ি নং ৮৮
সিট নং ১৮৩
কেন্দ্রিক্রম নং ১৪৩
সন ১৯৬৩-৬৪

Scale 18 inches = 1 Mile



INDEX

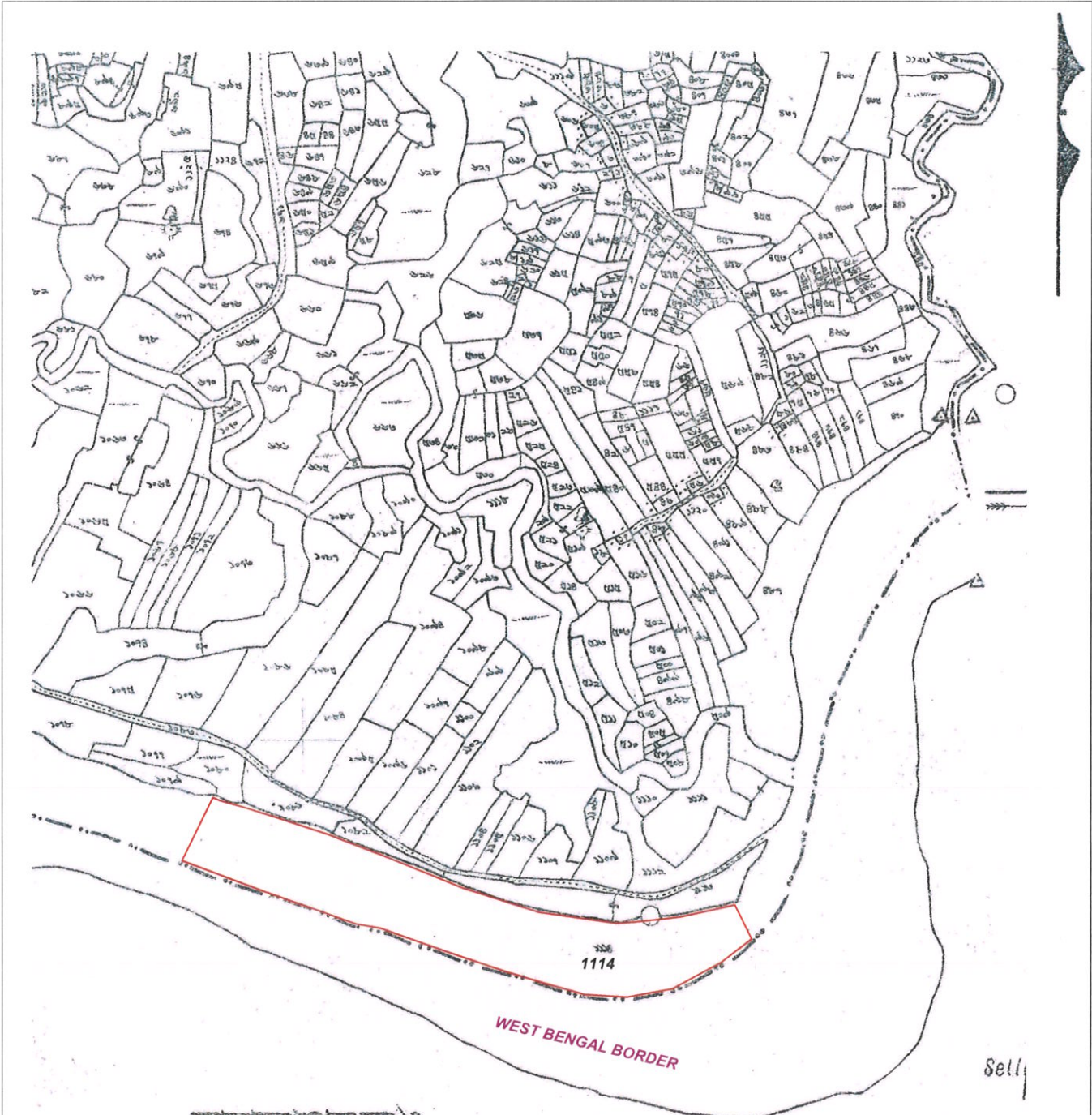


PROPOSED POTENTIAL AREA OF SAND



OTHER PLOTS

GRAM - BENAKURA,
P.S - PAKURIYA,
THANA NO. - 87, DISTRICT - PAKUR, JHARKHAND
PLOT NO. 325 & 291(P) & 316(P). AREA - 7.75 HA.

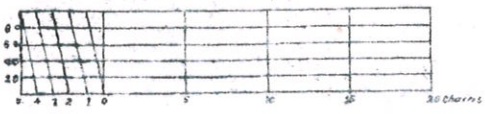


নারায়ণপুর নং ৩
থানা রামপুর হাট
জেলা বীরভূম

SANTAL PARGANAS.
সবডি বিজন পাকুড়

থানা পাকুড়িয়া
চলিত নাম ঘুরনী নং ৮
লিট সংখ্যা ১ লিট নং ১
ফোল ১৬ ইঞ্চি = ১ মাইল
সন ১৯২৬ - ২৭ খ.

Scale 10 inches = 1/10



INDEX



PROPOSED POTENTIAL AREA OF SAND



OTHER PLOTS

GRAM - GHURNI,
P.S - PAKURIYA,
THANA NO. - 88, DISTRICT - PAKUR, JHARKHAND
PLOT NO. 1114(P), AREA - 3.60 HA.



ANNEXURE-05

NO MINING ZONE MAP OF SAND GHAT



BANSLOI RIVER



MAP SHOWING NO MINING ZONE AT BANSLOI RIVER, PAKUR DISTRICT, JHARKHAND

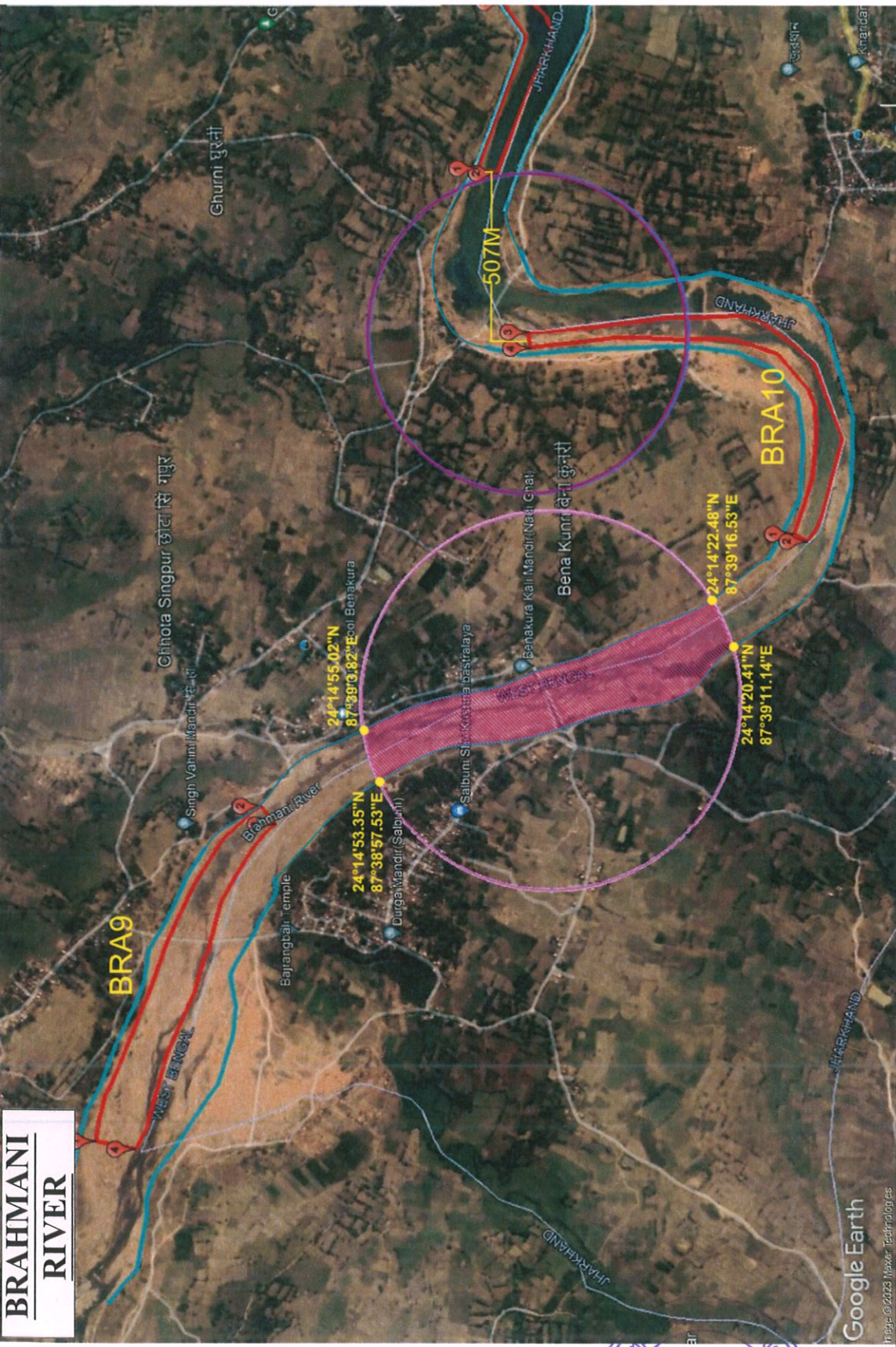


Handwritten signatures and initials in blue ink.

-  NO MINING ZONE
-  BAS6
-  1KM BUFFER ZONE



BRAHMANI RIVER



Handwritten signatures and initials.

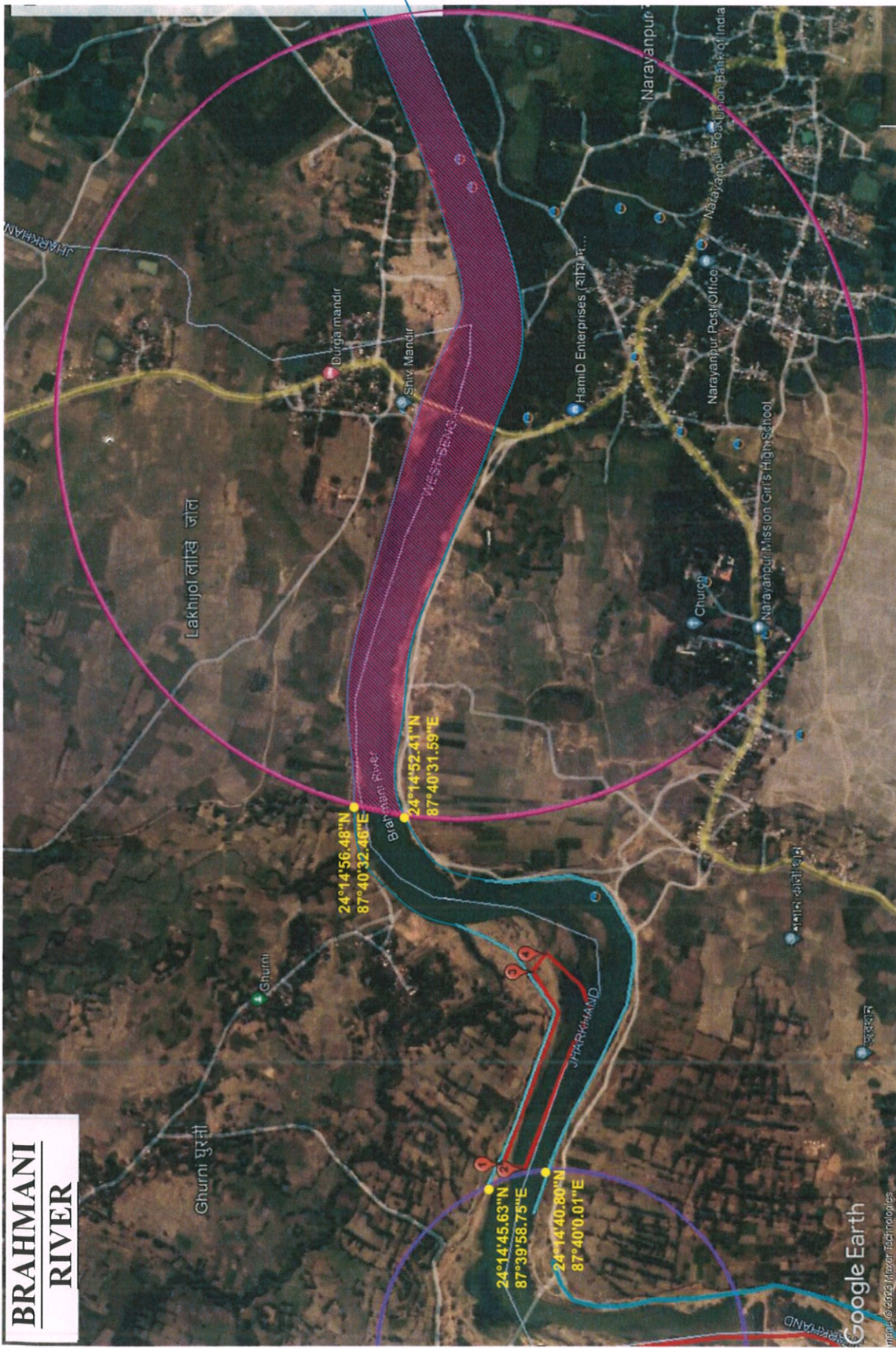


MAP SHOWING NO MINING ZONE AT BRAHMANI RIVER, PAKUR DISTRICT, JHARKHAND

-  NO MINING ZONE
-  500M BUFFER ZONE
-  500M BUFFER ZONE
-  BRA9
-  BRA10



BRAHMANI RIVER



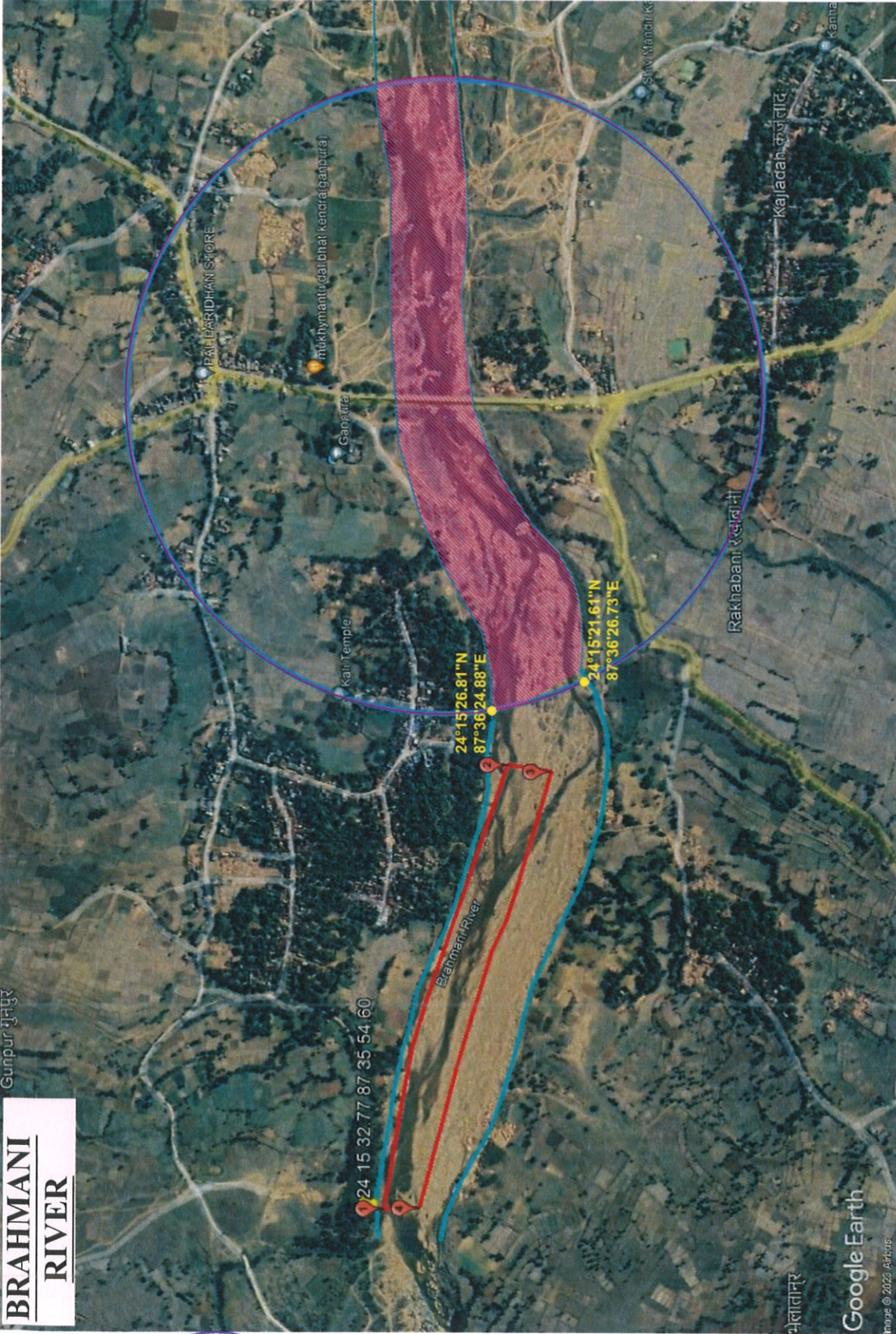
Handwritten signature and initials in blue ink.

MAP SHOWING NO MINING ZONE AT BRAHMANI RIVER, PAKUR DISTRICT, JHARKHAND

-  NO MINING ZONE
-  1KM BUFFER ZONE
-  BRA11



BRAHMANI RIVER



Handwritten signature and initials.

MAP SHOWING NO MINING ZONE AT BRAHMANI RIVER, PAKUR DISTRICT, JHARKHAND

-  NO MINING ZONE
-  BRA8
-  1KM BUFFER ZONE



BANSLOI RIVER



कुशाव

MAP SHOWING NO MINING ZONE AT BANSLOI RIVER, PAKUR DISTRICT, JHARKHAND

-  NO MINING ZONE
-  BAS3
-  1KM BUFFER ZONE



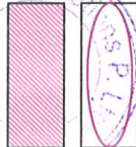


MAP SHOWING NO MINING ZONE AT BANSLOI RIVER, PAKUR DISTRICT, JHARKHAND



NO MINING ZONE

1KM BUFFER ZONE



Google Earth

Image © 2023 Airbus
© 2023 Google

ANNEXURE-06

ROUTE MAP OF SAND GHAT





Potential Area



Bansloi River



Metalled Road



Unmetalled Road



Plantation

Geo-Coordinates:

24°29'18.47"N 87°43'54.19"E
24°29'25.59"N 87°43'19.38"E

BAS1 & BAS2 ROUTE MAP

DISTRICT-PAKUR



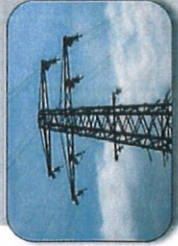
Google Earth

Image © 2023 Maxar Technologies

Route Map of Sand Ghat of Proposed Site



Water body



No High Tension Line



Metalled road



Human Settlement



No Religious Places



No Archaeological Site



www.davidgeorg



Potential Area



Bansloi River



Metalled Road



Unmetalled Road

Plantation

Geo-Coordinates:
24°29'10.99"N
87°42'10.95"E

BAS3 ROUTE MAP

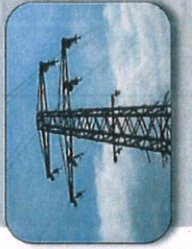
DISTRICT-PAKUR



Route Map of Sand Ghat of Proposed Site



Water body



No High Tension Line



Metalled road



Human Settlement



No Religious Places



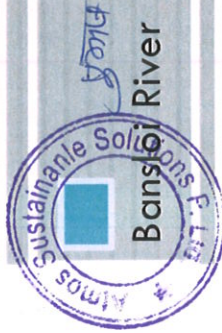
No Archaeological Site



www.Darstulge.org



Potential Area



Bansloi River



Metalled Road



Unmetalled Road



Geo-Coordinates:

24°29'22.81"N

87°38'17.71"E

BAS4 ROUTE MAP

DISTRICT:PAKUR

lokunri चमणपुरा

Legend
village road



Latibari लालि बारी

Bittu Hansdak

BAS-4

Sahani साही

Unmetalled Rd. 0.66km

MDR245 Amrapara to Maheshpur

Khushaidara खुशआदारा

Kalidaha कालिदाह

Google Earth

Image © 2023 Airbus
Images © 2023 Maxar Technologies

Route Map of Sand Ghat of Proposed Site



Water body



No High Tension Line



Metalled road



Human Settlement



No Religious Places

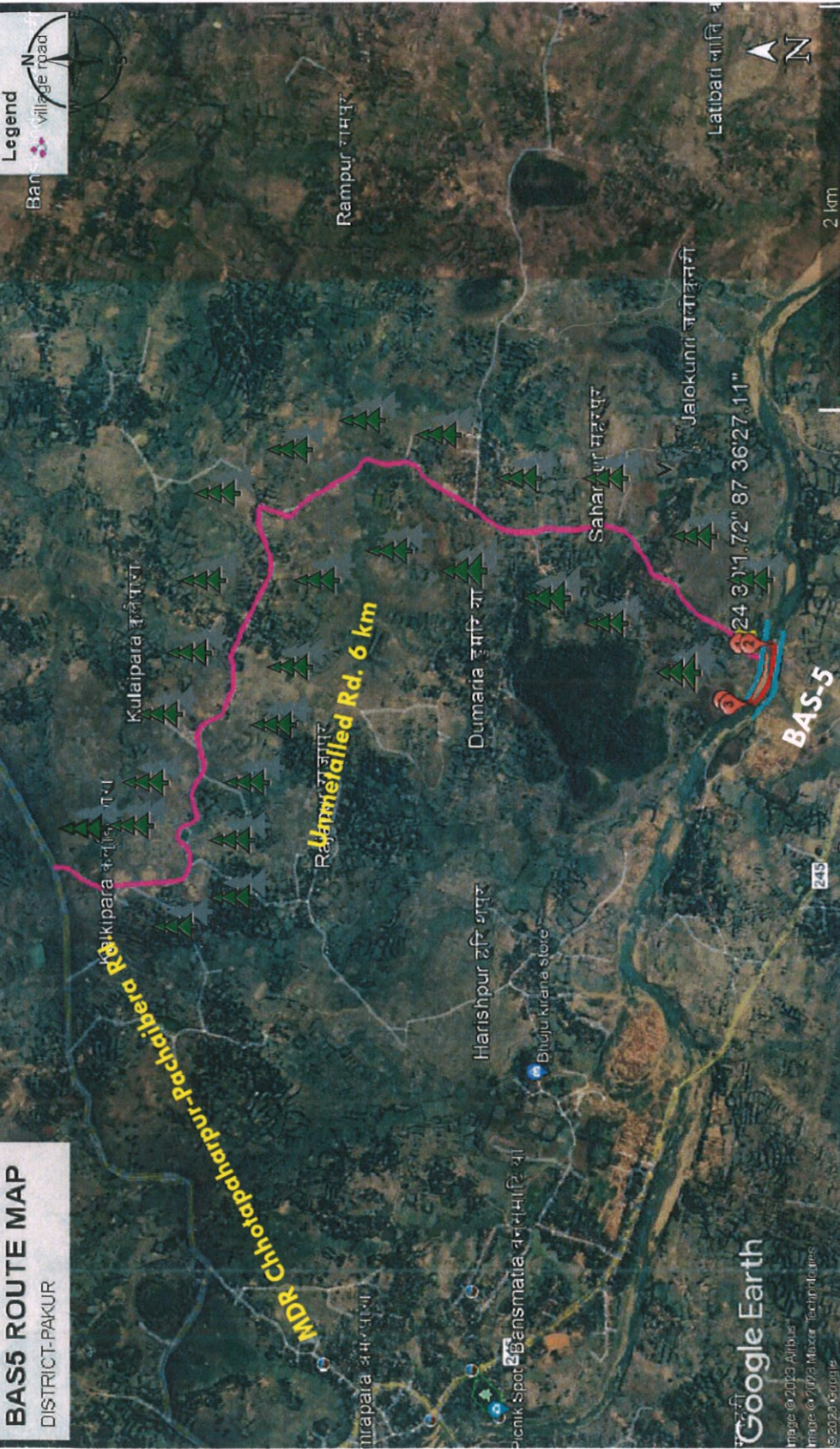


No Archaeological Site



www.Bridge.org

BAS5 ROUTE MAP
DISTRICT-PAKUR



 Potential Area

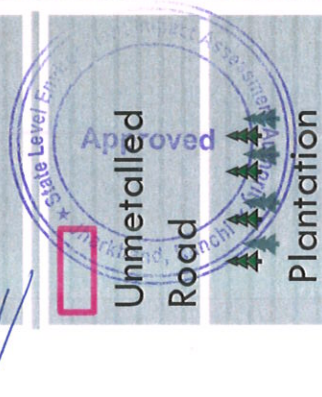
 Bansoi River

 Metalled Road

 Unmetalled Road

 Plantation

Geo-Coordinates:
24°30'1.72"N
87°36'27.11"E



Route Map of Sand Ghat of Proposed Site



Water body



No High Tension Line



Metalled road



Human Settlement



No Religious Places



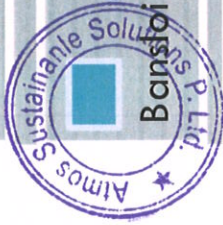
No Archaeological Site



www.Daridg.org



Potential Area



Bansloi River



Metalled Road



Unmetalled Road

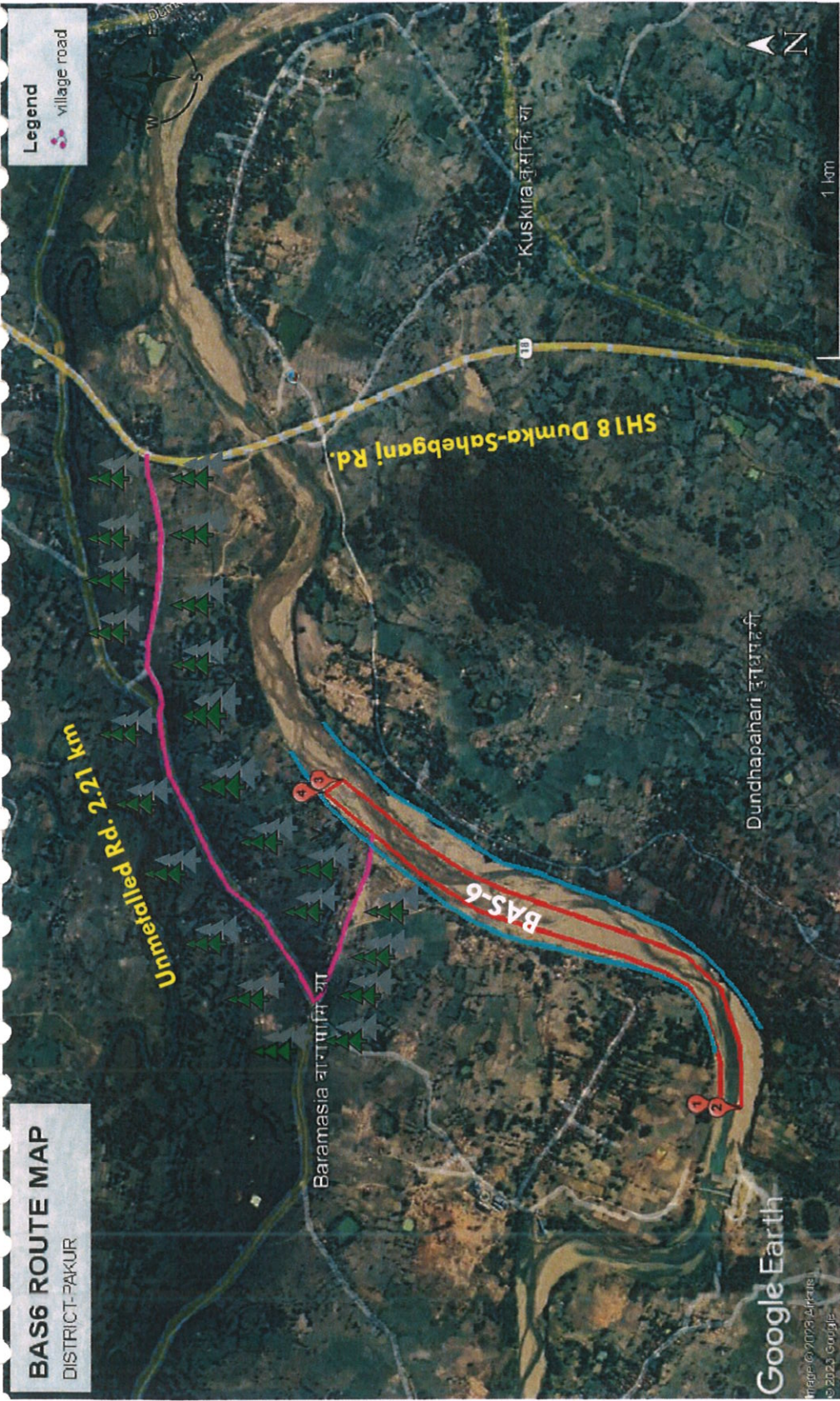


Plantation

Geo-Coordinates:

24°30'29.79"N

87°32'11.12"E



Route Map of Sand Ghat of Proposed Site



Water body



No High Tension Line



Metalled road



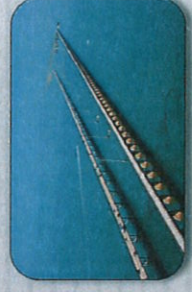
Human Settlement



No Religious Places



No Archaeological Site



www.drrbdtg.org



Potential Area



Bansloi River



Metalled Road



Unmetalled Road



Plantation

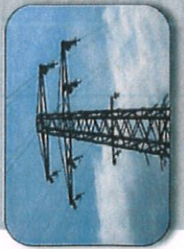
Geo-Coordinates:
24°31'12.11"N
87°27'16.82"E



Route Map of Sand Ghat of Proposed Site



Water body



No High Tension Line



Metalled road



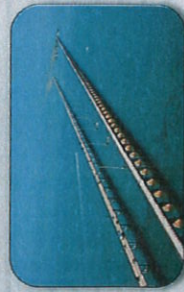
Human Settlement



No Religious Places



No Archaeological Site



www.bridg.org

BRA8 ROUTE MAP
DISTRICT-PAKUR

Unmetalled Rd. 1.58 km

MDR Boro Sapadaha-Kajladah Rd.

BRA-8 Brahmari River

Legend
village road

 Potential Area

 Brahmari River

 Metalled Road

 Unmetalled Road

 Plantation

Geo-Coordinates:
24°15'32.77"N
87°35'54.60"E



Route Map of Sand Ghat of Proposed Site



Water body



No High Tension Line



Metalled road



Human Settlement



No Religious Places



No Archaeological Site

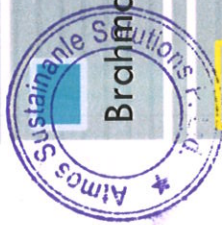


wdo.earthengine.org





Potential Area



Brahmani River



Metalled Road



Unmetalled Road



Plantation

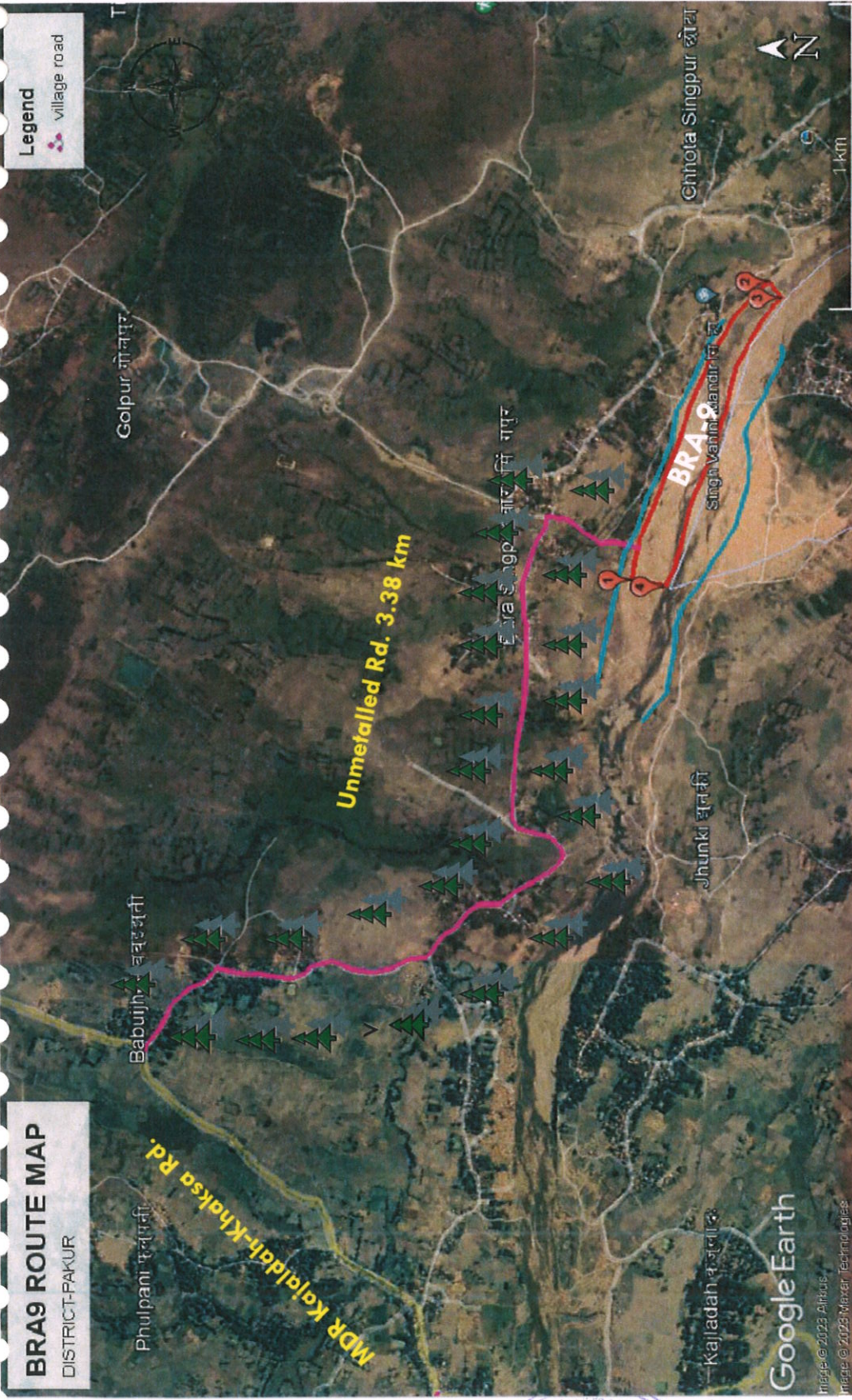
Geo-Coordinates:

24°15'19.91"N

87°38'20.67"E



Water body



BRA9 ROUTE MAP
DISTRICT-PAKUR

Legend
village road

Route Map of Sand Ghat of Proposed Site



No High Tension Line



Metalled road



Human Settlement



No Religious Places



No Archaeological Site



www.Bridggs.org



Potential Area



Brahmani River



Metalled Road



Unmetalled Road



Plantation

Geo-Coordinates:

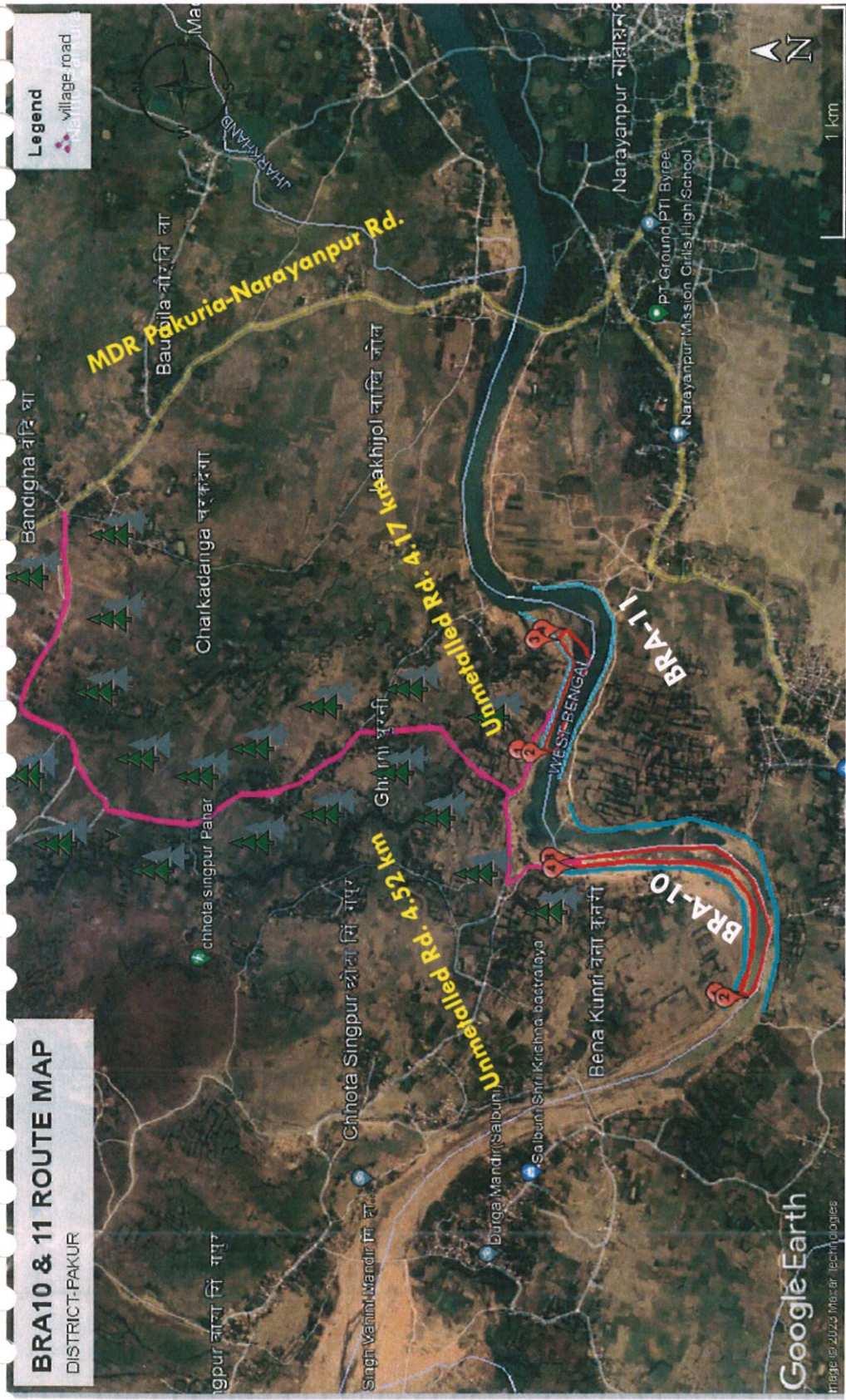
24°14'14.75"N 87°39'23.27"E
24°14'44.43"N 87°40'0.62"E



Water body

BRA10 & 11 ROUTE MAP

DISTRICT-PAKUR



Route Map of Sand Ghat of Proposed Site



No High Tension Line



Metalled road



Human Settlement



No Religious Places



No Archaeological Site



w.No.Dam@gs.org

ANNEXURE-07

COPY OF ZOOLOGICAL **SURVEY OF INDIA LETTER**



Mail / Reg

GOVT OF JHARKHAND
Department of Mines & Geology
District Mining Office, Pakur

Letter No. 19/M, Pakur dtd-04/01/23

From,
District Mining Officer,
Pakur

To,
The Director
Gangetic plains Regional Centre
Zoological Survey Of India,
Bahadurpur housing Colony,
Sec-8, Patna- 800026, Bihar

Subject:- Request to provide details regarding the presence of aquatic animal in the river Bansloi and Brahamani in proximity of the proposed Sand Ghats in Pakur District, Jharkhand.

Sir,

With reference to the above-mentioned subject, we would like to bring to your notice that, the work for the preparation of District Survey Report for Sand Mineral of Pakur Dstict is in progress. As per direction given by SEAC, Jharkhand we require to submit the undertaking regarding presence of aquatic animal in the river in proximity of the proposed sand ghats should be verified and certified by concerned Govt. Department like Zoological Survey of India. We are enclosing details of proposed sand along with Geo-ordinates for your reference.

It is therefore requested to provide the details of presence of aquatic animal in the river in proximity of the proposed sand ghats in DSR.

Thanking You.

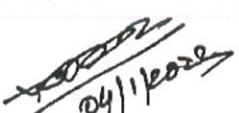
Encls - As above.

Yours faithfully,


District Mining Officer,
Pakur


Memo No. 19/M Pakur dtd-04/01/23

Copy to- Director, Mines, Department of Mines & Geology, Govt. of Jharkhand, Ranchi for information and necessary action.


District Mining Officer,
Pakur

Memo No. 19/M Pakur dtd-04/01/23

Copy to- Director, Geology, Department of Mines & Geology, Govt. of Jharkhand, Ranchi for information and necessary action.


District Mining Officer,
Pakur



ajc

ANNEXURE-08

COPY OF FISHERY DEPARTMENT LETTER



झारखण्ड सरकार
खान एवं भूतत्व विभाग
जिला भूतात्विक कार्यालय, साहेबगंज
E-mail :- astdirgeo-sahib@jharkhandmail.gov.in

पत्रांक:- स0नि0भू0104.....

साहेबगंज, दिनांक- .06/02/2023

प्रेषक,

सहायक निदेशक, भूतत्व
जिला भूतात्विक कार्यालय, साहेबगंज ।

सेवा में,

जिला मतस्य पदाधिकारी
पाकुड़ ।

विषय- जलीय जीवों के सूचना एकत्र करने के संबंध में ।

प्रसंग :- निदेशक भूतत्व, झारखण्ड राँची का पत्रांक- 77, दिनांक- 31.01.2023

महाशय,

उपरोक्त विषयक एवं प्रसंगाधीन पत्र के द्वारा दिये गये निदेश के आलोक में कहना है कि पाकुड़ जिलान्तर्गत बालू खनिज के लिए District Survey Report (DSR) तैयार करने के क्रम में नदियों/जलीय निकायों में पाये जाने वाले जलीय जीवों से संबंधित सूचनाओं को DSR में संलग्न करने की आवश्यकता है ।

अतः अनुरोध है कि पाकुड़ जिला में पाये जाने वाले नदियों/जलीय निकायों में जलीय जीवों से संबंधित सूचनाएँ उपलब्ध कराने का कृपा कि जाय ।

विश्वासभाजन,

सुभाष
06/2/2023

सहायक निदेशक, भूतत्व
जिला भूतात्विक कार्यालय, साहेबगंज ।



संशोधित

जिला मत्स्य कार्यालय, पाकुड़ ।

पत्रांक...119.../मत्स्य

प्रेषक : जिला मत्स्य पदाधिकारी
पाकुड़ ।

सेवा में,
जिला खनन पदाधिकारी,
पाकुड़ ।

मत्स्य/पाकुड़/दिनांक...16/02/2023/

विषय :- पाकुड़ जिला के बालू खनिज का जिला सर्वेक्षण रिपोर्ट (DSR) तैयार करने हेतु जलीय जीवों के संबंध में सूचना प्रेषण कराने के संबंध में।

प्रसंग :- जिला खनन कार्यालय, पाकुड़ का पत्रांक 228/एम0, दिनांक 01.02.2023 ।

महाशय,

उपरोक्त विषयक प्रसंगाधीन पत्र के आलोक में क्षेत्रीय प्रभारी के द्वारा जाँच कराई गई जो निम्नवत है :-

1. UIN- BAS1, BAS2, BAS3, BAS4 & BAS5

समिति के साथ विवरणी के जलकर अबन्दोवस्त है। समिति के साथ सिर्फ बांसलोई नदी बन्दोवस्त है, जिसका दाग नं0 उपलब्ध नहीं है तथा पाया गया कि विषयांगत गांव के नदी के हिस्सा में मछली पालन इत्यादि का कार्य नहीं होता है।

2. UIN- BAS6 & BAS7

समिति के साथ विवरणी के जलकर अबन्दोवस्त है। समिति के साथ सिर्फ बांसलोई नदी का दाग नं0 603 बन्दोवस्त है। स्थानीय लोगो से जानकारी मिला की मछली पालन कार्य नहीं होता है। पूरा क्षेत्र सूखा पाया गया।

3. UIN- BRA8, BRA9, BRA10 & BRA11

समिति के साथ सभी जलकर अबन्दोवस्त है। तथा इनमें किसी तरह की योजना पूर्व या वर्तमान में संचालित नहीं है। परन्तु कुछ जगहों में पानी का जमाव हो जाता है, जो कि वालु हटाने से हुआ है। तथा जंगली मछलीयों जो कि बहकर जमा होती है। तथा स्थानीय लोगो के द्वारा शिकारमाही किया जाता है।

सादर सूचनार्थ प्रेषित।

विश्वासभाजन

जिला मत्स्य पदाधिकारी
पाकुड़ ।

बेला
24/02/2023

24/02/2023



16/02/23

सेवा में,

जिला माध्यम पदाधिकारी, पाकुड़

विषय:- जांच प्रतिवेदन प्रेषण के संबंध में।

महोदय,

सूचित करना है कि जिला खनन कार्यालय पाकुड़ के पत्रांक 228 / दिनांक 01-02-23 पर प्राप्त निर्देश के आलोक में संबंधित विभाग का जांच कार्यालय में उपलब्ध जलकों की सूची एवं अंशों के संचालन माहौलीय सहायक समिति के सचिव की मदद से किया गया जो निम्नवत् है:-

1) VIN - BAS 1, BAS 2, BAS 3, BAS 4 एवं BAS 5 -

समिति के सामने विवरणी के जलकर अर्बंदोवस्त हैं। समिति के सामने धर्म बांसलोई नदी बन्दोवस्त है जिसका दाग नं 3 उपलब्ध नहीं है तथा जांच गया कि विधायक गांव के नदी के दिलना में मद्दली पालन इच्छादि का कार्य नहीं होता है।

ii) VIN - BAS 6, BAS 7 के बारे में भी समिति के सामने अर्बंदोवस्त हैं। समिति के सामने धर्म बांसलोई नदी का दाग नं 603 बंदोवस्त है। संचालन जांचों से जानकारी मिली की मद्दली पालन कार्य नहीं होगा।

iii) VIN - BAS 8, BAS 9, BAS 10, BAS 11 के भी जलकर समिति के सामने अर्बंदोवस्त हैं। तथा दूसरे किसी तरह की योजना पूर्व या वर्तमान में संचालित नहीं हैं। परन्तु कुछ जगहों में पानी का जमाव हो जाता है कि वलू उठते से हुआ है। तथा जंगली मद्दलीयों को-डि बंदकृत जाता होती है। तथा संचालन जांचों के साथ साथ जांचें साफ सूचनाएँ प्रेषित। किसी विशेष प्रकार की मद्दली कहे भी नहीं गई।

विभागाध्यक्ष

(सहस्र)

15.02.23



ANNEXURE-09

COPY OF NEWS PAPER

CUTTING



NEWS PAPER

जिला खनन कार्यालय, पाकुड़

आम सूचना

सर्वसाधारण को सूचित किया जाता है कि बालूघाटों के निलामी/संचालन के निमित्त पाकुड़ जिला के लिए बालू का जिला सर्वेक्षण रिपोर्ट (DSR) प्राधिकृत एजेन्सी द्वारा तैयार किया गया है, जिसमें जिला के निम्नांकित बालूघाट प्रस्तावित हैं:-

क्र०	प्रखण्ड/अंचल का नाम	बालूघाट का विवरण	नदी का नाम
1	महेशपुर	मौजा-सिंगनीया, प्लॉट नं०- 1189/पी०, 1190/पी०, 1/पी०, 197/पी०, रकवा-6.57 हे०	बांसलोई
2	महेशपुर	मौजा-बाबुदाहा, प्लॉट नं०-995/पी०, 1/पी०, रकवा-4.96 हे०	बांसलोई
3	महेशपुर	मौजा-नुरगीटोला, प्लॉट नं०-2259/पी०, 2218/पी०, रकवा-4.75 हे०	बांसलोई
4	महेशपुर	मौजा-भेलाई, प्लॉट नं०-1729/पी०, रकवा-2.87 हे०	बांसलोई
5	महेशपुर	मौजा-लिट्टीबाडी, प्लॉट नं०-507/पी०, रकवा-2.71 हे०	बांसलोई
6	महेशपुर	मौजा-लिट्टीबाडी, प्लॉट नं०-1451/पी०, 507/पी०, रकवा-2.11 हे०	बांसलोई
7	महेशपुर	मौजा-शहरपुर, प्लॉट नं०-1576/पी०, 842/पी०, रकवा-1.31 हे०	बांसलोई
8	अमड़ापाड़ा	मौजा-बारामसिया, प्लॉट नं०-698/पी०, रकवा-11.20 हे०	बांसलोई
9	अमड़ापाड़ा	मौजा-आमझारी, प्लॉट नं०-395/पी०, रकवा-4.90 हे०	बांसलोई
10	पाकुड़िया	मौजा-तालडीह, प्लॉट नं०-1411/पी०, रकवा-2.26 हे०	ब्राम्हणी
11	पाकुड़िया	मौजा-बडासिंहपुर, प्लॉट नं०-1417/पी०, रकवा-6.79 हे०	ब्राम्हणी
12	पाकुड़िया	मौजा-धुरणी, प्लॉट नं०-291/पी०, 324/पी०, रकवा-4.94 हे०	ब्राम्हणी

उपरोक्त बालूघाटों के संबंध में आपत्ति/सुझाव समाचार प्रकाशन की तिथि से एक माह के अन्दर जिला खनन कार्यालय, पाकुड़/E-mail- dmo-pakur@jharkhandmail.gov.in पर दिया जा सकता है।

उपायुक्त, पाकुड़ के आदेश से,

-ह०-

जिला खनन पदाधिकारी, पाकुड़

PR 285394 Revenue(22-23)#D



ANNEXURE-10

COPY OF NIC D.C. UPLOAD

SCREEN SHOT



13:39

4G



HOME / NOTICES / GENERAL NOTICES /
DSR Report from District Mining Officer Pakur



DSR Report from District Mining Officer Pakur

DSR Report from District Mining Officer Pakur

Title:	DSR Report from District Mining Officer Pakur
Description:	DSR Report from District Mining Officer Pakur
Start Date :	19/12/2022
End Date :	18/01/2023
File:	View (5 MB)  



ANNEXURE-11

COPY OF SUB-DIVISIONAL
COMITTE LETTER






कार्यालय

उपायुक्त-सह-जिला दण्डाधिकारी, पाकुड़
(जिला खनन शाखा)
आदेश


माननीय उच्चतम न्यायालय, नई दिल्ली द्वारा Civil Appeal No.-3661-3662/2020 State of Bihar & Others Vrs. Pawan Kumar & Others के मामले में पारित आदेश दिनांक 10.11.2021, Sustainable Sand Mining Guideline 2016 तथा Enforcement and Monitoring Guideline for Sand Mining 2020 के तहत झारखण्ड सरकार द्वारा प्राधिकृत NABET से मान्यता प्राप्त Consultant द्वारा बालू खनिज का DSR तैयार किया जाना है। पाकुड़ जिला हेतु बालू का DSR, NABET से मान्यता प्राप्त Consultant ATMOS SUSTAINABLE SOLUTION PVT. LTD. द्वारा तैयार कर SEIAA झारखण्ड को भेजने हेतु सहायक निदेशक, भूतत्व, साहेबगंज-सह-पाकुड़, जिला भूतात्विक कार्यालय, साहेबगंज के माध्यम से प्राप्त DSR (Sand) के प्रारूप में निहित बिन्दुओं की समीक्षा हेतु अद्योहस्ताक्षरी की अध्यक्षता में एक समिति निम्नरूपेण गठित की जाती है:-

1. वन प्रमण्डल पदाधिकारी, पाकुड़ - सदस्य
2. अपर समाहर्ता, पाकुड़ - सदस्य
3. असैनिक राज्य चिकित्सक, पाकुड़ - सदस्य
4. अनुमंडल पदाधिकारी, पाकुड़ - सदस्य
5. कार्यपालक अभियंता, सिंचाई प्रमण्डल, पाकुड़ - सदस्य
6. जिला कृषि पदाधिकारी, पाकुड़ - सदस्य
7. क्षेत्रीय पदाधिकारी, झारखण्ड राज्य प्रदूषण नियंत्रण पंषद, दुमका - सदस्य
8. सहायक निदेशक, भूतत्व, जिला भूतात्विक कार्यालय, साहेबगंज - सदस्य
9. जिला खनन पदाधिकारी, पाकुड़ - सदस्य-सह-समन्वयक

समिति के उक्त सदस्यों को बालू DSR की Soft copy भेजते हुए अनुरोध है कि इसमें निहित अपने-अपने विभाग से संबंधित विषयवस्तु/डाटा की जांच कर इसमें आवश्यक संशोधन/मंतव्य जिला खनन पदाधिकारी, पाकुड़ के ई-मेल dmo-pakur@jharkhandmail.gov.in पर तीन दिनों के अन्दर उपलब्ध करावे, ताकि आगामी बैठक में इसे अंतिम रूप दिया जा सके।


05/09/22
जिला खनन पदाधिकारी,
पाकुड़





5/9/22
उपायुक्त,
पाकुड़

ज्ञापांक 1944/एम0, दिनांक 05/09/22

प्रतिलिपि : सभी संबंधितों को सूचनाार्थ एवं आवश्यक क्रियार्थ प्रेषित।


05/09/22
जिला खनन पदाधिकारी,
पाकुड़


5/9/22
उपायुक्त,
पाकुड़

बालू (लघु खनिज) के प्रारूप डी0एस0आर0 के संबंध में उपायुक्त, पाकुड़ की अध्यक्षता में आयोजित बैठक दिनांक 14.09.2022 की कार्यवाही


उपस्थिति :- विवरणी के अनुसार।

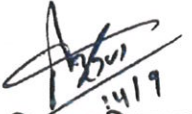
सर्वप्रथम उपायुक्त, पाकुड़ द्वारा बैठक में उपस्थित पदाधिकारियों का स्वागत करते हुए बैठक की कारवाई प्रारम्भ की गई।


NABET द्वारा मान्यता प्राप्त एवं राज्य सरकार द्वारा चयनित एजेंन्सी Atmos Sustainable Solution Pvt. Ltd. द्वारा सहायक निदेशक, जिला भूतात्विक कार्यालय, साहेबगंज/पाकुड़ के सहयोग से तैयार कर प्रस्तुत किये गये डी.एस.आर. के प्रारूप को गठित समिति के सदस्यों को उपलब्ध कराते हुए उनसे सुझाव/बदलाव की मांग की गई थी, के संबंध में उपायुक्त महोदय द्वारा पुछे जाने पर उपस्थित सदस्यों द्वारा प्रस्तुत डी.एस.आर. पर सहमति ब्यक्त की गई। बालूघाटों की वन्दोवस्ती प्रक्रिया हेतु पर्यावरणीय स्वच्छता प्रमाण पत्र के दौरान संबंधित अंचल के अंचलाधिकारी, वन प्रमंडल पदाधिकारी, पाकुड़ तथा संबंधित पंचायत के ग्राम सभा की स्वतंत्र पूर्व सहमति प्राप्त करने की आवश्यकता बतायी गई।

तैयार प्रारूप डी.एस.आर. को सदस्य सचिव, SEIAA, रांची को उपायुक्त, पाकुड़ के स्तर से अग्रेतर कार्रवाई हेतु भेजने का सर्वसम्मति से निर्णय लिया गया।

अन्त में धन्यवाद ज्ञापन के साथ बैठक की कार्रवाई समाप्त की गई।


14/9/22
जिला खनन पदा०,
पाकुड़



14/9
जिला कृषि पदा०,
पाकुड़

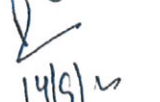

14/9/22
कार्यपालक अभियंता,
सिंचाई प्रमंडल, पाकुड़


14/9/22
सिविल सर्जन,
पाकुड़


14/9/22
अनुमंडली पदाधिकारी,
पाकुड़

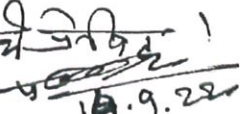

14/9/22
अपर समाहर्ता,
पाकुड़


वन प्रमंडल पदाधिकारी,
पाकुड़


14/9/22
उपायुक्त,
पाकुड़

ज्ञापन 2013 | रज. दिनांक 14/9/22

प्रति :- सभी संबंधित पदाधिकारियों को सूचित किया गया।

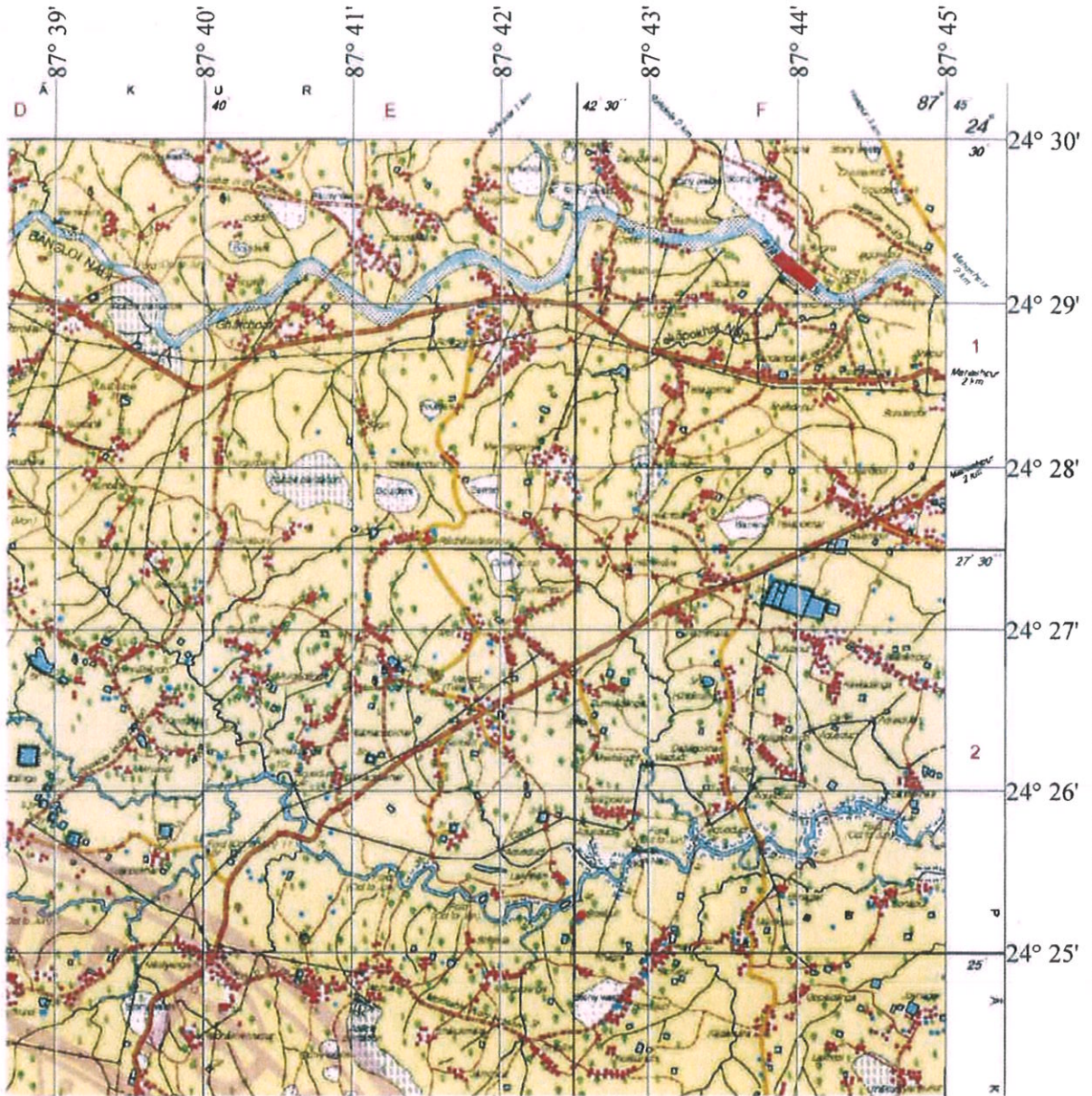

14.9.22
जिला खनन पदाधिकारी
पाकुड़

ANNEXURE-12

INDIVIDUAL TOPOSHEET MAP **OF SURVEY OF INDIA**



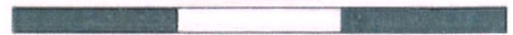
**POTENTIAL AREA OF SAND AT BANSLOI RIVER,
DISTRICT - PAKUR,
OSM TOPOSHEET NO. G45V11**



INDEX

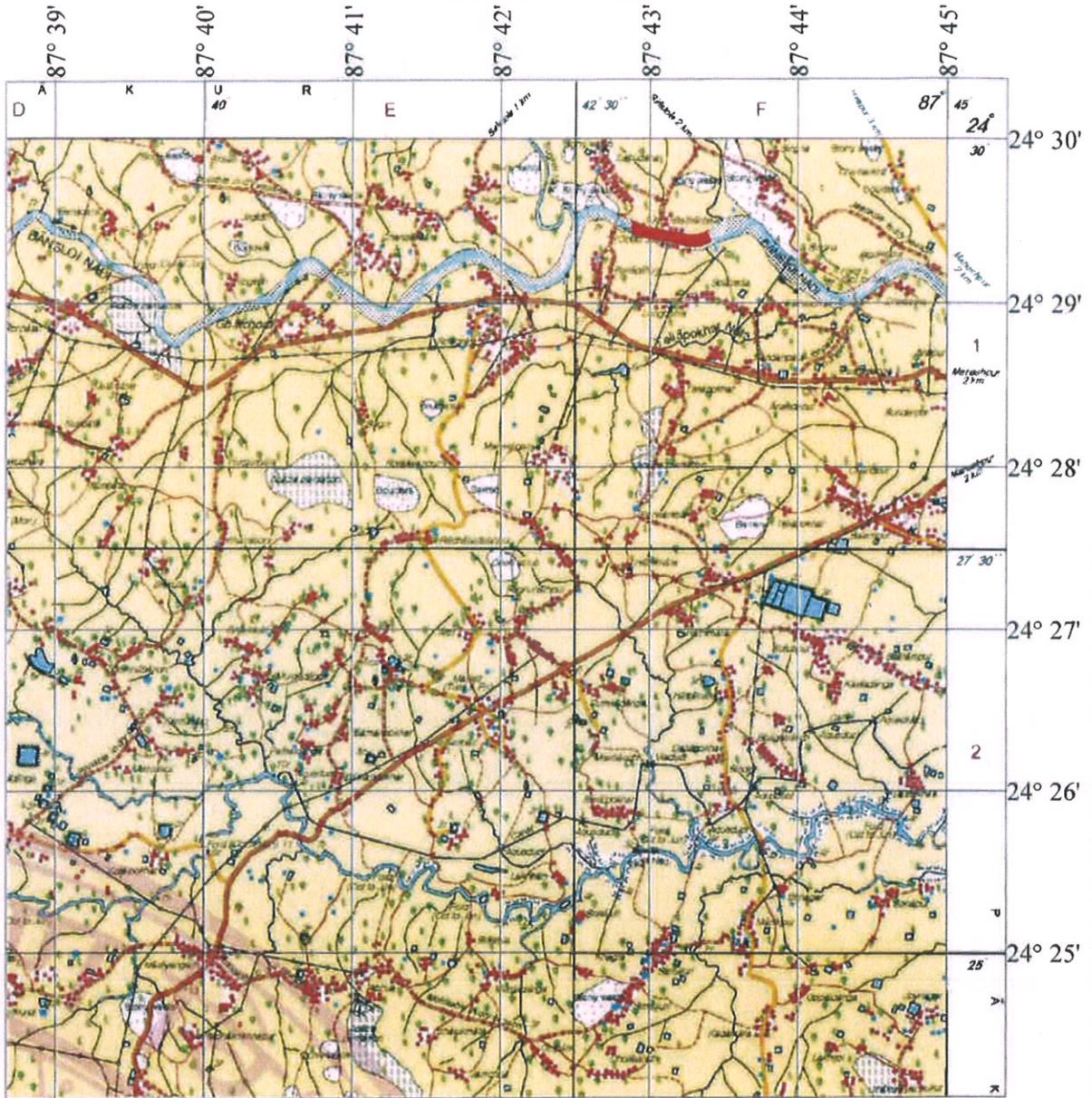
- PROPOSED POTENTIAL AREA
- BASI AREA - 6.57 HA

SCALE - 1:1500



Express highway with toll, with bridge, with distance along		Temple, Ghat, Church, Mosque, Jagan, Fort, Lighthouse	
Roads, metalled, according to importance		Lighthouse, Lightship, Buoy, grid, unlighted, Anchorage	
Roads, double cartage way, according to importance		Mine, Vene or hole, Grass, Scrub	
Unmetalled road, Cart-track, track back with pass, foot path		Palm, palm tree, other, Pandan, Conifer, Bamboo, Other trees	
Streams, with track in bed, unshaded, Canal		Area, disturbed, wooded, Reforested tree	
Dam, masonry or rock-fill, earthen, Weir		Boundary, international:	
River, dry with water channel, with stone blocks, Tidal weir		state demarcated, undemarcated	
Submerged rocks, Shoal, Swamp, Raft		defined, subaqueous, lateral, vertical, linear	
Wells, hand, unlined, Tube well, Spring, Famine perennial, dry		Boundary pillars, surveyed, uncoloured	
Embankments, road or rail, bank, Broken ground		heights, triangulated, station point, approximate	
Railways, broad gauge, double, single with station, under concern		Benchmark, geodetic, tertiary, canal	
Railways, other gauge, double, single with distance stone, do		Post office, Telegraph office, Overhead tank	
Mine, fire or tramway, skin cutting with tunnel		Rail houses, or inspection platform, Detail house, Paved station	
Quarries with subterranean, Rocky slopes, Cliff		Camping ground, Forest, reserved, protected	
River, because (Other) (Green) (unperennial) (Silt) (unshifting)		Spaced, reserve, administrative, locality or tribal	
Water or Village, inside, (Island), Post		Hospital, Dispensary, Veterinary, Hospital, Dispensary	
Hub, permanent, temporary, Transit, Airbase		Airports, inland, Tourist site	
		Power line, with pylons surveyed, with poles unsurveyed	

**POTENTIAL AREA OF SAND AT BANSLOI RIVER,
DISTRICT - PAKUR,
OSM TOPOSHEET NO. G45V11**



INDEX

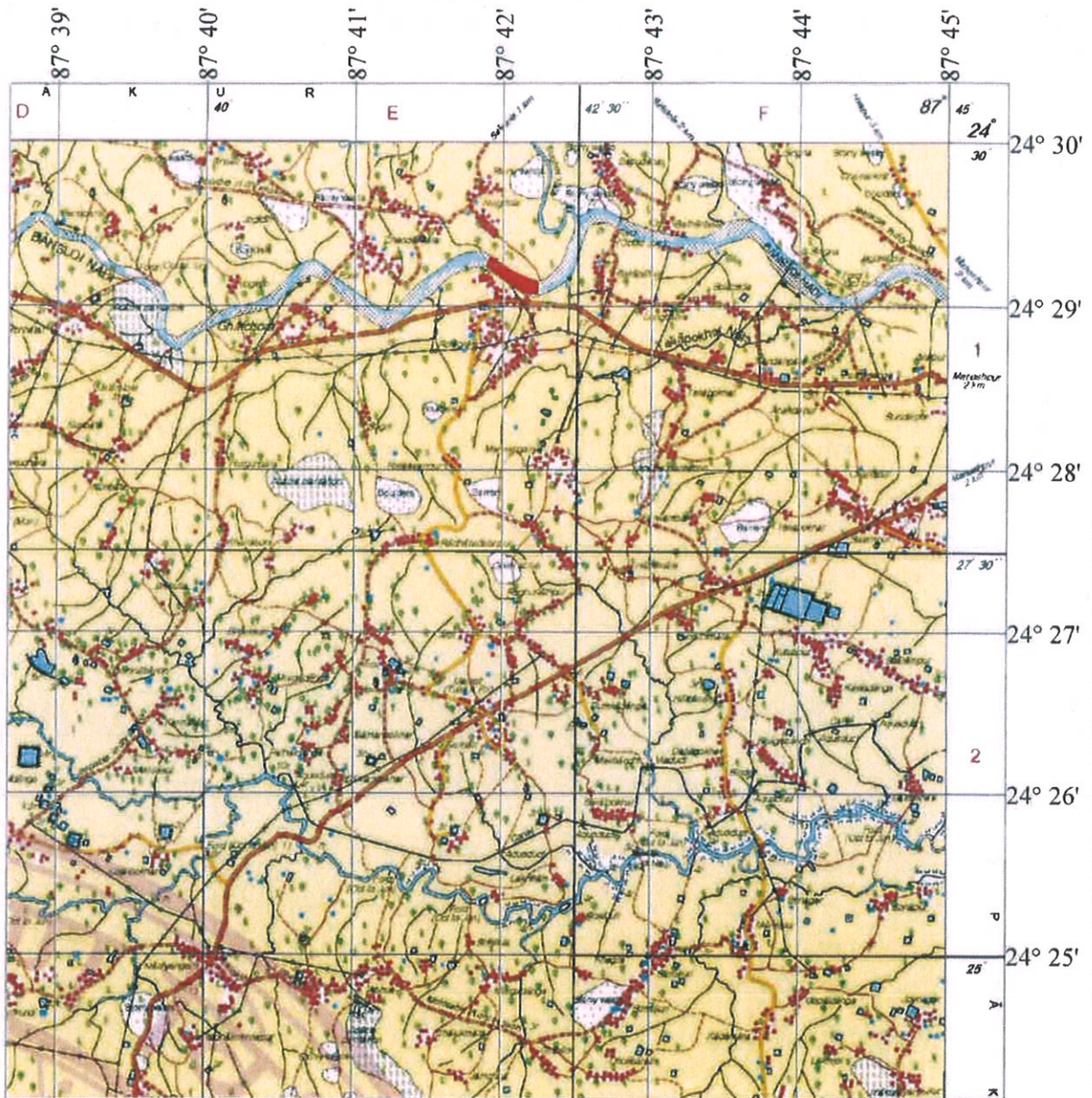
- PROPOSED POTENTIAL AREA
- BAS? AREA - 9.21 HA

SCALE - 1:1500

Express highway with toll with bridge with distance signs	30	Tempo (Motor Cycle) Rickshaw Light Motor cycles	BM 200
Rivers, metallic according to importance	42 30	Lighthouse Lightship Boats (rigged, unrigged) Anchorage	BM 200
Roads, double carriage way according to importance	42 30	Mine, Vire on trails, Grass, scrub	BM 200
Unmetalled road Cart track Pack track with pass Foot path	42 30	Palm, Calmyna, other, Penda, Conifer, Bamboo, Other trees	BM 200
Streams with rock in bed, unconfined Canal	42 30	Area cultivated, wooded, Surveyed area	BM 200
Dams, masonry or rock-filled, earthenwork Weir	42 30	Boundary international	BM 200
River dry with water channel, with stand & mds Tidal river	42 30	state demarcated, unbordered	BM 200
Submerged rocks Shrub Swamp Reeds	42 30	state demarcated, fenced or table, forest	BM 200
Wells (hand, unlined, tube well) Spring Tanks (perennial, dry)	42 30	Boundary of state surveyed, unbordered	BM 200
Embankments road or rail, tank Broken ground	42 30	heights, triangulated, station cont, spot heights	BM 200
Railways, broad gauge double, single with station, under constn	42 30	Bench-mark (good/bd) arbitrary, canal	BM 200
Railways, other gauge double, single with distance signs, do	42 30	Post office, Telegraph office, Overhead tank	BM 200
Mineral line or tramway, (in cutting with tunnel)	42 30	Rail house or inspection hut/guard, Great house, Power station	BM 200
Circular with sub-features Rocky slopes Cliffs	42 30	Camping ground, Hotel, reserved, protected	BM 200
Road (barrow) (1/2) (2) (hand) (displacement) (2) (displacement)	42 30	Spaced fence, administrative, facility or table	BM 200
Towns or Villages, established, (new) (old)	42 30	Hospital, Dispensary, Veterinary Hospital, Dispensary	BM 200
Highway, unmetalled, temporary, (new) (old)	42 30	Airports, heliport, Tourist stop	BM 200
	42 30	Power line, with pylons surveyed, with poles unsurveyed	BM 200



**POTENTIAL AREA OF SAND AT BANSLOI RIVER,
DISTRICT - PAKUR,
OSM TOPOSHEET NO. G45V11**



INDEX

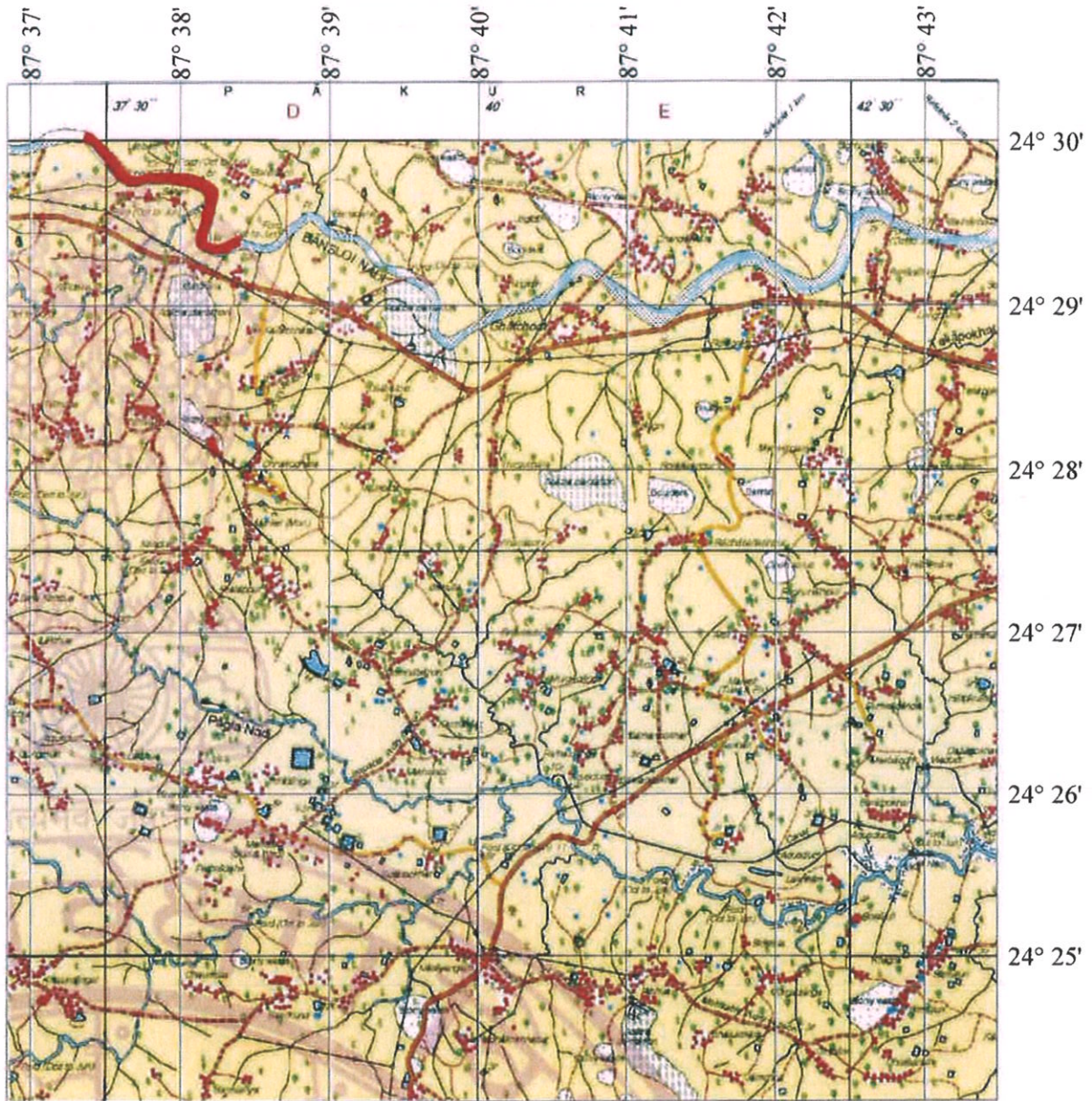
- PROPOSED POTENTIAL AREA
- BAS3 AREA - 8.09 HA

SCALE - 1:1500



Express highway with toll, with bridge, with distance along		Temple, Ghuman, Ghuman, Mosque, Jagan, Jagan, Ganesha	
Roads, metalled, according to importance		Lighthouse, Lightship, Buoy, lighted, unlighted, Anchorage	
Roads, double carriageway, according to importance		Mine, Vire on trolly, Grass, Scrub	
Unmetalled road, Cart-track, Pack track with pass, Foot path		Palm, date-palm, other, Plantain, Conifer, Bamboo, Other trees	
Streams with back in bed, unshoed, Canal		Areas cultivated, wooded, Surveyed tree	
Dams, masonry or rock-filled, earthwork, Weir		Boundary, international	
River dry with water channel, with sand & rocks, Tidal River		State demarcated, un-demarcated	
Submerged rocks, River, Swamps, Rafts		old, not, sub-division, forest or bush, forest	
Wells, lined, unlined, Tube well, Spring, Tanks, perennial, dry		Boundary of state, surveyed, un-surveyed	
Embankments, road or rail, bank, Broken ground		heights, unregulated, station, cont, approximate	
Railways, broad gauge, double, single with station, under constr.		Bench-mark, geodetic, tertiary, canal	
Railways, other gauge, double, single with distance stone, do		Post office, Telegraph office, Overhead tank	
Mineral line or tramway, Min. Cutting with tunnel		Rest house or inspection bungalow, Civil house, Power station	
Contours with sub-benchmarks, Rocky slopes, Cliffs		Camping ground, forest, reserved, protected	
Sand features (Tidal, Ghats, High ground) (2) houses, village		Spaced wires, administrative, locality or tribal	
Towns or Villages, industrial, reserved, Port		Hospital, Dispensary, Veterinary Hospital, Dispensary	
Rail, Carriage, temporary, Lines, Air-pipe		Sanatorium, Hospital, Tourist site	
		Power line, with cyphers surveyed, with codes un-surveyed	

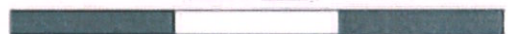
**POTENTIAL AREA OF SAND AT BANSLOI RIVER,
DISTRICT - PAKUR,
OSM TOPOSHEET NO. G45V11**



INDEX

- PROPOSED POTENTIAL AREA
- AREA - 27.20 HA

SCALE - 1:1500



Express highway with toll, with bridge, with distance signs		Temple, Ghata, Church, Mosque, Ghat, Tomb, Shrine	
Roads, metalled, according to importance		Lighthouse, Lightship, Buoy, Lighted, Unlighted, Anchorage	
Roads, double carriage way, according to importance		Line, Wire on poles, Grass, Scrub	
Unmetalled road, Cart track, Pack track with pass, Foot path		Palm, Calmyna, Other, Pantain, Conifer, Bamboo, Other trees	
Streams, with track in bed, untracked, Canal		Area, as forest, wooded, Surveyed, tree	
Dam, masonry or rock filled, earthwork, Weir		Boundary, international	
River, dry with water channel, with sand, A, rocks, Tidal flow		State, uncontrolled, uncontrolled	
Submerged rocks, Steel, Sewer, Roads		State, controlled, uncontrolled	
Weir, masonry, concrete, stone, brick, masonry, dry		Boundary of state, surveyed, uncoloured	
Embankments, road or rail, bank, Broken ground		Height, triangulated, station, cont, approximate	
Railways, broad gauge, double, single with station, under construction		Benchmark, geodetic, tertiary, cane	
Railways, other gauge, double, single with distance signs, do		Post office, Telegraph office, Overhead tank	
Mineral line or tramway, kiln, Cutting with tunnel		Rail house, or inspection house, Signal house, Police station	
Contours with sub-bathymetry, Rocky slopes, Cliffs		Camping ground, Forest, reserved, protected	
Small features (Other) (200m and perimeter), (200m and string)		Special reserve, administrative, locality or tribal	
Town or Village, (metalled), (metalled), (not)		Hospital, Dispensary, Veterinary, Hospital, Dispensary	
Rail, permanent, temporary, Diesel, Electric		Academy, school, Tourist, etc.	
		Power line, with pylons surveyed, with poles unsurveyed	

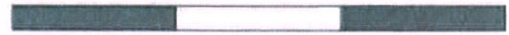
**POTENTIAL AREA OF SAND AT BANSLOI RIVER,
DISTRICT - PAKUR,
OSM TOPOSHEET NO. G45V10 & G45V11**



INDEX

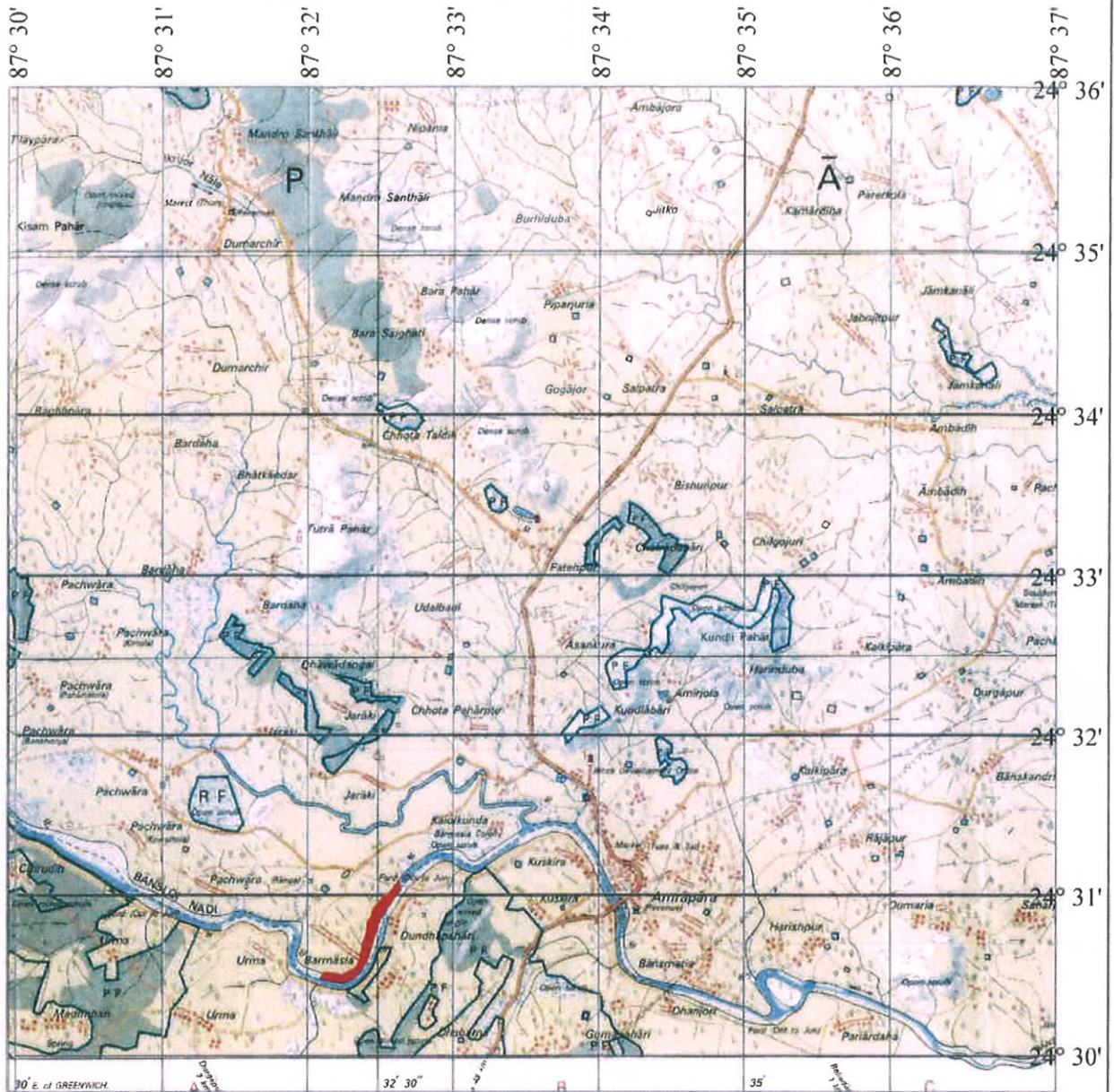
- PROPOSED POTENTIAL AREA
- BASS AREA - 1.63 HA

SCALE - 1:1500



Express highway with toll, with bridge, with staro skin		Tempo (Train, Gun, Missile, Log, Bomb, Mines)	
Roads (includes according to importance)		Lighthouse, Lightship, Buoy, Lighted, unlighted, Anchorage	
Roads, double carriage way according to importance		Mine, Wire on poles, Grass, Scrub	
Immaculated road, Cart track, Pack track with pass, Foot path		Palm, Palmyra, other, Bamboo, Cane, Bamboo, Other trees	
Streams with track bed, unlined, Canal		Area, Cultivated, wastel, Barren, Fallow	
Canal, machinery or rock/fill, earthenwork, Weir		Boundary, international	
Stream, dry with water channel, with stone & rock, Tidal river		State, international, (unbordered)	
Canal, earthenwork, Rhial, Sewer, Ruine		Canal, irrigation, lateral or furrow, Canal	
Bank (low, raised), Flow, side, Spring, Trench, (formed, by)		Boundary, private, surveyed, unbordered	
Embankments, road or rail, Bank, Broken ground		Height, triangulated, station, point, ascromena	
Railways, broad gauge, double, single with station, under constn.		Bench-mark, geodetic, arbitrary, canal	
Railways, other gauge, double, single with station, constn.		Provision, Telegraph, office, (unbordered) lines	
Mineral line or railway, Min. Cutting with tunnel		Rail, (road or) (road) (road) (road) (road) (road) (road)	
Ditches with cut-bank, Rocky slopes, Cliff		Dam, (road or) (road) (road) (road) (road) (road) (road)	
Sand, (road or) (road) (road) (road) (road) (road) (road)		Spur, (road or) (road) (road) (road) (road) (road) (road)	
House or Village, (road or) (road) (road) (road) (road) (road) (road)		Hospital, Dispensary, Veterinary, Hospital, Dispensary	
High, (road or) (road) (road) (road) (road) (road) (road)		Acropolis, (road or) (road) (road) (road) (road) (road) (road)	
		Power line, with cylin surveyed, with poles unsurveyed	

**BARAMASIA SAND GHAT AT BANSLOI RIVER,
DISTRICT - PAKUR,
TOPOSHEET NO. G45V10**



INDEX

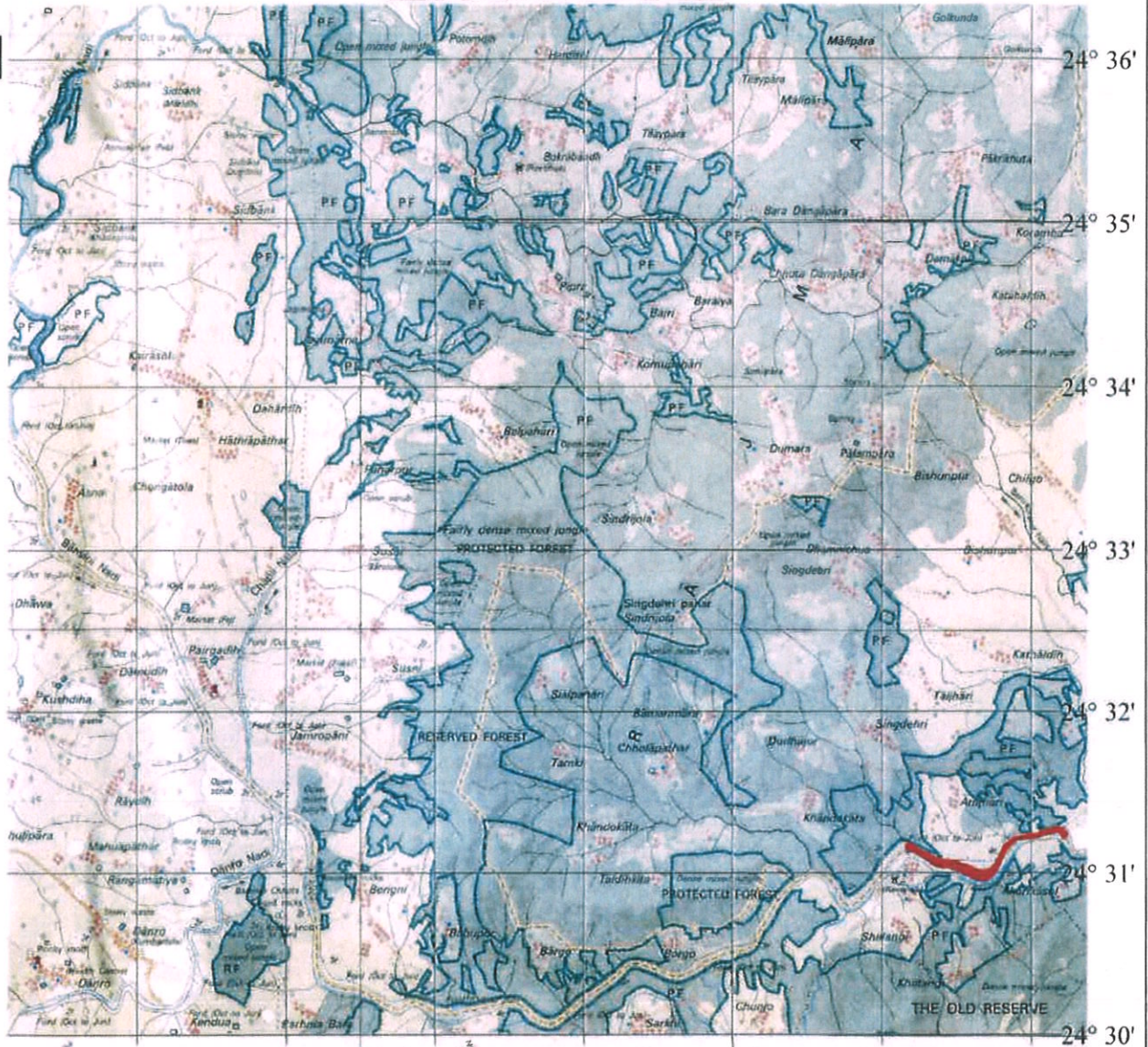
- PROPOSED POTENTIAL AREA
- AREA - 1120 HA

SCALE - 1:1500



Express highway with hill, with bridge with distance sign		20	temple, shrine, church, mosque, ghat, tomb, graves	
Narrow gauge railway according to importance			Lighthouse, Lightship, Buoy, lighted, unlighted, Anchorage	
Road, double carriage way according to importance			Mine, Vein on belt, shaft, slope	
Unimproved cart track, Pack track with pass, foot path			Trees: palm tree, other, Pandan, Conifer, Bamboo, Other trees	
Stream, water track in bed, unshoed, Canal			Areas: cultivated, wooded, Surveyed line	
Dam, reservoir or rock-fill, earthwork, Weir			Boundary, international	
River, with water channel, with levee & sides, Tidal river			shore, elevated, unimproved	
Water channel, River, Seasonal River			channel, surveyed, listed or fallow, forest	
Well, open, covered, tube well, Spring, Tank, pond, dry			Boundary of area, surveyed, unlocated	
Embankment, road or rail, tank, broken ground			heights, triangulated, station point, astronomical	
Road gauge, double, single with station, under construction, other gauge, double, single with distance stone, do			Benchmark, geodetic, tertiary, canal	
Central line of railway, Km. Cutting with tunnel			road, class, Takayama, other, overhead, tele	
Contact with sub-stations, Relay station, GNB			Rail track or inspection, freight, Great Indian Peninsula	
Sand dunes, (1:5000 scale) (2:10000 scale)			Graveling ground, Forest, reserved, protected	
Town or Village, established, New, not			Spaced, white, administrative, locality of 100m	
Rail, permanent, temporary, Tower, telegraph			Hospital, Dispensary, Veterinary, Hospital, Dispensary	
			Airports, military, Tourist, stop	
			Tower, line, with pylons, surveyed, with poles, unsurveyed	

**POTENTIAL AREA OF SAND AT BANSLOI RIVER,
DISTRICT - PAKUR,
OSM TOPOSHEET NO. G45V6**



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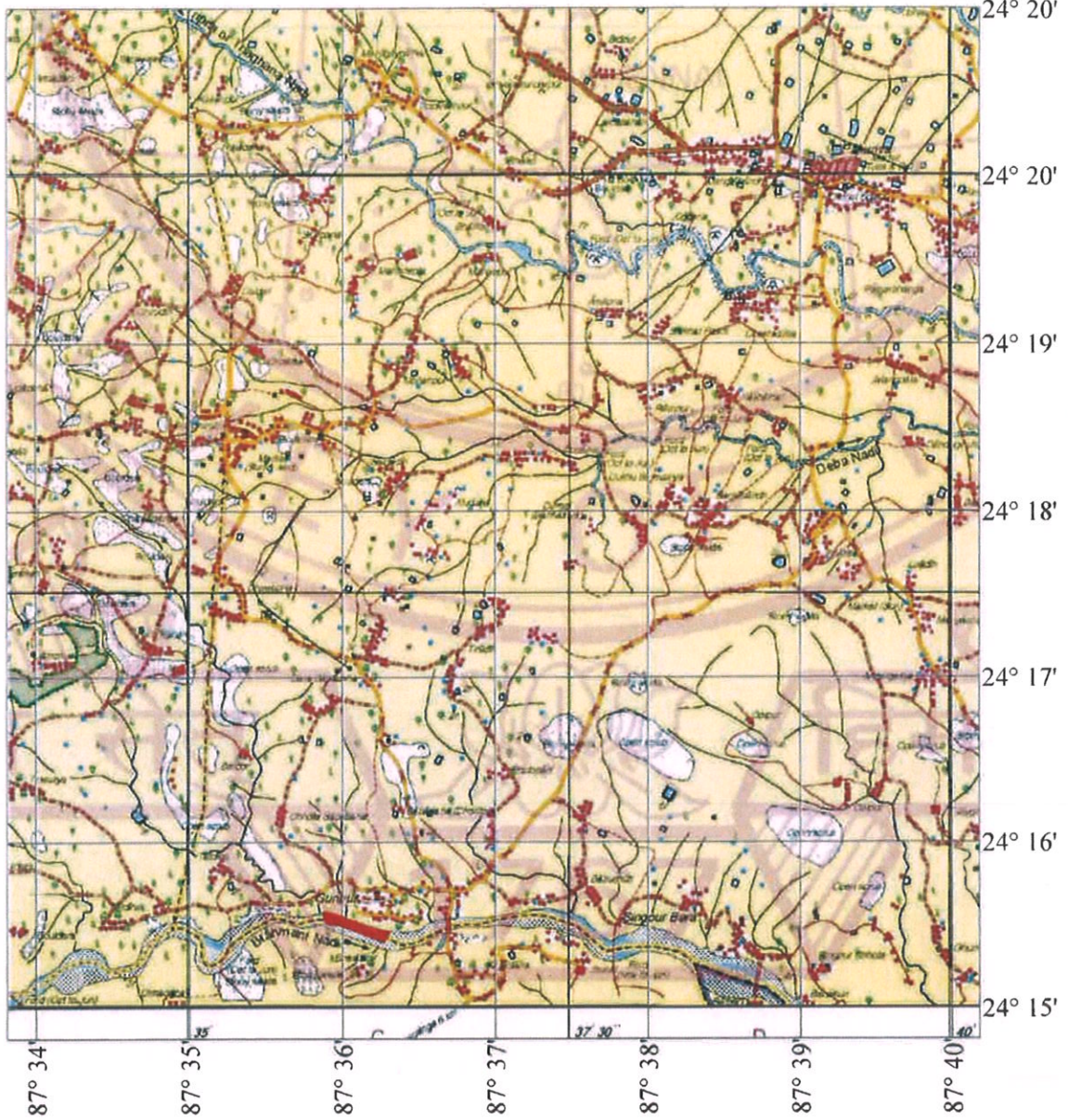
PROPOSED POTENTIAL AREA

AREA - 13.00 HA



Express highway with toll, with bridge, with barrier skirts		Temples, Ghats, Churches, Mosques, Dargahs, Forts, Bunkers	
Canals, irrigation according to importance		Lighthouses, Lightships, Buoys, Lighted, Unlighted, Anchorage	
Roads, double carriageway according to importance		Mine, Wire on hills, Grass, Scrub	
Unimproved road, Cart-track, Path track with pass, Foot path		Palm, Sal, Other, Pantan, Conifer, Bamboo, Other trees	
Stream with track in bed, unimproved Canal		Area of forest, wooded, Surveyed tree	
Canal, irrigation or industrial, earthen, Weir		Boundary, International	
River, irrigation, water channel, with steel & rock, Tidal river		State, District, Unsurveyed	
Railways, other gauge, double, single with distance stones, do		Boundary of area, surveyed, unlocated	
Mineral line of railway, K.M. Cladding with tunnel		Height, triangulated, station, point, aerodrome	
Contours with sub-contours, Rocky slopes, Cliffs		Beach-mark, gabbio, battery, canal	
Barbed wire, Chain (2 kind), barbed wire, 2 1/2, 3, 4, 5, 6, 7, 8, 9, 10		Post office, Telegraph office, Overhead tank	
Towns or Villages, inhabited, Uninhabited		Rail house or inspection, engine, Diesel House, Power station	
High, International, temporary, Low, Adjoining		Camping ground, Forest, reserved, protected	
		Road, narrow, asphalt, stone, quality or other	
		Medical, Dispensary, Veterinary, Hospital, Dispensary	
		Aerodrome, heliport, Tourist site	
		Power line, with pylons surveyed, with poles, unsurveyed	

POTENTIAL AREA OF SAND AT BRAHMANI RIVER, DISTRICT - PAKUR, OSM TOPOSHEET NO. G45V11



INDEX

PROPOSED POTENTIAL AREA

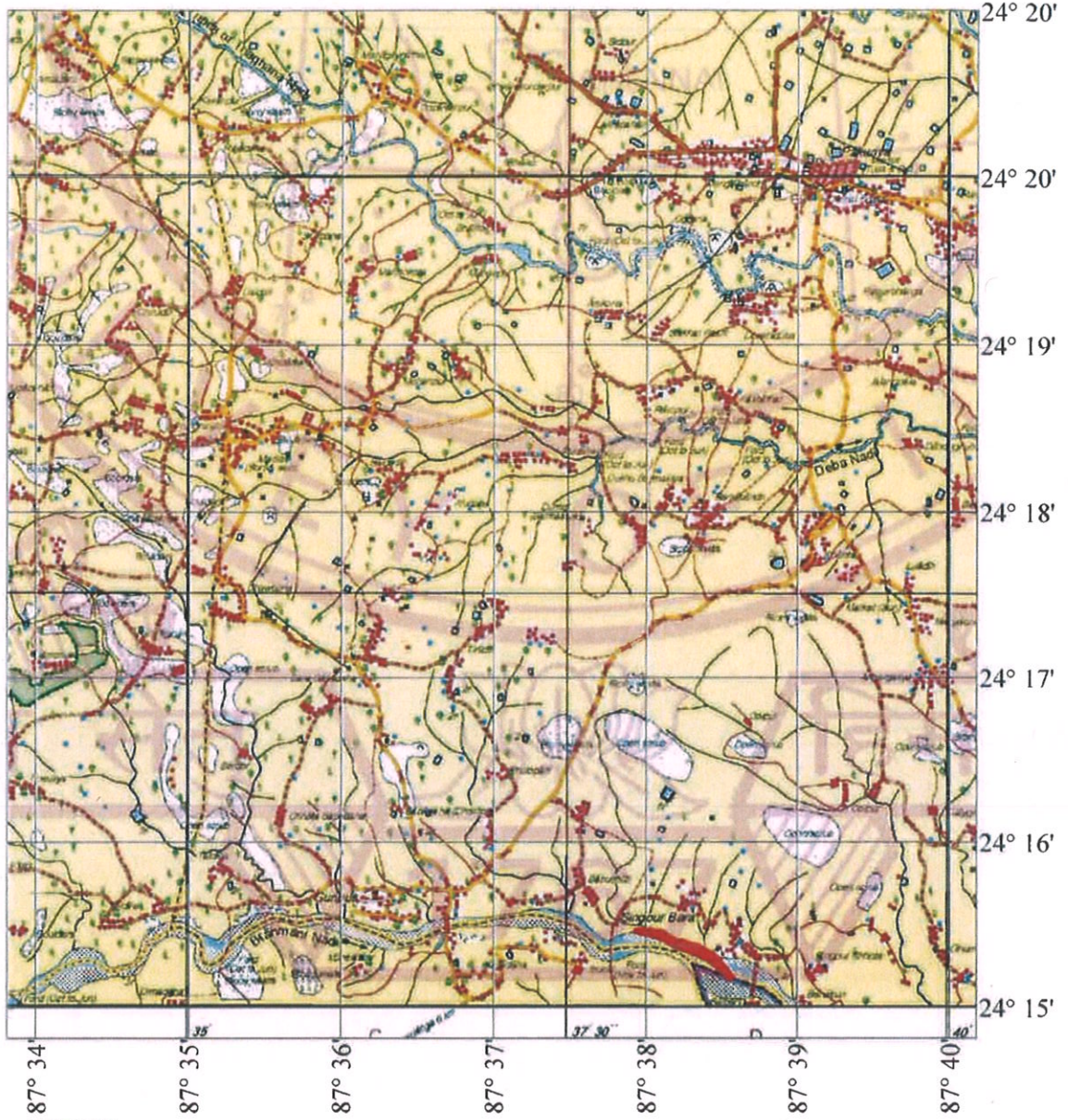
BRAR AREA - 6.00 HA

SCALE - 1:1500



<p>State highway with toll, with bridge, with stairs, state</p> <p>Open canals: according to importance</p> <p>Public carriage way according to importance</p> <p>Unimproved road Cart-track Pack-track with pass Foot-path</p> <p>Street with tacks in bed, unimproved Canal</p> <p>Canal masonry or rock-lined, earthenwork Weir</p> <p>Reservoir with or without dam, with stand A, side Tidal river</p> <p>Shaded area: River Swamp Reservoir</p> <p>Water met, unlined Full well Spring Tank (perennial, dry)</p> <p>Breakwaters: road or rail, bank Broken ground</p> <p>Railways, broad gauge Double, single with station, under constn</p> <p>Railways, other gauges Double, single with station, do</p> <p>Mineral line or trackway Min Cutting with tunnel</p> <p>Contours with substantial Rocky slopes Cliff</p> <p>Spill basins (filled) (dry) (impounded) (2) (freshwater)</p> <p>Towers: Masts: chimneys, (steel) (iron) (wood)</p> <p>Pit (open-cast) Temporary Tower Antenna</p>	<p>7.5</p> <p>10</p> <p>15</p> <p>20</p> <p>25</p> <p>30</p> <p>35</p> <p>40</p> <p>45</p> <p>50</p> <p>55</p> <p>60</p> <p>65</p> <p>70</p> <p>75</p> <p>80</p> <p>85</p> <p>90</p> <p>95</p> <p>100</p> <p>105</p> <p>110</p> <p>115</p> <p>120</p> <p>125</p> <p>130</p> <p>135</p> <p>140</p> <p>145</p> <p>150</p> <p>155</p> <p>160</p> <p>165</p> <p>170</p> <p>175</p> <p>180</p> <p>185</p> <p>190</p> <p>195</p> <p>200</p> <p>205</p> <p>210</p> <p>215</p> <p>220</p> <p>225</p> <p>230</p> <p>235</p> <p>240</p> <p>245</p> <p>250</p> <p>255</p> <p>260</p> <p>265</p> <p>270</p> <p>275</p> <p>280</p> <p>285</p> <p>290</p> <p>295</p> <p>300</p> <p>305</p> <p>310</p> <p>315</p> <p>320</p> <p>325</p> <p>330</p> <p>335</p> <p>340</p> <p>345</p> <p>350</p> <p>355</p> <p>360</p> <p>365</p> <p>370</p> <p>375</p> <p>380</p> <p>385</p> <p>390</p> <p>395</p> <p>400</p> <p>405</p> <p>410</p> <p>415</p> <p>420</p> <p>425</p> <p>430</p> <p>435</p> <p>440</p> <p>445</p> <p>450</p> <p>455</p> <p>460</p> <p>465</p> <p>470</p> <p>475</p> <p>480</p> <p>485</p> <p>490</p> <p>495</p> <p>500</p>
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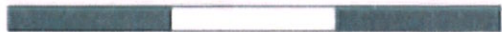
**POTENTIAL AREA OF SAND AT BRAHMANI RIVER,
DISTRICT - PAKUR,
OSM TOPOSHEET NO. G45V11**



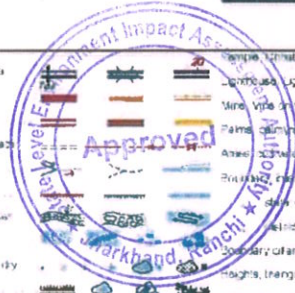
INDEX

- PROPOSED POTENTIAL AREA
- BRA⁹ AREA - 1160 HA

SCALE - 1:1500



Express highway with toll, with bridge, with drainage along	Temple, shrine, church, mosque, ghat, tomb, dargah	BM 83.3	BM 83.3
Roads, metalled, according to importance	Compass, lighthouse, buoy, lighted, unlighted, Anchorage	RF	PF
Roads, double carriageway, according to importance	Wire, type, electric, Grass, scrub	KIKRI	NAGA
Unmetalled road, Cart track, Path track with pass, Foot path	Farms, paddy, other, Poultry, Cattle, Bamboo, Other trees		
Streams with back in cut, unforded Canal	Area of forest, wooded, Surveyed tree		
Dam, masonry or rock-filled, earthen, Weir	Rivulet, stream, brook		
River, dry with water channel, with stone A, sills, Tidal weir	Shrub, (sarcocolla), unclassified		
Unimproved roads, Canal, Sewer, Road	Field, sown, wheat, kharif or bahar, forest		
Well, tube, unwell, Tubewell, Spring, Tank, perennial, dry	Boundary of area, surveyed, unroaded		
Embankments, road or rail, tank, broken ground	Height, triangulated, station, spot, approach		
Railways, road gauge, double, single with station, under construction	Bench-mark, geodetic, tertiary, canal		
Railways, other gauges, double, single with station, stop, do	Rail station, Telegraph office, Overhead tank		
Mineral line or tramway, with cutting with tunnel	Rail route or inspection platform, Great Indian Railway station		
Contours with subdivisions, Rocky slopes, Cliffs	Common ground, Forest, reserved, protected		
Sand, (barren) (lake), (ground) (perennial) (rain) (seasonal)	Spaced, (barren), (barren), (barren), (barren)		
Trees or village, (shaded), (beaded), Post	Hospital, Dispensary, Veterinary, Hospital / Dispensary		
Club, (barren), (barren), Tower, Abutment	Sanatorium, (barren), Tourist site		
	Power line, with pylons surveyed, with poles unsurveyed		



**POTENTIAL AREA OF SAND AT BRAHMANI RIVER,
DISTRICT - PAKUR,
OSM TOPOSHEET NO. G45V12**



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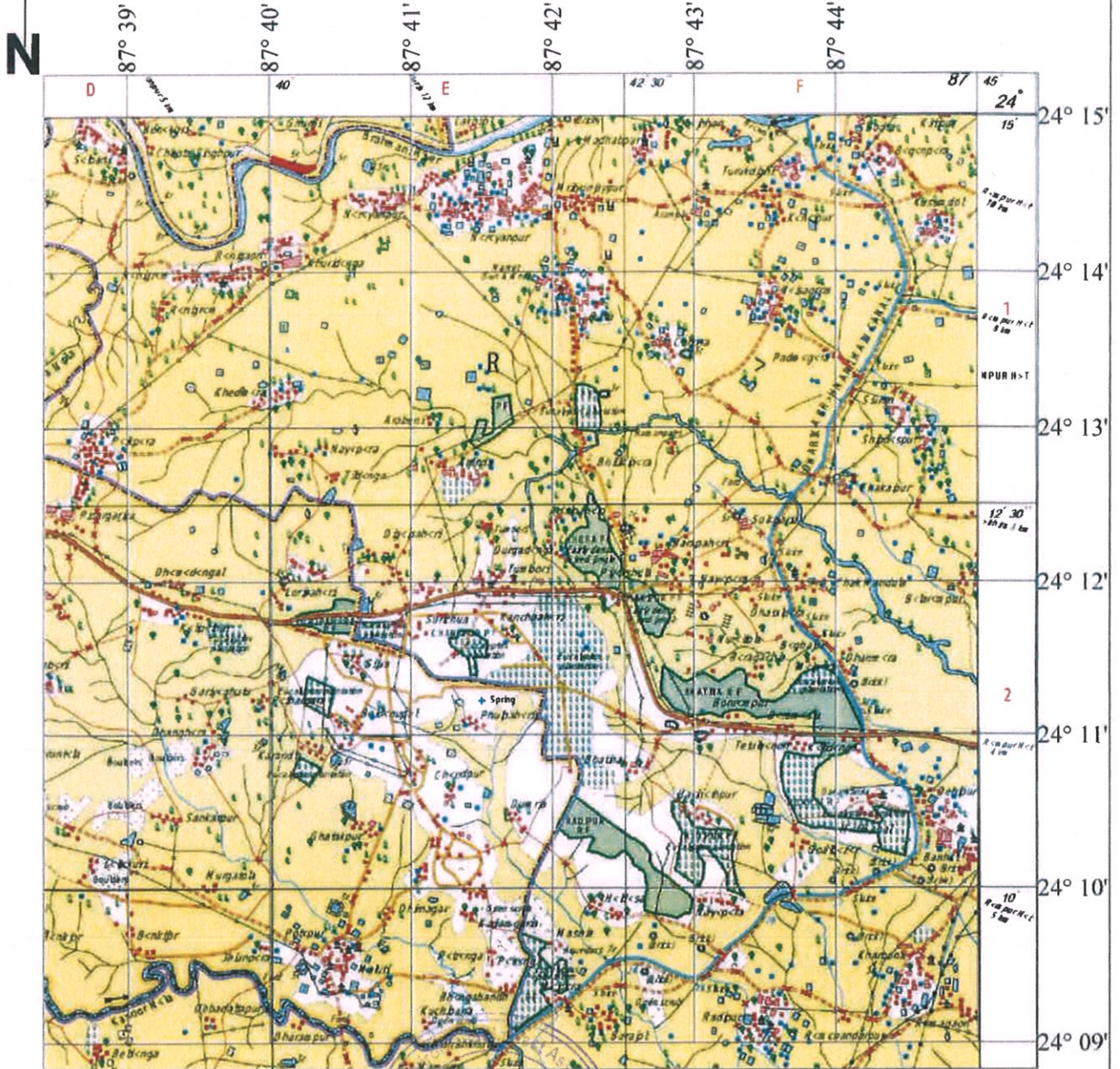
- PROPOSED POTENTIAL AREA
- BRA 10 AREA - 7.75 HA

SCALE - 1:1500

Express highway with toll, with bridge, with distance signs	Light house, Light ship, Buoy: lighted, unlighted, Anchorage	▲ 200	200	▲ 200
Rails: metallic according to type, bridge	Mine, Vine or bridle, Green, Scrub	BM 63.3	BM 63.3	BM 63.3
Roads: double carriage way according to type	Palms, palms, other, Plantain, Conifer, Bamboo, Other trees	+	+	+
Unmetalled road, Cart-track, Pack-track, Grass, Foot path	Areas: cultivated, wooded, Surveyed, tree	RF	RF	RF
Streams: with track in bed, unshaded, channel	Boundary: international	KMQR	KMQR	KMQR
Dams: masonry or rock-filled, same type, well	State demarcated, undemarcated	+	+	+
River dry with water channel, with stand A, rock, tidal river	Canal, irrigation, lined or false, forest	+	+	+
Submerged rocks, Shoal, Seem, Roads	Boundary: others: surveyed, uncolored	+	+	+
Wells: hand, unlined, Tube well, Spring, Tanks, permanent, dry	Height, the regulated, station, point, approximate	+	+	+
Embankments: road or rail, tank, Broken ground	Benchmark: geodetic, tertiary, canal	+	+	+
Railways: broad gauge, double, single with distance stone, do	Rail office, Telegraph office, Overhead line	+	+	+
Railways: other gauge: double, single with distance stone, do	Rail house or inspection building, Diesel, Locomotive, Power station	+	+	+
Mine: iron or manganese, lignite, Cutting with tunnel	Camping ground, Forest: reserved, protected	+	+	+
Cuttings with sub-basins, Rocky slopes, Gullies	Special areas: administrative, locality, vital	+	+	+
Sand basins (like closed drainage system) (20:10:10:10)	Hospital, Dispensary, Veterinary, Hospital, Dispensary	+	+	+
Towers: Wireless, electric, telegraph, Post	Reservoirs, reserved, Tourist site	+	+	+
Tide: permanent, temporary, Tides: Artificial	Power line, with pylons surveyed, with poles unsurveyed	+	+	+



**POTENTIAL AREA OF SAND AT BRAHMANI RIVER,
DISTRICT - PAKUR,
OSM TOPOSHEET NO. G45V12**



INDEX

- PROPOSED POTENTIAL AREA
- BRAHMANI AREA - 3 60 HA

SCALE - 1:1500

Express highway with toll, with bridge, with distance signs	30	Reserve Green Ground Mosque Jagan Temple Gurdwara	20	20
Roads, metalled according to importance	10	Lighthouse Lightship Buoy (lighted, unlighted) Anchorage	20	20
Roads, double cartway according to importance	5	Mine Wire on poles Grass Scrub	20	20
Unmetalled road Cart track Pack track with peak Foot path	2	Palm, palmiya, other Plantain Conifer Bamboo Other trees	20	20
Streams with track in bed, unconfined Canal	1	Area cultivated, wooded, surveyed, tree	20	20
Dams: masonry or rock faced, damwork, weir	1	Boundary, international	20	20
River dry with water channel, with sand & rocks, tidal river	1	state demarcated, unmetalled	20	20
Submerged rocks River Swamp Road	1	land, submersed, forest or tank, forest	20	20
Well: used, unlined Tube well Spring Tank: permanent, dry	1	Boundary, others, surveyed, uncolored	20	20
Embankment: road or rail, tank Broken ground	1	Height, triangulated, station point, approximate	20	20
Railways: broad gauge double, single with station, under construction	1	Benchmark: geodetic, battery, canal	20	20
Railways, other gauge double, single with distance signs, do	1	Post office Telegraph office Overhead tank	20	20
Mineral line or tramway: 4th Cutting with tunnel	1	Real house or inspection bungalow Great house Poxa station	20	20
Contour with sub-features Rocky slopes Cliff	1	Camping ground Forest reserved, protected	20	20
Road feature (1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th)	1	Spaced series administrative, locality or other	20	20
Conical Village, inhabited, (less than 100)	1	Hospital Dispensary Veterinary Hospital Dispensary	20	20
Tube well: test, temporary Tower Aqueduct	1	Ancient: temple, Tourist site	20	20
		Power line, with pylons surveyed, with poles unsurveyed	20	20

ANNEXURE-13

COMPOSITE MAP OF **TOPOSHEET MAP OF SURVEY** **OF INDIA**



ANNEXURE-14

SATELLITE MAP OF PRE-
MONSOON AND POST-
MONSOON MAP

&



ZONE WISE

ANNEXURE-15

REPLENISHMENT STUDY OF **PRE-MONSOON AND POST** **MONSOON DATA**



BANSLOI RIVER OF PAKUR DISTRICT															
PRE MONSOON						POST MONSOON									
S.NO	UIN SAND BAR	AMSL	AREA IN SQM	AREA IN HA.	UIN SAND BAR	AMSL	AREA IN SQM	AREA IN HA.	UIN SAND BAR	AMSL	AREA IN SQM	AREA IN HA.	THICKNESS OF SAND IN MTR	VOLUME IN CUM	VOL IN M CUM
1	PAK_BAS_PRE_01	44.01	559471	56.95	PAK_BAS_POS_01	45.34	569473	56.95	569473	45.34	569473	56.95	1.33	757399	0.757
2	PAK_BAS_PRE_02	48.22	557679	55.77	PAK_BAS_POS_02	48.71	557682	55.77	557682	48.71	557682	55.77	0.49	273264	0.273
3	PAK_BAS_PRE_03	60.69	418382	41.84	PAK_BAS_POS_03	60.92	418389	41.84	418389	60.92	418389	41.84	0.23	96229	0.096
4	PAK_BAS_PRE_04	65.36	132966	13.30	PAK_BAS_POS_04	65.42	132968	13.30	132968	65.42	132968	13.30	0.06	7978	0.008
5	PAK_BAS_PRE_05	68.82	124841	12.48	PAK_BAS_POS_05	68.88	124842	12.48	124842	68.88	124842	12.48	0.06	7491	0.007
6	PAK_BAS_PRE_06	76.15	51671	9.17	PAK_BAS_POS_06	76.23	51674	9.17	51674	76.23	51674	9.17	0.08	7334	0.007
7	PAK_BAS_PRE_07	77.19	190432	19.04	PAK_BAS_POS_07	77.28	190435	19.04	190435	77.28	190435	19.04	0.09	17139	0.017
8	PAK_BAS_PRE_08	82.79	268510	26.85	PAK_BAS_POS_08	82.92	268511	26.85	268511	82.92	268511	26.85	0.13	34906	0.035
9	PAK_BAS_PRE_09	101.73	415669	41.57	PAK_BAS_POS_09	102.81	415670	41.57	415670	102.81	415670	41.57	1.08	448924	0.449
			2769621	276.96			2769644	276.96			2769644	276.96		1650664	1.650664

BRAHMANI RIVER OF PAKUR DISTRICT															
PRE MONSOON						POST MONSOON									
S.NO	UIN SAND BAR	AMSL	AREA IN SQM	AREA IN HA.	UIN SAND BAR	AMSL	AREA IN SQM	AREA IN HA.	UIN SAND BAR	AMSL	AREA IN SQM	AREA IN HA.	THICKNESS OF SAND IN MTR	VOLUME IN CUM	VOL IN M CUM
1	PAK_BRA_PRE_01	60.29	274144	27.41	PAK_PRE_POS_01	60.91	274145	27.41	274145	60.91	274145	27.41	0.62	169970	0.170
2	PAK_BRA_PRE_02	59.2	51027	9.10	PAK_PRE_POS_02	60.11	51029	9.10	51029	60.11	51029	9.10	0.91	82836	0.083
3	PAK_BRA_PRE_03	52.98	459633	45.96	PAK_PRE_POS_03	53.68	459635	45.96	459635	53.68	459635	45.96	0.7	321745	0.322
4	PAK_BRA_PRE_04	49.48	293640	29.36	PAK_PRE_POS_04	50.04	293642	29.36	293642	50.04	293642	29.36	0.56	164440	0.164
5	PAK_BRA_PRE_05	48.32	196026	19.60	PAK_PRE_POS_05	49.31	196028	19.60	196028	49.31	196028	19.60	0.99	194068	0.194
			1314470	131.45			1314479	131.45			1314479	131.45		933058	0.933



AMTA

A



ESTIMATED POTENTIAL AREA OF SAND BAR OF PRE-MONSOON AND POST MONSOON PERIOD												
PRE MONSOON DATA						POST MONSOON DATA						
BANSLOJ RIVER						BANSLOJ RIVER						
UIN OF SAND BAR	AMSL	AVG AMSL	AREA IN SQM	RIVER WIDTH IN MTR	UIN OF SAND BAR	LATITUDE (N)	LONGITUDE (E)	AMSL	AVG AMSL	AREA IN SQM	SAND THICKNES S IN MTR	VOLUME IN M CUM
PAK_BAS_PRE_01	46.09	44.01	569471	138	PAK_BAS_POS_01	24.489759	87.706915	47.03	45.34	569473	1.33	0.757
	45.83					24.490035	87.707245	47.03				
	46.83					24.490136	87.708005	46.77				
	44.16					24.49041	87.708624	47.79				
	46.71					24.490756	87.708154	45.06				
	44.89					24.491052	87.707515	47.67				
	43.22					24.491143	87.707918	45.81				
	46.05					24.491228	87.70835	44.11				
	46.94					24.491207	87.708812	46.99				
	44.31					24.49137	87.709068	47.90				
	44.31					24.491709	87.708661	45.22				
	45.38					24.492444	87.708491	46.31				
	43.75					24.492364	87.709101	44.65				
	45.81					24.491748	87.709179	46.75				
	46.65					24.491785	87.709501	47.61				
	45.42					24.492066	87.709585	46.34				
	43.33					24.492603	87.709429	44.21				
	44.87					24.492683	87.708817	45.79				
	44.02					24.492914	87.709288	44.92				
	43.43					24.492686	87.709643	44.32				
	46.04					24.49206	87.709904	46.98				
	46.52					24.492093	87.710221	47.47				
	43.48					24.492781	87.709931	44.37				
	43.93					24.49298	87.709644	44.82				
	45.05					24.492663	87.710336	45.97				
	47.9					24.492114	87.710861	48.88				
	47.23					24.49239	87.71088	48.20				
	46.14					24.493	87.710396	47.08				
	45.82					24.493191	87.710283	46.76				
	48.08					24.493132	87.710649	49.06				
	48.14					24.492812	87.710841	49.13				
	46.83					24.492421	87.71114	47.79				
	47.3					24.49207	87.711255	48.26				
	46.54					24.49238	87.711417	47.49				
	49.93					24.493149	87.71121	50.94				
	49.72					24.492976	87.711717	50.73				
	46.4					24.492309	87.711588	47.34				
	46.74					24.491994	87.711619	47.70				
	47.63					24.492192	87.711931	48.61				
	51.28					24.492638	87.712388	52.32				
	50.62					24.492163	87.712638	51.65				
	49.19					24.491653	87.712664	50.19				
	50.86					24.491826	87.713302	51.90				
	52.62					24.492159	87.713553	53.69				
	51.88					24.492087	87.713818	52.94				
	49.5					24.491493	87.713966	50.51				



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49.84	24.491211	87.713858	50.86
50.23	24.491057	87.714188	51.26
48.84	24.491395	87.714287	49.84
50.69	24.491966	87.714187	51.72
49.02	24.491908	87.714516	50.02
46.24	24.491551	87.714715	47.19
46.11	24.491551	87.714738	47.06
44.99	24.491477	87.714903	45.91
44.56	24.491444	87.715079	45.47
45.91	24.491364	87.715536	46.84
43.85	24.491199	87.714948	44.74
45.35	24.490929	87.71471	46.27
45.18	24.490929	87.714727	46.10
42.55	24.490807	87.714975	43.41
43.24	24.49071	87.715132	44.12
42.96	24.49092	87.715145	43.84
43.25	24.490815	87.715292	44.13
44.54	24.490725	87.715605	45.45
45.11	24.490764	87.715849	46.03
44.48	24.490871	87.715625	45.39
46.38	24.491203	87.715833	47.33
45.31	24.491147	87.716167	46.23
43.88	24.491045	87.716499	44.77
42.47	24.490889	87.716801	43.34
44.13	24.490507	87.716454	45.03
44.48	24.490619	87.716159	45.38
45.27	24.490169	87.717606	46.19
42.36	24.490785	87.717379	43.23
45.61	24.489887	87.719556	46.54
45.75	24.490154	87.719459	46.69
45.85	24.490172	87.719498	46.79
47.71	24.490486	87.719827	48.68
44.72	24.490266	87.720612	45.63
44.48	24.490266	87.720688	45.39
42.93	24.490068	87.720975	43.81
44.71	24.490233	87.721378	45.63
43.77	24.489968	87.72147	44.67
43.87	24.489994	87.721874	44.76
44.36	24.489838	87.721512	45.27
46.68	24.489476	87.721187	47.64
46.3	24.489638	87.72049	47.25
44.4	24.489747	87.721913	45.31
45.08	24.490262	87.721887	46.00
45.79	24.490542	87.722395	46.73
45.62	24.490919	87.722933	46.55
43.47	24.489956	87.722289	44.36
45.16	24.48954	87.722993	46.08
43.55	24.48991	87.723518	44.73
43.84	24.490205	87.723113	44.44
43.81	24.490749	87.723816	44.40
43.52	24.491113	87.723576	44.40
44.74	24.4914	87.724303	45.66
42.47	24.490699	87.724161	43.33
43.47	24.490199	87.723674	44.36
43.88	24.490067	87.724214	44.78



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42.63	24.490319	87.724776	43.50
42.73	24.490978	87.724467	43.60
46.52	24.491589	87.724438	47.47
49.97	24.49191	87.725094	50.99
49.37	24.491569	87.724977	50.38
43.82	24.49107	87.72489	44.71
44.15	24.490985	87.725492	45.06
42.63	24.490624	87.725276	43.50
42.75	24.4904	87.725161	43.62
44.17	24.490686	87.725992	45.07
45.01	24.491077	87.726005	45.93
47.38	24.491371	87.725373	48.35
50.02	24.491726	87.725345	51.04
46.67	24.492079	87.726399	47.62
47.07	24.491525	87.72609	48.03
44.17	24.49122	87.726473	45.07
41.94	24.490801	87.727008	42.80
44.24	24.491848	87.727	45.14
40.92	24.491441	87.728248	41.76
41.33	24.490762	87.727706	42.18
41.17	24.491172	87.728561	42.01
40.55	24.490753	87.728556	41.38
40.83	24.490583	87.72887	41.66
41.96	24.490534	87.727955	42.82
41.9	24.489709	87.729161	42.75
42.37	24.489862	87.729708	43.24
43.31	24.48946	87.729321	44.19
44.39	24.489049	87.729497	45.29
43.09	24.489571	87.729934	43.97
42.78	24.489248	87.730178	43.66
43.41	24.489066	87.729885	44.29
44.02	24.488743	87.729693	44.92
42.9	24.4884	87.730095	43.77
42.67	24.488901	87.730193	43.54
41.51	24.48898	87.730682	42.36
42.55	24.488777	87.731174	43.42
41.47	24.488586	87.730699	42.32
43.21	24.488816	87.730254	44.09
41.75	24.488196	87.7309	42.60
44.48	24.488453	87.731565	45.39
43.12	24.487844	87.731247	44.00
43.6	24.487281	87.730925	44.49
43.27	24.487591	87.731547	44.16
44.07	24.487857	87.731889	44.97
44.67	24.487974	87.732316	45.58
43.13	24.487413	87.732029	44.01
43.56	24.48703	87.731754	44.45
44.21	24.486705	87.731528	45.11
43.44	24.486688	87.731942	44.33
42.68	24.486929	87.732358	43.55
42.6	24.487126	87.732787	43.47
43.17	24.487199	87.733172	43.80
41.08	24.487229	87.733327	44.05
40.39	24.486693	87.733319	41.92
	24.486762	87.733154	41.21



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41.77	24.486549	87.732683	42.62						
42.81	24.486471	87.732411	43.68						
43.89	24.486085	87.732335	44.79						
42.36	24.486152	87.732781	43.22						
40.22	24.48643	87.733457	41.04						
41.06	24.486705	87.733663	41.90						
42.03	24.486716	87.733844	42.89						
41.78	24.486316	87.733879	42.64						
41.1	24.486084	87.733571	41.94						
43.06	24.485671	87.732963	43.94						
43.3	24.485421	87.733248	44.18						
42.8	24.485455	87.733659	43.67						
41.8	24.485886	87.733881	42.66						
42.16	24.485846	87.734273	43.02						
42.03	24.486183	87.733971	42.89						
43.34	24.486194	87.734548	44.23						
42.67	24.48594	87.734839	43.55						
41.98	24.485698	87.734505	42.83						
43.13	24.485307	87.733815	44.01						
43.74	24.485044	87.733855	44.63						
43.39	24.484938	87.734144	44.27						
41.54	24.485157	87.734458	42.39						
40.39	24.485044	87.734648	41.21						
40.43	24.485278	87.735209	41.26						
42.6	24.485421	87.735508	43.47						
40.98	24.485191	87.735455	41.81						
40.45	24.484629	87.735023	41.27						
41.36	24.484516	87.734933	42.20						
43.24	24.484264	87.734817	44.12						
40.44	24.484926	87.735555	41.26						
42.74	24.485172	87.735906	43.61						
42.44	24.484894	87.736028	43.31						
42.37	24.484691	87.73595	43.23						
43.55	24.484	87.735494	44.44						
43.95	24.483926	87.735803	44.84						
43.56	24.484586	87.736235	44.45						
44.4	24.484516	87.736501	45.31						
44.11	24.484187	87.736638	45.01						
43.94	24.484447	87.737085	44.84						
42.34	24.484164	87.737416	43.20						
43.48	24.483984	87.737068	44.37						
45.19	24.483566	87.736766	46.11						
44.79	24.483403	87.736989	45.70						
42.32	24.484074	87.73769	43.19						
43.4	24.483812	87.737203	44.29						
43.23	24.483554	87.737385	44.11						
50.44	24.485938	87.675084	50.95	48.71	55.7682	0.49		0.273	
49.89	24.48586	87.675274	50.39						
50.3	24.485524	87.675679	50.81						
49.14	24.485753	87.675742	49.64						
50.51	24.486216	87.675338	51.02						
50.25	24.486224	87.675562	50.75						
49.8	24.486191	87.675856	50.31						
49.78	24.486105	87.676017	50.29						
50.27	24.485938	87.676224	50.78						



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50.4	24.486095	87.676377	50.91
50.19	24.486441	87.676055	50.70
49.86	24.486613	87.676178	50.37
49.56	24.486395	87.676409	50.06
49.72	24.486302	87.676661	50.22
50.01	24.486356	87.676937	50.51
48.16	24.48658	87.676632	48.65
49.37	24.486771	87.6764	49.87
50.99	24.487109	87.676529	51.50
49.04	24.486862	87.676762	49.53
48.54	24.486641	87.677033	49.03
49.45	24.486596	87.677303	49.95
49.67	24.486873	87.677229	50.17
50.25	24.487031	87.677088	50.75
51.93	24.487304	87.676778	52.45
51.51	24.487307	87.677121	52.03
50.9	24.487204	87.67732	51.42
49.9	24.486867	87.67744	50.41
50.11	24.486764	87.677707	50.62
50.48	24.486894	87.677909	50.99
50.54	24.48711	87.677624	51.05
51.68	24.487421	87.677301	52.20
51.04	24.487559	87.677659	51.56
49.95	24.487746	87.678112	50.45
50.6	24.487348	87.677846	51.11
50.65	24.486958	87.678136	51.16
50.44	24.486875	87.678561	50.95
49.83	24.487276	87.67842	50.33
49.67	24.487557	87.678258	50.17
48.7	24.487758	87.678824	49.19
49.12	24.48737	87.678621	49.62
49.79	24.487035	87.678675	50.30
49.26	24.486915	87.67902	49.76
48.24	24.487387	87.679284	48.72
49.21	24.487148	87.679658	49.71
49.14	24.486713	87.679294	49.63
48.62	24.486827	87.679662	49.11
48.86	24.486949	87.679933	49.36
47.57	24.486662	87.680021	48.05
49.93	24.486416	87.679691	50.43
50.62	24.486258	87.679893	51.13
48.89	24.486465	87.68012	49.38
48.96	24.486425	87.680315	49.46
48.89	24.486333	87.680606	49.38
48.69	24.486229	87.680937	49.18
49.48	24.486134	87.680544	49.98
50.03	24.486206	87.680279	50.54
51.82	24.48604	87.680039	52.34
51.51	24.485837	87.680325	52.03
49.1	24.485956	87.680712	49.60
48.67	24.486058	87.681001	49.16
48.59	24.485874	87.681294	49.08
48.52	24.485862	87.6809	49.01
50.63	24.485634	87.680539	51.14
49.27	24.48562	87.681103	49.77



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48.75	24.485767	87.681484	49.24
49.31	24.485675	87.681741	49.81
49.43	24.485576	87.681523	49.93
49.74	24.485487	87.681295	50.25
50.62	24.485241	87.681013	51.13
50.27	24.48534	87.681575	50.78
49.95	24.485511	87.681859	50.46
50.25	24.485458	87.682062	50.75
50.32	24.485393	87.682325	50.83
49.94	24.485171	87.682511	49.86
49.36	24.485167	87.682163	50.45
50.43	24.485213	87.681867	50.94
51.52	24.484976	87.681372	52.04
51.7	24.484899	87.681611	52.23
50.08	24.484888	87.682135	50.58
48.99	24.484886	87.682571	49.48
49.86	24.484873	87.682867	50.36
49.42	24.484738	87.682638	49.92
50.04	24.484619	87.682324	50.55
51.97	24.484479	87.681876	52.49
49.87	24.48443	87.682523	50.38
50.06	24.484516	87.682999	50.57
50.33	24.484538	87.683279	50.84
49.88	24.484249	87.683078	50.38
50.12	24.484052	87.682859	50.63
50.35	24.483726	87.682755	50.86
49.9	24.483914	87.683205	50.41
50.62	24.484152	87.683568	51.13
51.36	24.48411	87.683737	51.88
50.9	24.483828	87.683688	51.42
50.4	24.483485	87.68344	50.91
50.45	24.483366	87.683307	50.96
50.28	24.483568	87.683117	50.79
50.5	24.483386	87.683573	51.01
51.7	24.483785	87.68401	52.22
51.48	24.483738	87.684528	52.00
48.96	24.483362	87.684647	49.46
50.75	24.483194	87.68379	51.26
51.29	24.482937	87.683916	51.81
50.84	24.482642	87.684399	51.36
50.27	24.482839	87.684445	50.78
48.61	24.483431	87.684908	49.10
48.21	24.483284	87.685215	48.70
47.57	24.482882	87.685146	48.05
48.18	24.482379	87.684981	48.67
48.93	24.482165	87.685093	49.43
47.38	24.482404	87.685263	47.86
47.74	24.482884	87.685596	48.22
46.06	24.48253	87.685932	46.53
47.52	24.482571	87.686309	48.00
49.08	24.482873	87.686504	49.57
48.48	24.482379	87.686722	48.97
47.37	24.482286	87.686109	47.85
49.21	24.481998	87.685416	49.71
47.5	24.482451	87.686351	47.98



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48.72	24.482763	87.686881	49.21
47.7	24.482454	87.68754	48.18
47.51	24.482432	87.687873	47.99
47.21	24.482842	87.687759	47.69
47.3	24.483255	87.687681	47.78
48.06	24.483493	87.687923	48.55
47.07	24.483174	87.687882	47.54
46.63	24.483279	87.688247	47.10
47.79	24.483054	87.688685	48.27
48.31	24.483247	87.688833	48.30
48.15	24.483534	87.688477	48.63
49.03	24.483662	87.688118	49.53
48.81	24.483656	87.688536	49.30
48.87	24.483571	87.689089	49.36
48.95	24.483816	87.688861	49.44
50.67	24.484123	87.688606	51.19
49.09	24.484079	87.688891	49.58
48.18	24.483922	87.689256	48.66
48.56	24.483824	87.689495	49.05
47.87	24.484136	87.689412	48.36
48.77	24.484414	87.689314	49.26
50.74	24.484845	87.689181	51.25
49.35	24.484544	87.689488	49.85
48.63	24.484314	87.689702	49.12
48.44	24.484212	87.689885	48.93
49.1	24.484431	87.689902	49.59
49.78	24.484686	87.689899	50.28
50.49	24.485218	87.689779	51.00
49.36	24.484799	87.6902	49.86
48.19	24.48446	87.690363	48.68
47.7	24.484473	87.690547	48.18
48.5	24.484951	87.690537	48.99
48.65	24.485307	87.690547	49.15
48.95	24.485669	87.690447	49.45
48.73	24.485969	87.691354	49.23
46.23	24.484954	87.691383	46.70
48.57	24.485745	87.692412	49.06
48.61	24.486453	87.691907	49.10
47.62	24.486362	87.692841	48.11
45.91	24.486669	87.693713	46.37
46.04	24.48736	87.693748	46.50
46.64	24.48762	87.693671	47.11
45.93	24.487416	87.69424	46.40
48.07	24.487418	87.69515	48.36
46.58	24.487717	87.69468	47.05
45.77	24.488473	87.695248	46.24
47.22	24.487848	87.69556	47.70
48.29	24.48766	87.696163	48.78
46.55	24.488171	87.696049	47.02
46.3	24.488452	87.695614	46.77
46.84	24.488691	87.695478	47.31
47.05	24.488824	87.695897	47.53
46.28	24.488451	87.696022	46.75
46.42	24.488087	87.696354	46.89
47.83	24.487781	87.696376	48.32



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47.3	24.487871	87.696662	47.77
45.83	24.488144	87.696568	46.29
45.38	24.488405	87.6964	45.84
46.77	24.488864	87.696282	47.25
45.28	24.488495	87.696584	45.74
44.9	24.488288	87.696738	45.36
46.67	24.488012	87.696841	47.14
48.07	24.487797	87.696949	48.55
46.49	24.488082	87.697045	46.96
44.9	24.488334	87.696952	45.35
47.17	24.488903	87.696957	47.64
47.16	24.488755	87.697283	47.64
46.06	24.488196	87.697256	46.53
48.59	24.48778	87.697301	49.08
47.69	24.487956	87.697571	48.18
46.51	24.48814	87.697647	46.98
45.42	24.488409	87.698052	45.88
45.89	24.488159	87.698071	46.36
48.24	24.487788	87.69795	48.73
49.36	24.4876	87.697949	49.86
49.97	24.487422	87.698129	50.48
46.77	24.487554	87.69844	49.21
46.21	24.488048	87.698922	46.67
46.53	24.487891	87.699313	47.00
46.08	24.487705	87.699249	46.54
48.09	24.487496	87.698631	48.58
49.74	24.487347	87.698362	50.24
49.08	24.487188	87.698671	49.58
47.87	24.487248	87.698939	48.35
46.92	24.487321	87.699348	47.40
46.93	24.487617	87.699517	47.40
47.07	24.487759	87.699509	47.55
48.36	24.487602	87.699924	48.85
47.78	24.487402	87.699807	48.26
47.36	24.48736	87.699622	47.84
48.51	24.487065	87.699034	49.00
48.65	24.487118	87.698896	49.14
48.72	24.486972	87.699147	49.21
48.35	24.486987	87.699317	48.84
47.69	24.487131	87.699473	48.18
47.7	24.48722	87.699816	48.19
47.81	24.487219	87.700041	48.29
47.72	24.487265	87.700352	48.20
47.19	24.487032	87.70016	47.66
47.25	24.486974	87.700008	47.73
48.8	24.486736	87.699948	49.30
48.39	24.486526	87.699753	48.88
46.05	24.486748	87.700315	46.51
46.01	24.486894	87.700614	46.48
45.55	24.486859	87.700855	46.01
44.77	24.486621	87.700811	45.22
45.69	24.486561	87.700547	46.15
45.86	24.486302	87.700838	46.32
46.92	24.486093	87.700752	47.39



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46.33	24.48624	87.700983	46.79						
45.83	24.486519	87.701037	46.30						
45.66	24.486689	87.70105	46.13						
46.7	24.486493	87.70127	47.18						
46.72	24.486264	87.701224	47.19						
46.91	24.486008	87.701121	47.39						
47.14	24.485895	87.701045	47.62						
46.93	24.486046	87.701334	47.40						
47.44	24.486295	87.701576	47.92						
47.92	24.486416	87.701787	48.40						
47.23	24.486129	87.701688	47.71						
46.72	24.485869	87.701553	47.19						
46.81	24.485697	87.701524	47.28						
46.53	24.485749	87.701687	47.00						
46.92	24.485996	87.702036	47.39						
47.33	24.486169	87.702283	47.81						
46.71	24.48591	87.702178	47.18						
46.63	24.485649	87.702032	47.10						
46.7	24.485468	87.701993	47.17						
46.76	24.485568	87.702285	47.24						
46.66	24.485886	87.702496	47.13						
46.96	24.486082	87.702669	47.43						
47.08	24.486148	87.702844	47.55						
46.01	24.485893	87.702826	46.48						
46.4	24.485577	87.702715	46.87						
46.9	24.485326	87.70264	47.37						
46.24	24.485478	87.702878	46.71						
45.45	24.485914	87.703165	45.91						
46.23	24.48605	87.703406	46.69						
45.25	24.485906	87.703418	45.71						
45.5	24.485486	87.703265	45.96						
46.45	24.485118	87.703181	46.92						
46.16	24.485137	87.703403	46.63						
45.48	24.485585	87.703594	45.94						
46.32	24.485963	87.703754	46.79						
47.81	24.486147	87.704023	48.30						
46.32	24.485812	87.704084	46.79						
45.96	24.485588	87.703956	46.42						
45.89	24.485331	87.703992	46.36						
47.04	24.485223	87.704431	47.52						
46.8	24.485856	87.704303	47.27						
48.43	24.486143	87.704457	48.92						
48.23	24.486124	87.704918	48.72						
47.93	24.486124	87.705172	48.42						
46.63	24.485866	87.705783	47.10						
48.15	24.48631	87.705271	48.63						
49.01	24.486555	87.7051	49.51						
48.24	24.486654	87.705437	48.73						
47.49	24.486454	87.705726	47.97						
47.44	24.486136	87.706132	47.92						
47.3	24.486582	87.706006	47.78						
48.23	24.486864	87.70567	48.72						
47.09	24.48683	87.706126	47.57						
47.66	24.486604	87.706862	48.15						
46.55	24.487047	87.706255	47.02						



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47.55	24.487313	87.705983	48.04						
45.68	24.487319	87.706365	46.14						
45.39	24.487212	87.707001	45.85						
45.8	24.487203	87.70715	46.27						
43.99	24.487462	87.706883	44.43						
46.63	24.487638	87.706245	47.11						
44.68	24.487708	87.706795	45.13						
44.26	24.487712	87.707265	44.71						
47.64	24.488015	87.706394	48.12						
45.22	24.48797	87.706989	45.68						
43.54	24.48796	87.707475	43.98						
48.57	24.488457	87.70658	49.06						
43.1	24.488331	87.707562	43.53						
PAK_BAS_PRE_03	60.69	418382	121	PAK_BAS_POS_03	60.92	418389	0.23	0.096	
64.08	24.499689	87.617688	64.20						
62.93	24.500181	87.6178	63.06						
62.67	24.500599	87.618035	62.80						
62.82	24.500186	87.618013	62.95						
64.11	24.49971	87.617961	64.24						
63.58	24.499851	87.618306	63.71						
62.34	24.500468	87.618314	62.46						
61.91	24.500763	87.618382	62.04						
63.53	24.500148	87.618807	63.66						
63.38	24.500289	87.619218	63.50						
61.52	24.500828	87.61864	61.64						
61.79	24.500942	87.618861	61.91						
61.96	24.500982	87.61911	62.08						
61.11	24.500785	87.619165	61.23						
62.17	24.500385	87.619537	62.29						
62.29	24.500226	87.619976	62.41						
61.02	24.500472	87.619787	61.14						
59.88	24.500796	87.619504	60.00						
61.81	24.501018	87.619287	61.93						
62.41	24.501185	87.61949	62.53						
60.59	24.501006	87.619624	60.71						
58.55	24.50082	87.619838	58.67						
60.49	24.500471	87.619998	60.61						
61.78	24.500259	87.62019	61.90						
59.27	24.500615	87.620151	59.39						
57.99	24.500851	87.620041	58.10						
60.82	24.50114	87.619884	60.94						
61.77	24.501247	87.619861	61.89						
60.71	24.501175	87.620055	60.84						
59.08	24.500997	87.620183	59.20						
57.59	24.500837	87.620274	57.71						
59.02	24.50061	87.620386	59.14						
60.74	24.500349	87.620517	60.87						



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58.08	24.500712	87.620562	58.20
59.16	24.501042	87.620527	59.28
61.13	24.501256	87.620508	61.26
59.05	24.501043	87.620671	59.17
57.23	24.500856	87.620733	57.34
57.94	24.500689	87.620815	58.06
59.97	24.500436	87.620954	60.09
60.92	24.500292	87.620999	61.05
59.83	24.5005	87.621062	59.95
58.45	24.500773	87.621093	58.57
59.9	24.501079	87.621053	60.03
61.45	24.50128	87.621008	61.57
60.2	24.501064	87.621184	60.32
58.89	24.50084	87.621241	59.01
60.5	24.500491	87.621328	60.62
61.31	24.500275	87.621358	61.43
60.76	24.5005	87.621448	60.88
60.05	24.500842	87.621484	60.17
61.54	24.501126	87.621519	61.66
61	24.500861	87.621677	61.13
61.36	24.500454	87.621682	61.48
61.79	24.50018	87.621756	61.91
61.88	24.500592	87.622015	62.01
61.99	24.500852	87.622101	62.11
62.74	24.500831	87.622445	62.87
62.22	24.500486	87.622152	62.34
62.2	24.500216	87.622054	62.33
62.26	24.500065	87.622022	62.38
62.59	24.500249	87.622319	62.72
62.91	24.50048	87.622534	63.04
63.58	24.500643	87.622819	63.71
62.99	24.500396	87.622762	63.12
62.78	24.500255	87.622673	62.90
62.74	24.500082	87.622571	62.87
62.91	24.499977	87.622518	63.04
62.41	24.50007	87.622745	62.54
62.36	24.500178	87.622964	62.48
62.75	24.500307	87.623156	62.88
61.8	24.500059	87.623045	61.92
61.94	24.499914	87.622994	62.06
62.32	24.499811	87.622296	62.45
61.64	24.499836	87.623191	61.77
61.14	24.499901	87.623376	61.26
61.32	24.499997	87.623698	61.44



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61.41	24.499765	87.623537	61.53						
61.91	24.499567	87.623338	62.03						
62.31	24.499486	87.623267	62.44						
61.99	24.499497	87.623387	62.11						
61.56	24.499582	87.623596	61.69						
61.42	24.499604	87.623706	61.55						
61.19	24.499688	87.624069	61.31						
61.33	24.499494	87.623775	61.46						
61.8	24.499327	87.623592	61.92						
62.2	24.499213	87.623501	62.33						
61.59	24.49923	87.623684	61.71						
60.89	24.499307	87.623926	61.01						
61.15	24.499387	87.624387	61.27						
59.94	24.499168	87.624191	60.06						
60.94	24.499103	87.623955	61.06						
62.4	24.498922	87.62379	62.53						
61.55	24.498894	87.624063	61.68						
60.91	24.499	87.624656	61.04						
61.07	24.499028	87.624822	61.19						
61.2	24.499041	87.624922	61.33						
60.65	24.49884	87.624752	60.77						
61.83	24.498635	87.624328	61.95						
63.15	24.498466	87.624181	63.27						
61.77	24.498445	87.624431	61.90						
60	24.498609	87.624801	60.12						
59.97	24.498685	87.625083	60.09						
60.69	24.498724	87.625194	60.81						
59.43	24.498541	87.625114	59.55						
58.27	24.498369	87.624969	58.38						
61.19	24.498156	87.624614	61.32						
62.34	24.498057	87.624449	62.46						
61.07	24.49805	87.62468	61.19						
58.78	24.498197	87.625113	58.90						
59.87	24.498333	87.625414	59.99						
61.21	24.498391	87.625635	61.33						
60.37	24.498218	87.625546	60.49						
59.79	24.498038	87.625376	59.91						
59.69	24.497919	87.625261	59.81						
60.91	24.497703	87.624879	61.03						
59.85	24.497834	87.625346	59.97						
60.38	24.497983	87.625699	60.50						
61.22	24.498108	87.625886	61.35						
61.54	24.498138	87.625951	61.66						
60.74	24.497962	87.625909	60.86						



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59.82	24.497748	87.625675	59.94
59.81	24.497618	87.625471	59.93
60.58	24.497391	87.625218	60.70
59.71	24.497484	87.625499	59.83
59.41	24.497634	87.625861	59.53
60.53	24.497776	87.626163	60.66
61.11	24.497825	87.626331	61.24
59.77	24.497601	87.626183	59.89
59.3	24.497257	87.625918	59.42
60.25	24.49694	87.625616	60.37
59.82	24.497165	87.626153	59.94
59.93	24.497359	87.626462	60.05
60.3	24.49749	87.626734	60.43
60.53	24.497265	87.626687	60.65
61.01	24.496865	87.626481	61.13
61.52	24.496453	87.626323	61.64
61.87	24.496271	87.626286	62.00
61.87	24.496649	87.626687	62.00
61.58	24.496853	87.627022	61.70
62.11	24.497002	87.627278	62.24
61.22	24.496651	87.627232	61.34
61.66	24.496393	87.627122	61.78
62.28	24.496035	87.626962	62.40
61.25	24.496379	87.627473	61.38
61.2	24.496631	87.627784	61.33
61.54	24.496658	87.62807	61.67
61.2	24.496497	87.62803	61.32
60.83	24.496146	87.627875	60.95
61.42	24.495878	87.62762	61.54
61.14	24.495798	87.627764	61.26
60.4	24.495966	87.627966	60.52
61.09	24.496443	87.628359	61.21
61.95	24.496627	87.628535	62.08
61.32	24.496456	87.628672	61.45
60.39	24.496252	87.628735	60.51
58.72	24.495891	87.628693	58.84
60.1	24.496198	87.628948	60.22
61.92	24.496527	87.629017	62.04
62.53	24.496617	87.629117	62.65
61.74	24.496473	87.629193	61.87
59.89	24.496089	87.629308	60.01
59.41	24.495918	87.629403	59.53
60.45	24.496044	87.62953	60.57
61.98	24.496363	87.629692	62.10



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62.01	24.496371	87.629699	62.13						
62.79	24.496613	87.629919	62.91						
62.56	24.496426	87.629983	62.69						
61.97	24.496108	87.629926	62.10						
61.69	24.495893	87.629942	61.82						
62.3	24.496065	87.630133	62.42						
62.25	24.496411	87.630344	62.37						
61.93	24.496549	87.630466	62.05						
62.34	24.496267	87.63053	62.47						
62.85	24.495996	87.630535	62.98						
63.2	24.495842	87.630561	63.33						
62.85	24.496098	87.630757	62.98						
61.49	24.496411	87.630943	61.61						
60.34	24.496685	87.631086	60.46						
61.05	24.496307	87.631217	61.17						
61.92	24.496012	87.631225	62.04						
62.4	24.495822	87.631267	62.52						
61.13	24.496012	87.631462	61.25						
59.9	24.496269	87.631703	60.02						
59.69	24.496633	87.631979	59.81						
60.3	24.496315	87.631973	60.42						
61.01	24.49595	87.631968	61.13						
61.73	24.495765	87.631949	61.85						
61.14	24.496109	87.632246	61.26						
61.3	24.496338	87.632552	61.42						
61.23	24.496612	87.632639	61.36						
61.43	24.49614	87.632616	61.56						
61.73	24.495868	87.632546	61.86						
62.29	24.495706	87.63252	62.41						
61.13	24.496029	87.632902	61.25						
61.66	24.49636	87.633152	61.78						
62.53	24.496575	87.633351	62.65						
61.15	24.49619	87.633362	61.27						
60	24.495866	87.63341	60.12						
61.05	24.495588	87.633449	61.18						
60.73	24.49612	87.633767	60.85						
61.73	24.496554	87.634045	61.86						
60.67	24.49614	87.634045	60.79						
60.02	24.495804	87.634042	60.14						
61.42	24.495511	87.634091	61.55						
59.93	24.495772	87.634364	60.06						
60.3	24.496154	87.634639	60.42						
60.97	24.496398	87.634851	61.09						
59.32	24.495898	87.634813	59.44						



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60.9										24.49543	87.634923	61.02
59.29										24.495945	87.635267	59.40
60.32										24.496232	87.635497	60.44
59.41										24.495687	87.635401	59.53
60.58										24.495395	87.635319	60.70
61.06										24.495275	87.635311	61.18
60.21										24.495419	87.635552	60.33
59.48										24.49564	87.635874	59.60
60.09										24.49577	87.636076	60.21
60.46										24.495472	87.636156	60.58
60.44										24.495185	87.635869	60.56
61.28										24.495005	87.635659	61.40
60.76										24.495005	87.635924	60.88
60.46										24.495153	87.636364	60.58
61.64										24.495506	87.636644	61.77
61.87										24.495403	87.636815	61.99
61.25										24.495148	87.636899	61.37
60.08										24.495042	87.636661	60.20
60.32										24.494907	87.636256	60.44
60.48										24.49463	87.636061	60.61
60.47										24.494359	87.636025	60.59
59.85										24.494664	87.636447	59.97
60.15										24.494844	87.636793	60.27
61.06										24.495012	87.636983	61.19
60.41										24.494639	87.636934	60.53
59.6										24.494562	87.636736	59.72
59.95										24.494257	87.636242	60.07
60.3										24.494202	87.636078	60.43
59.81										24.494073	87.636259	59.93
59.84										24.493915	87.636806	59.96
59.61										24.493822	87.636323	59.73
59.64										24.493677	87.636064	59.76
59.37										24.493512	87.635974	59.49
59.42										24.493413	87.636243	59.54
60.09										24.493356	87.636699	60.21
59.95										24.493187	87.6363	60.07
59.24										24.493134	87.636018	59.36
58.53										24.49296	87.635851	58.64
60.08										24.492885	87.636136	60.20
63.19										24.492815	87.636601	63.31
61.07										24.492603	87.636191	61.19
58.39										24.492477	87.635887	58.51
58.33										24.49234	87.635731	58.44
59.89										24.49204	87.636097	60.01



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62.4	24.491801	87.63652	62.52						
60.34	24.491656	87.63624	60.46						
58.05	24.491574	87.635808	58.17						
58.8	24.491514	87.635528	58.92						
58.52	24.491312	87.635746	58.63						
59.8	24.491193	87.636034	59.92						
61	24.49111	87.636194	61.13						
62.83	24.49098	87.636425	62.96						
59.98	24.490981	87.636016	60.10						
59.41	24.490918	87.635571	59.53						
59.93	24.490884	87.63537	60.05						
59.43	24.49066	87.63557	59.55						
58.95	24.490539	87.6359	59.07						
59.79	24.49046	87.636054	59.91						
61.13	24.490364	87.636315	61.25						
58.65	24.490354	87.635742	58.77						
59.51	24.490366	87.635514	59.63						
60.24	24.490381	87.63532	60.36						
59.2	24.490142	87.635572	59.32						
58.78	24.489958	87.635976	58.90						
60.37	24.489897	87.636361	60.49						
59.12	24.489901	87.635724	59.23						
60.96	24.489896	87.635346	61.09						
62.38	24.489569	87.63554	62.50						
60.18	24.489693	87.63607	60.30						
60.38	24.489804	87.636385	60.50						
60.25	24.489599	87.636363	60.37						
61.25	24.489102	87.636219	61.37						
59.31	24.489352	87.636548	59.43						
59.55	24.489504	87.636646	59.67						
58.11	24.489255	87.636733	58.23						
57.68	24.489092	87.63681	57.80						
56.38	24.489231	87.637247	56.49						
58.72	24.489417	87.63687	58.84						
58.14	24.48947	87.637529	58.26						
55.88	24.489251	87.63762	55.99						
56	24.4891	87.637307	56.11						
55.74	24.489084	87.637693	55.85						
56.29	24.489277	87.638006	56.40						
58.12	24.489492	87.637742	58.24						
58.79	24.489656	87.638094	58.91						
57.77	24.489524	87.638212	57.89						
57.44	24.489441	87.638032	57.56						
56.42	24.489292	87.638087	56.53						



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57.64								24.489346	87.638534	57.76								
58.82								24.489775	87.638349	58.93								
64.21	PAK_BAS_PRE_04	65.36	132966	88	PAK_BAS_POS_04			24.503598	87.6016	64.28	65.42	132968	0.06					0.008
64.79								24.503577	87.602308	64.85								
63.12								24.503361	87.602045	63.18								
63.94								24.50319	87.601744	64.01								
63.97								24.503174	87.602149	64.04								
63								24.503323	87.602286	63.06								
65.09								24.503495	87.602704	65.16								
63.51								24.503238	87.602453	63.58								
64.81								24.50303	87.602366	64.88								
65.1								24.502986	87.602325	65.17								
65.2								24.502986	87.602601	65.26								
65.19								24.503188	87.602889	65.25								
65.51								24.503271	87.603016	65.57								
65.77								24.502966	87.602889	65.84								
65.91								24.502857	87.602673	65.97								
66.47								24.502732	87.60267	66.54								
66.28								24.502773	87.602876	66.35								
66.23								24.502827	87.603104	66.30								
66.49								24.502983	87.603318	66.55								
66.27								24.502709	87.603182	66.34								
66.46								24.502647	87.60302	66.53								
66.67								24.502642	87.602851	66.74								
66.63								24.502545	87.603013	66.70								
66.35								24.502595	87.603143	66.41								
66.09								24.502613	87.603317	66.16								
68.41								24.502631	87.603615	68.48								
66.31								24.502428	87.6032	66.38								
66.59								24.502342	87.603093	66.66								
66.47								24.502138	87.603256	66.54								
66.19								24.502335	87.603304	66.25								
66.75								24.501934	87.603371	66.81								
67.21								24.501836	87.603514	67.28								
66.86								24.501806	87.603371	66.92								
67.17								24.501691	87.603523	67.24								
67.42								24.501727	87.603656	67.49								
66.78								24.501501	87.603703	66.85								
68.01								24.501751	87.603942	68.08								
68.35								24.501729	87.604198	68.42								
66.69								24.501381	87.603985	66.76								
66.34								24.501297	87.603943	66.40								
66.24								24.501212	87.604117	66.31								
67.93								24.501609	87.60436	68.00								



BI/18

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67.28							24.501426	87.604592	67.35			
65.5							24.501085	87.604891	65.56			
65.14							24.501007	87.60477	65.20			
64.93							24.500997	87.605002	64.99			
65.13							24.500912	87.605207	65.20			
64.36							24.500897	87.604953	64.43			
64.68							24.500553	87.604655	64.75			
64.1							24.500809	87.60504	64.17			
64.84							24.500796	87.605257	64.90			
65.65							24.500711	87.605574	65.71			
64.8							24.50064	87.605288	64.87			
64.41							24.50066	87.605113	64.47			
64.72							24.500514	87.60531	64.79			
65.46							24.50056	87.605735	65.53			
66.35							24.500548	87.606156	66.42			
65.17							24.500437	87.60588	65.24			
64.72							24.500392	87.605605	64.79			
65.17							24.500363	87.605984	65.23			
66.67							24.500549	87.606286	66.74			
67.38							24.500566	87.606569	67.45			
66.67							24.500457	87.606379	66.74			
66.14							24.500396	87.606257	66.21			
67.04							24.50033	87.606582	67.11			
67.72							24.500346	87.606977	67.79			
67.48							24.500445	87.606674	67.54			
67.03							24.500457	87.606505	67.10			
67.63							24.50054	87.606711	67.70			
68.02							24.500513	87.607057	68.09			
67.83							24.500437	87.60698	67.90			
68.02							24.50036	87.607213	68.09			
68.2							24.500478	87.607243	68.27			
67.57							24.499929	87.607145	67.63			
67.56							24.499886	87.60707	67.63			
67.65							24.499829	87.607148	67.72			
67.71							24.49991	87.607329	67.78			
67.87							24.499995	87.607453	67.94			
66.6							24.499987	87.607721	66.66			
66.77							24.500341	87.607889	66.84			
65.49							24.500089	87.607965	65.56			
64.18							24.499504	87.60819	64.25			
62.93							24.499844	87.608493	63.00			
62.2							24.499984	87.608962	62.26			
62.61							24.499994	87.609353	62.68			
63.18							24.499797	87.609467	63.24			



File

BA



62.25						24.499803	87.6091	62.32				
64.31						24.499901	87.609819	64.38				
64.7						24.499727	87.609926	64.76				
62.82						24.499431	87.60924	62.89				
63.27						24.499235	87.60882	63.33				
63.9						24.499226	87.609583	63.97				
64.23						24.499381	87.610119	64.29				
64.31						24.499822	87.610183	64.37				
62.39						24.499768	87.610682	62.45				
63.04						24.499625	87.610416	63.10				
63.3						24.499355	87.610266	63.37				
59.77						24.499297	87.610888	59.83				
61.63						24.499255	87.610494	61.70				
62.85						24.499186	87.610295	62.91				
65.39						24.498953	87.609791	65.46				
61.66						24.499053	87.610597	61.72				
63.12						24.49901	87.611436	63.18				
60.56						24.499239	87.611138	60.62				
61.74						24.499579	87.611497	61.80				
62.59						24.499383	87.612211	62.65				
64.04						24.49906	87.612399	64.10				
63.72						24.499077	87.612015	63.78				
68.185	PAK_BAS_PRE_05	68.82	124841	142	PAK_BAS_POS_05	24.504828	87.588429	68.25	68.88	124842	0.06	0.007
68.738						24.504587	87.588628	68.81				
69.715						24.504343	87.588812	69.79				
69.897						24.504271	87.588624	69.97				
68.788						24.50444	87.588135	68.86				
68.175						24.504453	87.587865	68.24				
66.194						24.504145	87.587709	66.26				
64.751						24.503871	87.587522	64.82				
65.418						24.50372	87.587618	65.48				
64.482						24.503606	87.587391	64.55				
64.604						24.503754	87.58736	64.67				
64.524						24.504145	87.587141	64.59				
65.993						24.504244	87.58758	66.06				
64.076						24.504164	87.586778	64.14				
65.077						24.503837	87.586726	65.14				
64.921						24.503686	87.58714	64.99				
65.643						24.503444	87.586967	65.71				
68.064						24.503211	87.586452	68.13				
67.192						24.503403	87.586273	67.26				
66.07						24.503875	87.586118	66.14				
66.565						24.504247	87.585776	66.63				
67.006						24.503907	87.585644	67.07				



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68.014					24.50349	87.585642	68.08	
68.754					24.503285	87.585607	68.82	
68.638					24.503557	87.585314	68.71	
67.63					24.503937	87.585355	67.70	
66.911					24.50414	87.585452	66.98	
68.141					24.504078	87.584997	68.21	
68.535					24.503854	87.584878	68.60	
69.009					24.503607	87.58478	69.08	
69.116					24.50348	87.584616	69.19	
68.829					24.503451	87.584317	68.90	
68.622					24.503638	87.584518	68.69	
67.917					24.504092	87.584839	67.99	
68.008					24.504219	87.584662	68.08	
68.919					24.504325	87.584462	68.99	
67.483					24.504035	87.584364	67.55	
68.329					24.503785	87.584003	68.40	
69.178					24.50366	87.583836	69.25	
68.277					24.503961	87.583849	68.35	
70.462					24.504491	87.583898	70.53	
71.426					24.504626	87.583815	71.50	
70.116					24.504501	87.583595	70.19	
68.83					24.504082	87.583494	68.90	
70.253					24.503794	87.583338	70.32	
70.9					24.503698	87.583221	70.97	
71.316					24.503833	87.582783	71.39	
70.033					24.504009	87.583009	70.10	
69.388					24.504345	87.583267	69.46	
70.255					24.504618	87.583418	70.33	
69.585					24.504411	87.582859	69.66	
69.69					24.504218	87.582681	69.76	
70.783					24.504014	87.58236	70.85	
70.077					24.504133	87.581949	70.15	
69.721					24.504298	87.582228	69.79	
69.561					24.504538	87.58269	69.63	
69.754					24.504825	87.582873	69.82	
69.234					24.504721	87.582461	69.30	
69.422					24.504473	87.582179	69.49	
69.539					24.504339	87.581761	69.61	
70.293					24.504345	87.581441	70.36	
69.023					24.504561	87.581734	69.09	
68.822					24.504774	87.582066	68.89	
68.814					24.504976	87.582375	68.88	
69.712					24.505158	87.582042	69.78	
68.156					24.504985	87.581828	68.22	



gms



69.076																			24.504633	87.581482	69.15								
70.42																				24.504524	87.581061	70.49							
70.573																				24.504408	87.581266	70.64							
68.317																				24.504836	87.58125	68.39							
68.248																				24.505034	87.58169	68.32							
69.609																				24.505279	87.58125	69.68							
68.416																				24.504822	87.58094	68.48							
69.542																				24.504698	87.580797	69.61							
69.707																				24.504871	87.580373	69.78							
68.144																				24.505156	87.580807	68.21							
70.709																				24.505445	87.581144	70.78							
69.679																				24.50511	87.580325	69.75							
71.13																				24.50498	87.579923	71.20							
71.399																				24.505199	87.579804	71.47							
71.13																				24.50555	87.579916	71.20							
72.028																				24.505418	87.579541	72.10							
72.553																				24.505259	87.579322	72.63							
72.599																				24.505703	87.579303	72.67							
73.425																				24.505983	87.579461	73.50							
71.899																				24.505787	87.580484	71.97							
73.772																				24.513182	87.568901	73.85	76.23	91674	0.08	0.007			
72.7																				24.51324	87.569387	72.77							
73.1																				24.513241	87.569487	73.17							
72.631																				24.513325	87.569362	72.70							
72.899																				24.513375	87.569044	72.97							
73.655																				24.513412	87.568949	73.73							
74.016																				24.51346	87.568912	74.09							
73.337																				24.513522	87.569028	73.41							
72.529																				24.513515	87.569216	72.60							
73.581																				24.513578	87.569494	73.66							
73.823																				24.513623	87.569543	73.90							
73.543																				24.513668	87.569427	73.62							
73.598																				24.513731	87.569403	73.67							
73.213																				24.513622	87.569079	73.29							
74.313																				24.513652	87.568925	74.39							
73.986																				24.513818	87.569475	74.06							
74.122																				24.513884	87.569478	74.20							
73.598																				24.513921	87.569261	73.67							
74.701																				24.513906	87.568946	74.78							
74.123																				24.51417	87.569134	74.20							
75.158																				24.514307	87.569605	75.23							
75.922																				24.514544	87.569739	76.00							
74.802																				24.514466	87.569435	74.88							
74.79																				24.514466	87.569431	74.87							

Atmos Sustainable Solutions P. Ltd.

Atmos

Approved
 State Level Environment Impact Assessment Authority
 Jharkhand, Ranchi

74.811	24.514518	87.569062	74.89						
75.673	24.514646	87.568981	75.75						
74.661	24.514762	87.569345	74.74						
76.586	24.514886	87.569762	76.66						
77.995	24.515036	87.56998	78.07						
77.31	24.515159	87.569768	77.39						
74.962	24.515082	87.569377	75.04						
76.434	24.514933	87.568948	76.51						
73.719	24.515399	87.569202	73.79						
73.778	24.515409	87.569211	73.85						
75.359	24.515599	87.569402	75.43						
76.488	24.51583	87.569497	76.57						
76.393	24.515661	87.568715	76.47						
74.928	24.516018	87.56905	75.00						
76.257	24.516154	87.569245	76.33						
77.37	24.516346	87.569188	77.45						
76.718	24.516273	87.569062	76.80						
76.614	24.516195	87.56881	76.69						
77.075	24.516009	87.568493	77.15						
78.422	24.516	87.568216	78.50						
77.694	24.516146	87.568303	77.77						
77.114	24.516288	87.568679	77.19						
77.731	24.516437	87.568889	77.81						
78.272	24.516516	87.56896	78.35						
78.275	24.516573	87.568824	78.35						
77.455	24.516448	87.568583	77.53						
77.264	24.516425	87.568395	77.34						
78.273	24.516273	87.568115	78.35						
78.938	24.516294	87.567929	79.02						
77.216	24.516515	87.568284	77.29						
77.228	24.516598	87.568412	77.31						
78.241	24.516667	87.568699	78.32						
78.869	24.516742	87.568833	78.95						
78.133	24.516805	87.568608	78.21						
78.109	24.5168	87.568604	78.19						
77.008	24.516724	87.568314	77.09						
77.127	24.516753	87.568159	77.20						
77.693	24.516638	87.567806	77.77						
77.837	24.516679	87.567519	77.92						
76.95	24.516923	87.567899	77.03						
76.752	24.517151	87.568004	76.83						
77.714	24.517481	87.568293	77.79						
76.176	24.517484	87.567964	76.25						
75.505	24.517384	87.567758	75.58						



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75.321									24.517277	87.567441	75.40					
77.133									24.51735	87.567093	77.21					
74.567									24.517558	87.567399	74.64					
74.633									24.517699	87.567676	74.71					
76.211									24.517882	87.567965	76.29					
73.982									24.517966	87.5676	74.06					
74.863									24.517923	87.56728	74.94					
76.897									24.517936	87.566967	76.97					
74.901									24.518147	87.56722	74.98					
74.197									24.518247	87.567668	74.27					
74.471									24.518372	87.567703	74.55					
73.903									24.518531	87.567572	73.98					
74.327									24.518397	87.567285	74.40					
76.995									24.518334	87.566821	77.07					
75.675									24.518497	87.567073	75.75					
74.016									24.518724	87.567469	74.09					
75.226									24.518858	87.567267	75.30					
77.213									24.518833	87.566822	77.29					
78.507									24.518929	87.566595	78.59					
76.958									24.519138	87.566928	77.04					
76.429									24.519316	87.567272	76.51					
77.223									24.519347	87.566841	77.30					
80.227									24.519346	87.566396	80.31					
78.477									24.519452	87.566547	78.56					
77.633									24.519798	87.567	77.71					
76.985									24.519729	87.566629	77.06					
80.347									24.519704	87.566333	80.43					
76.336									24.519858	87.566683	76.41					
78.194									24.520088	87.567045	78.27					
76.371									24.520026	87.566628	76.45					
81.214									24.520108	87.566187	81.30					
77.194									24.520243	87.566538	77.27					
77.604									24.520366	87.566946	77.68					
75.98									24.520532	87.566659	76.06					
80.287									24.520542	87.566069	80.37					
77.387									24.520814	87.566371	77.46					
76.857									24.520973	87.566749	76.93					
78.471									24.520864	87.566123	78.55					
80.122									24.520797	87.565844	80.20					
80.106	PAK BAS_PRE_07	77.19	190432	117	PAK BAS_POS_07				24.522739	87.563565	80.19	77.28	190435	0.09	0.017	
79.189									24.523067	87.563551	79.27					
78.271									24.52352	87.56359	78.35					
78.091									24.523764	87.563487	78.17					
78.884									24.523406	87.563194	78.96					



5/10/18

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80.467	24.522898	87.563003	80.55						
79.633	24.523241	87.562925	79.71						
78.201	24.523674	87.562883	78.28						
79.042	24.523487	87.562685	79.12						
80.179	24.523086	87.562575	80.26						
80.2	24.522995	87.562432	80.28						
79.684	24.52321	87.562397	79.76						
78.029	24.523663	87.562373	78.11						
77.113	24.52387	87.562252	77.19						
77.801	24.523459	87.56211	77.88						
78.781	24.523105	87.562	78.86						
79.013	24.523044	87.561956	79.09						
77.334	24.523266	87.561868	77.41						
76.808	24.523626	87.561865	76.89						
76.658	24.523827	87.561781	76.74						
76.298	24.52362	87.561587	76.37						
76.374	24.523294	87.56156	76.45						
77.969	24.523111	87.56146	78.05						
76.276	24.523463	87.561429	76.35						
76.437	24.523802	87.561343	76.51						
76.437	24.523576	87.561222	76.51						
77.124	24.523261	87.561124	77.20						
78.517	24.523084	87.561066	78.60						
76.925	24.523323	87.560892	77.00						
76.568	24.523623	87.560852	76.65						
76.141	24.523783	87.560748	76.22						
75.874	24.523558	87.560629	75.95						
75.549	24.523345	87.560546	75.63						
76.969	24.523101	87.560469	77.05						
77.534	24.523004	87.560428	77.61						
75.599	24.52319	87.560321	75.68						
74.127	24.523488	87.5602	74.20						
74.514	24.523793	87.560172	74.59						
74.107	24.523725	87.560076	74.18						
73.147	24.523397	87.559948	73.22						
74.85	24.523099	87.559918	74.93						
76.327	24.522909	87.559915	76.40						
74.864	24.523082	87.559722	74.94						
73.51	24.523353	87.559564	73.58						
74.888	24.523695	87.559363	74.96						
73.898	24.523407	87.559392	73.97						
74.273	24.523179	87.559416	74.35						
75.198	24.522965	87.559437	75.27						
76.232	24.52275	87.55947	76.31						



50104

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74.994	24.522921	87.559211	75.07
74.833	24.523126	87.558995	74.91
75.33	24.523373	87.558792	75.41
76.019	24.523448	87.558594	76.10
75.764	24.523158	87.558618	75.84
75.508	24.52295	87.558689	75.58
75.418	24.522753	87.558776	75.49
75.601	24.522509	87.558904	75.68
75.297	24.522562	87.558597	75.37
75.602	24.522782	87.558204	75.68
76.199	24.523031	87.557891	76.28
75.196	24.522612	87.557918	75.27
75.716	24.522327	87.558182	75.79
76.825	24.522088	87.558212	76.90
76.31	24.522166	87.557883	76.39
75.105	24.522452	87.557632	75.18
76.265	24.522766	87.557323	76.34
75.551	24.522407	87.557395	75.63
76.124	24.522177	87.55745	76.20
77.165	24.521887	87.55754	77.24
76.913	24.521887	87.557373	76.99
76.424	24.522091	87.557088	76.50
76.969	24.522366	87.556859	77.05
76.332	24.522034	87.556865	76.41
75.888	24.521707	87.556918	75.96
77.03	24.521514	87.556948	77.11
75.055	24.521691	87.556679	75.13
76.507	24.521965	87.556446	76.58
77.292	24.522137	87.556235	77.37
76.067	24.521733	87.556394	76.14
76.704	24.521456	87.556486	76.78
77.31	24.521341	87.556521	77.39
77.046	24.521476	87.556219	77.12
77.408	24.521735	87.555989	77.49
78.003	24.521854	87.555765	78.08
77.635	24.521532	87.555889	77.71
77.435	24.521396	87.556018	77.51
77.623	24.521208	87.55608	77.70
77.484	24.52128	87.555918	77.56
77.878	24.521484	87.555575	77.96
78.064	24.521508	87.555386	78.14
77.961	24.521443	87.555282	78.04
77.478	24.52127	87.555329	77.56
77.121	24.521127	87.555391	77.20



Signature

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76.619	24.520886	87.555482	76.70						
76.487	24.520931	87.555231	76.56						
77.274	24.521205	87.555078	77.35						
77.192	24.521157	87.554939	77.27						
76.635	24.520996	87.554914	76.71						
76.104	24.520859	87.555075	76.18						
76.578	24.520728	87.555268	76.66						
76.716	24.520655	87.555213	76.79						
76.086	24.520765	87.554999	76.16						
76.6	24.520927	87.554745	76.68						
76.672	24.520871	87.554513	76.75						
76.545	24.520643	87.554563	76.62						
76.659	24.520427	87.55457	76.74						
76.813	24.52026	87.554619	76.89						
76.483	24.520407	87.554277	76.56						
76.896	24.520405	87.554005	76.97						
76.967	24.520082	87.553895	77.04						
77.732	24.519736	87.553925	77.81						
78.292	24.519568	87.553876	78.37						
78.035	24.51971	87.553615	78.11						
78.371	24.519844	87.55342	78.45						
79.151	24.519805	87.553128	79.23						
78.113	24.519602	87.553257	78.19						
77.651	24.519331	87.553439	77.73						
77.517	24.519215	87.553444	77.60						
77.123	24.519255	87.553309	77.20						
77.548	24.51938	87.553005	77.63						
77.588	24.519389	87.553005	77.67						
79.65	24.519704	87.552794	79.73						
77.89	24.519422	87.552782	77.97						
76.305	24.519153	87.552757	76.38						
76.856	24.519055	87.552754	76.93						
76.6	24.519235	87.552635	76.68						
77.99	24.519418	87.552577	78.07						
79.647	24.519624	87.552555	79.73						
77.943	24.519451	87.552385	78.02						
76.519	24.519294	87.552274	76.60						
75.536	24.519189	87.552073	75.61						
75.585	24.519198	87.552077	75.66						
77.203	24.519444	87.552171	77.28						
79.043	24.519692	87.552239	79.12						
78.214	24.519649	87.552122	78.29						
76.909	24.519501	87.551994	76.99						
75.838	24.519384	87.551808	75.91						



Handwritten signatures and initials in blue ink.



75.283						24.519302	87.551681	75.36		
75.883						24.519464	87.551739	75.96		
76.831						24.519704	87.551788	76.91		
77.392						24.519848	87.551803	77.47		
76.305						24.519748	87.551601	76.38		
76.231						24.519597	87.551413	76.31		
76.645						24.51948	87.551202	76.72		
76.28						24.519689	87.55131	76.36		
76.273						24.519696	87.551317	76.35		
76.298						24.51992	87.551412	76.37		
76.832						24.520051	87.55148	76.91		
76.298						24.520025	87.551335	76.37		
75.906						24.519882	87.551135	75.98		
76.314						24.519707	87.550945	76.39		
76.762						24.519615	87.550838	76.84		
75.546						24.51989	87.550899	75.62		
75.505						24.519901	87.550902	75.58		
75.474						24.519908	87.550902	75.55		
76.041						24.520086	87.55107	76.12		
77.69						24.520282	87.551215	77.77		
77.173						24.520284	87.551026	77.25		
75.964						24.520129	87.550752	76.04		
76.06						24.519965	87.55056	76.14		
76.957						24.519874	87.550414	77.03		
76.977						24.520129	87.550437	77.05		
78.497						24.520497	87.550561	78.58		
79.615						24.520733	87.550636	79.70		
79.517						24.520601	87.550303	79.60		
78.572						24.520345	87.550227	78.65		
78.164						24.520216	87.55018	78.24		
77.396						24.520027	87.550177	77.47		
77.976						24.520018	87.550003	78.05		
78.721						24.52024	87.549944	78.80		
80.75						24.520879	87.549753	80.83		
79.409						24.520521	87.549674	79.49		
78.583						24.520303	87.549639	78.66		
77.842						24.520097	87.549639	77.92		
77.535						24.519981	87.549615	77.61		
77.309						24.519977	87.549406	77.39		
78.043						24.52025	87.549348	78.12		
79.129						24.520591	87.549233	79.21		
79.682						24.520756	87.548992	79.76		
78.751						24.52045	87.548978	78.83		
77.794						24.520159	87.549013	77.87		



6/1/19

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77.461					24.519959	87.549026	77.54			
78.113					24.519886	87.548914	78.19			
77.839					24.520027	87.548814	77.92			
77.876					24.520041	87.548814	77.95			
79.109					24.520446	87.548644	79.19			
79.713					24.520711	87.548508	79.79			
79.443					24.520433	87.548331	79.52			
79.03					24.520104	87.548305	79.11			
79.867					24.519842	87.548329	79.95			
78.909					24.520091	87.548151	78.99			
80.03					24.520483	87.547999	80.11			
80.819					24.520671	87.547923	80.90			
81.044					24.520618	87.547748	81.13			
79.054					24.520183	87.547734	79.13			
80.131					24.519796	87.547848	80.21			
80.954					24.5197	87.547874	81.04			
78.259					24.520033	87.547633	78.34			
80.571					24.520457	87.547458	80.65			
83.172		268510	148	PAK_BAS_POS_08	24.507823	87.534523	83.26	82.92	268511	0.13
83.279					24.508086	87.534663	83.36			0.035
85.016					24.50865	87.534851	85.10			
84.772					24.508557	87.535029	84.86			
83.901					24.508322	87.535004	83.99			
83.095					24.507977	87.534902	83.18			
82.869					24.507822	87.534823	82.95			
83.054					24.507955	87.535058	83.14			
83.72					24.508107	87.535242	83.80			
85.16					24.508439	87.535411	85.25			
83.985					24.508098	87.535458	84.07			
83.118					24.507904	87.535421	83.20			
82.278					24.5077	87.535364	82.36			
82.935					24.507848	87.535592	83.02			
83.746					24.507985	87.535739	83.83			
86.231					24.508344	87.53596	86.32			
85.523					24.508175	87.536065	85.61			
83.487					24.507882	87.535947	83.57			
82.095					24.507688	87.535713	82.18			
81.732					24.507602	87.53557	81.81			
81.725					24.507616	87.535877	81.81			
83.121					24.507772	87.536069	83.20			
83.82					24.507897	87.536049	83.90			
86.713					24.508343	87.536161	86.80			
86.877					24.50841	87.536196	86.96			
86.781					24.508299	87.53628	86.87			



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86.074	24.508178	87.536287	86.16
84.917	24.508	87.536248	85.00
83.458	24.507775	87.536203	83.54
82.251	24.507611	87.53611	82.33
81.168	24.507495	87.535929	81.25
82.062	24.507419	87.536173	82.14
82.864	24.507633	87.53631	82.95
84.159	24.507857	87.536289	84.24
87.192	24.50835	87.536357	87.28
86.306	24.508156	87.536438	86.39
85.211	24.507948	87.536502	85.30
83.608	24.507677	87.536511	83.69
82.605	24.507474	87.536488	82.69
83.133	24.507341	87.536459	83.22
82.754	24.507485	87.536571	82.84
83.238	24.507574	87.536614	83.32
84.149	24.507724	87.536717	84.23
85.985	24.508124	87.53684	86.07
86.341	24.508248	87.536906	86.43
85.557	24.508113	87.536936	85.64
83.843	24.507742	87.536902	83.93
83.092	24.507585	87.536883	83.18
83.102	24.507431	87.536869	83.19
84.287	24.507237	87.536828	84.37
83.37	24.507385	87.53693	83.45
82.724	24.507558	87.53704	82.81
83.269	24.50774	87.537154	83.35
84.105	24.508065	87.537271	84.19
84.444	24.508263	87.537344	84.53
82.755	24.507695	87.537319	82.84
82.221	24.507499	87.537253	82.30
84.017	24.507298	87.537207	84.10
85.157	24.50716	87.537161	85.24
84.032	24.507299	87.537302	84.12
82.035	24.507522	87.537451	82.12
82.394	24.507689	87.537514	82.48
83.594	24.508065	87.537659	83.68
84.409	24.508316	87.537724	84.49
84.052	24.50814	87.537781	84.14
83.088	24.507763	87.537841	83.17
82.374	24.507535	87.537796	82.46
84.502	24.507277	87.537707	84.59
86.347	24.507098	87.537653	86.43
84.378	24.507304	87.537883	84.46



Signature

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82.95	24.507618	87.538044	83.03
83.521	24.507813	87.538015	83.61
84.975	24.508325	87.537951	85.06
84.236	24.507898	87.538269	84.32
83.355	24.507648	87.538264	83.44
84.206	24.507347	87.538156	84.29
86.439	24.507121	87.538171	86.53
86.474	24.507336	87.53853	86.56
84.811	24.50759	87.538498	84.90
84.94	24.507876	87.538457	85.03
86.586	24.508442	87.5384	86.67
85.636	24.508155	87.538599	85.72
86.652	24.507807	87.538746	86.74
87.546	24.507635	87.538802	87.63
88.592	24.507508	87.538862	88.68
88.706	24.507691	87.538967	88.80
87.252	24.507925	87.538933	87.34
85.594	24.508391	87.538843	85.68
86.714	24.50862	87.538852	86.80
85.546	24.508492	87.539135	85.63
85.384	24.508358	87.539283	85.47
88.672	24.508113	87.539561	88.76
88.485	24.508197	87.539722	88.57
85.82	24.508643	87.539409	85.91
85.831	24.508667	87.539402	85.92
86.189	24.508899	87.539334	86.28
85.517	24.508706	87.539584	85.60
85.156	24.508684	87.539867	85.24
87.375	24.508473	87.540063	87.46
86.792	24.508737	87.540267	86.88
83.734	24.508868	87.54004	83.82
84.426	24.509075	87.539612	84.51
83.409	24.509148	87.539712	83.49
81.749	24.509195	87.540141	81.83
84.409	24.50924	87.540675	84.49
82.071	24.509509	87.540477	82.15
81.531	24.509853	87.540072	81.61
79.5	24.509892	87.540672	79.58
80.847	24.509921	87.541082	80.93
79.021	24.510139	87.540892	79.10
81.543	24.510399	87.540515	81.63
83.391	24.510545	87.540321	83.47
81.412	24.510603	87.540727	81.49
81.675	24.510619	87.541089	81.76



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82.811					24.510668	87.541475	82.89		
82.434					24.510926	87.541106	82.52		
83.615					24.511155	87.540687	83.70		
84.14					24.51126	87.540598	84.22		
83.436					24.511344	87.541016	83.52		
82.805					24.511378	87.541387	82.89		
83.344					24.511443	87.541832	83.43		
82.545					24.511608	87.541495	82.63		
83.525					24.51182	87.541153	83.61		
85.392					24.512045	87.540792	85.48		
82.819					24.512149	87.541177	82.90		
78.958					24.51219	87.541644	79.04		
79.442					24.512265	87.542104	79.52		
77.332					24.512471	87.541842	77.41		
79.39					24.512705	87.541399	79.47		
82.489					24.512892	87.541093	82.57		
76.519					24.512916	87.541614	76.60		
77.806					24.512887	87.542121	77.88		
78.931					24.512858	87.542425	79.01		
78.042					24.513232	87.542111	78.12		
76.697					24.513539	87.541752	76.77		
81.394					24.51386	87.541221	81.48		
79.898					24.51402	87.541868	79.98		
82.585					24.514029	87.542499	82.67		
86.34					24.51406	87.542971	86.43		
81.866					24.514403	87.542334	81.95		
80.413					24.51491	87.542004	80.49		
79.895					24.515048	87.541735	79.98		
80.663					24.515076	87.542319	80.74		
83.378					24.515022	87.543026	83.46		
85.073					24.51503	87.543415	85.16		
82.233					24.51549	87.543166	82.32		
80.596					24.515979	87.542848	80.68		
79.815					24.516434	87.542722	79.90		
78.941					24.516399	87.543298	79.02		
80.604					24.516305	87.543867	80.69		
81.967					24.516282	87.544224	82.05		
77.927					24.516716	87.544101	78.01		
78.269					24.517277	87.543772	78.35		
78.565					24.517477	87.543615	78.64		
78.321					24.517409	87.544263	78.40		
81.32					24.517193	87.54448	81.40		
79.166					24.517811	87.544713	79.25		
79.135					24.518258	87.544372	79.21		



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79.259	24.518393	87.544396	79.34										
78.082	24.518283	87.544709	78.16										
78.221	24.518106	87.545162	78.30										
80.093	24.517934	87.545546	80.17										
77.074	24.518312	87.545451	77.15										
77.9	24.518171	87.545233	77.98										
79.335	24.519033	87.545034	79.41										
77.635	24.518876	87.545529	77.71										
76.962	24.518662	87.545806	77.04										
79.426	24.518553	87.546201	79.51										
77.653	24.518954	87.546019	77.73										
77.551	24.518982	87.546002	77.63										
79.238	24.519475	87.545686	79.32										
78.237	24.519431	87.546099	78.32										
79.544	24.518964	87.546514	79.62										
81.104	24.518888	87.546738	81.19										
77.373	24.519676	87.546453	77.45										
77.304	24.519924	87.546394	77.38										
PAK_BAS_PRE_09	106.97	101.73	415669	98	PAK_BAS_POS_09	108.05	102.81	415670	1.08	0.449			
103.91		24.516395	87.433532	104.96									
103.84		24.516402	87.433301	104.89									
102.72		24.516671	87.433042	103.76									
104.81		24.516865	87.432822	105.87									
103.48		24.516825	87.433027	104.52									
101.54		24.5167	87.433265	102.56									
102.74		24.516563	87.433535	103.78									
105.15		24.516384	87.433752	106.22									
103.24		24.516567	87.433697	104.28									
102.04		24.51674	87.433567	103.07									
102.55		24.516969	87.433424	103.58									
104.62		24.517266	87.433178	105.68									
103.45		24.517189	87.433444	104.49									
103.03		24.517033	87.433656	104.07									
103.09		24.516848	87.43388	104.13									
103.57		24.516684	87.434063	104.62									
104.48		24.516605	87.434169	105.53									
103.50		24.516882	87.43407	104.54									
103.35		24.517144	87.433974	104.40									
103.50		24.517366	87.433897	104.55									
105.33		24.517703	87.433702	106.39									
106.36		24.517839	87.433659	107.43									
104.38		24.517648	87.433889	105.44									
103.23		24.517433	87.434068	104.27									
103.64		24.517196	87.434289	104.69									



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104.73										24.516985	87.434429	105.79		
105.98										24.516824	87.434549	107.05		
105.18										24.517006	87.434553	106.24		
103.91										24.517282	87.434536	104.96		
103.84										24.517296	87.434532	104.89		
103.01										24.517555	87.434426	104.06		
103.77										24.517853	87.434294	104.82		
105.73										24.518271	87.434164	106.80		
102.91										24.517967	87.434533	103.95		
102.71										24.517707	87.434646	103.74		
102.88										24.517529	87.434812	103.92		
104.04										24.517367	87.434978	105.09		
106.45										24.517112	87.435112	107.52		
104.94										24.517291	87.435102	106.00		
102.55										24.517589	87.434979	103.59		
102.54										24.517592	87.434976	103.58		
101.78										24.517836	87.434874	102.81		
101.44										24.518107	87.434774	102.46		
101.75										24.518337	87.434672	102.77		
104.43										24.518668	87.434557	105.49		
101.18										24.518444	87.434482	102.20		
99.64										24.518228	87.435031	100.64		
101.27										24.518004	87.435184	102.29		
102.88										24.51775	87.43536	103.92		
104.10										24.517531	87.435522	105.15		
105.22										24.517401	87.435603	106.28		
103.97										24.517629	87.435591	105.02		
102.37										24.518008	87.435477	103.41		
100.54										24.518335	87.435322	101.56		
101.95										24.518713	87.435247	102.98		
103.29										24.518976	87.435175	104.34		
102.20										24.518744	87.435411	103.23		
101.99										24.518485	87.435589	103.02		
102.96										24.518205	87.435763	104.00		
104.16										24.517953	87.435878	105.22		
105.45										24.517757	87.436025	106.52		
104.81										24.518095	87.436009	105.87		
103.32										24.51857	87.435917	104.36		
102.67										24.518853	87.435881	103.71		
102.02										24.519135	87.435836	103.06		
103.92										24.519423	87.435796	104.97		
103.33										24.519241	87.435978	104.38		
103.80										24.51902	87.436094	104.85		
104.85										24.518831	87.436193	105.91		



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105.83	24.518627	87.436264	106.90
107.05	24.518414	87.436351	108.13
107.91	24.518199	87.436431	109.00
108.08	24.518106	87.436456	109.17
108.62	24.51837	87.436527	109.72
108.07	24.518653	87.436575	109.16
107.19	24.519009	87.436621	108.27
107.18	24.519014	87.436621	108.26
108.45	24.519472	87.436677	109.55
108.02	24.519093	87.436827	109.11
108.45	24.518829	87.436795	109.55
109.16	24.518508	87.436835	110.26
109.29	24.518266	87.436886	110.39
109.12	24.518446	87.436961	110.22
109.45	24.518712	87.437026	110.15
110.72	24.518972	87.437126	110.56
109.70	24.519232	87.437226	111.84
109.12	24.518874	87.437241	110.81
109.12	24.518606	87.437254	110.22
108.61	24.518406	87.437287	109.71
108.42	24.518309	87.437273	109.51
108.95	24.518546	87.437389	110.05
109.00	24.518559	87.437389	110.10
109.95	24.518772	87.437517	111.06
110.59	24.518959	87.437641	111.71
109.19	24.518707	87.437658	110.29
108.28	24.518515	87.437625	109.37
107.35	24.51834	87.437625	108.44
107.25	24.518221	87.437615	108.33
106.56	24.518344	87.437798	107.64
107.09	24.518497	87.437894	108.17
107.49	24.518633	87.438032	108.57
107.89	24.518748	87.43817	108.98
106.68	24.518571	87.438132	107.76
105.63	24.518388	87.438062	106.70
105.59	24.518225	87.437975	106.66
105.70	24.518102	87.437936	106.77
105.83	24.518008	87.437893	106.90
105.21	24.518126	87.438049	106.28
104.71	24.518237	87.438169	105.77
104.04	24.518335	87.438318	105.09
105.20	24.518483	87.438484	106.26
105.80	24.518555	87.438562	106.87
104.05	24.518345	87.438452	105.10



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103.92							24.518173	87.438359	104.97		
104.17							24.518033	87.438283	105.22		
104.56							24.517874	87.438184	105.62		
104.83							24.517768	87.438111	105.89		
103.89							24.517863	87.438351	104.94		
103.36							24.51799	87.438573	104.41		
103.43							24.518176	87.438798	104.48		
103.89							24.518319	87.438981	104.94		
104.31							24.518376	87.439133	105.37		
102.42							24.518052	87.439095	103.46		
101.72							24.517759	87.438879	102.74		
101.77							24.517562	87.43873	102.79		
102.44							24.517376	87.438592	103.47		
100.96							24.517476	87.438848	101.98		
100.20							24.5176	87.43905	101.22		
100.42							24.517766	87.4393	101.43		
101.54							24.517955	87.439564	102.56		
102.32							24.518058	87.43977	103.36		
100.22							24.517796	87.439657	101.23		
98.47							24.517476	87.439469	99.47		
100.21							24.517276	87.439315	101.23		
101.64							24.517057	87.439176	102.66		
102.18							24.51697	87.439109	103.22		
101.83							24.517051	87.439376	102.86		
100.35							24.517234	87.439626	101.37		
97.54							24.517525	87.439875	98.53		
100.19							24.517816	87.440161	101.20		
101.36							24.51794	87.440315	102.38		
97.97							24.517553	87.440206	98.96		
99.88							24.517266	87.440126	100.89		
103.45							24.516956	87.440018	104.49		
105.37							24.516788	87.439965	106.44		
102.76							24.516997	87.440186	103.80		
100.74							24.517194	87.440463	101.76		
98.76							24.517474	87.440654	99.76		
101.61							24.517864	87.440948	102.64		
99.91							24.517369	87.440862	100.92		
102.29							24.516945	87.440838	103.33		
103.67							24.516724	87.440812	104.72		
102.01							24.517113	87.441174	103.04		
102.18							24.517429	87.441361	103.22		
103.50							24.517666	87.441537	104.55		
104.24							24.517812	87.441647	105.29		
103.27							24.517389	87.441743	104.32		



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102.29	24.517055	87.441749	103.33							
102.09	24.516632	87.44165	103.12							
103.12	24.516318	87.441529	104.17							
100.31	24.516586	87.441879	101.32							
98.76	24.516997	87.44219	99.76							
99.51	24.517428	87.442515	100.52							
101.11	24.517778	87.442823	102.13							
99.50	24.517302	87.442788	100.50							
96.58	24.516723	87.442738	97.56							
98.82	24.516256	87.442698	99.81							
102.90	24.515815	87.442531	103.94							
104.27	24.515649	87.442498	105.32							
101.16	24.515855	87.442783	102.18							
101.08	24.515855	87.442797	102.10							
100.92	24.515864	87.442817	101.94							
99.69	24.516228	87.443186	100.69							
99.74	24.516243	87.443203	100.75							
101.38	24.516563	87.443468	102.40							
101.40	24.516568	87.443474	102.42							
100.90	24.516894	87.443704	101.92							
98.99	24.517264	87.443941	99.99							
98.75	24.517706	87.444187	99.75							
98.60	24.517164	87.444169	99.60							
100.72	24.516738	87.444114	101.74							
100.49	24.516298	87.444016	101.50							
99.60	24.515884	87.443956	100.60							
100.40	24.515567	87.443909	101.41							
99.67	24.516108	87.444303	100.68							
97.98	24.516542	87.444444	98.97							
97.85	24.516555	87.444453	98.84							
96.55	24.517005	87.444595	97.53							
97.29	24.517398	87.444683	98.28							
99.19	24.517721	87.444767	100.20							
95.51	24.517107	87.444846	96.47							
92.32	24.516683	87.444905	93.25							
94.71	24.516312	87.444963	95.67							
97.55	24.51599	87.445013	98.54							
100.14	24.515659	87.445075	101.15							
97.83	24.516051	87.445245	98.82							
95.54	24.51653	87.445346	96.51							
95.53	24.516548	87.445356	96.50							
97.24	24.517024	87.445448	98.23							
99.15	24.517469	87.445522	100.16							
100.49	24.517754	87.445559	101.51							



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99.40	24.517342	87.445682	100.40							
99.30	24.516898	87.44575	100.30							
99.97	24.516552	87.44583	100.98							
100.37	24.516232	87.445902	101.38							
100.90	24.515918	87.445968	101.92							
101.23	24.516506	87.446124	102.25							
100.72	24.516833	87.44609	101.74							
100.04	24.517454	87.446067	101.05							
100.80	24.517753	87.446099	101.82							
100.11	24.517439	87.446299	101.12							
100.91	24.517175	87.446498	101.93							
102.28	24.516879	87.446676	103.31							
101.63	24.517066	87.44668	102.65							
100.00	24.517502	87.446528	101.01							
101.14	24.517916	87.446401	102.16							
100.46	24.517691	87.446591	101.48							
100.52	24.517497	87.446775	101.53							
102.57	24.517304	87.447003	103.61							
101.22	24.517503	87.446924	102.24							
101.03	24.51777	87.446808	102.06							
101.60	24.518166	87.446636	102.63							
101.51	24.518122	87.446796	102.54							
101.58	24.517993	87.447002	102.60							
101.92	24.517892	87.447178	102.95							
102.38	24.517818	87.447325	103.42							
101.80	24.518004	87.447199	102.83							
101.54	24.518257	87.447059	102.56							
102.64	24.518565	87.446863	103.68							
102.26	24.518553	87.447024	103.29							
101.76	24.518487	87.447176	102.79							
101.28	24.518415	87.447369	102.30							
101.01	24.518354	87.447497	102.03							
102.16	24.518308	87.447631	103.19							
101.26	24.51849	87.447451	102.28							
101.91	24.51866	87.447291	102.94							
103.41	24.518967	87.44707	104.45							
102.63	24.518932	87.44725	103.67							
101.77	24.518853	87.44745	102.80							
101.97	24.518789	87.447619	103.00							
102.85	24.518707	87.44781	103.89							
103.38	24.518671	87.447904	104.42							
102.45	24.518843	87.447768	103.49							
102.01	24.518975	87.447639	103.04							
102.03	24.519148	87.447483	103.06							



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102.72						24.519308	87.447372	103.75		
102.16						24.51933	87.447507	103.19		
101.99						24.51927	87.447681	103.02		
101.93						24.519208	87.447873	102.96		
102.02						24.519155	87.448079	103.05		
102.20						24.519128	87.448211	103.23		
101.69						24.5193	87.448068	102.72		
101.66						24.519442	87.447903	102.69		
101.78						24.519571	87.44779	102.81		
101.93						24.519725	87.44772	102.96		
101.10						24.519619	87.448045	102.12		
100.60						24.519552	87.448328	101.62		
101.20						24.5195	87.448527	102.22		
100.74						24.519611	87.448475	101.75		
99.80						24.519785	87.448321	100.81		
99.79						24.519791	87.448319	100.80		
99.87						24.51997	87.448167	100.87		
100.03						24.520027	87.44814	101.04		
99.20						24.519974	87.448362	100.20		
100.14						24.519868	87.448544	101.16		
100.16						24.519865	87.448547	101.17		
101.09						24.519758	87.448761	102.11		
101.38						24.519713	87.448828	102.40		
101.09						24.519855	87.448833	102.11		
101.71						24.520106	87.448941	102.73		
103.02						24.520269	87.449094	104.06		
102.69						24.520089	87.449255	103.72		
102.86						24.519942	87.449398	103.90		
103.20						24.5199	87.449477	104.24		
103.36						24.520046	87.449507	104.40		
104.27						24.520233	87.449575	105.32		
105.14						24.520411	87.449676	106.21		
104.94						24.520252	87.449789	106.00		
104.73						24.520124	87.449841	105.78		
104.61						24.51995	87.449891	105.67		
105.14						24.520139	87.44996	106.21		
105.64						24.520308	87.450017	106.71		
105.86						24.520465	87.450109	106.93		
104.81						24.520178	87.450261	105.87		
104.15						24.520002	87.450334	105.21		
104.35						24.520154	87.450444	105.40		
104.73						24.520339	87.450537	105.79		
105.18						24.520501	87.450569	106.25		
105.50						24.520626	87.450627	106.56		



2/10/15



104.73										24.520454	87.450744	105.79					
104.09										24.520318	87.450834	105.14					
102.99										24.520128	87.450941	104.03					
103.37										24.52031	87.450988	104.42					
103.74										24.520545	87.451061	104.78					
103.84										24.520692	87.451112	104.88					
102.93										24.520585	87.451238	103.97					
101.95										24.520423	87.45136	102.98					
101.20										24.520314	87.451478	102.23					
101.44										24.520514	87.4515	102.46					
101.52										24.520651	87.451528	102.54					
101.30										24.520827	87.45161	102.33					
100.61										24.520655	87.451735	101.63					
100.38										24.520489	87.45184	101.39					
100.36										24.520402	87.451893	101.37					
100.17										24.520585	87.451951	101.19					
99.86										24.520771	87.452002	100.87					
99.85										24.520902	87.452052	100.86					
100.08										24.521027	87.452118	101.09					
99.15										24.520803	87.452201	100.16					
99.36										24.520661	87.452273	100.36					
99.78										24.520506	87.452328	100.78					
99.92										24.520459	87.452356	100.93					
99.33										24.520579	87.452435	100.33					
98.41										24.520748	87.452502	99.41					
98.36										24.520758	87.452503	99.36					
98.45										24.520923	87.452576	99.44					
99.35										24.521103	87.452646	100.36					
99.90										24.521209	87.452692	100.91					
98.79										24.520984	87.452774	99.79					
98.43										24.520708	87.452818	99.43					
99.12										24.520497	87.452838	100.12					
99.52										24.520353	87.452876	100.52					
98.64										24.520608	87.452961	99.63					
98.16										24.520859	87.453153	99.15					
99.54										24.521086	87.453341	100.55					
100.63										24.521208	87.453462	101.65					
98.75										24.520893	87.453442	99.75					
98.47										24.520597	87.453395	99.46					
98.61										24.520342	87.453342	99.61					
98.86										24.520141	87.453325	99.85					
99.08										24.520339	87.453555	100.08					
99.52										24.520536	87.453759	100.53					
100.34										24.520798	87.453993	101.35					



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AS



100.55	24.520834	87.454043	101.56						
100.19	24.520561	87.453997	101.20						
99.82	24.520293	87.453908	100.82						
99.61	24.520114	87.453827	100.62						
99.36	24.519866	87.453691	100.36						
99.81	24.520092	87.453968	100.82						
100.68	24.520243	87.454248	101.70						
101.87	24.520375	87.454418	102.90						
101.20	24.520157	87.454395	102.22						
99.79	24.519884	87.454296	100.80						
98.03	24.51966	87.454142	99.03						
97.62	24.519448	87.453989	98.60						
97.09	24.519491	87.454195	98.08						
98.46	24.51958	87.454396	99.45						
99.56	24.519648	87.454575	100.57						
100.76	24.519734	87.454762	101.78						
99.03	24.519521	87.45461	100.03						
97.67	24.519408	87.454438	98.66						
96.38	24.519265	87.454329	97.35						
95.95	24.519068	87.45419	96.92						
96.23	24.519147	87.45439	97.21						
96.80	24.519167	87.454536	97.78						
97.32	24.519187	87.454623	98.30						
97.56	24.519002	87.45449	98.55						
98.21	24.518868	87.454429	99.20						
98.53	24.51881	87.454404	99.52						
98.64	24.518833	87.454516	99.64						
98.86	24.518864	87.454671	99.86						
98.99	24.518874	87.454736	99.99						
99.45	24.51873	87.454641	100.45						
100.11	24.51859	87.454595	101.12						
100.02	24.518636	87.454755	101.03						
99.88	24.518742	87.454925	100.89						
100.38	24.518558	87.454842	101.39						
100.97	24.518393	87.454828	101.99						
100.58	24.518501	87.454978	101.60						
100.46	24.518612	87.45509	101.47						
100.35	24.518709	87.455153	101.36						
100.70	24.518566	87.455181	101.72						
100.89	24.518495	87.455208	101.91						
100.74	24.518634	87.455295	101.76						
100.55	24.518778	87.455344	101.57						
101.00	24.518663	87.455486	102.02						
100.97	24.518744	87.455543	101.99						



gms

SA



100.82	24.518889	87.455586	101.84
101.19	24.518763	87.455683	102.21
101.61	24.518638	87.455846	102.64
101.45	24.518772	87.455859	102.47
101.20	24.518964	87.455871	102.22
101.19	24.518966	87.455874	102.22
101.03	24.519067	87.455913	102.05
101.23	24.518895	87.456013	102.25
101.48	24.518748	87.456145	102.50
101.02	24.518942	87.456241	102.04
100.45	24.51915	87.456315	101.46
100.98	24.519329	87.456436	102.00
100.35	24.519096	87.456554	101.37
101.06	24.518852	87.456688	102.08
101.29	24.518731	87.45677	102.32
100.45	24.518906	87.456864	101.46
99.52	24.519104	87.456956	100.53
99.71	24.519383	87.457062	100.72
98.79	24.519155	87.457189	99.79
99.16	24.518963	87.457319	100.17
99.26	24.518891	87.457387	100.26
98.41	24.519103	87.457425	99.41
98.42	24.519371	87.457447	99.42
98.50	24.51954	87.457489	99.49
98.67	24.51938	87.457696	99.66
99.22	24.519262	87.457881	100.22
99.60	24.519208	87.457973	100.61
99.59	24.519212	87.457969	100.59
98.95	24.51945	87.457889	99.95
98.61	24.519653	87.457725	99.61
98.62	24.519838	87.457653	99.62
98.09	24.519867	87.458022	99.09
97.55	24.519897	87.458305	98.54
97.71	24.520014	87.458055	98.70
98.36	24.520103	87.457879	99.35
98.88	24.520166	87.457775	99.88
98.42	24.520278	87.457995	99.42
97.50	24.520329	87.458306	98.49
98.35	24.520379	87.458605	99.35
97.75	24.520542	87.458376	98.74
98.61	24.52066	87.458143	99.61
99.35	24.520812	87.458043	100.35
98.06	24.520889	87.458382	99.06
97.93	24.520946	87.45878	98.92



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97.73								24.520976	87.459071	98.72
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99.10								24.521447	87.458269	100.10
97.83								24.521498	87.458675	98.81
96.49								24.521512	87.459133	97.47
98.10								24.52153	87.459492	99.09
97.21								24.521736	87.459265	98.20
98.78								24.521933	87.459062	99.77
101.15								24.522195	87.458993	102.17
100.17								24.522038	87.459437	101.18
100.31								24.521896	87.459742	101.32
101.19								24.521862	87.459994	102.21
101.08								24.522068	87.459802	102.10
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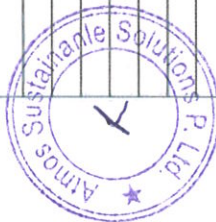
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**ESTIMATED POTENTIAL AREA OF SAND BAR OF PRE-MONSOON AND POST MONSOON PERIOD
SAND REPLENISHMENT ESTIMATION SHEET AS PER GSDA**

PRE MONSOON DATA BRAHMANI RIVER						POST MONSOON DATA BRAHMANI RIVER						
UIN OF SAND BAR	AMSL	AVG AMSL	AREA IN SQM	RIVER WIDTH IN MTR	UIN OF SAND BAR	LATITUDE (N)	LONGITUDE (E)	AMSL	AVG AMSL	AREA IN SQM	SAND THICKNESS IN MTR	VOLUME IN M CUM
PAK_BRA_PRE_01	61.91	60.29	274144	164	PAK_BRA_POS_01	24.25831	87.597183	62.53	60.91	274145	0.62	0.17
	61.84					24.258661	87.597217	62.47				
	61.98					24.258987	87.597244	62.61				
	62.01					24.258934	87.597334	62.63				
	61.85					24.258718	87.597402	62.47				
	61.62					24.258525	87.597479	62.24				
	61.55					24.258332	87.597567	62.17				
	62.21					24.258744	87.597692	62.84				
	62.62					24.259019	87.597695	63.25				
	62.87					24.258948	87.597865	63.50				
	62.31					24.258534	87.597969	62.94				
	62.29					24.25829	87.598008	62.92				
	62.77					24.258585	87.598202	63.40				
	63.76					24.25903	87.598211	64.40				
	63.28					24.258719	87.598336	63.92				
	62.50					24.258405	87.59837	63.13				
	62.53					24.258289	87.598441	63.16				
	62.68					24.258563	87.598613	63.31				
	63.37					24.258839	87.598776	64.01				
	63.98					24.259056	87.599038	64.63				
	62.41					24.258582	87.598999	63.04				
	61.88					24.258262	87.598959	62.50				
	62.58					24.25807	87.598954	63.21				
	61.50					24.258304	87.599214	62.12				
	62.37					24.258577	87.599412	63.00				
	63.26					24.258938	87.599675	63.90				
	62.37					24.258533	87.599611	63.00				
	61.86					24.25823	87.599559	62.49				
	62.03					24.257913	87.599458	62.65				
	61.86					24.258112	87.599782	62.49				
	62.40					24.258358	87.600092	63.03				
	62.60					24.258526	87.600332	63.23				
	62.85					24.258737	87.600558	63.49				
	62.14					24.258201	87.600443	62.77				
	61.49					24.257885	87.600293	62.11				



Amos

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60.82							24.257605	87.60017	61.43		
61.54							24.257812	87.600543	62.16		
62.03							24.25801	87.600894	62.66		
63.02							24.258354	87.60133	63.65		
64.00							24.258581	87.601537	64.65		
63.26							24.258307	87.601634	63.90		
62.54							24.257995	87.601685	63.17		
61.81							24.257729	87.601328	62.44		
61.49							24.257441	87.600988	62.11		
61.44							24.257259	87.601575	62.06		
61.32							24.257529	87.601724	61.94		
61.79							24.257848	87.601971	62.41		
63.48							24.258361	87.602069	64.12		
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58.30							24.256426	87.605039	58.89		
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60.20							24.257	87.606185	60.81		
57.53							24.256627	87.606097	58.11		
58.30							24.256244	87.60604	58.89		
58.77							24.256009	87.605991	59.37		



6014

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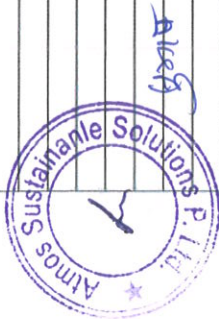


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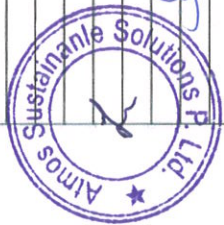


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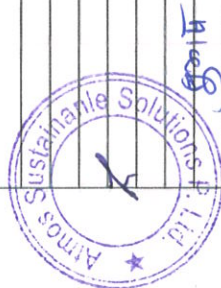
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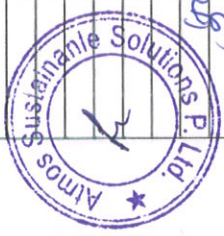


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50.01							24.236392	87.657844	50.57			
50.51							24.236963	87.658284	51.07			
49.38							24.236453	87.65816	49.93			
51.87							24.236047	87.657878	52.44			
50.02							24.236272	87.65824	50.58			
49.90							24.236813	87.658634	50.46			
50.78							24.236985	87.658809	51.35			
49.61							24.236504	87.65867	50.16			
50.83							24.235979	87.658473	51.39			
50.28							24.236227	87.658842	50.84			
50.59							24.236842	87.659113	51.15			
51.00							24.237017	87.659272	51.57			
51.10							24.236962	87.659367	51.67			
50.82							24.236415	87.659288	51.38			
50.48							24.235997	87.659175	51.04			
51.56							24.236243	87.65948	52.14			
51.57							24.236254	87.659484	52.14			
51.49							24.236879	87.659619	52.06			
51.59							24.237094	87.659726	52.17			
51.86							24.236961	87.659867	52.44			
52.13							24.23686	87.659968	52.71			
52.70							24.236516	87.660023	53.29			
53.31							24.236163	87.660213	53.90			
51.58							24.23663	87.660269	52.16			
51.27							24.236892	87.660301	51.84			
51.22							24.237166	87.660281	51.79			
51.10							24.237304	87.660319	51.67			
50.72							24.237233	87.660526	51.28			
50.20							24.237138	87.660748	50.76			
49.89							24.236969	87.660802	50.45			
50.86							24.236399	87.661064	51.43			



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51.26									24.240881	87.66365	51.83						
49.00									24.240796	87.662726	49.54						
49.59									24.240802	87.662032	50.14						
49.93									24.240832	87.661882	50.48						
48.89									24.241109	87.662106	49.44						
47.56									24.241306	87.662427	48.09						
47.53									24.241319	87.662426	48.06						
52.98									24.241651	87.663356	52.97						
47.03									24.241613	87.662562	47.56						
48.25									24.241559	87.662056	48.79						
49.18									24.241561	87.661781	49.73						
47.89									24.241868	87.66219	48.42						
47.73									24.242139	87.662532	48.26						
50.00									24.242392	87.663374	50.56						
48.59									24.242333	87.662186	49.13						
49.46									24.242389	87.661592	50.01						
48.68									24.242772	87.661947	49.23						
47.26									24.24301	87.662503	47.78						
48.66									24.243448	87.663258	49.20						
46.95									24.243338	87.662301	47.48						
48.70									24.243339	87.661565	49.24						
47.26									24.243791	87.662172	47.79						
48.28									24.24414	87.662808	48.82						
50.94									24.244336	87.663453	51.51						
45.80									24.244427	87.662539	46.31						
47.74									24.244565	87.661737	48.27						
44.38									24.244851	87.662549	44.88						
49.92									24.24493	87.663641	50.48						
44.27									24.245153	87.662413	44.76						
47.50									24.245144	87.661697	48.03						
46.31									24.245626	87.66216	46.83						
47.48									24.245766	87.661914	48.01						
45.38									24.245697	87.662564	45.88						
47.72									PAK_BRA_PRE_05	87.664801	48.70	49.31	196028	0.99	0.194		
46.94								196026	24.245696	87.665072	47.90						
49.79									24.246334	87.665209	50.81						
48.39									24.246153	87.665365	49.38						
47.15									24.245468	87.6655	48.12						
48.84									24.24495	87.665482	49.84						
45.63									24.245805	87.665902	46.56						
47.86									24.246121	87.665919	48.83						
48.33									24.24602	87.666169	49.32						
47.31									24.245611	87.666106	48.27						



MDA



MDA

48.35										24.244816	87.67249	49.34		
49.59										24.245914	87.672135	50.61		
48.92										24.245618	87.671813	49.92		
48.95										24.245553	87.672857	49.95		
47.44										24.244787	87.67397	48.41		
49.78										24.245953	87.672631	50.80		
49.95										24.246313	87.672438	50.97		
48.57										24.246014	87.673862	49.57		



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ANNEXURE-16

TEST REPORT OF SAND FROM
NABL ACCREDITED AGENCY





A D POWER PVT.LTD. TESTING LAB
QR.NO. CD/488, SECTOR 2, DHURWA, RANCHI-834004, JHARKHAND

SPECIFIC GRAVITY (IS:2386,PART - 3)

DIST-PAKUR

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	UIN	AREA IN HA.	SAMPLE NO.	SPECIFIC GRAVITY	BULK DENSITY
1	Pathar Ghati & Singna,Bansloi River	24°29'11.37"N 87°43'56.22"E	BAS1	6.57	1	2.620	1.289
		24°29'10.25"N 87°44'1.51"E			2	2.612	1.288
		24°29'14.42"N 87°43'55.00"E			3	2.605	1.285
2	Babudaha & Longbehra,Bansloi River	24°29'26.63"N 87°42'57.62"E	BAS2	9.21	4	2.615	1.294
		24°29'23.08"N 87°43'13.71"E			5	2.602	1.290
		24°29'23.94"N 87°43'8.13"E			6	2.625	1.292
		24°29'25.65"N 87°43'0.01"E			7	2.606	1.280
3	Nurgitola & Rolagram,Bansloi River	24°29'13.94"N 87°41'59.63"E	BAS3	8.09	8	2.619	1.281
		24°29'10.04"N 87°42'5.92"E			9	2.629	1.293
		24°29'11.66"N 87°42'2.85"E			10	2.605	1.282
		24°29'16.03"N 87°41'52.78"E			11	2.610	1.293
4	Lutibari, Sahri & Maldhara, Bansloi River	24°29'53.22"N 87°37'31.41"E	BAS4	27.2	12	2.622	1.300
		24°29'45.63"N 87°37'56.66"E			13	2.604	1.298
		24°29'21.59"N 87°38'12.99"E			14	2.609	1.296
		24°29'21.20"N 87°38'14.94"E			15	2.618	1.294
		24°29'22.82"N 87°38'10.64"E			16	2.634	1.292
		24°29'28.08"N 87°38'9.50"E			17	2.610	1.290
		24°29'39.54"N 87°38'10.32"E			18	2.606	1.295
		24°29'46.40"N 87°37'48.72"E			19	2.602	1.296
		24°29'49.90"N 87°37'35.21"E			20	2.630	1.288
		24°29'58.98"N 87°37'24.47"E			21	2.613	1.287
5	Dumariya & Saharpur, Bansloi River	24°30'2.06"N 87°36'20.30"E	BAS5	1.63	22	2.640	1.297
		24°30'1.57"N 87°36'23.34"E			23	2.633	1.286
6	Baramasia, Bansloi River	24°30'41.39"N 87°32'27.27"E	BAS6	11.2	24	2.605	1.300
		24°30'54.05"N 87°32'32.22"E			25	2.610	1.302
		24°30'31.07"N 87°32'21.20"E			26	2.615	1.284
		24°30'48.44"N 87°32'28.73"E			27	2.610	1.286
		24°31'4.58"N 87°32'38.90"E			28	2.600	1.282
7	Amjhari, Bansloi River	24°31'3.83"N 87°26'24.73"E	BAS7	13	29	2.635	1.288
		24°31'2.37"N 87°26'42.33"E			30	2.611	1.284
		24°31'15.66"N 87°27'10.73"E			31	2.618	1.292
		24°31'2.24"N 87°26'35.41"E			32	2.630	1.297
		24°31'9.11"N 87°26'51.05"E			33	2.625	1.296
8	Gunpur, Brahmani River	24°15'29.88"N 87°36'6.91"E	BAR8	6	34	2.616	1.298
		24°15'28.56"N 87°36'11.69"E			35	2.619	1.286
		24°15'25.10"N 87°36'18.34"E			36	2.613	1.285
9	Bara Singpur, Brahmani River	24°15'15.71"N 87°38'29.31"E	BAR9	11.6	37	2.622	1.286
		24°15'12.84"N 87°38'38.15"E			38	2.620	1.288
		24°15'8.02"N 87°38'46.48"E			39	2.630	1.287
		24°15'14.46"N 87°38'32.43"E			40	2.610	1.286
		24°15'17.05"N 87°38'22.32"E			41	2.607	1.293
10	Bena Kundi,Brahmani River	24°14'13.94"N 87°39'37.39"E	BAR10	7.75	42	2.625	1.294
		24°14'21.31"N 87°39'40.00"E			43	2.610	1.286
		24°14'29.49"N 87°39'42.95"E			44	2.630	1.278
		24°14'13.20"N 87°39'27.50"E			45	2.605	1.280
11	Ghurni,Brahmani River	24°14'39.85"N 87°40'13.30"E	BAR11	3.6	46	2.638	1.282
		24°14'40.43"N 87°40'17.13"E			47	2.634	1.286
		24°14'43.25"N 87°40'2.59"E			48	2.610	1.290

For AD Powers Pvt. Ltd.
TESTING LAB

AUTHORIZED SIGNATORY

Authorised Signatory



**A D POWER PVT.LTD. TESTING LAB****QR.NO. CD/488, SECTOR 2, DHURWA, RANCHI-834004, JHARKHAND****SPECIFIC GRAVITY (IS:2386,PART - 3)****DIST-PAKUR**

Sl. NO.	DETAILS	LATITUDE AND LONGITUDE	UIN	AREA IN HA.	SAMPLE NO.	SPECIFIC GRAVITY
1	Pathar Ghati & Singna,Bansloi River	24°29'11.37"N 87°43'56.22"E	BAS1	6.57	1	2.620
		24°29'10.25"N 87°44'1.51"E			2	2.612
		24°29'14.42"N 87°43'55.00"E			3	2.605
2	Babudaha & Longbehra,Bansloi River	24°29'26.63"N 87°42'57.62"E	BAS2	9.21	4	2.615
		24°29'23.08"N 87°43'13.71"E			5	2.602
		24°29'23.94"N 87°43'8.13"E			6	2.625
		24°29'25.65"N 87°43'0.01"E			7	2.606
3	Nurgitola & Rolagram,Bansloi River	24°29'13.94"N 87°41'59.63"E	BAS3	8.09	8	2.619
		24°29'10.04"N 87°42'5.92"E			9	2.629
		24°29'11.66"N 87°42'2.85"E			10	2.605
		24°29'16.03"N 87°41'52.78"E			11	2.610
4	Lutibari, Sahri & Maldhara, Bansloi River	24°29'53.22"N 87°37'31.41"E	BAS4	27.2	12	2.622
		24°29'45.63"N 87°37'56.66"E			13	2.604
		24°29'21.59"N 87°38'12.99"E			14	2.609
		24°29'21.20"N 87°38'14.94"E			15	2.618
		24°29'22.82"N 87°38'10.64"E			16	2.634
		24°29'28.08"N 87°38'9.50"E			17	2.610
		24°29'39.54"N 87°38'10.32"E			18	2.606
		24°29'46.40"N 87°37'48.72"E			19	2.602
		24°29'49.90"N 87°37'35.21"E			20	2.630
		24°29'58.98"N 87°37'24.47"E			21	2.613
5	Dumariya & Saharpur, Bansloi River	24°30'2.06"N 87°36'20.30"E	BAS5	1.63	22	2.640
		24°30'1.57"N 87°36'23.34"E			23	2.633
6	Baramasia, Bansloi River	24°30'41.39"N 87°32'27.27"E	BAS6	11.2	24	2.605
		24°30'54.05"N 87°32'32.22"E			25	2.610
		24°30'31.07"N 87°32'21.20"E			26	2.615
		24°30'48.44"N 87°32'28.73"E			27	2.610
		24°31'4.58"N 87°32'38.90"E			28	2.600
7	Amjhari, Bansloi River	24°31'3.83"N 87°26'24.73"E	BAS7	13	29	2.635
		24°31'2.37"N 87°26'42.33"E			30	2.611
		24°31'15.66"N 87°27'10.73"E			31	2.618
		24°31'2.24"N 87°26'35.41"E			32	2.630
		24°31'9.11"N 87°26'51.05"E			33	2.625
8	Gunpur, Brahmani River	24°15'29.88"N 87°36'6.91"E	BAR8	6	34	2.616
		24°15'28.56"N 87°36'11.69"E			35	2.619
		24°15'25.10"N 87°36'18.34"E			36	2.613
9	Bara Singpur, Brahmani River	24°15'15.71"N 87°38'29.31"E	BAR9	11.6	37	2.622
		24°15'12.84"N 87°38'38.15"E			38	2.620
		24°15'8.02"N 87°38'46.48"E			39	2.630
		24°15'14.46"N 87°38'32.43"E			40	2.610
		24°15'17.05"N 87°38'22.32"E			41	2.607
10	Bena Kundi,Brahmani River	24°14'13.94"N 87°39'37.39"E	BAR10	7.75	42	2.625
		24°14'21.31"N 87°39'40.00"E			43	2.610
		24°14'29.49"N 87°39'42.95"E			44	2.630
		24°14'13.20"N 87°39'27.50"E			45	2.605
11	Ghurni,Brahmani River	24°14'39.85"N 87°40'13.30"E	BAR11	3.6	46	2.638
		24°14'40.43"N 87°40'17.13"E			47	2.634
		24°14'43.25"N 87°40'2.59"E			48	2.610

AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB



AD POWER PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 30.12.2022

Report No.ADP/PR/22-23/TR-NO-12/1

Description of Sample: - 03 Bag /2KG Sand sample submitted to us for the Specific Gravity tests.

Source: -BANSLOI RIVER

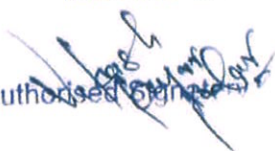
SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	UIN	AREA IN HA.	SPECIFIC GRAVITY
1	Pathar Ghati & Singna, Bansloi River.	24°29'11.37"N 87°43'56.22"E	1	BAS1	6.57	2.620
		24°29'10.25"N 87°44'1.51"E	2			2.612
		24°29'14.42"N 87°43'55.00"E	3			2.605

AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB

Authorized Signatory






AD POWER PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.:- adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 30.12.2022

Report No.ADP/PR/22-23/TR-NO-12/2

Description of Sample: - 04 Bag/2KG Sand sample submitted to us for the Specific Gravity tests.

Source: -BANSLOI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	UIN	AREA IN HA.	SPECIFIC GRAVITY
2	Babudaha & Longbehra, Bansloi River.	24°29'26.63"N 87°42'57.62"E	1	BAS2	9.21	2.615
		24°29'23.08"N 87°43'13.71"E	2			2.602
		24°29'23.94"N 87°43'8.13"E	3			2.625
		24°29'25.65"N 87°43'0.01"E	4			2.606

AUTHORIZED SIGNATORY
For AD Powers Pvt. Ltd.
TESTING LAB

Authorized Signatory





AD POWER PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 30.12.2022

Report No.ADP/PR/22-23/TR-NO-12/3

Description of Sample: - 04 Bag /2KG Sand sample submitted to us for the Specific Gravity tests.

Source: -BANSLOI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	UIN	AREA IN HA.	SPECIFIC GRAVITY
3	Nurgitola & Rolagram, Bansloi River	24°29'13.94"N 87°41'59.63"E	1	BAS3	8.09	2.619
		24°29'10.04"N 87°42'5.92"E	2			2.629
		24°29'11.66"N 87°42'2.85"E	3			2.605
		24°29'16.03"N 87°41'52.78"E	4			2.610

AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB

[Handwritten Signature]
Authorized Signatory



AD POWER PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email:- adpower350@gmail.com, Mobile: 7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 30.12.2022

Report No.ADP/PR/22-23/TR-NO-12/4

Description of Sample: - 010 Bag /2KG Sand sample submitted to us for the Specific Gravity tests.

Source: -BANSLOI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	UIN	AREA IN HA.	SPECIFIC GRAVITY
4	Lutibari, Sahri & Maldhara Bansloi River.	24°29'53.22"N 87°37'31.41"E	1	BAS4	27.20	2.622
		24°29'45.63"N 87°37'56.66"E	2			2.604
		24°29'21.59"N 87°38'12.99"E	3			2.609
		24°29'21.20"N 87°38'14.94"E	4			2.618
		24°29'22.82"N 87°38'10.64"E	5			2.634
		24°29'28.08"N 87°38'9.50"E	6			2.610
		24°29'39.54"N 87°38'10.32"E	7			2.606
		24°29'46.40"N 87°37'48.72"E	8			2.602
		24°29'49.90"N 87°37'35.21"E	9			2.630
		24°29'58.98"N 87°37'24.47"E	10			2.613

AUTHORIZED SIGNATORY
For AD Powers Pvt. Ltd.
TESTING LAB



Authorized Signatory
[Handwritten Signature]



AD POWER PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email:- adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 30.12.2022

Report No.ADP/PR/22-23/TR-NO-12/5

Description of Sample: - 02 Bag /2KG Sand sample submitted to us for the Specific Gravity tests.

Source: -BANSLOI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	UIN	AREA IN HA.	SPECIFIC GRAVITY
5	Dumariya & Saharpur, Bansloi River	24°30'2.06"N 87°36'20.30"E	1	BAS5	1.63	2.640
		24°30'1.57"N 87°36'23.34"E	2			2.633

AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB

[Handwritten Signature]
Authorized Signatory





AD POWER PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: - 7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 30.12.2022

Report No.ADP/PR/22-23/TR-NO-12/6

Description of Sample: - 05 Bag /2KG Sand sample submitted to us for the Specific Gravity tests.

Source: -BANSLOI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	UIN	AREA IN HA	SPECIFIC GRAVITY
6	Baramasia, Bansloi River	24°30'41.39"N 87°32'27.27"E	1	BAS6	11.2	2.605
		24°30'54.05"N 87°32'32.22"E	2			2.610
		24°30'31.07"N 87°32'21.20"E	3			2.615
		24°30'48.44"N 87°32'28.73"E	4			2.610
		24°31'4.58"N 87°32'38.90"E	5			2.600

AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB

[Handwritten Signature]
Authorized Signatory





AD POWER PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 30.12.2022

Report No.ADP/PR/22-23/TR-NO-12/7

Description of Sample: - 05 Bag /2KG Sand sample submitted to us for the Specific Gravity tests.

Source: -BANSLOIRIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	UIN	AREA IN HA.	SPECIFIC GRAVITY
7	Amjhari, Bansloi River	24°31'3.83"N 87°26'24.73"E	1	BAS7	13.0	2.635
		24°31'2.37"N 87°26'42.33"E	2			2.611
		24°31'15.66"N 87°27'10.73"E	3			2.618
		24°31'2.24"N 87°26'35.41"E	4			2.630
		24°31'9.11"N 87°26'51.05"E	5			2.625



AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB

Authorised Signatory



AD POWER PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 30.12.2022

Report No.ADP/PR/22-23/TR-NO-12/8

Description of Sample: - 03 Bag /2KG Sand sample submitted to us for the Specific Gravity tests.

Source: -BRAHMANI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	UIN	AREA IN HA.	SPECIFIC GRAVITY
8	Gunpur, Brahmani River	24°15'29.88"N 87°36'6.91"E	1	BAR 8	6.0	2.616
		24°15'28.56"N 87°36'11.69"E	2			2.619
		24°15'25.10"N 87°36'18.34"E	3			2.613



AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB

Authorised Signatory



AD POWER PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 30.12.2022

Report No.ADP/PR/22-23/TR-NO-12/9

Description of Sample: - 05 Bag /2KG Sand sample submitted to us for the Specific Gravity tests.

Source: -BRAHMANI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	UIN	AREA IN HA.	SPECIFIC GRAVITY
9	Bara Singpur, Brahmani River	24°15'15.71"N 87°38'29.31"E	1	BAR9	11.6	2.622
		24°15'12.84"N 87°38'38.15"E	2			2.620
		24°15'8.02"N 87°38'46.48"E	3			2.630
		24°15'14.46"N 87°38'32.43"E	4			2.610
		24°15'17.05"N 87°38'22.32"E	5			2.607



AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB

[Handwritten Signature]
Authorized Signatory



AD POWER PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 30.12.2022

Report No.ADP/PR/22-23/TR-NO-12/10

Description of Sample: - 04 Bag /2KG Sand sample submitted to us for the Specific Gravity tests.

Source: -BRAHMANI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	UIN	AREA IN HA.	SPECIFIC GRAVITY
10	Bena Kundi, Brahmani River	24°14'13.94"N 87°39'37.39"E	1	BAR10	7.75	2.625
		24°14'21.31"N 87°39'40.00"E	2			2.610
		24°14'29.49"N 87°39'42.95"E	3			2.630
		24°14'13.20"N 87°39'27.50"E	4			2.605



AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB

[Handwritten Signature]
Authorized Signatory



AD POWER PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email:- adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 30.12.2022

Report No.ADP/PR/22-23/TR-NO-12/11

Description of Sample: - 03 Bag /2KG Sand sample submitted to us for the Specific Gravity tests.

Source: -BRAHMANI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	UIN	AREA IN HA.	SPECIFIC GRAVITY
10	Ghurni,Brahmani River	24°14'39.85"N	1	BAR11	3.60	2.638
		87°40'13.30"E	2			2.634
		24°14'40.43"N	3			2.610
		87°40'17.13"E				
		24°14'43.25"N				
		87°40'2.59"E				



AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB

[Handwritten Signature]
Authorized Signatory

**A D POWER PVT.LTD. TESTING LAB****QR.NO. CD/488, SECTOR 2, DHURWA, RANCHI-834004, JHARKHAND****SPECIFIC GRAVITY (IS:2386,PART - 3)****DIST-PAKUR**

Sl. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	SPECIFIC GRAVITY
1	Mouza - Solapetia & Singna, Dist. - Pakur, Bansloi River.	24°29'11.37"N 87°43'56.22"E	1	2.615
		24°29'12.96"N 87°43'53.36"E	2	2.602
		24°29'16.19"N 87°43'54.15"E	3	2.625
		24°29'15.60"N 87°43'52.32"E	4	2.606
		24°29'24.84"N 87°43'25.56"E	5	2.619
		24°29'27.03"N 87°43'27.62"E	6	2.629
		24°29'26.40"N 87°43'32.14"E	7	2.610
2	Mouza - Beliapathra,Rolagram & Nurgitola, Dist. - Pakur, Bansloi River.	24°29'8.59"N 87°42'12.25"E	8	2.622
		24°29'7.86"N 87°42'10.01"E	9	2.604
		24°29'9.34"N 87°42'9.55"E	10	2.609
		24°29'8.74"N 87°42'7.85"E	11	2.618
3	Mouza - Latibar & Sahari, Dist. - Pakur, Bansloi River.	24°29'10.58"N 87°42'8.04"E	12	2.613
		24°29'26.09"N 87°38'7.44"E	13	2.640
		24°29'27.87"N 87°38'9.43"E	14	2.605
		24°29'29.74"N 87°38'8.57"E	15	2.610
		24°29'44.81"N 87°37'58.00"E	16	2.615
		24°29'46.36"N 87°37'56.48"E	17	2.610
		24°29'45.55"N 87°37'54.47"E	18	2.600
		24°29'49.45"N 87°37'33.85"E	19	2.635
4	Mouza - Dumaria & Baliadanga, Dist. - Pakur, Bansloi River.	24°29'52.10"N 87°37'33.82"E	20	2.630
		24°29'51.84"N 87°37'32.06"E	21	2.625
		24°30'2.16"N 87°36'21.18"E	22	2.616
		24°30'1.74"N 87°36'20.66"E	23	2.619
		24°30'2.24"N 87°36'20.50"E	24	2.613
		24°30'2.07"N 87°36'19.90"E	25	2.622
5	Mouza - Baramasia, Dist. - Pakur, Bansloi River.	24°30'2.73"N 87°36'19.74"E	26	2.610
		24°30'2.56"N 87°36'19.12"E	27	2.607
		24°30'46.25"N 87°32'30.35"E	28	2.625
		24°30'43.41"N 87°32'28.56"E	29	2.610
6	Mouza - Amjhari, Dist. - Pakur, Bansloi River.	24°30'42.32"N 87°32'29.57"E	30	2.630
		24°30'40.24"N 87°32'27.13"E	31	2.605
		24°31'2.17"N 87°26'43.60"E	32	2.638
		24°31'0.87"N 87°26'41.37"E	33	2.634
		24°31'2.42"N 87°26'39.90"E	34	2.610
		24°31'1.70"N 87°26'37.35"E	35	2.606
		24°31'4.74"N 87°26'8.14"E	36	2.602
		24°31'3.93"N 87°26'5.30"E	37	2.630
		24°30'54.55"N 87°25'54.41"E	38	2.626
		24°30'51.93"N 87°25'53.24"E	39	2.622
7	Mouza - Jordiha Chhota Murjora, Dist. - Pakur, Gumani River	24°30'49.95"N 87°25'50.00"E	40	2.617
		24°47'11.02"N 87°27'26.27"E	41	2.620
8	Mouza - Gunpur, Dist. - Pakur, Brahmani River	24°47'11.34"N 87°27'23.39"E	42	2.610
		24°15'27.94"N 87°36'6.83"E	43	2.625
9	Mouza - Barasinghpur, Dist. - Pakur, Brahmani River	24°15'28.82"N 87°36'2.64"E	44	2.615
		24°15'15.67"N 87°38'27.75"E	45	2.630
10	Mouza - Ghurni, Dist. - Pakur, Brahmani River	24°15'17.28"N 87°38'22.45"E	46	2.620
		24°14'14.80"N 87°39'38.51"E	47	2.610
		24°14'18.59"N 87°39'40.30"E	48	2.600

For AD Power & Pvt. Ltd.
TESTING LAB

AUTHORIZED SIGNATORY





AD POWER PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 30.11.2022

Report No.ADP/PR/22-23/TR-NO-11/1

Description of Sample: - 014 Bag /2KG Sand sample submitted to us for the Specific Gravity tests.

Source: - BANSLOI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	SPECIFIC GRAVITY
1	Mouza - Solapetia & Singna, Dist. - Pakur, Bansloi River.	24°29'11.37"N 87°43'56.22"E	1	2.615
		24°29'12.96"N 87°43'53.36"E	2	2.602
		24°29'16.19"N 87°43'54.15"E	3	2.625
		24°29'15.60"N 87°43'52.32"E	4	2.606
		24°29'24.84"N 87°43'25.56"E	5	2.619
		24°29'27.03"N 87°43'27.62"E	6	2.629
		24°29'26.40"N 87°43'32.14"E	7	2.610

For AD Power & Pvt. Ltd.
TESTING LAB

[Signature]
Authorised Signatory

AUTHORIZED SIGNATORY



AD POWER PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 30.11.2022

Report No.ADP/PR/22-23/TR-NO-11/2

Description of Sample: - 010 Bag/2KG Sand sample submitted to us for the Specific Gravity tests.

Source: - BANSLOI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	SPECIFIC GRAVITY
2	Mouza - Beliapathra,Rolagram & Nurgitola, Dist. - Pakur, Bansloi River.	24°29'8.59"N 87°42'12.25"E	1	2.622
		24°29'7.86"N 87°42'10.01"E	2	2.604
		24°29'9.34"N 87°42'9.55"E	3	2.609
		24°29'8.74"N 87°42'7.85"E	4	2.618
		24°29'10.58"N 87°42'8.04"E	5	2.613

For AD Power & Pvt. Ltd.
TESTING LAB

[Signature]
Authorized Signatory

AUTHORIZED SIGNATORY





AD Powers Private Limited

AD POWER PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 30.11.2022

Report No.ADP/PR/22-23/TR-NO-11/3

Description of Sample: - 018 Bag /2KG Sand sample submitted to us for the Specific Gravity tests.

Source: - BANSLOI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	SPECIFIC GRAVITY
3	Mouza - Latibar & Sahari, Dist. - Pakur, Bansloi River	24°29'26.09"N 87°38'7.44"E	1	2.640
		24°29'27.87"N 87°38'9.43"E	2	2.605
		24°29'29.74"N 87°38'8.57"E	3	2.610
		24°29'44.81"N 87°37'58.00"E	4	2.615
		24°29'46.36"N 87°37'56.48"E	5	2.610
		24°29'45.55"N 87°37'54.47"E	6	2.600
		24°29'49.45"N 87°37'33.85"E	7	2.635
		24°29'52.10"N 87°37'33.82"E	8	2.630
		24°29'51.84"N 87°37'32.06"E	9	2.625

For AD Power & Pvt. Ltd.
TESTING LAB

Authorised Signatory
AUTHORIZED SIGNATORY





AD Power Private Limited

AD POWER PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 30.11.2022

Report No.ADP/PR/22-23/TR-NO-11/4

Description of Sample: - 012 Bag /2KG Sand sample submitted to us for the Specific Gravity tests.

Source: - BANSLOI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	SPECIFIC GRAVITY
4	Mouza - Dumaria & Baliadanga, Dist. - Pakur, Bansloi River.	24°30'2.16"N 87°36'21.18"E	1	2.616
		24°30'1.74"N 87°36'20.66"E	2	2.619
		24°30'2.24"N 87°36'20.50"E	3	2.613
		24°30'2.07"N 87°36'19.90"E	4	2.622
		24°30'2.73"N 87°36'19.74"E	5	2.610
		24°30'2.56"N 87°36'19.12"E	6	2.607

For AD Power & Pvt. Ltd.
TESTING LAB


Authorized Signatory
AUTHORIZED SIGNATORY



AD POWER PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 30.11.2022

Report No.ADP/PR/22-23/TR-NO-11/5

Description of Sample: - 08 Bag /2KG Sand sample submitted to us for the Specific Gravity tests.

Source: - BANSLOI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	SPECIFIC GRAVITY
5	Mouza - Baramasia, Dist. - Pakur, Bansloi River.	24°30'46.25"N 87°32'30.35"E	1	2.625
		24°30'43.41"N 87°32'28.56"E	2	2.610
		24°30'42.32"N 87°32'29.57"E	3	2.630
		24°30'40.24"N 87°32'27.13"E	4	2.605

for AD Power & Pvt. Ltd.
TESTING LAB

[Signature]
Authorized Signatory
AUTHORIZED SIGNATORY



AD POWER PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 30.11.2022

Report No.ADP/PR/22-23/TR-NO-11/6

Description of Sample: - 018 Bag /2KG Sand sample submitted to us for the Specific Gravity tests.

Source: - BANSLOI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	SPECIFIC GRAVITY
6	Mouza - Amjhari, Dist. - Pakur, Bansloi River.	24°31'2.17"N 87°26'43.60"E	1	2.638
		24°31'0.87"N 87°26'41.37"E	2	2.634
		24°31'2.42"N 87°26'39.90"E	3	2.610
		24°31'1.70"N 87°26'37.35"E	4	2.606
		24°31'4.74"N 87°26'8.14"E	5	2.602
		24°31'3.93"N 87°26'5.30"E	6	2.630
		24°30'54.55"N 87°25'54.41"E	7	2.626
		24°30'51.93"N 87°25'53.24"E	8	2.622
		24°30'49.95"N 87°25'50.00"E	9	2.617



For AD Power & Pvt. Ltd.
TESTING LAB

[Signature]
Authorized Signatory

AUTHORIZED SIGNATORY

AD POWER PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 30.11.2022

Report No.ADP/PR/22-23/TR-NO-11/7

Description of Sample: - 04 Bag /2KG Sand sample submitted to us for the Specific Gravity tests.

Source: - GUMANI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	SPECIFIC GRAVITY
7	Mouza - Jordiha Chhota Murjora, Dist. - Pakur, Gumani River	24°47'11.02"N 87°27'26.27"E	1	2.620
		24°47'11.34"N 87°27'23.39"E	2	2.610

For AD Power & Pvt. Ltd.
TESTING LAB

DKB
Authorized Signatory

AUTHORIZED SIGNATORY



AD POWER PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 30.11.2022

Report No.ADP/PR/22-23/TR-NO-11/8

Description of Sample: - 04 Bag /2KG Sand sample submitted to us for the Specific Gravity tests.

Source: - BRAHMANI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	SPECIFIC GRAVITY
8	Mouza - Gunpur, Dist. - Pakur, Brahmani River	24°15'27.94"N 87°36'6.83"E	1	2.625
		24°15'28.82"N 87°36'2.64"E	2	2.615

for AD Power & Pvt. Ltd.
TESTING LAB
Dbk
Authorized Signatory

AUTHORIZED SIGNATORY



AD POWER PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 30.11.2022

Report No.ADP/PR/22-23/TR-NO-11/9

Description of Sample: - 04 Bag /2KG Sand sample submitted to us for the Specific Gravity tests.

Source: - BRAHMANI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	SPECIFIC GRAVITY
9	Mouza - Barasinghpur, Dist. - Pakur, Brahmani River	24°15'15.67"N 87°38'27.75"E	1	2.630
		24°15'17.28"N 87°38'22.45"E	2	2.620

For AD Power & Pvt. Ltd.
TESTING LAB



Authorized Signatory

AUTHORIZED SIGNATORY



AD POWER PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 30.11.2022

Report No.ADP/PR/22-23/TR-NO-11/10

Description of Sample: - 04 Bag /2KG Sand sample submitted to us for the Specific Gravity tests.

Source: - BRAHMANI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	SPECIFIC GRAVITY
10	Mouza - Ghurni, Dist. - Pakur, Brahmani River	24°14'14.80"N 87°39'38.51"E	1	2.610
		24°14'18.59"N 87°39'40.30"E	2	2.600

For AD Power & Pvt. Ltd.
TESTING LAB

[Signature]
Authorized Signatory

AUTHORIZED SIGNATORY





NABL

**National Accreditation Board for
Testing and Calibration Laboratories**

CERTIFICATE OF ACCREDITATION

A D POWERS PVT LTD TESTING LAB

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

**"General Requirements for the Competence of Testing &
Calibration Laboratories"**

for its facilities at

SECTOR 2, DHURWA, RANCHI, JHARKHAND, INDIA

in the field of

TESTING

Certificate Number: **TC-9476**

Issue Date: **28/04/2021**

Valid Until:

27/04/2023

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.
(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Name of Legal Identity : **A D POWERS PRIVATE LIMITED TESTING LAB**

Signed for and on behalf of NABL



**N. Venkateswaran
Chief Executive Officer**



ANNEXURE-17

COPY OF WORK ORDER



GOVERNMENT OF JHARKHAND
DEPARTMENT OF MINES & GEOLOGY
DIRECTORATE OF GEOLOGY
ENGINEERS' HOSTEL, 2ND FLOOR, DHURWA, RANCHI
E-MAIL- dir-geology@jharkhandmail.gov.in

Letter No:- Bhu.Ni. Anve-95/2021 - 2135

M/Ranchi, Date:- 13.10.2022

From,
Vijay Kumar Ojha
Director, Geology

To,
M/s Atmos Sustainable Solutions Private Limited,
A QCI-NABET-Approved EIA Consultant
A-73, 3rd Floor, Sector-65, Noida-201301
e-mail-gilbertmervyn@gmail.com

Subject: Work Order for Preparation/Updation and Revision of District Survey Report (DSR) of Sand in Jharkhand.

Sir,

This is to inform you that M/s Atmos Sustainable Solutions Private Limited has been submitted lowest financial offer for Preparation/Updation and Revision of District Survey Report (DSR) of Sand under the guideline of Enforcement and Monitoring Guidelines for Sand Mining 2020 (EMGSM-2020), Sustainable Sand Mining Management Guidelines 2016 (SSMMG-2016), Ministry of Environment, Forest and Climate Change January 2020 (MoEF&CC) and follow Gazette of India 15th January 2016 and 25th July 2018 and also guidance of Hon'ble Court of Jharkhand and Supreme Court of India. In consequence of that Directorate of Geology intend to give work order for Preparation/Updation and Revision of District Survey Report (DSR) of Sand on the lowest rate decided by the Departmental Purchase Committee.

2. Scope of work:-

- i. Preparation of District Survey Reports of Sand for 7 districts of Jharkhand (as per list contained in this letter further).
- ii. Preparation of DSR of Sand should be done as per the procedure and the parameters lay down under the Sustainable Sand Mining Management Guidelines 2016 and Enforcement & Monitoring Guidelines for Sand Mining 2020 read in sync with each other and carried out as per format prescribed by the MoEF& CC, GoI vide Notification dated 25 July 2018.
- iii. In preparation of DSR of other minor minerals including Sand, various guidelines and direction given by Honourable NGT and MoEF& CC, GoI and SEIAA Jharkhand shall be strictly adhered to.

(Signature)



- iv. The selected agency will have to update the DSR as per prevailing law, guidelines, rules and regulations issued by competent authority.
- v. The selected agency will have to prepare DSR and approval there of as existing law and guideline/circular issued by the competent authority.
- vi. This will be a continues and progressive work by way of updation of relevant information as per guideline over a period of 5 (Five) year.
- vii. District Survey Report (DSR) shall be submitted to Respective DMO through respective Assistant Director, Geology who shall after due diligence forward that to Deputy Commissioner of the concerned district for verification and needful action.
- viii. The concerned Deputy Commissioner will verify the DSR in respect of the relevant facts pertaining to the physical and geographical features of the district which shall be in line with scientific findings based on the parameters prescribed in the Sustainable Sand Mining Management Guidelines 2016 and Enforcement & Monitoring Guidelines for Sand Mining 2020. After such verification, the Deputy Commissioner after following all procedure to check the DSR and will get it vetted by Committee at district level shall forward the DSR for examination and evaluation by the State Expert Appraisal Committee (SEAC) having regarding to the fact that the SEIAA comprises of technical/scientific experts.
- ix. The SEAC after appraisal of the report shall forward it to the SEIAA for consideration and approval if it meets all scientific/technical requirements.
- x. DSR approved by the SEIAA shall be taken as final outcome of the Agency and will be submitted by the agency to Director, Geology/Director Mines.
- xi. Any modification/ correction if required and asked to do after scrutiny of District Survey Report (DSR) at various levels shall be done under time limit by the agency.
- xii. NGT order dt. 05.09.2022 of original application No. 54/2022/EZ must be complied.

3. District Details: -

Following is the list of district your agency has been allotted for DSR Preparation-

Sl. No.	District	Unit Rate (Rs. In Lakh) (Inclusive of all taxes)
1.	East Singhbhum	Rs. 20.00 (Rupees Twenty Lakh only)
2.	West Singhbhum	Rs. 18.00 (Rupees Eighteen Lakh only)
3.	Saraikela-Kharsawan	Rs. 16.00 (Rupees Sixteen Lakh only)
4.	Dhanbad	Rs. 16.00 (Rupees Sixteen Lakh only)

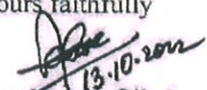
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5.	<i>Pakur</i>	Rs. 16.00 (Rupees Sixteen Lakh only)
6.	<i>Simdega</i>	Rs. 18.00 (Rupees Eighteen Lakh only)
7.	<i>Gumla</i>	Rs. 18.50 (Rupees Eighteen Lakh Fifty Thousand only)

4. All terms and conditions mentioned in Expression of Interest No- 08/2021-22 of Directorate of Geology, Department of Mines & Geology, Government of Jharkhand will be applicable and the agency will execute the work accordingly.
5. The Agency shall have to submit the Performance Security Deposit in the form of Bank Guarantee. Performance security deposit shall be 20% of the contract value excluding the taxes. The performance security deposit shall be returned after completion of the warranty period to the satisfaction of the Directorate of Geology and satisfactory performance of the work.
6. You are directed to provide email ID and mobile numbers of each member of your survey team for better communication.
7. Your agency will report progress of work fortnightly to project in-charge as well as Directorate of Geology.
8. Your agency will work under the supervision of authorized representative of Directorate of Geology.
9. **Payment and Termination of Work Order:**
 - i. Payment shall be made after approval of District Survey Report (DSR) by the SEIAA. The company shall submit certified final bill after completion of work to the Directorate of Geology, 2nd floor Engineers' Hostel no-2, Dhurwa Ranchi with completion certificate duly certified by authorized field officer of Directorate of Geology and concern District Mining Officer.
 - ii. In case of any breach of Terms & Conditions mentioned in work order or in the Expression of Interest No. 08/2021-22 of Directorate of Geology, Department of Mines & Geology, work order will be cancelled and the security money and payment will be forfeited after giving 15 day of notice.
 - iii. Any dispute will be mutually settled by the parties. In case any further legal dispute, jurisdiction will be Ranchi only.
10. This work order is being issued after the approval of competent authority.

Yours faithfully


(Vijay Kumar Ojha)
Director, Geology



ANNEXURE-18

MINUTES OF SEAC RANCHI



State Level Expert Appraisal Committee (SEAC), Jharkhand.

Nursery Complex, Near Dhurwa Bus Stand, Dhurwa, Ranchi

98th Meeting Agenda Points

Date –02.11.2022

Time – 11 :00 AM

A. Deputy Commissioner - cum – District Magistrate, Hazaribagh or through authorized representative and M/s Rian Enviro Pvt. Ltd.

i. Draft District Survey Report (DSR) of sand, Hazaribagh

B. Deputy Commissioner - cum – District Magistrate, Pakur or through authorized representative and Atmos Sustainable Solution Pvt. Ltd.

i. Draft District Survey Report (DSR) of sand, Pakur

C. Tentative List of Proponent for Appearance

Consultant : CMPDI, Kanke Road, Ranchi

- 1. Kabribad Opencast Coal Mine Project of M/s Central Coalfields Limited, Village : Kabribad, Chunjka, Patrodih, Khandih, Chilga, Tehsil : Giridih, Distt. : Giridih, Jharkhand (90.84 Ha) (Proposal No. : SIA/JH/CMIN/76338/2018) (Violation EIA/EMP)**
- 2. Selected Dhorri (Lower) Open Cast Mine of M/s Central Coalfields Limited, Village :Turio, Makoli, Tarmi, Tehsil : Bermo, Distt. : Bokaro, Jharkhand (211.82 Ha) (Proposal No. : SIA/JH/CMIN /402680/2022) (New ToR)**

Consultant : SAIL

- 3. Topailore Iron Ore Mining Project of Gua Ore Mines of SAIL Bokaro Steel Plant, Village : Topailore, Tehsil. : Noamundi, Distt. : West Singhbhum, Jharkhand. (Proposal No. : SIA/JH/MIN/293216/2022) (Amendment EC)**

Consultant : M/S Oceo Inviro Management solutions (India) Pvt. Ltd.

- 4. Residential Complex “Skyline” Located at Village : Khayerbani, Town Jamshedpur, Distt. : East Singhbhum, Jharkhand. (Proposal No. : SIA/JH/INFRA2/403054/2022) (EC)**

Consultant : Visiontek Consultancy Services Pvt. Ltd., Bhubaneswar

- 5 Singhpur Stone Deposit of M/s Maa Mundeshwari Stone Mines, Village : Singhpur, Tehsil : Nagri, Dist. : Ranchi, Jharkhand (1.715 Ha) (Proposal No. : SIA/JH/MIN /402564/2022) (New EC)**
- 6 Betakocho Brick Earth Deposit of M/s B.N.P. Bricks, Village : Betakocho, Tehsil : Ghatsila, Distt. : East Singhbhum, Jharkhand (1.352 Ha) (Proposal No. : SIA/JH/MIN /402834/2022) (New EC)**



जिला खनन कार्यालय, पाकुड़

पत्रांक २३०६/एम०, दिनांक १५/११/२०२२

प्रेषक,

जिला खनन पदाधिकारी,
पाकुड़।

सेवा में,

Atmos Sustainable Solution Pvt. Ltd.,
A-73, 3rd Floor, Sector-65,
Noida, Uttar Pradesh-201301

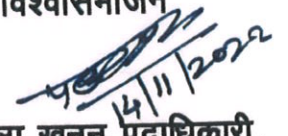
विषय :- पाकुड़ जिला के लिए बालू (लघु खनिज) के DSR के संबंध में।

प्रसंग :- सचिव, SEAC, झारखण्ड, रांची के पत्रांक 21, दिनांक 07.11.2022

महाशय,

उपर्युक्त विषयक SEAC, झारखण्ड की 98वीं बैठक दिनांक 02-05.11.2022 में पाकुड़ जिला के लिए तैयार DSR पर समीक्षा कर समिति द्वारा लिये गये निर्णय की कार्यवाही प्रसांगिक पत्र से उपायुक्त, पाकुड़ को प्रेषित की गई है, को अत्र-सह संलग्न करते हुए अनुरोध है कि कार्यवाही में दिये गये निदेश के आलोक में पाकुड़ जिला के लिए DSR तैयार कर अविलम्ब उपलब्ध करावें।

विश्वासमाजन


जिला खनन पदाधिकारी,
पाकुड़





Ministry of Environment, Forest & Climate Change, Govt. of India
कार्यालय : राज्य स्तरीय विशेषज्ञ आकलन समिति, झारखण्ड, राँची
State Level Expert Appraisal Committee, Jharkhand, Ranchi
पौधशाला परिसर, धूर्वा बस स्टैंड के समीप, धूर्वा, राँची- 834004, (झारखण्ड)
ई-मेल. seac.jhk@gmail.com; वेबसाइट. www.jseiaa.org.

राँची, दिनांक : 07.11.2022

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14/11/22

प्रेषक,
पत्रांक : 21

श्रीकांत वर्मा, भा०व०से०
सचिव,
राज्य स्तरीय विशेषज्ञ आकलन समिति (SEAC),
झारखण्ड, राँची।

सेवा में,
उपायुक्त-सह-जिला दण्डाधिकारी,
जिला - पाकुड़, झारखण्ड।

विषय : - पाकुड़ जिला के लिए बालू (लघु खनिज) का प्रारूप DSR भेजने के संबंध में।

प्रसंग : - 1. आपका पत्रांक 2012/एम०, दिनांक 14.09.2022।
2. SEAC. झारखण्ड की 98वीं बैठक दिनांक 02-05.11.2022।

महाशय,
उपर्युक्त विषयक आपके प्रासंगिक पत्र दिनांक 14.09.2022 के क्रम में SEAC. झारखण्ड की 98वीं बैठक दिनांक 02-05.11.2022 में समिति (SEAC) द्वारा लिये गये निर्णय की कार्यवाही की छायाप्रति अत्र-सह-संलग्न अग्रेतर कार्रवाई हेतु आपको भेजी जा रही है।

अनु०-यथोक्त।

विश्वासभाजन

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सचिव,
07/11/2022

राज्य स्तरीय विशेषज्ञ आकलन समिति (SEAC),
झारखण्ड, राँची।

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7/11
14/11/2022



MINUTES OF THE 98TH MEETING OF STATE LEVEL EXPERT APPRAISAL COMMITTEE (SEAC), JHARKHAND HELD ON 02ND, 03RD, 04TH and 05TH NOVEMBER, 2022

The 98th meeting of State Level Expert Appraisal Committee (SEAC), Jharkhand was held on 02nd, 03rd, 04th and 05th November, 2022 under the Chairmanship of Shri Ashok Kumar Singh, IFS (Retd.) in the Conference Room at SEAC, Ranchi.

The following members were present:

1. Shri Ashok Kumar Singh, IFS (Retd.) - Chairman
2. Dr. Kirti Avishek - Member
3. Shri Niranjan Lal Agarwalla - Member
4. Dr. Raju Kumar - Member
5. Dr. Ajay Govind Bhatt - Member
6. Shri Srikant Verma, IFS - Secretary

SEIAA forwarded various projects to the SEAC for the technical appraisal after the last SEAC meeting held on 14th, 15th, 16th 17th and 18th September, 2022. These projects have been put up for discussions. Besides, these Projects, wherein PP's were asked to provide requisite information / clarifications in the earlier meeting of SEAC, were also considered for appraisal. The Project Proponents have been asked to make technical presentation for the appraisal of their projects before the committee.

The following observations / recommendations were made during the presentation (Project -wise), as under :-

Day 1 : November 02nd, 2022 [Wednesday]

A. Deputy Commissioner - cum - District Magistrate, Hazaribagh or through authorized representative and M/s Rian Enviro Pvt. Ltd.

i. Draft District Survey Report (DSR) of sand, Hazaribagh

The DSR was submitted by Deputy Commissioner, Hazaribagh. He was represented by District Mining Officer, Hazaribagh Sri Ajit Kumar and Assistant Director, Geology, Hazaribagh Md. Abu Husain at the SEAC meeting on 02.11.2022.

During the meeting the consultant Rian Enviro Pvt. Ltd. submitted as follows :

1. The DSR submitted was at a draft stage and it was not a final & complete DSR.
2. No field survey and primary data collection has been done.
3. The DSR submitted is based only on secondary data.
4. The consultant declared that he has not received the work order from the concerned authorities.
5. The consultant admitted that the Enforcement and Monitoring Guidelines for Sand Mining 2020 has not been followed in the preparation of the draft DSR submitted for appraisal.

A (Handwritten signature)



The Committee is of the view that the DSR should be prepared in the light of Hon'ble Apex Court in Civil Appeal no. 3661-3662/2020, Pawan Kumar vs State of Bihar & ors, Hon'ble NGT in O.A. no. 54/2022/EZ, Bhumi Adhigrahan Visthapan Avam Punarvas Kisan Samiti vs State of Jharkhand & ors and Enforcement and Monitoring Guidelines for Sand Mining 2020.

The final DSR should be prepared in the light of above guidelines and Hon'ble Apex Court & Hon'ble NGT direction and to be submitted for appraisal.

B. Deputy Commissioner - cum – District Magistrate, Pakur or through authorized representative and Atmos Sustainable Solution Pvt. Ltd.

i. Draft District Survey Report (DSR) of sand, Pakur

The DSR was submitted by Deputy Commissioner, Pakur. He was represented by District Mining Officer, Pakur Sri Pradeep Kumar at the SEAC meeting on 02.11.2022. The consultant i.e. Atmos Sustainable Solution Pvt. Ltd. was not present before SEAC, Jharkhand.

During the meeting the DMO, Pakur submitted the following :

1. The DSR submitted was at a draft stage and it was not a final & complete DSR.
2. No field survey and primary data collection has been done.
3. The DSR submitted is based only on secondary data.
4. The authorized person admitted that the Enforcement and Monitoring Guidelines for Sand Mining 2020 has not been followed in the preparation of the draft DSR submitted for appraisal.

The Committee is of the view that the DSR should be prepared in the light of Hon'ble Apex Court in Civil Appeal no. 3661-3662/2020, Pawan Kumar vs State of Bihar & ors, Hon'ble NGT in O.A. no. 54/2022/EZ, Bhumi Adhigrahan Visthapan Avam Punarvas Kisan Samiti vs State of Jharkhand & ors and Enforcement and Monitoring Guidelines for Sand Mining 2020.

The final DSR should be prepared in the light of above guidelines and Hon'ble Apex Court & Hon'ble NGT direction and to be submitted for appraisal.

C. Consideration of Proposals

1. Kabribad Opencast Coal Mine Project of M/s Central Coalfields Limited, Village : Kabribad, Chunjka, Patrodih, Khandih, Chilga, Tehsil : Giridih, Distt. : Giridih, Jharkhand (90.84 Ha)

(Proposal No. : SIA/JH/CMIN/76338/2018)

Name of the consultant: CMPDI, Kanke Road, Ranchi

This is a violation project which has been taken for appraisal on 02.11.2022.

Kabribad OC is an operating mine located in Giridih coalfields of Central Coalfields Limited, Jharkhand. Mining activity in the coalfield started as early a 1871 by M/s Bangal Coal Company & by then State Railway and subsequently transferred to National Coal Development Corporation



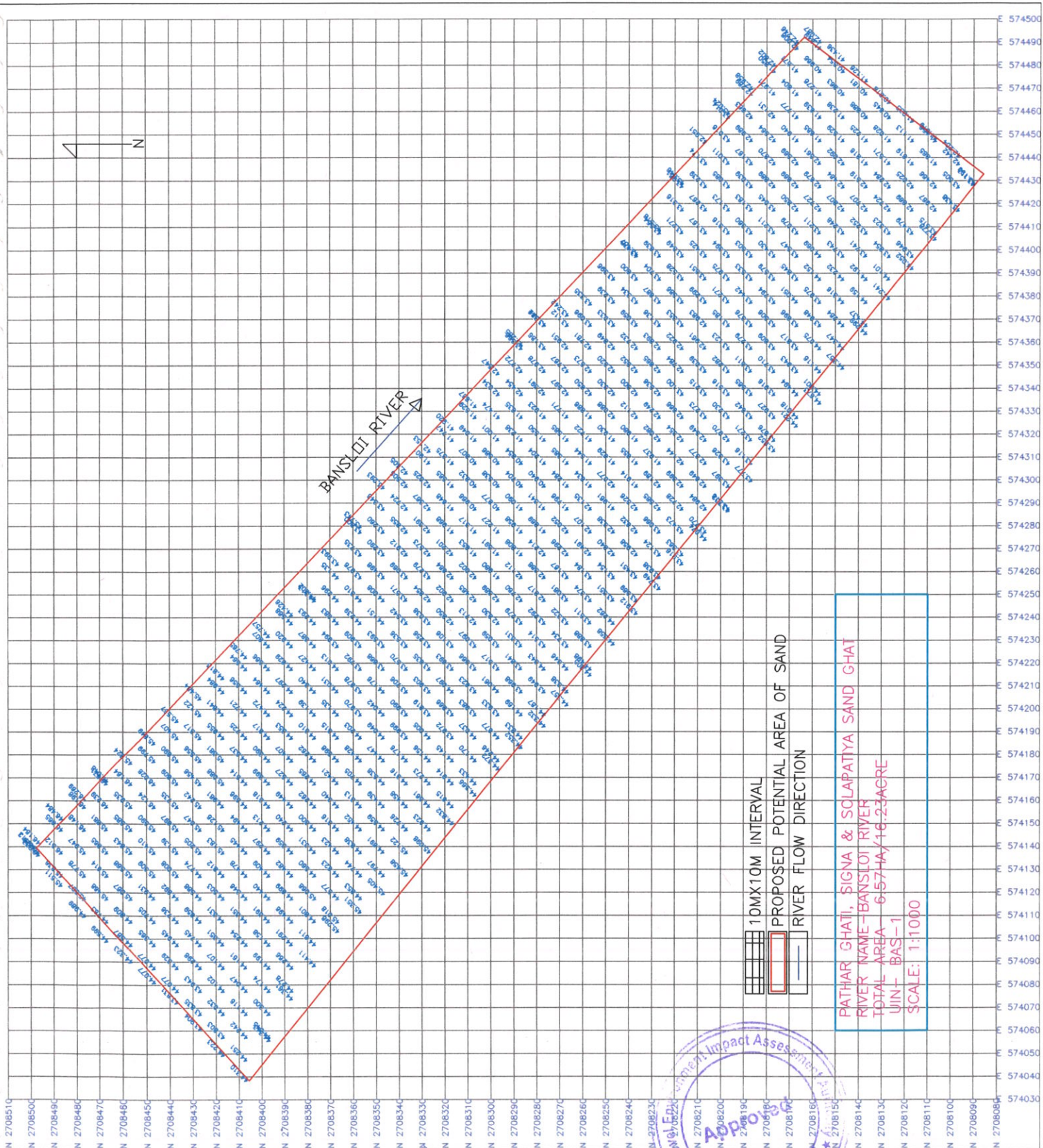
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ANNEXURE-19

10M X 10M GRID MAP WITH
CROSS SECTION



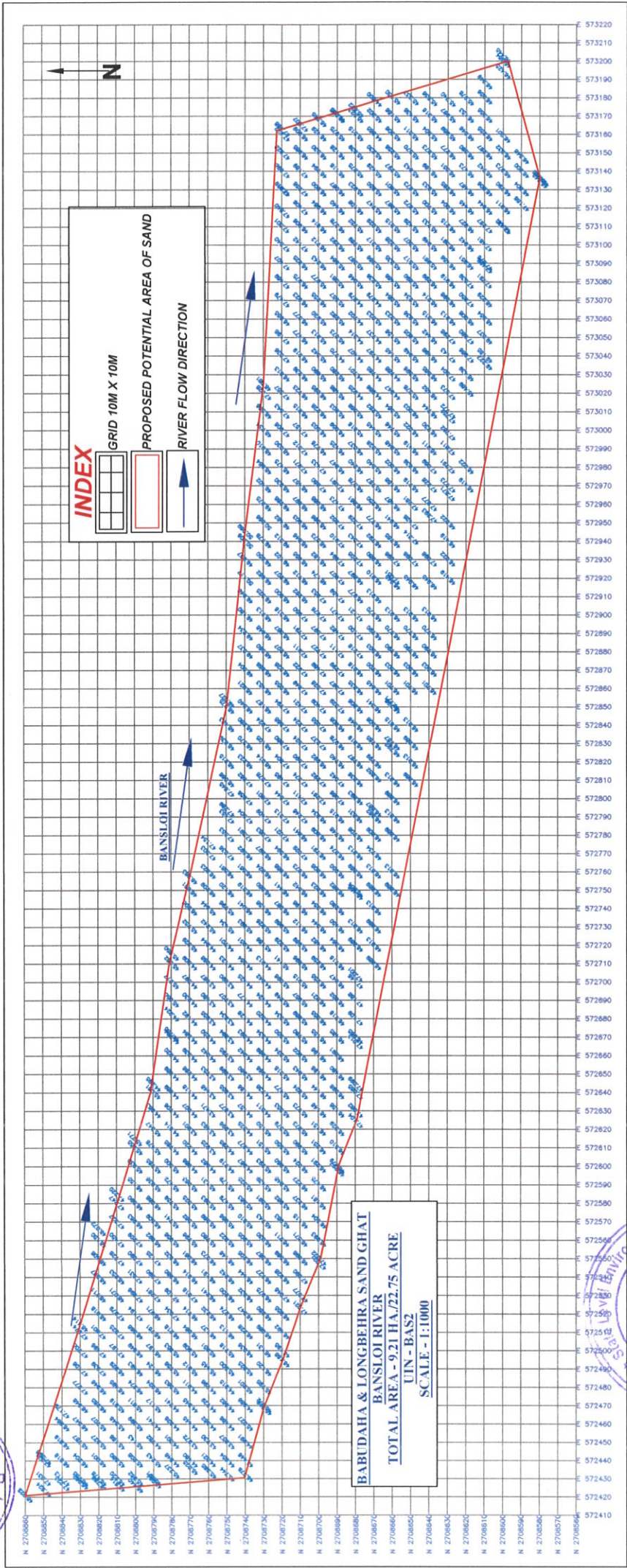
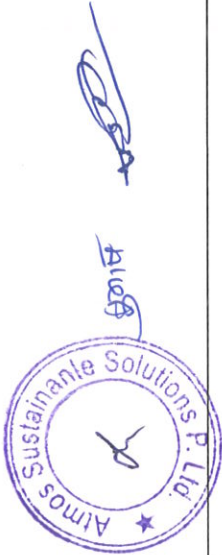


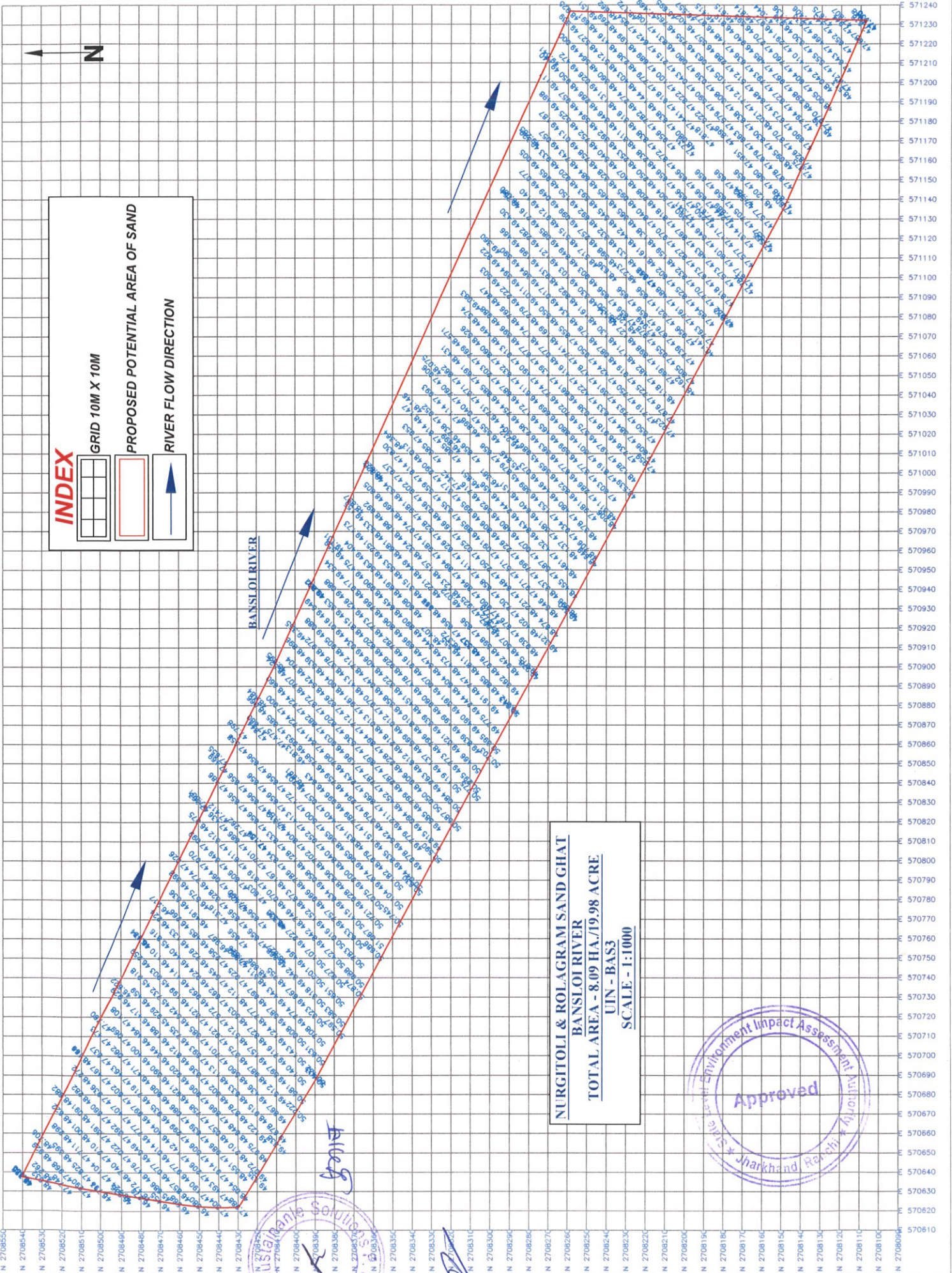
PATHAR GHATI, SIGNA & SCLAPATIYA SAND GHAT
 RIVER NAME - BANSLOI RIVER
 TOTAL AREA - 6.57 HA / 16.23 ACRE
 UIN - BAS - 1
 SCALE: 1:1000



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GRID 10M X 10M

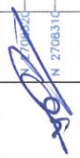


PROPOSED POTENTIAL AREA OF SAND

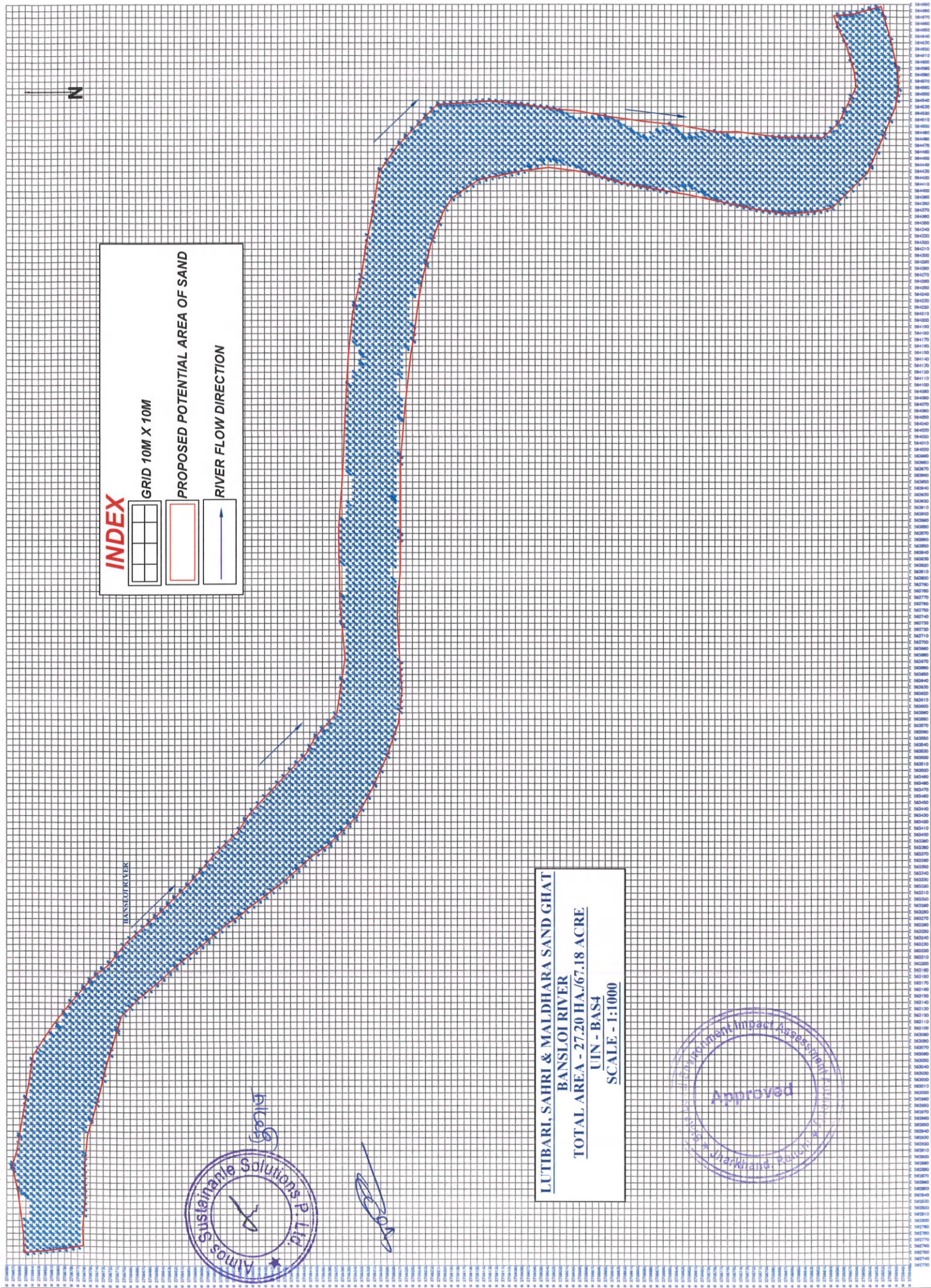


RIVER FLOW DIRECTION

NURGITOLI & ROLAGRAM SAND GHAT
BANSLOI RIVER
TOTAL AREA - 8.09 HA./19.98 ACRE
UIN - BAS3
SCALE - 1:1000



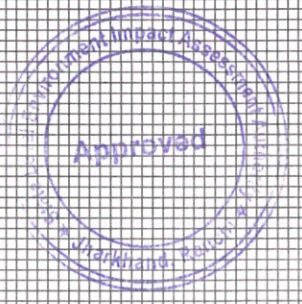
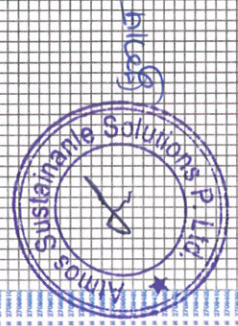
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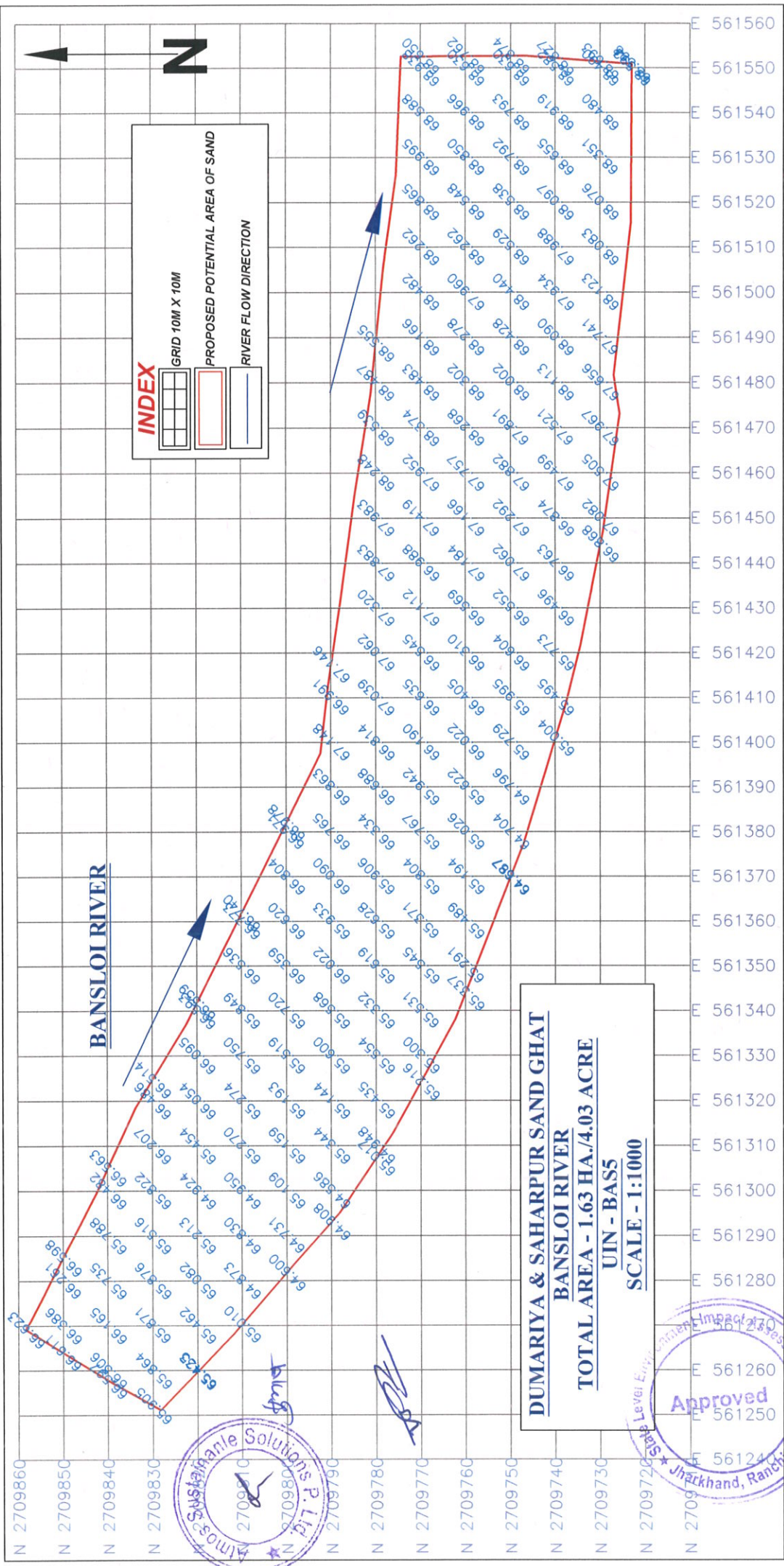


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	GRID 10M X 10M
	PROPOSED POTENTIAL AREA OF SAND
	RIVER FLOW DIRECTION

LUTBARI, SAHRI & MALDHARA SAND GHAT
BANSLOI RIVER
TOTAL AREA - 27.20 HA./67.18 ACRE
UIN - BAS4
SCALE - 1:1000





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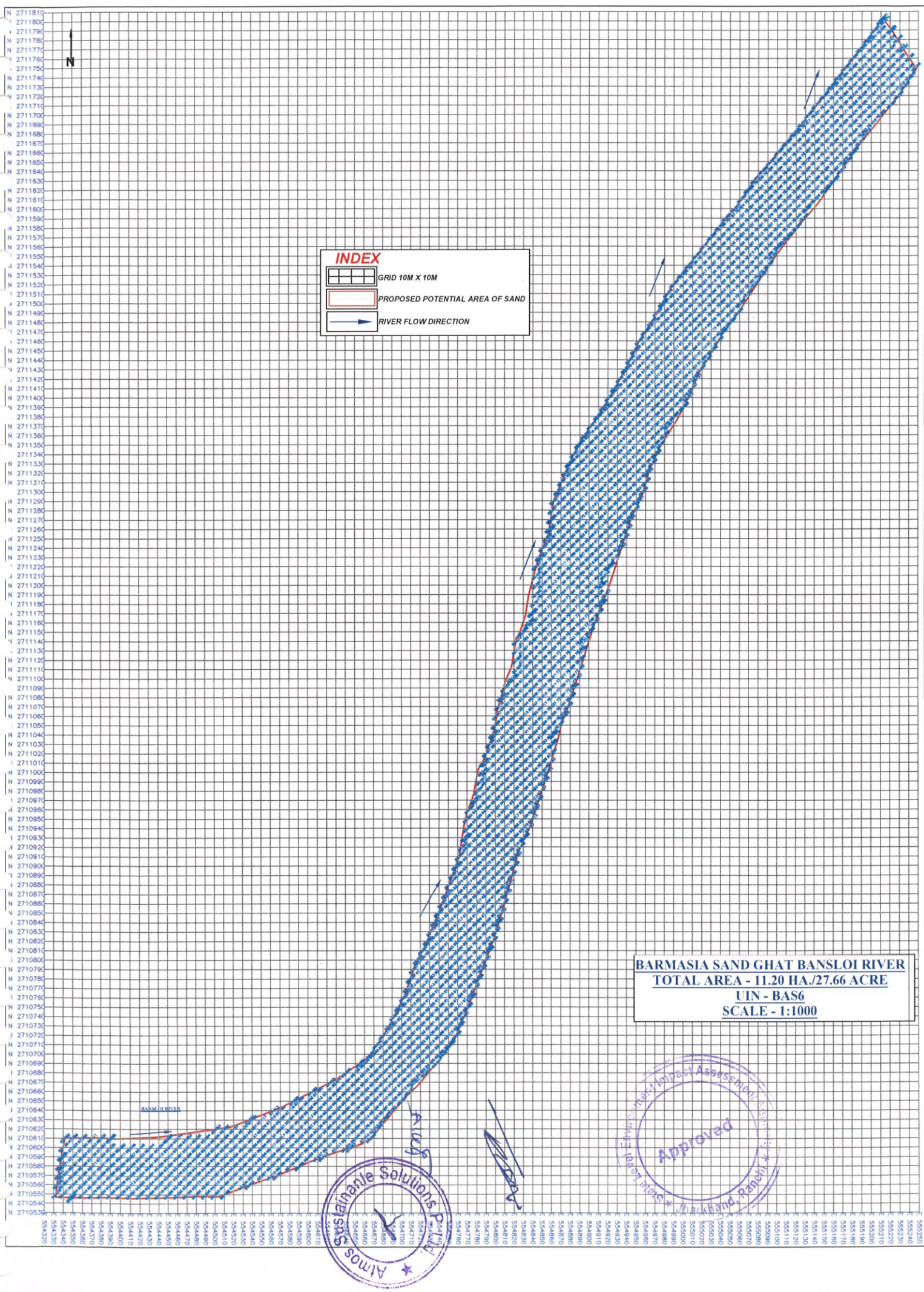
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PROPOSED POTENTIAL AREA OF SAND




RIVER FLOW DIRECTION

DUMARIYA & SAHARPUR SAND GHAT
BANSLOI RIVER
TOTAL AREA - 1.63 HA./4.03 ACRE
UIN - BAS5
SCALE - 1:1000

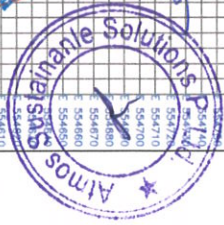




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-  GRID 10M X 10M
-  PROPOSED POTENTIAL AREA OF SAND
-  RIVER FLOW DIRECTION

BARMASIA SAND GHAT BANSLOI RIVER
TOTAL AREA - 11.20 HA./27.66 ACRE
 UIN - BAS6
 SCALE - 1:1000

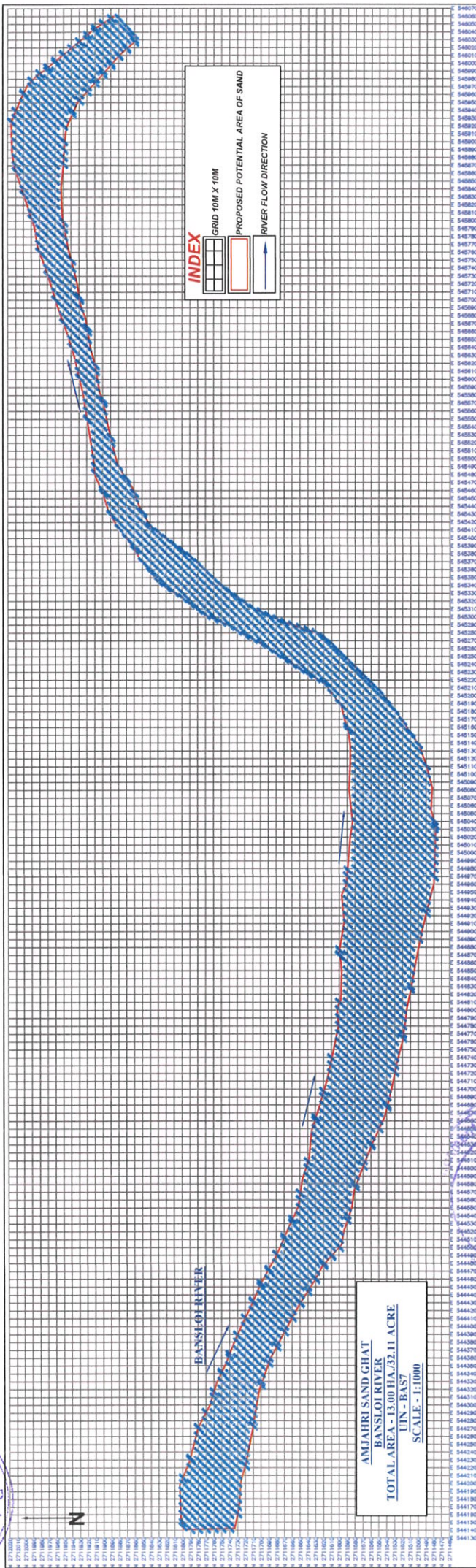


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Handwritten signature and initials in blue ink.

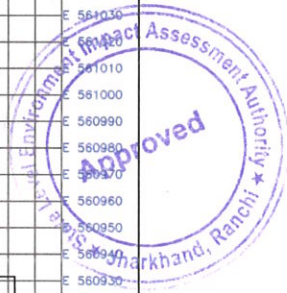
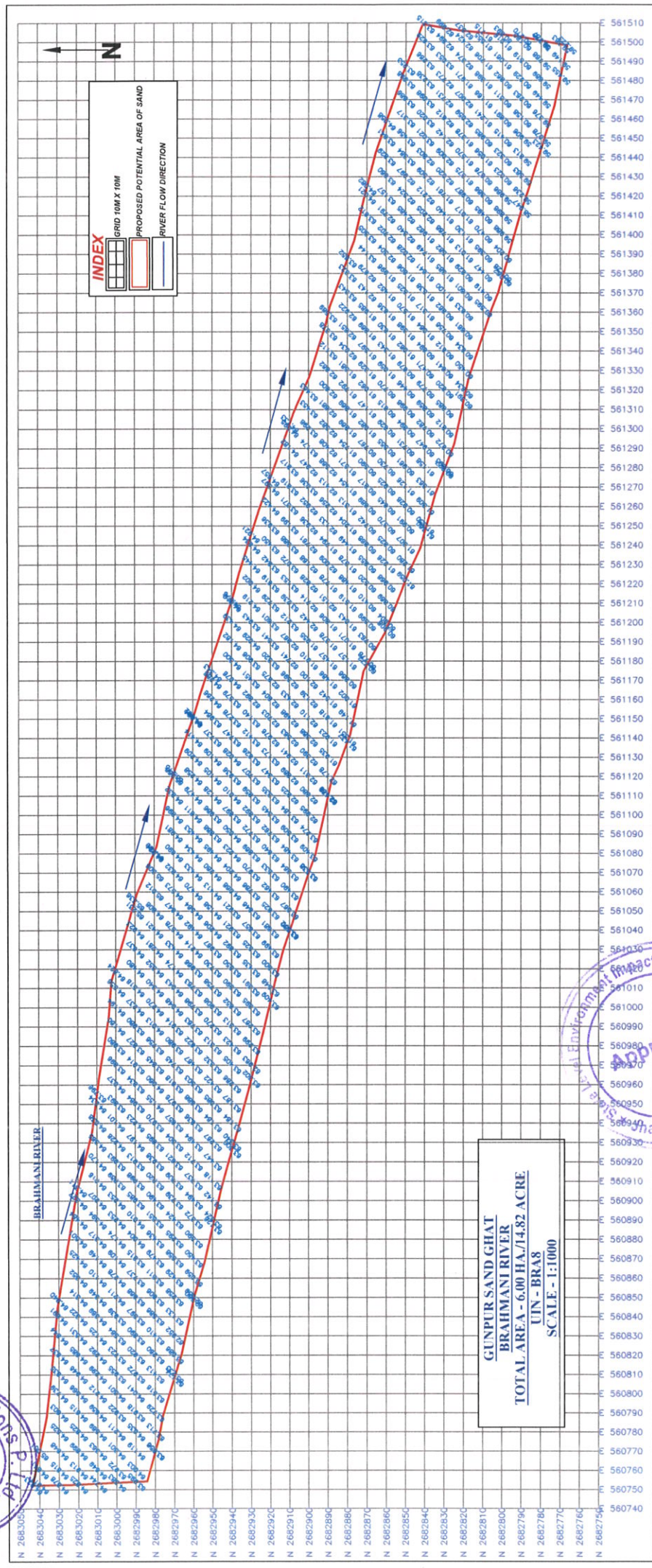


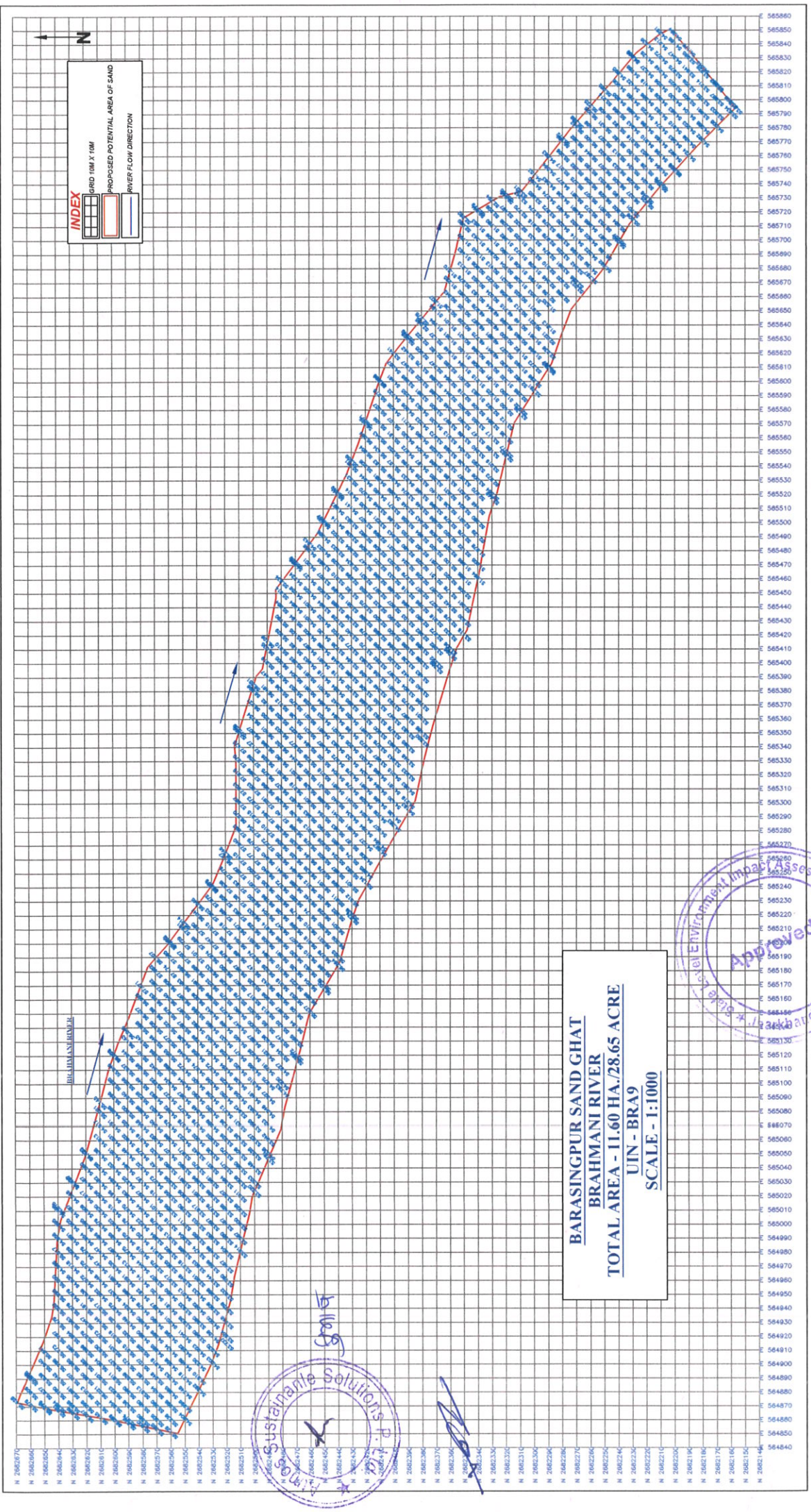
AMJAHRI SAND GHAT
BANSLOI RIVER
TOTAL AREA - 13.00 HA./32.11 ACRE
IIN - BAS7
SCALE - 1:1000





Handwritten signatures and initials in blue ink.





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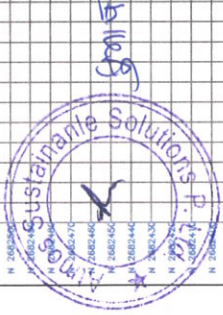
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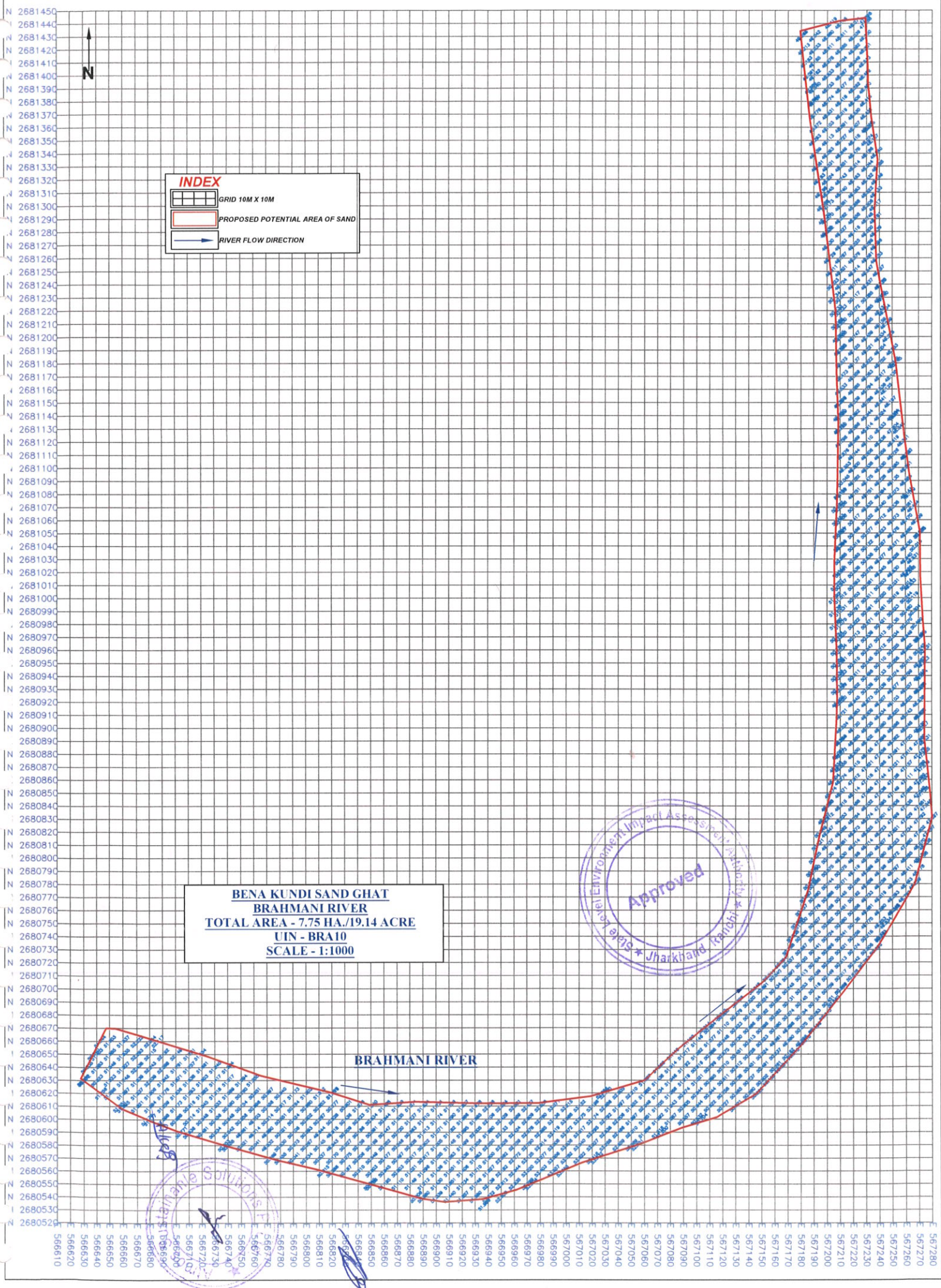
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PROPOSED POTENTIAL AREA OF SAND




RIVER FLOW DIRECTION

BARASINGPUR SAND GHAT
BRAHMANI RIVER
 TOTAL AREA - 11.60 HA./28.65 ACRE
 UIN - BRA9
 SCALE - 1:1000





INDEX

-  GRID 10M X 10M
-  PROPOSED POTENTIAL AREA OF SAND
-  RIVER FLOW DIRECTION

BENA KUNDI SAND GHAT
BRAHMANI RIVER
TOTAL AREA - 7.75 HA/19.14 ACRE
UIN - BRA10
SCALE - 1:1000



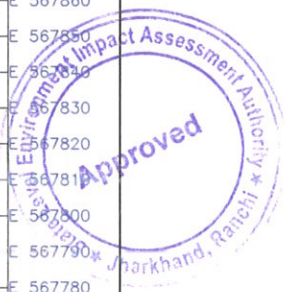
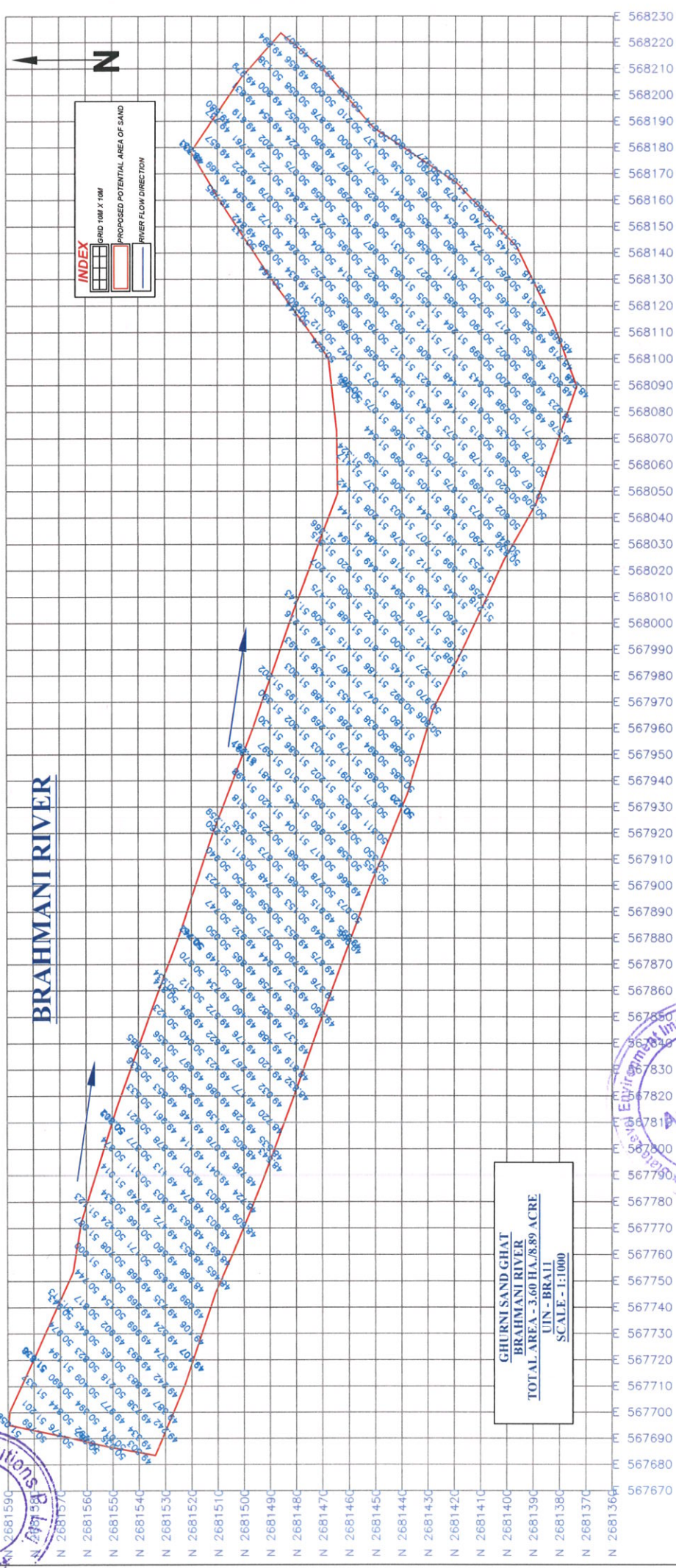
BRAHMANI RIVER

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Handwritten signature and initials.



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Cutting	1.031
Filling	
Formation	
Ground	
Distance	

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Datum: 45.0

Cutting	11.798
Filling	
Formation	
Ground	
Distance	

Filling: 0.936
Cutting: 21.853
Datum: 45.0

Cutting	21.853
Filling	0.936
Formation	
Ground	
Distance	

Filling: 2.141
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Filling	2.141
Formation	
Ground	
Distance	

Filling: 7.236
Cutting: 121.808
Datum: 45.0

Cutting	121.808
Filling	7.236
Formation	
Ground	
Distance	

Filling: 17.418
Cutting: 123.904
Datum: 45.0

Cutting	123.904
Filling	17.418
Formation	
Ground	
Distance	

Filling: 7.026
Cutting: 53.897
Datum: 45.0

Cutting	53.897
Filling	7.026
Formation	
Ground	
Distance	

Filling: 57.917
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Datum: 44.0

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Filling	57.917
Formation	
Ground	
Distance	

Cutting: 21.840
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Ground	
Distance	

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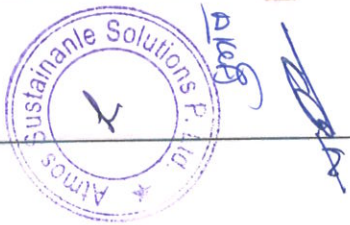
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Formation	
Ground	
Distance	

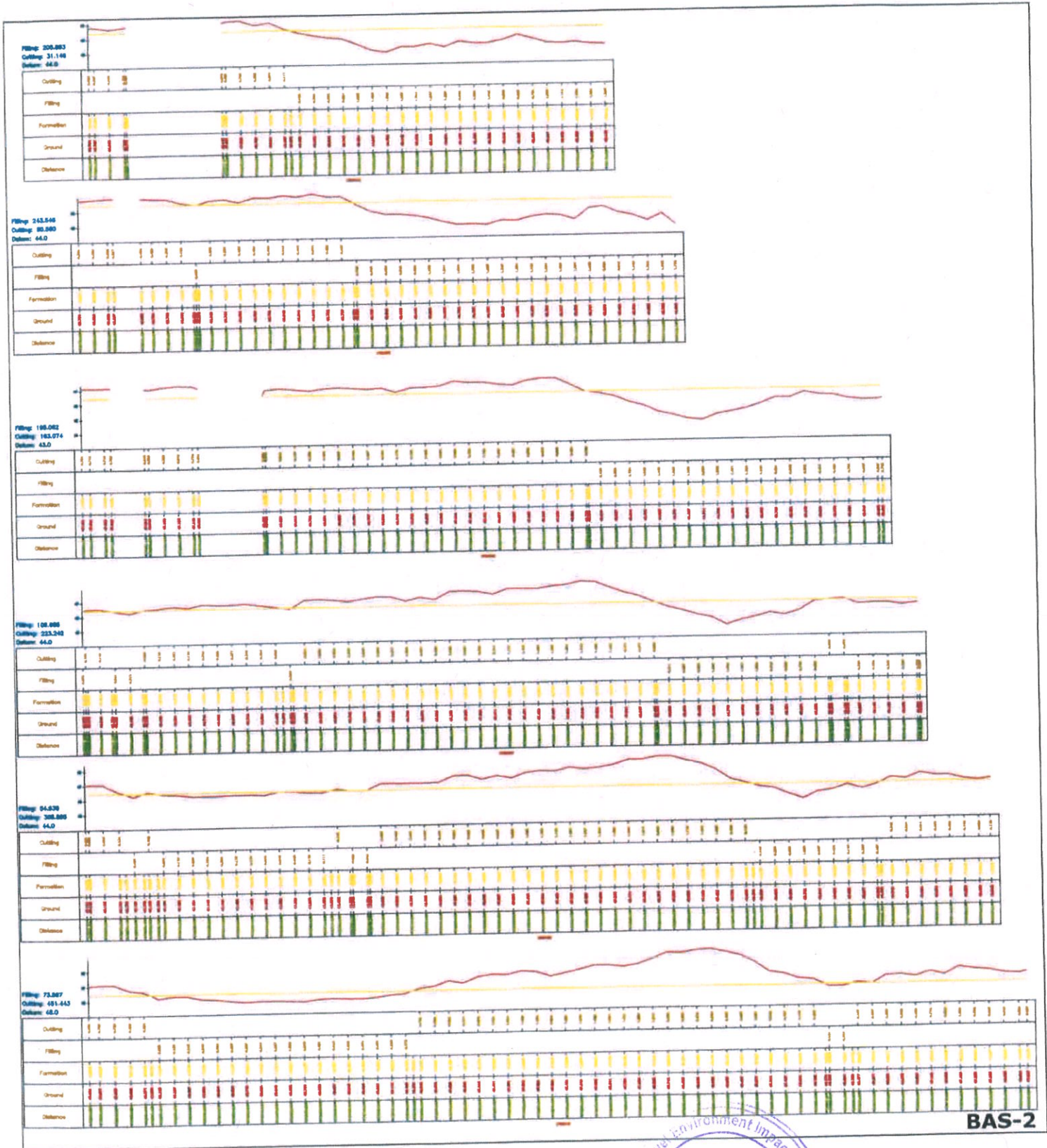
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Ground	
Distance	





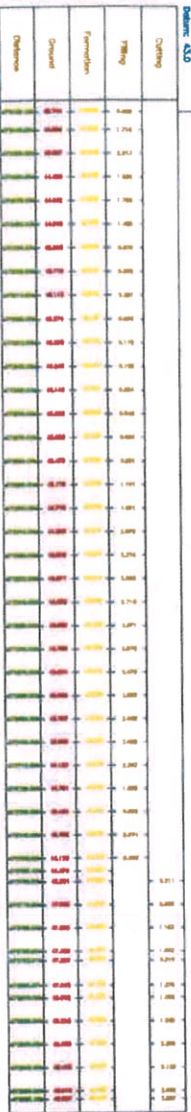
BAS-2



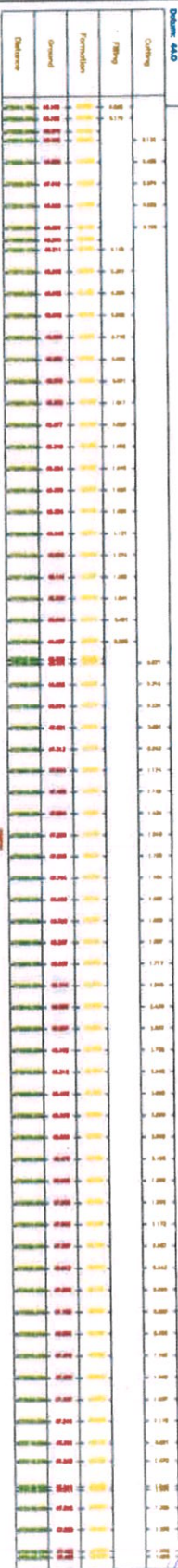
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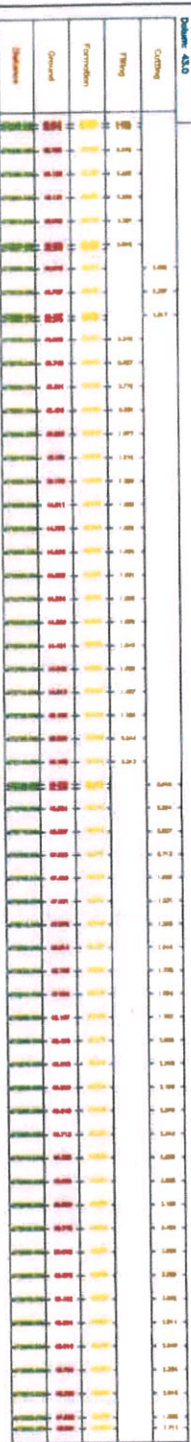
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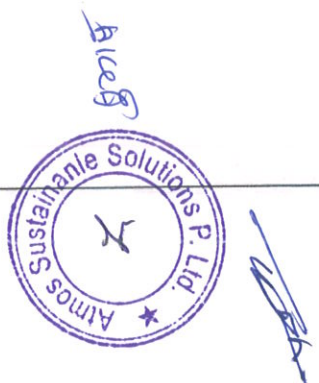
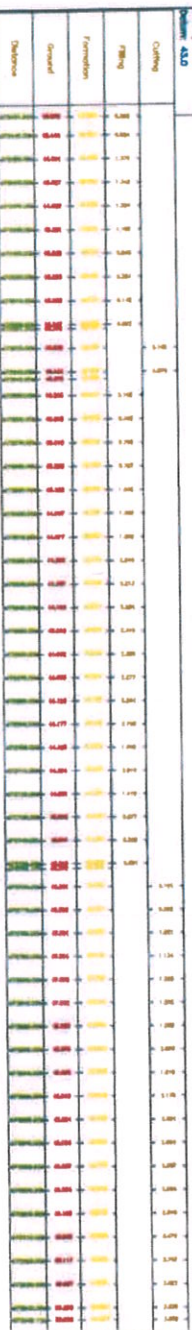
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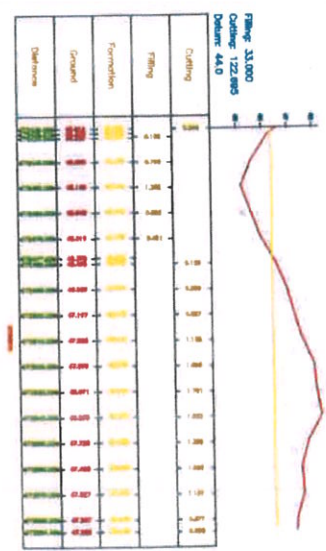
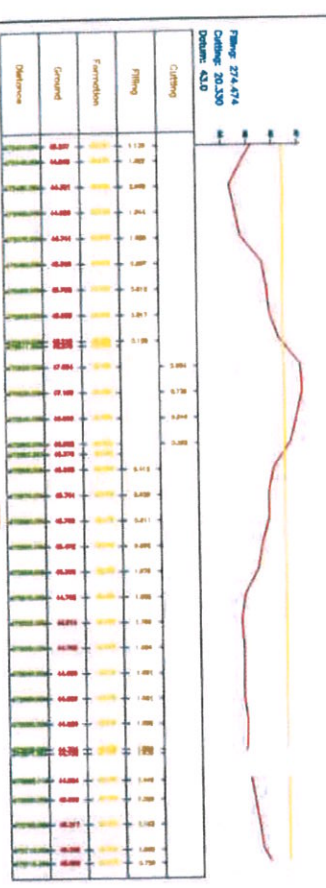
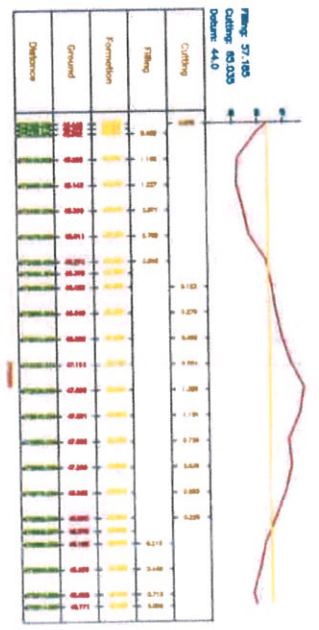
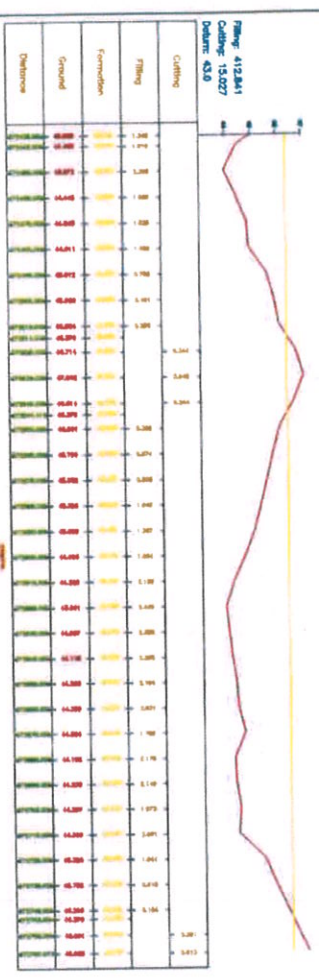
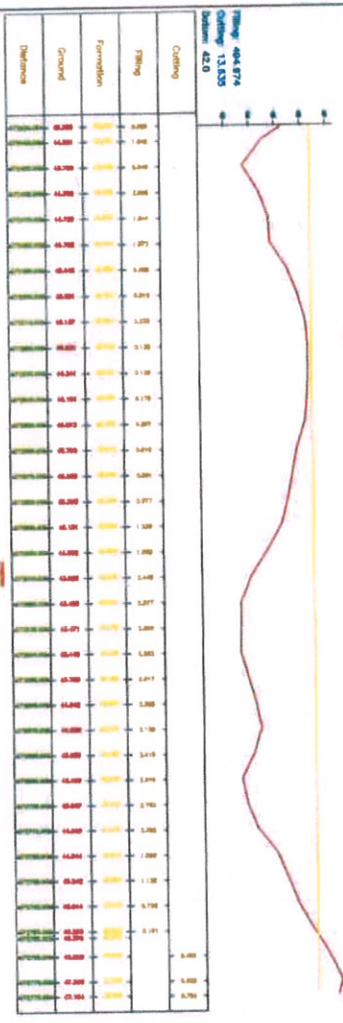
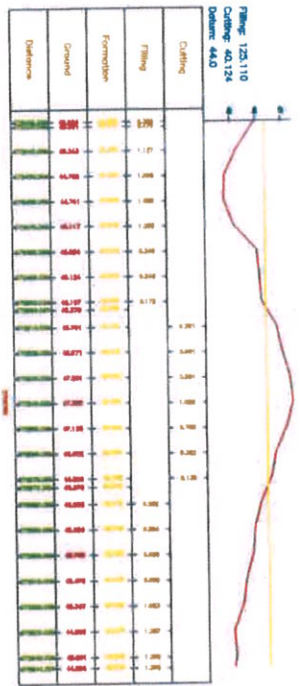
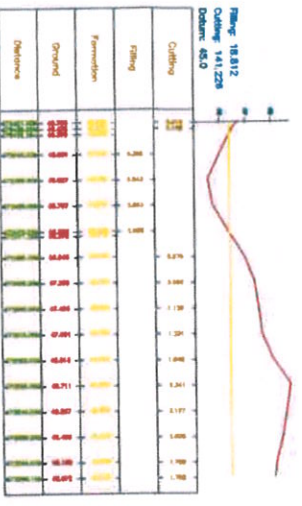


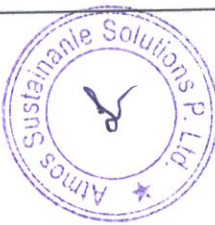

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 Output 4.00



Range 370.831
 Outlay 470.000
 Output 4.00





Amos Sustainable Solutions P. Ltd.

 A1288


BAS-2

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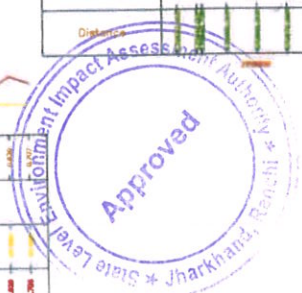
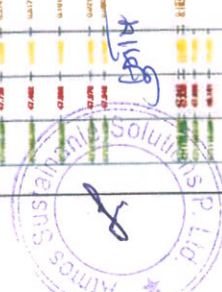
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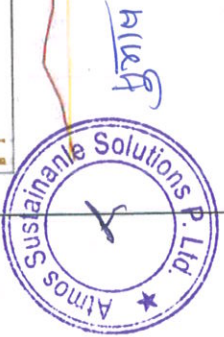
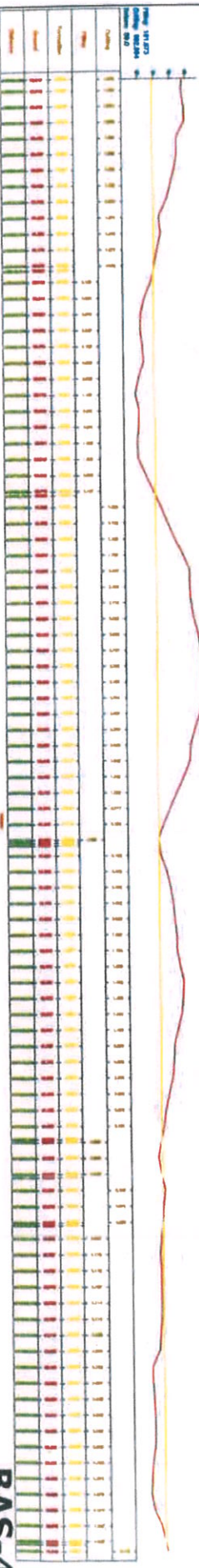
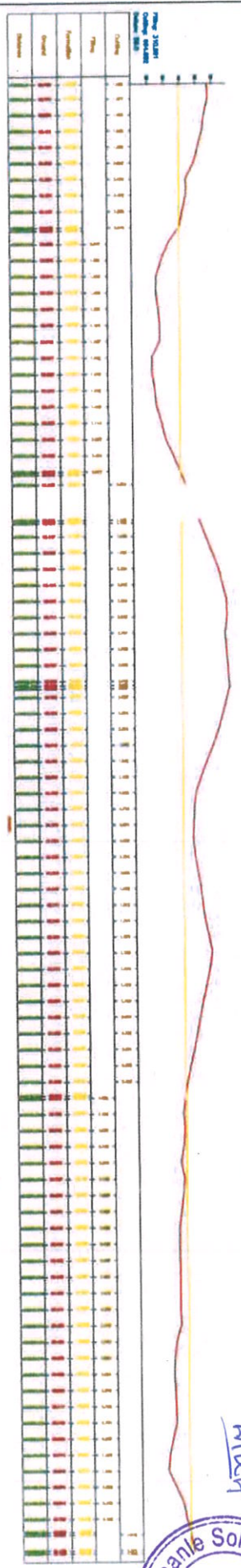
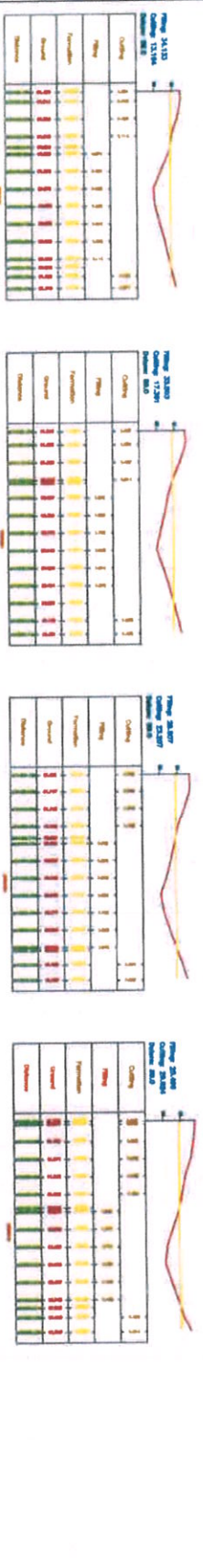
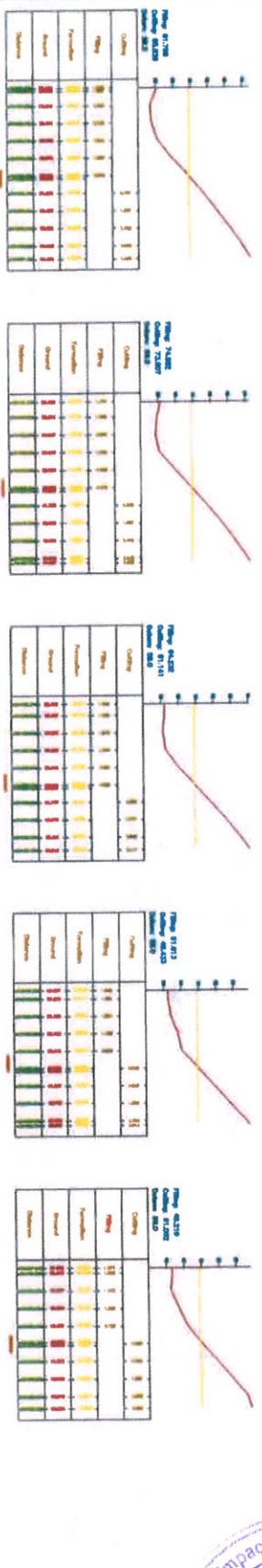
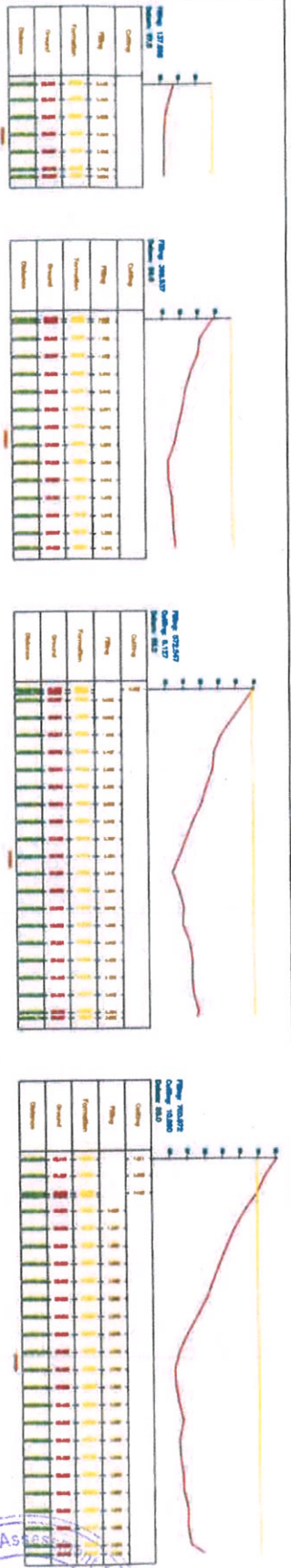
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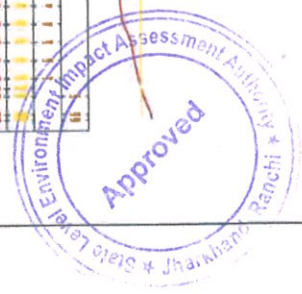
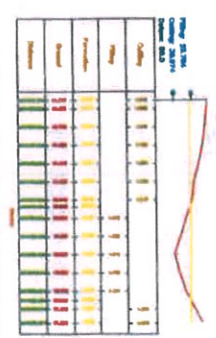
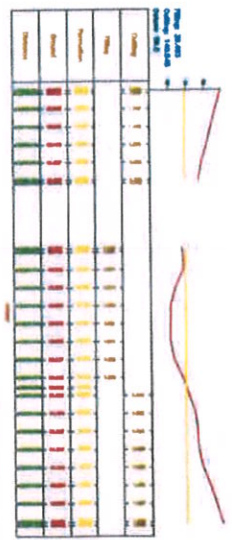
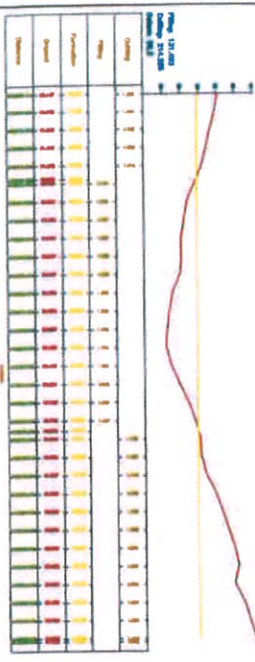
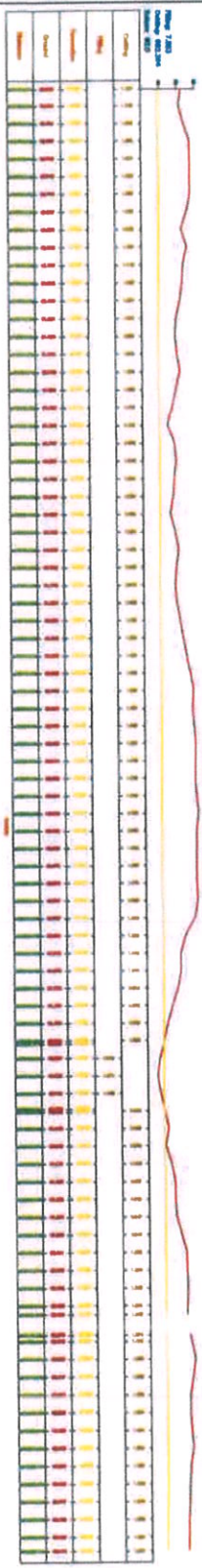
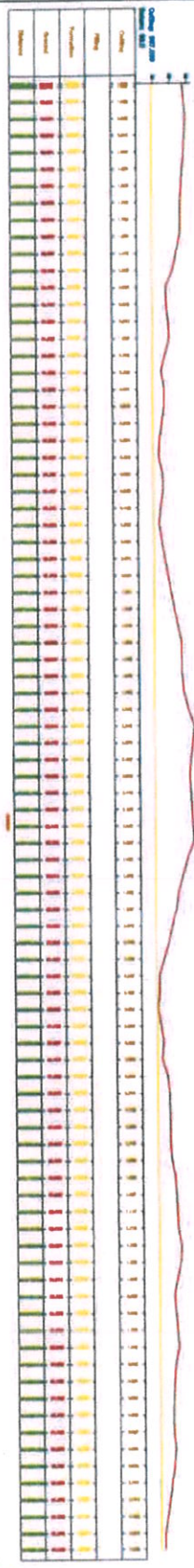
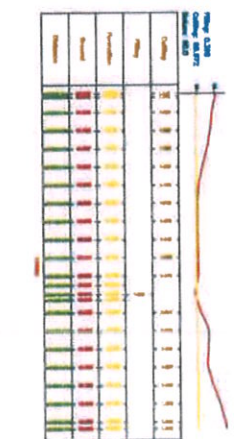
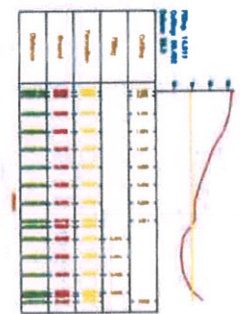
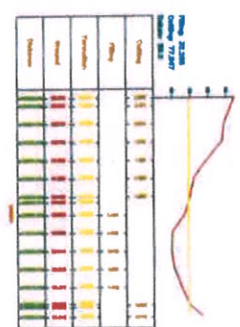
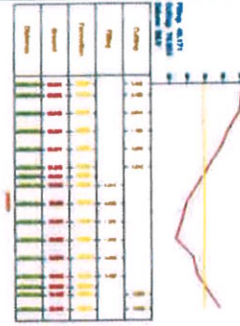
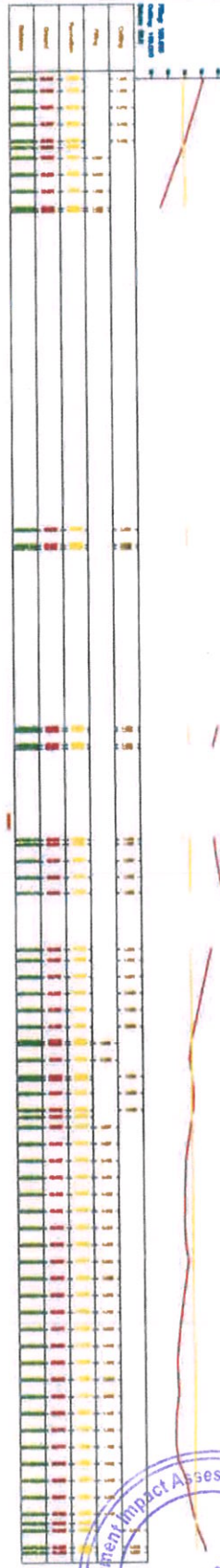
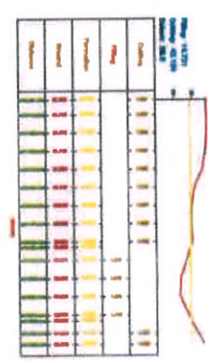
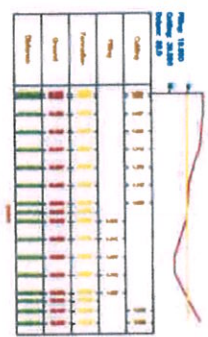
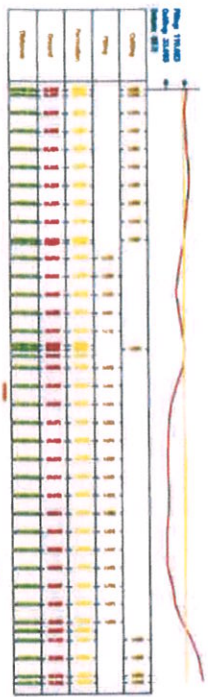


BAS-3



Handwritten signature or initials.

BAS-4



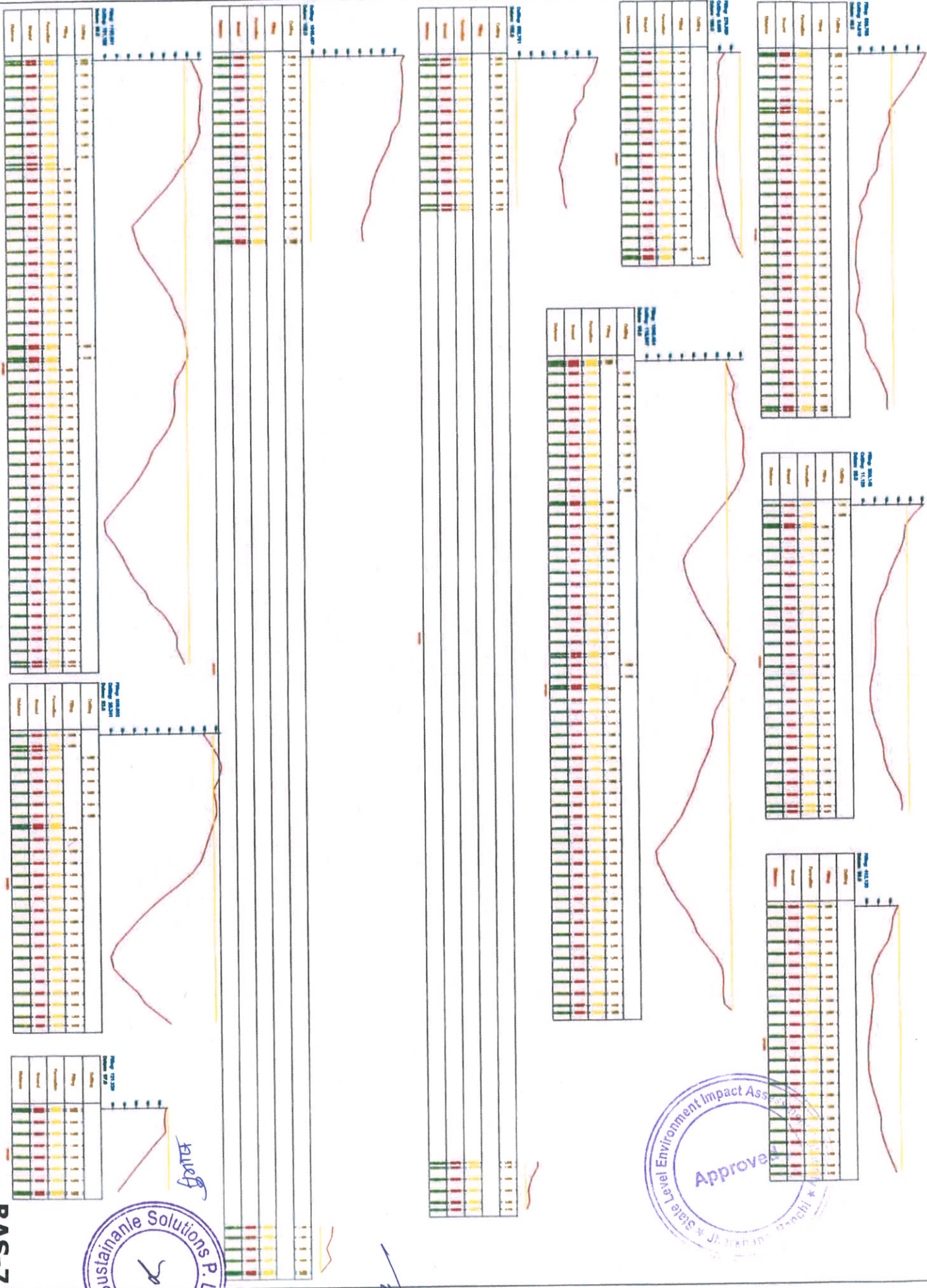
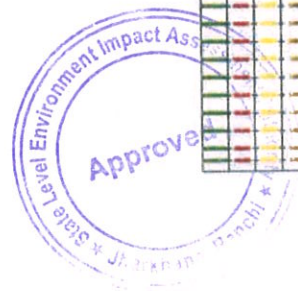
BAS-4

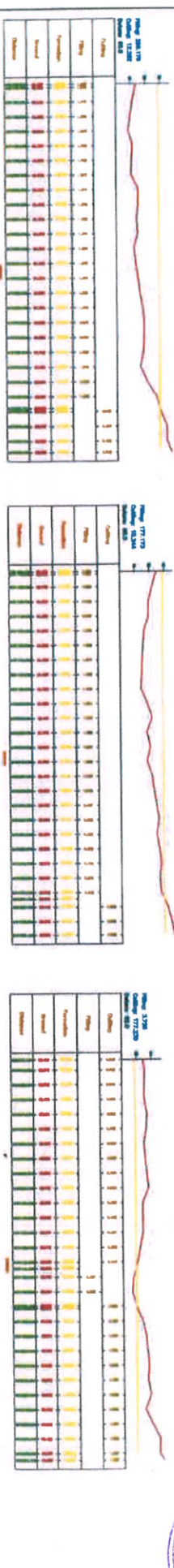
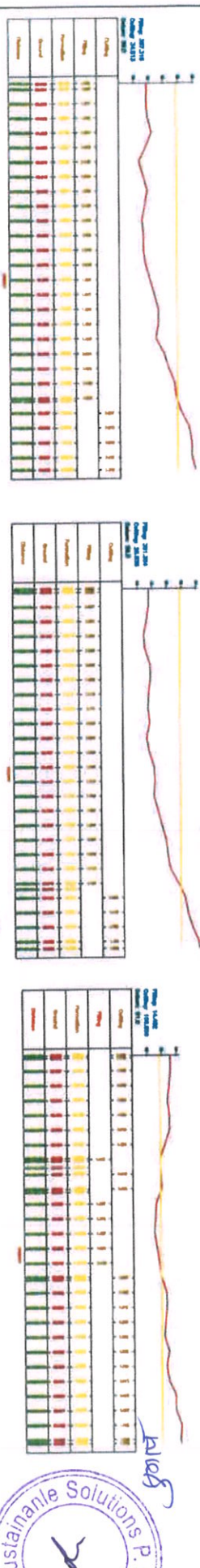
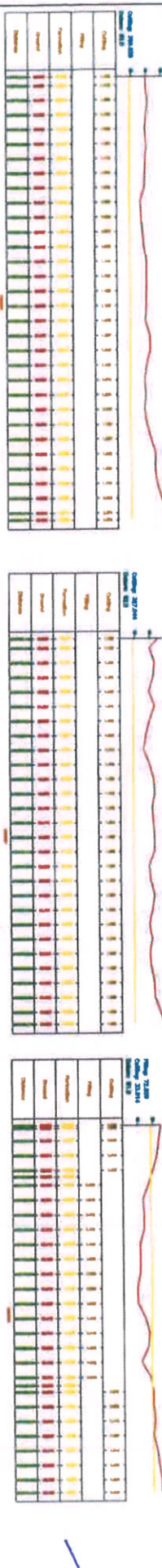
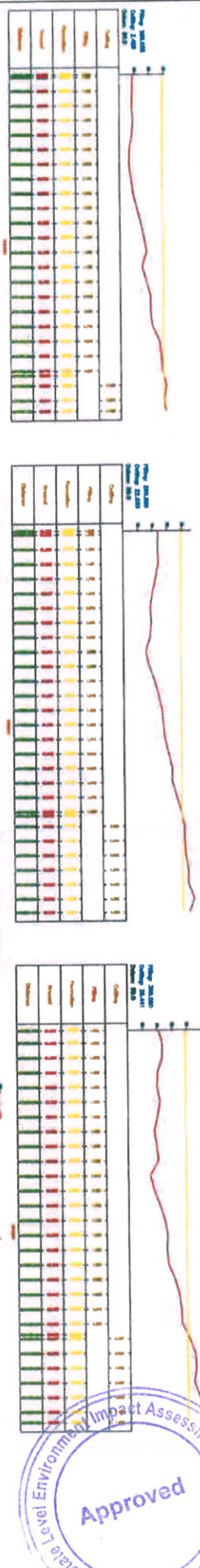
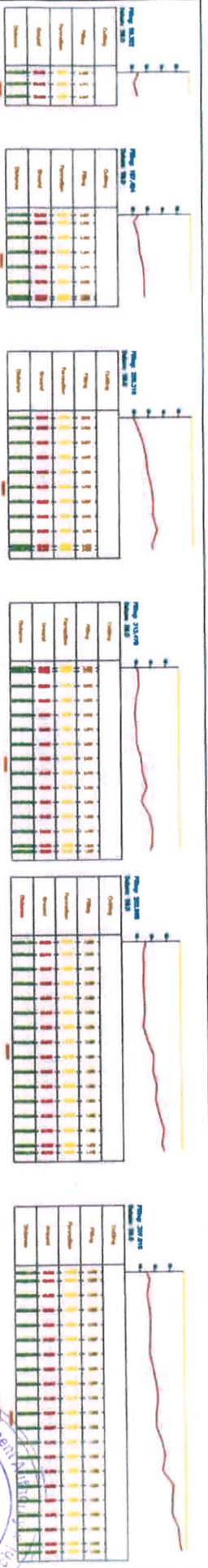
BAS-7



gentle

AP



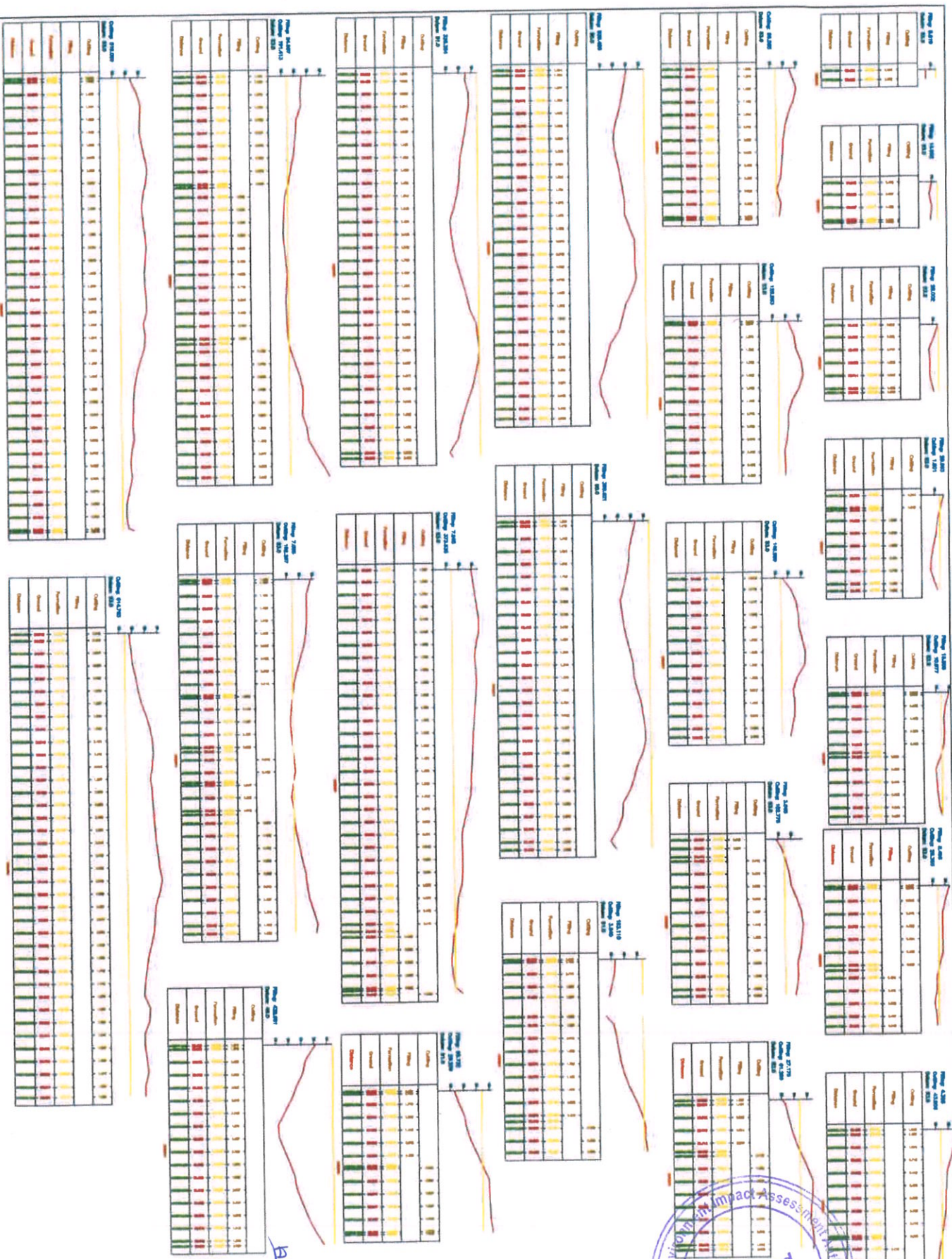


Approved
State Level Environmental Impact Assessment
Jharkhand, Ranchi

Amos Sustainable Solutions P. Ltd.

Amos

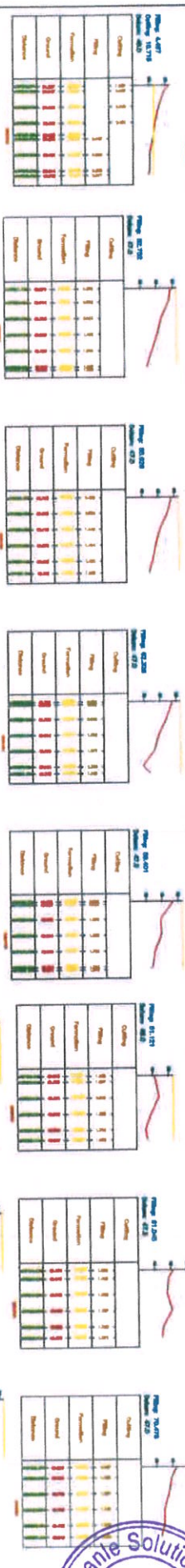
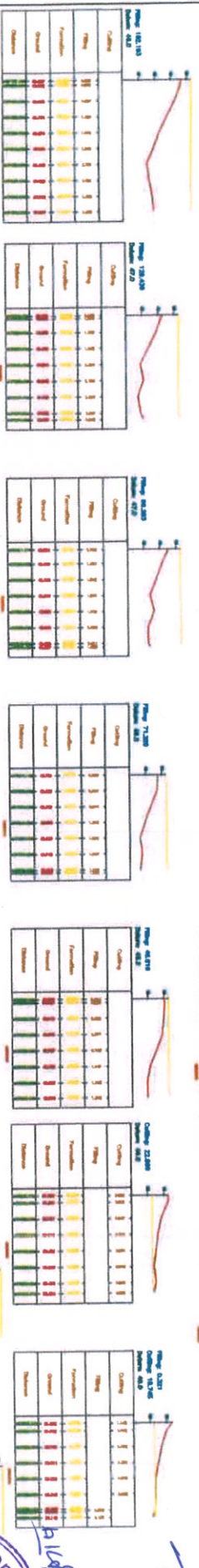
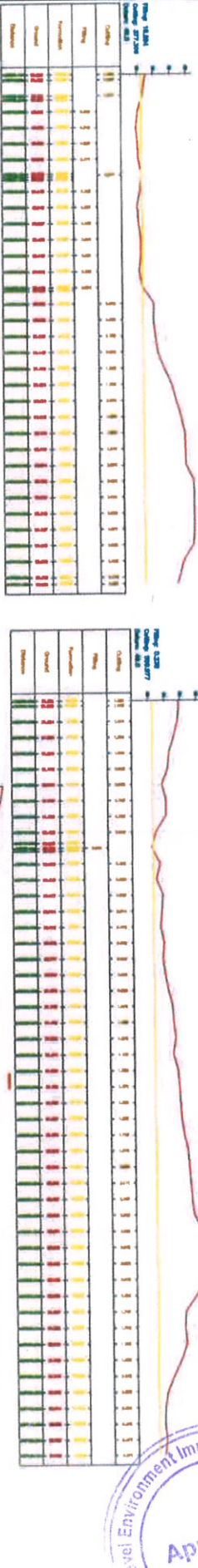
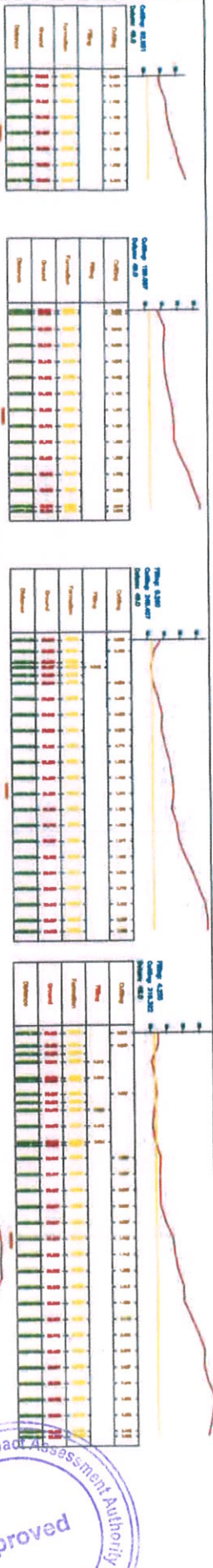
BRA-8



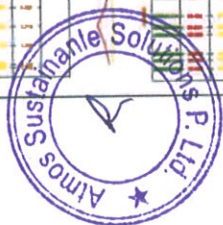
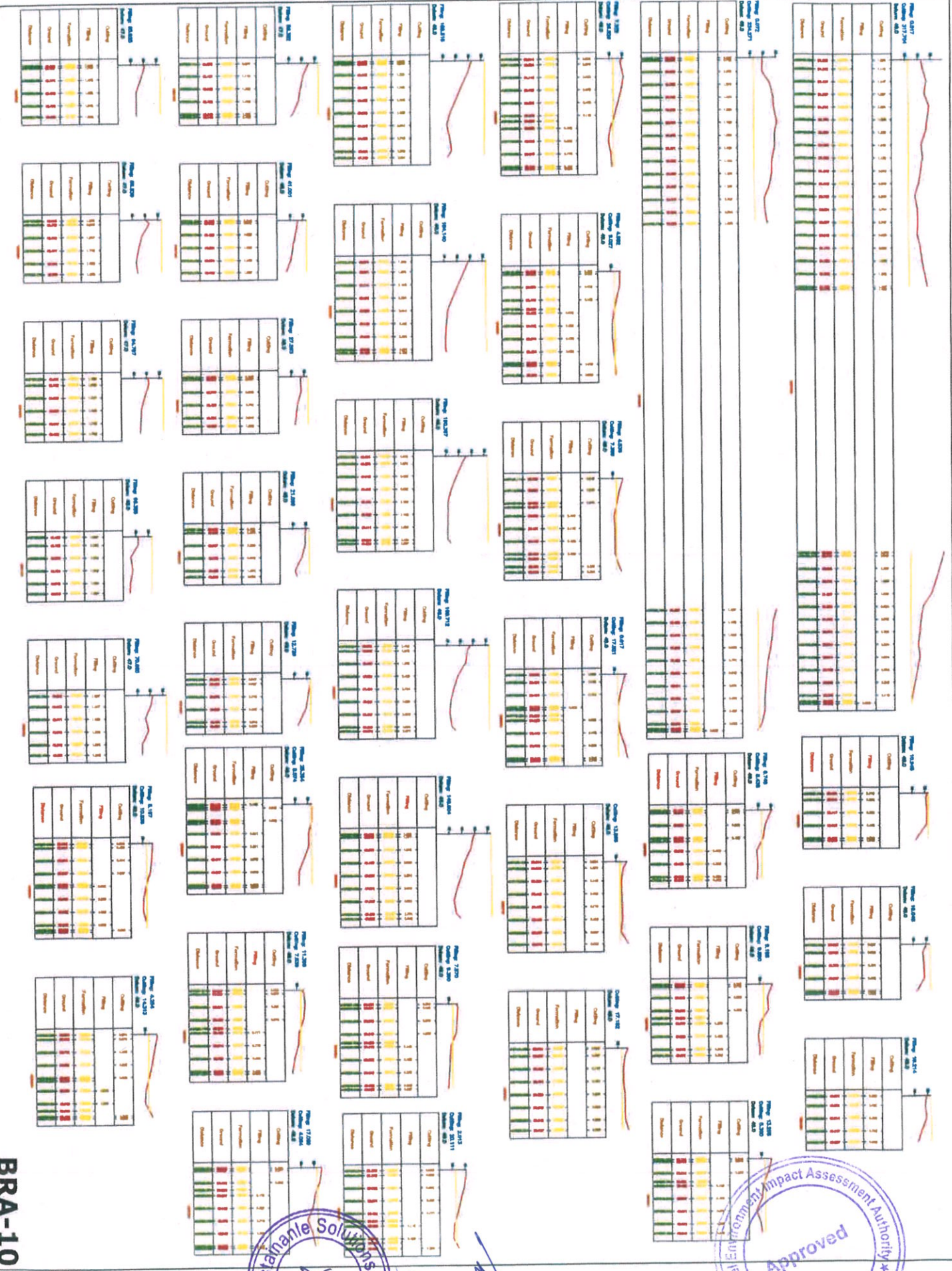
Approved
 State Level Environmental Impact Assessment
 Jharkhand, Ranchi

Atmos Sustainable Solutions P. Ltd.

BRA-9



Handwritten signature



Handwritten signature and initials in blue ink, including the name 'S. S. S.' and other illegible characters.

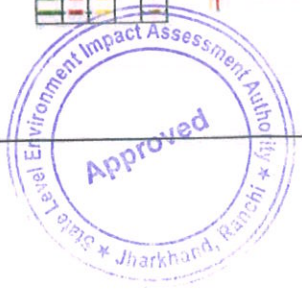
BRA-11

Sl. No.	Activity	Phase	Start	End	Impact	Control	Monitoring	Residual
1	Site Preparation	Clearing	10/01/2024	15/01/2024	High	Tree preservation	Visual	Low
2		Excavation	15/01/2024	20/01/2024	Medium	Erosion control	Visual	Low
3	Foundation	Excavation	20/01/2024	25/01/2024	Medium	Erosion control	Visual	Low
4		Concrete pouring	25/01/2024	30/01/2024	Low	Spill prevention	Visual	Low
5	Structural	Reinforcement	30/01/2024	05/02/2024	Low	Spill prevention	Visual	Low
6		Formwork	05/02/2024	10/02/2024	Low	Spill prevention	Visual	Low
7	Roofing	Structure	10/02/2024	15/02/2024	Low	Spill prevention	Visual	Low
8		Roofing	15/02/2024	20/02/2024	Low	Spill prevention	Visual	Low
9	Interior	Plastering	20/02/2024	25/02/2024	Low	Spill prevention	Visual	Low
10		Painting	25/02/2024	30/02/2024	Low	Spill prevention	Visual	Low
11	Finishing	Flooring	30/02/2024	05/03/2024	Low	Spill prevention	Visual	Low
12		Painting	05/03/2024	10/03/2024	Low	Spill prevention	Visual	Low
13	Handover	Handover	10/03/2024	15/03/2024	Low	Spill prevention	Visual	Low
14		Handover	15/03/2024	20/03/2024	Low	Spill prevention	Visual	Low



Signature

Signature



ANNEXURE-20

COPY OF ACCREDITED **CERTIFICATE**





Quality Council of India

National Accreditation Board for Education & Training



Certificate of Accreditation

Atmos Sustainable Solutions Pvt. Ltd.

A-73, 3rd Floor, Sector-65, Noida, Uttar Pradesh-201301

Accredited as Category – 'B' organization under the QCI-NABET Scheme for Accreditation of EIA Consultant Organizations: Version 3 for preparing EIA/EMP reports in the following sectors:

Sl. No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1.	Mining of minerals including opencast and underground mining	1	1 (a) (i)	A
2.	River Valley projects	3	1 (c)	A
3.	Industrial estates/ parks/ complexes/areas, export processing Zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes	31	7 (c)	A
4.	Highways,	34	7 (f)	A
5.	Common Municipal Solid Waste Management Facility (CMSWMF)	37	7 (i)	B
6.	Building and construction projects	38	8 (a)	B
7.	Townships and Area development projects	39	8 (b)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in IA AC Minutes dated December 4, 2020 on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in NABET's letter of accreditation bearing no. QCI/NABET/ENV/ACO/21/1592 dated January 6, 2021. The accreditation needs to be renewed before the expiry date by Atmos Sustainable Solutions Pvt. Ltd., Noida following due process of assessment.

Sr. Director, NABET
Dated: January 6, 2021

Certificate No.
NABET/EIA/2023/IA0063

Valid till
September 8, 2023



For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.



ANNEXURE-21

CADASTRAL MAP 1/4, 3/4 &

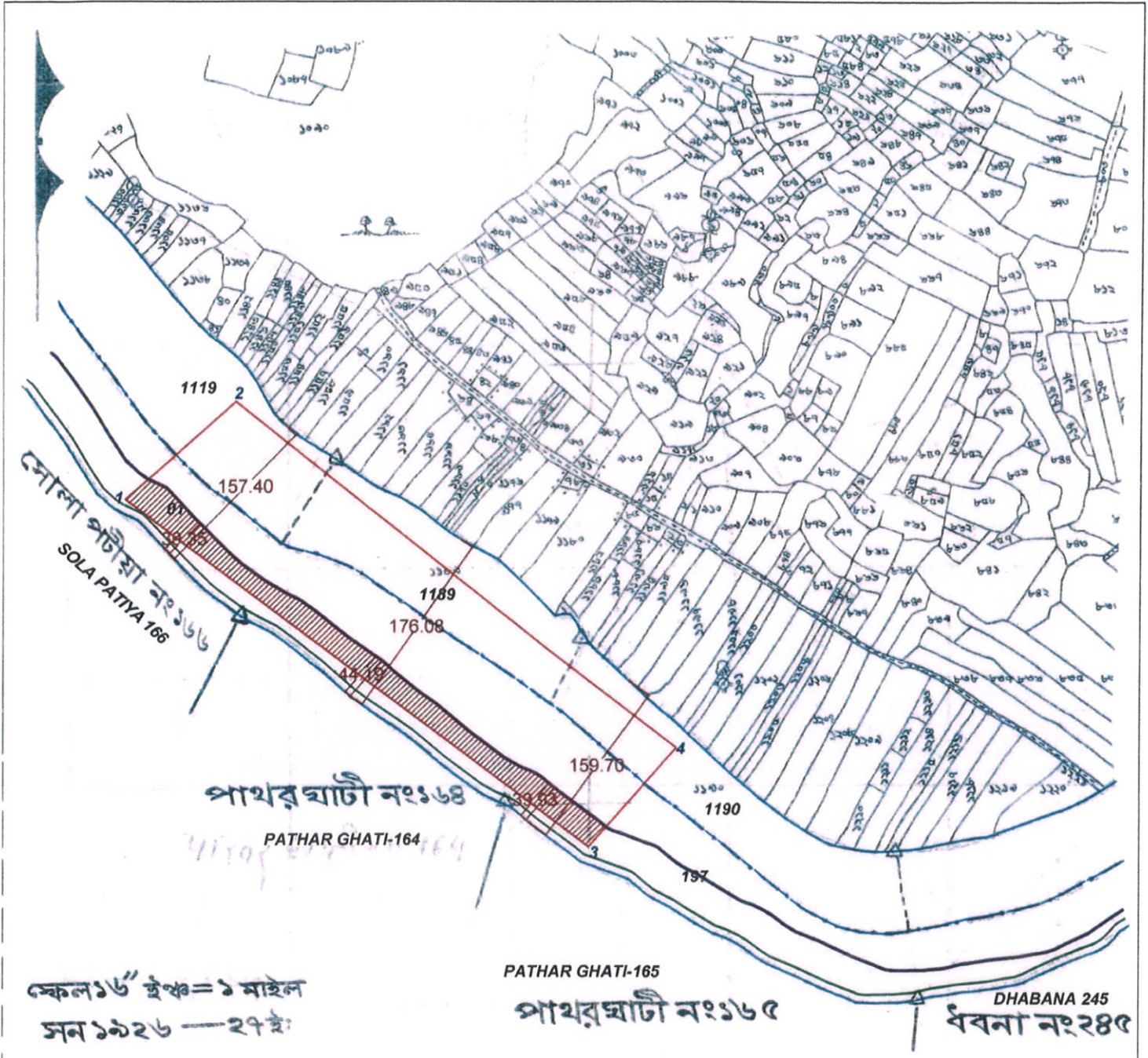
60%, NO MINING ZONE

GHATS WISE



ANNEXURE-21





स्केल १/६" इंच = १ माइल
 सन १९२६ — २९ ई.

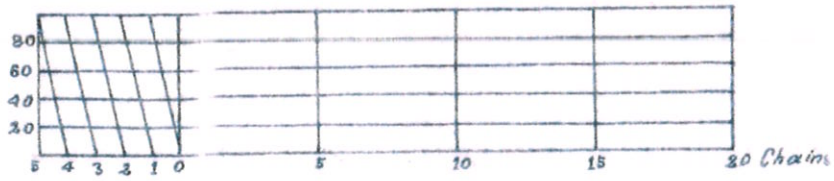
PATHAR GHATI-165

पाथरघाटी नं० १६५

DHBANA 245

धबना नं० २४५

Scale 1/6 inches = 1 Mile



GRAM - SINGNA,
 P.S - MAHESHPUR, THANA NO.-163
 DISTRICT - PAKUR
 PLOT NO. 1119(P), 1189(P), & 1190(P)
 GRAM - PATHAR GHATI,
 P.S - MAHESHPUR, THANA NO.-164
 DISTRICT - PAKUR
 PLOT NO. 01(P)
 GRAM - SOLA PATIYA,
 P.S - MAHESHPUR, THANA NO.-166
 DISTRICT - PAKUR
 PLOT NO. 01(P)
 GRAM - PATHAR GHATI,
 P.S - MAHESHPUR, THANA NO.-165
 DISTRICT - PAKUR
 PLOT NO. 197(P)
 TOTAL AREA - 6.57 HA.

SI. NO.	MINING AREA IN HA.	NO MINING AREA IN HA.
1.0	6.57	1.18

INDEX

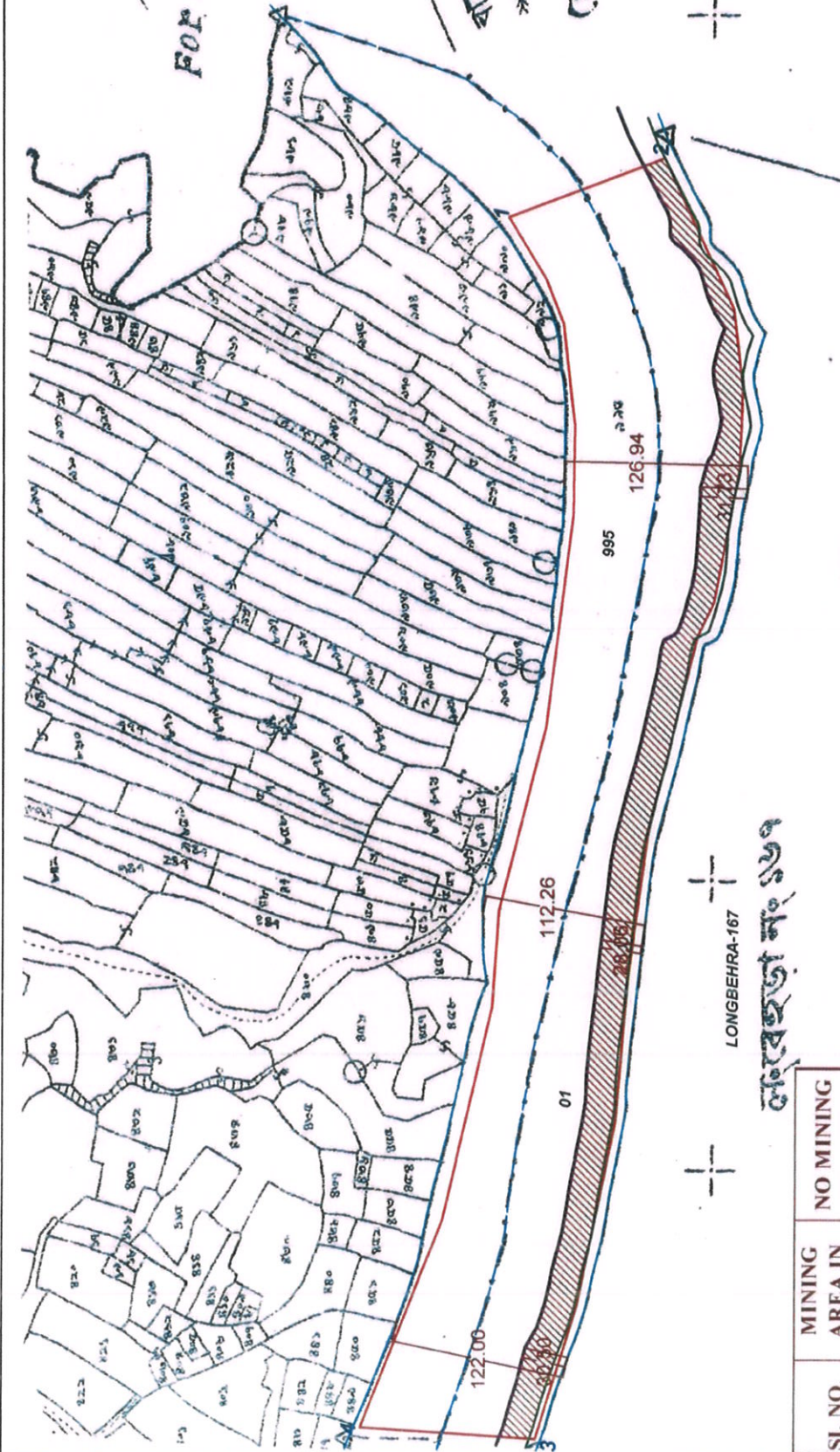
	PROPOSED GHAT/ MINING AREA		RIVER CENTER
	OTHER PLOTS		1/4 TH OF THE RIVER WIDTH
	RIVER EDGE		7.5M SAFETY ZONE
	NO MINING ZONE		



For Settlement Office
Santal Parj

জোমপটিয়া নং ১৬৬

বালুঘাট

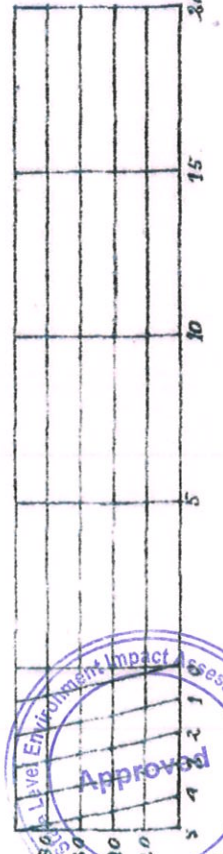


INDEX

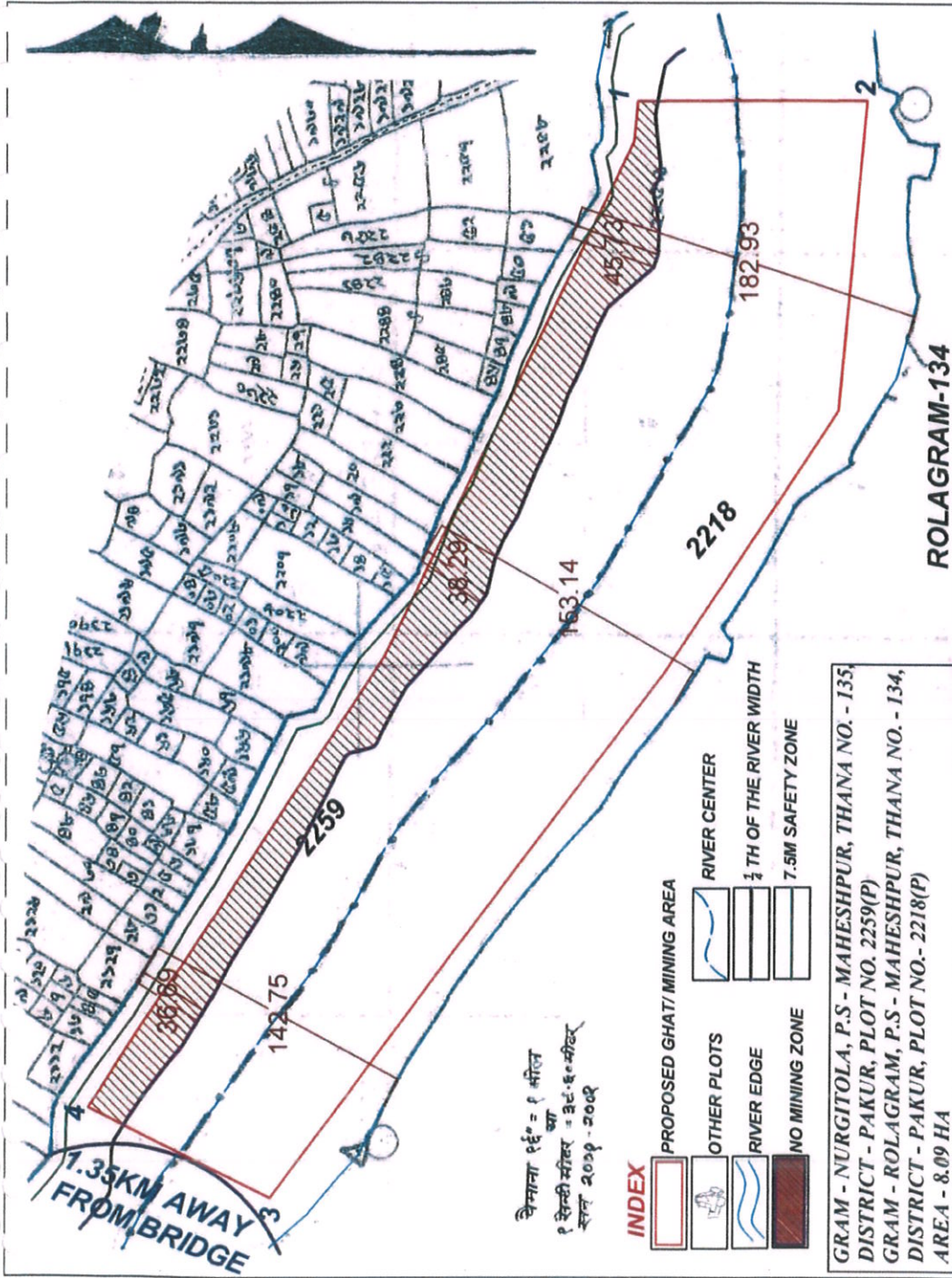
- PROPOSED GHAT/ MINING AREA
- OTHER PLOTS
- RIVER EDGE
- NO MINING ZONE
- RIVER CENTER
- 1/4 TH OF THE RIVER WIDTH
- 7.5M SAFETY ZONE

Sl. NO.	MINING AREA IN HA.	NO MINING AREA IN HA.
1.0	9.21	1.73

Scale 16 inches = 1 Mile



GRAM - BABUDAHA,
P.S. - MAHESHUPUR,
THANA NO. - 137, DISTRICT - PAKUR, JHARKHAND
PLOT NO. 995(P)
GRAM - LONGBEHRA,
P.S. - MAHESHUPUR,
THANA NO. - 167, DISTRICT - PAKUR
PLOT NO. - 1(P)
AREA - 9.21 HA.



विमाना रकम = १ कोल
 या
 १ सेन्टीमीटर = ३०.४०मीटर
 साल २०२१-२०२२

- INDEX**
- PROPOSED GHAT/ MINING AREA
 - OTHER PLOTS
 - RIVER CENTER
 - 1/4 TH OF THE RIVER WIDTH
 - RIVER EDGE
 - 7.5M SAFETY ZONE
 - NO MINING ZONE

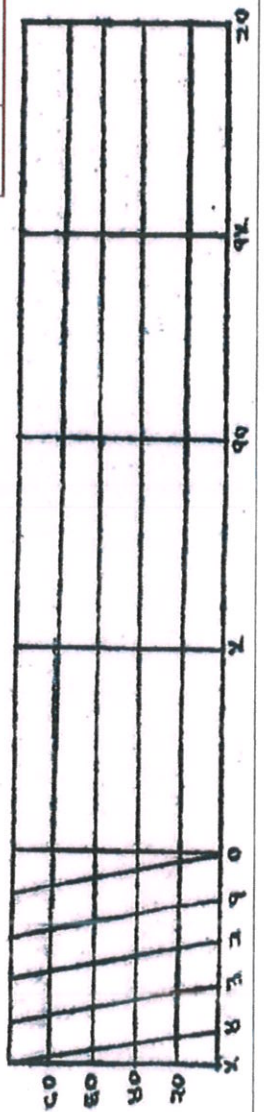
GRAM - NURGITOLA, P.S - MAHESHPUR, THANA NO. - 135
 DISTRICT - PAKUR, PLOT NO. 2259(P)
 GRAM - ROLAGRAM, P.S - MAHESHPUR, THANA NO. - 134,
 DISTRICT - PAKUR, PLOT NO. - 2218(P)
 AREA - 8.09 HA

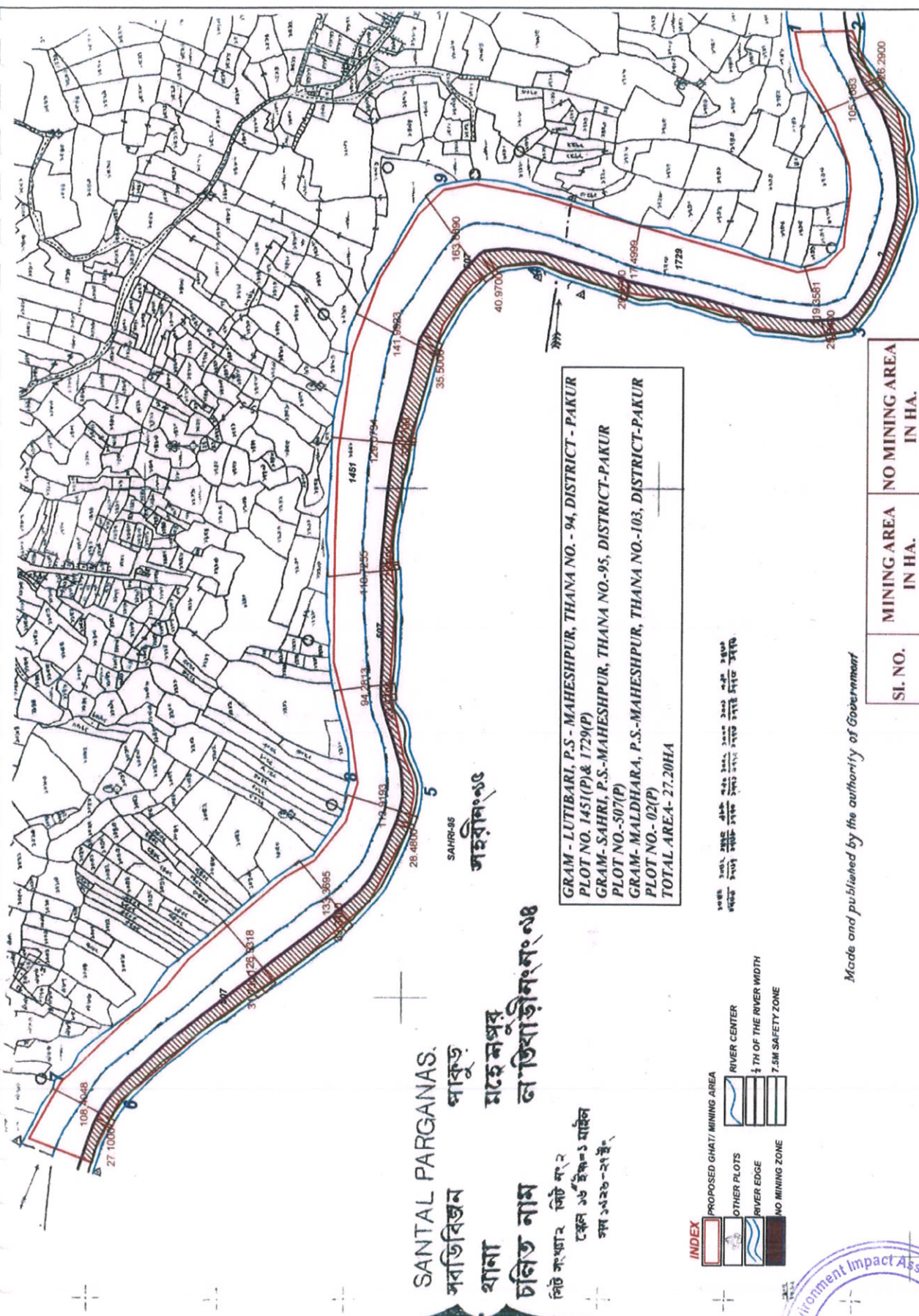
ROLAGRAM-134

बिनाग्राम नं १७४

विमाना रकम = १ कोल

SL. NO.	MINING AREA IN HA.	NO MINING AREA IN HA.
1.0	8.09	1.42





SANTAL PARGANAS.
सबडिविजन
थाना
चरित नाम
महे नगपुर
ला तियाडी नगं

सिटे नं० २
 एरर २७ ईनर ०५ मररर
 नर २०२७-२१ ई

GRAM - LUTIBARI, P.S. - MAHESHPUR, THANA NO. - 94, DISTRICT - PAKUR
PLOT NO. 1451(P)& 1729(P)
GRAM- SAHRI, P.S.-MAHESHPUR, THANA NO.-95, DISTRICT-PAKUR
PLOT NO.-507(P)
GRAM- MALDHARA, P.S.-MAHESHPUR, THANA NO.-103, DISTRICT-PAKUR
PLOT NO.- 02(P)
TOTAL AREA- 27.20HA

INDEX

- PROPOSED GHAT/ MINING AREA
- OTHER PLOTS
- RIVER EDGE
- NO MINING ZONE
- RIVER CENTER
- 1/4 TH OF THE RIVER WIDTH
- 7.5M SAFETY ZONE



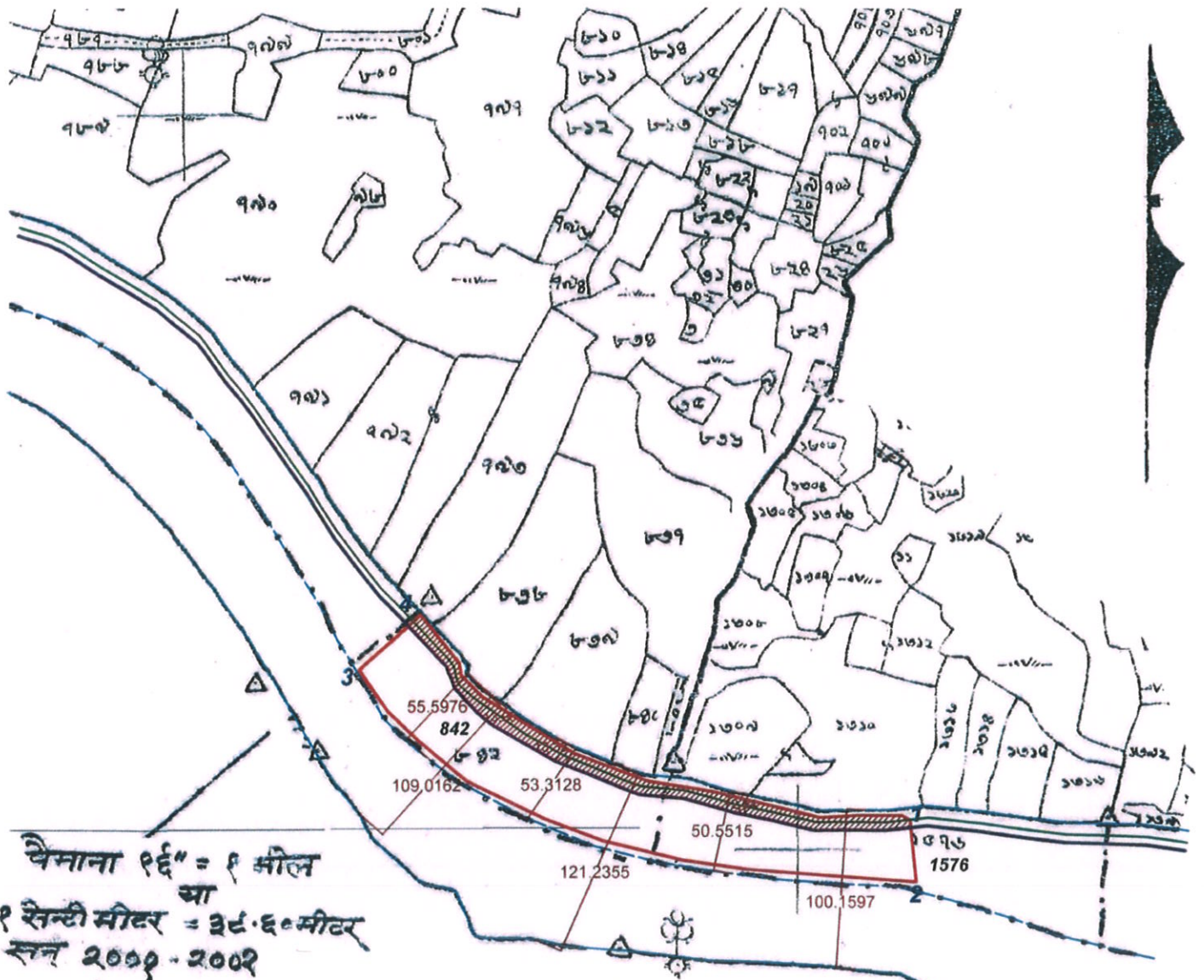
Made and published by the authority of Government

SL. NO.	MINING AREA IN HA.	NO MINING AREA IN HA.
1.0	27.20	5.18

Scale 1/16 Inches = 1 Mile



MALDHARA-0703
मालतजारानं १०३

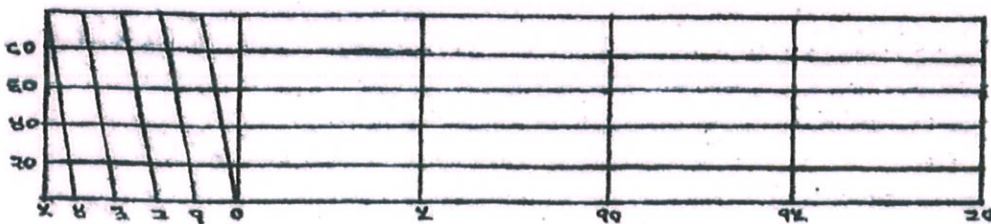


पैमाना १इं = १ मील
 या
 १ सेंटीमीटर = २.५४ सेंटीमीटर
 सन २००१-२००२

SI. NO.	MINING AREA IN HA.	NO MINING AREA IN HA.
1.0	1.63	0.32

BALYADAJANG-016
 बलिया डाकानं ०१७

पैमाना १इं = १ मील



INDEX

- PROPOSED GHAT/ MINING AREA
- OTHER PLOTS
- RIVER EDGE
- RIVER CENTER
- NO MINING ZONE
- 1/4 TH OF THE RIVER WIDTH
- 7.5M SAFETY ZONE

GRAM - DUMRIYA,
 THANA - MAHESHPUR,
 THANA NO. - 45, DISTRICT - PAKUR, JHARKHAND
 PLOT NO. 842
 MOUZA - SAHARPUR,
 THANA - MAHESHPUR,
 THANA NO. - 46, DISTRICT - PAKUR, JHARKHAND
 PLOT NO. 1576(P)
 AREA - 1.63 HA.

SANTAL PARGANAS

मंत्रालय विकास पत्रिका

बाजला आमड़ा पाड़ा

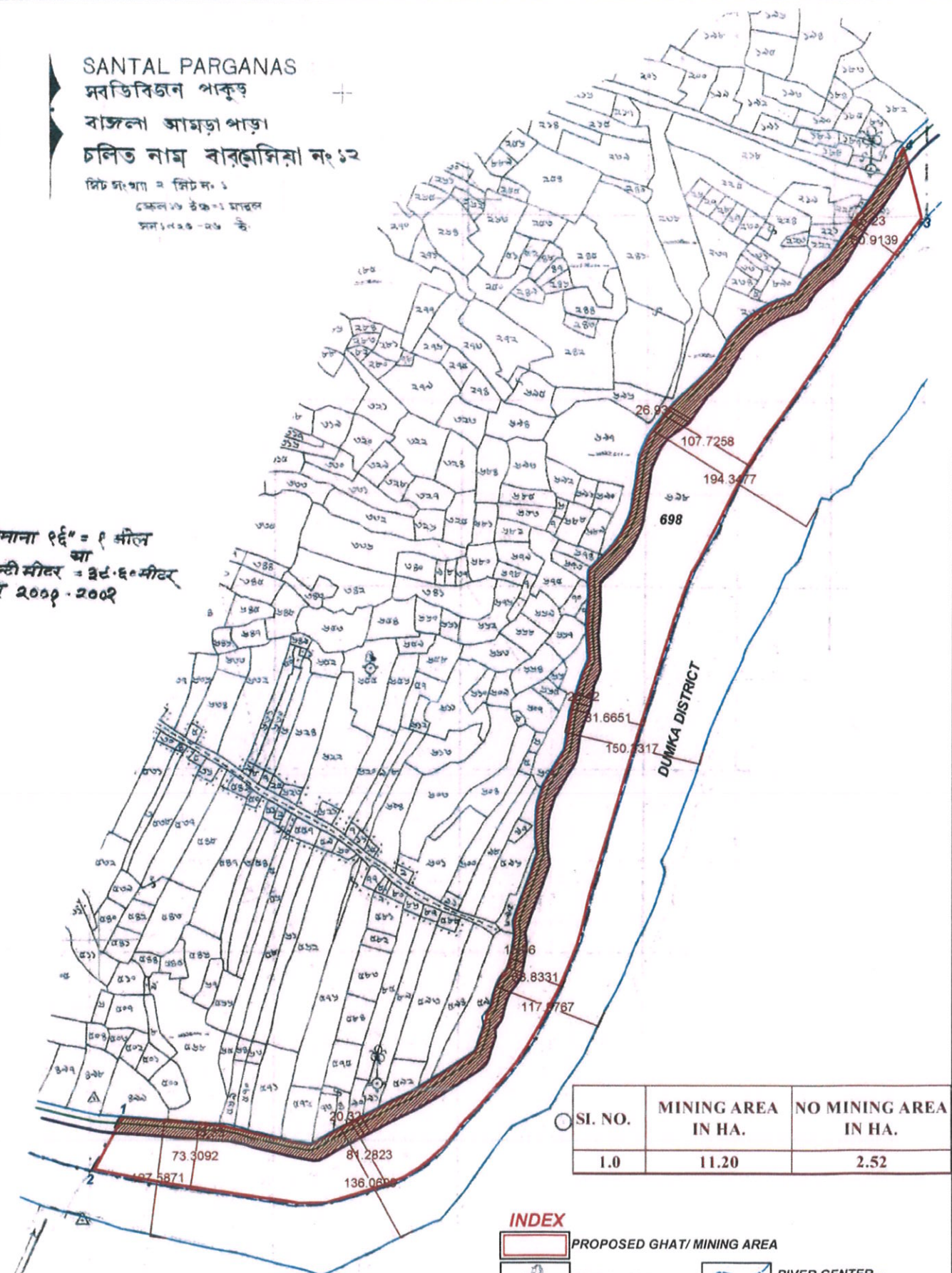
चलित नाम बारहदिया नं० १२

प्लॉट संख्या = प्लॉट नं० १

कुल १७ टुकड़े हैं





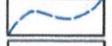


सन् १९७७-७८ ई.

दिमाना १६" = १ मील
 वा
 १ सेंटीमीटर = ३३.६० मीटर
 सन् २००१-२००२

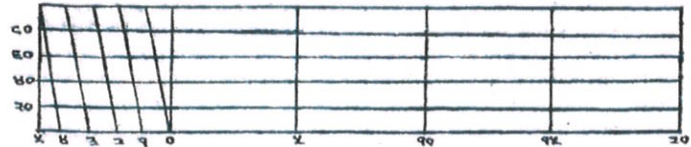


SI. NO.	MINING AREA IN HA.	NO MINING AREA IN HA.
1.0	11.20	2.52

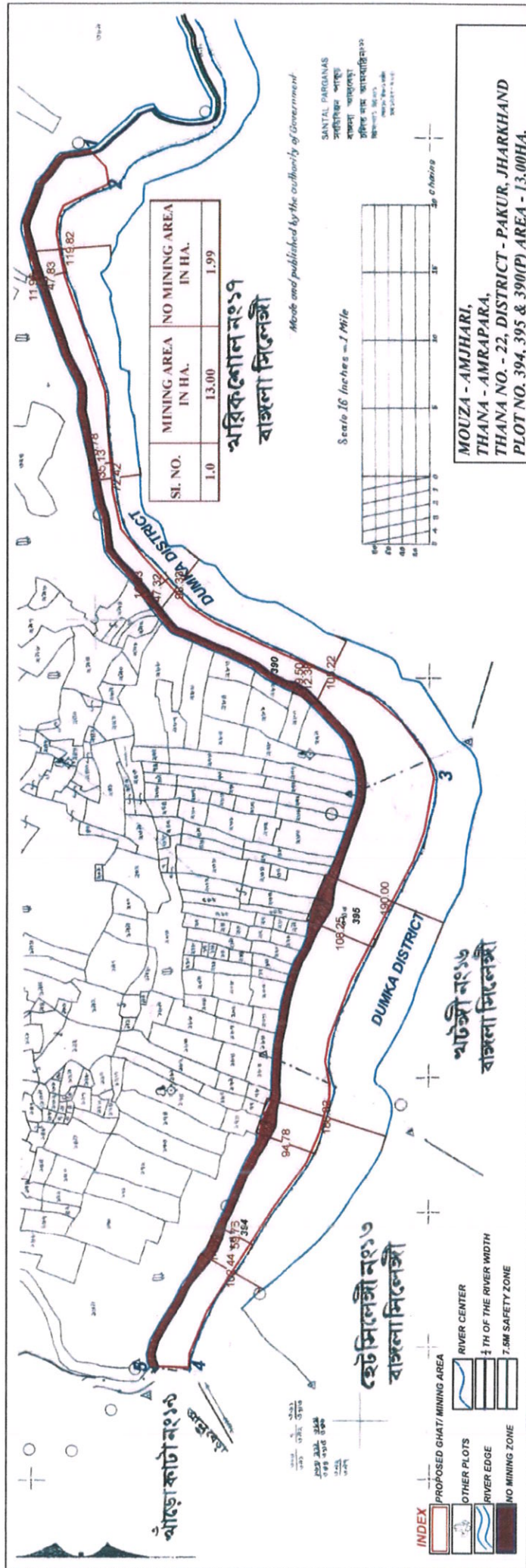
INDEX

-  PROPOSED GHAT/MINING AREA
-  OTHER PLOTS
-  RIVER EDGE
-  NO MINING ZONE
-  RIVER CENTER
-  1/4 TH OF THE RIVER WIDTH
-  7.5M SAFETY ZONE

दिमाना १६" = १ मील

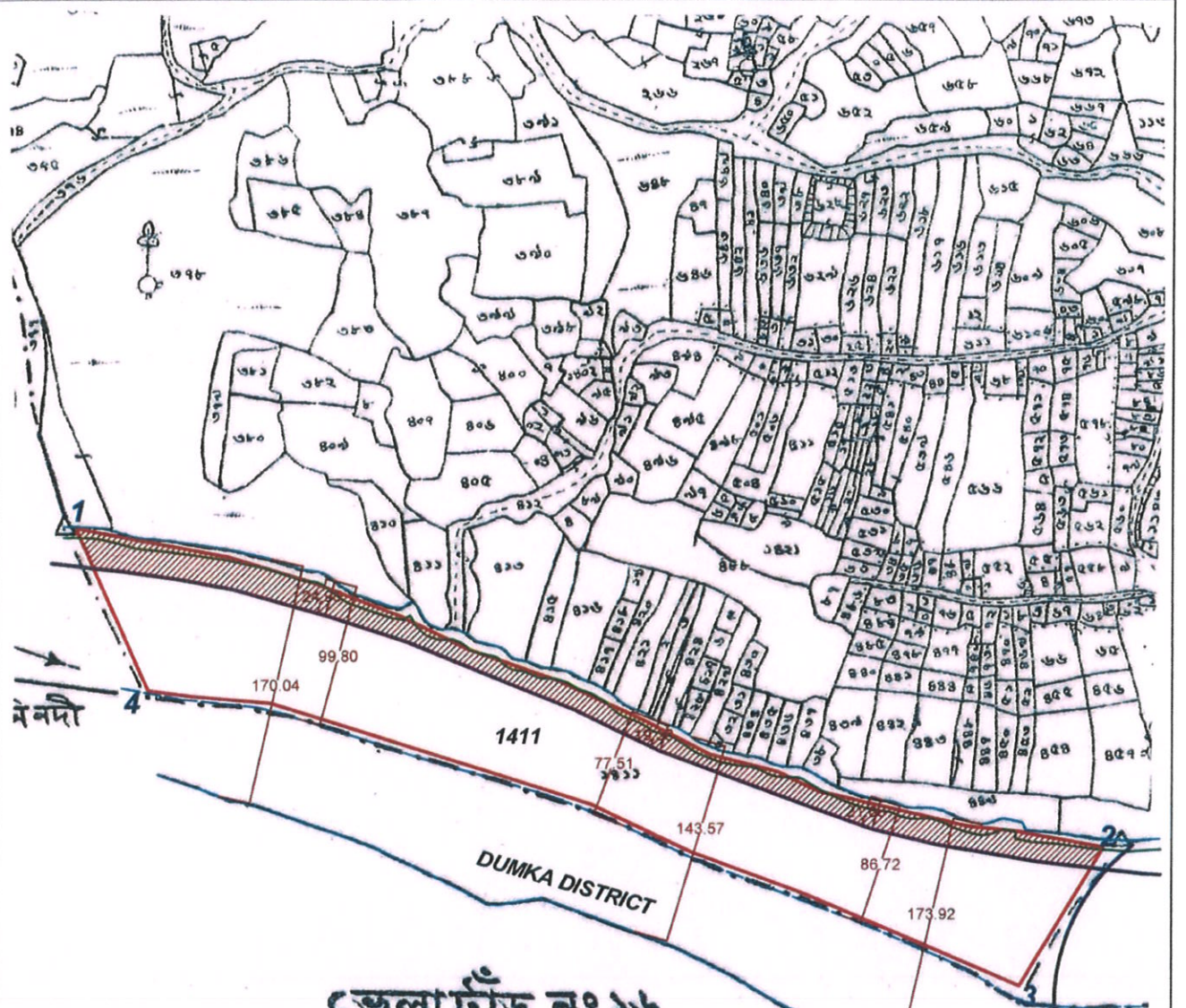


MOUZA - BARAMASIA,
 THANA - AMRAPARA,
 THANA NO. - 12, DISTRICT - PAKUR, JHARKHAND
 PLOT NO. 698, AREA - 11.20 HA.



MOUZA - AMJHARI,
THANA - AMRAPARA,
THANA NO. - 22, DISTRICT - PAKUR, JHARKHAND
PLOT NO. 394, 395 & 390(P) AREA - 13.00HA.



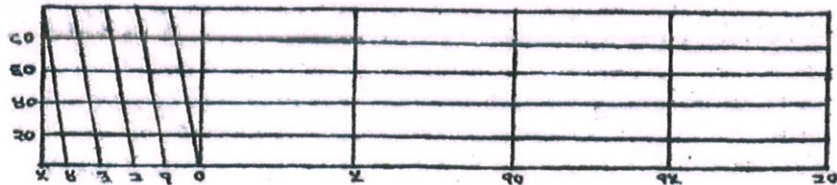


ভেলাটাঁড় নং ১৬
সবদারি সার্কেল হরিপুর

SANTAL PARGANAS.
 সবডিবিজন পাকুড়া
 থানা পাকুড়িয়া
 চলিত নাম গোনপুর নং ৫২
 নিট সংখ্যা ১ নিট নং ১
 কেল ১৬ ইঞ্চি-১ মাইন
 সন ১৯২৬ - ২৭ ই.

বৈমানা ১ ইঞ্চি = ১ মীল
 বা
 ১ সেন্টিমিটার = ৩৯.৩৭ মিমিটার
 সন ২০০০ - ২০০২

বৈমানা ১ ইঞ্চি = ১ মীল



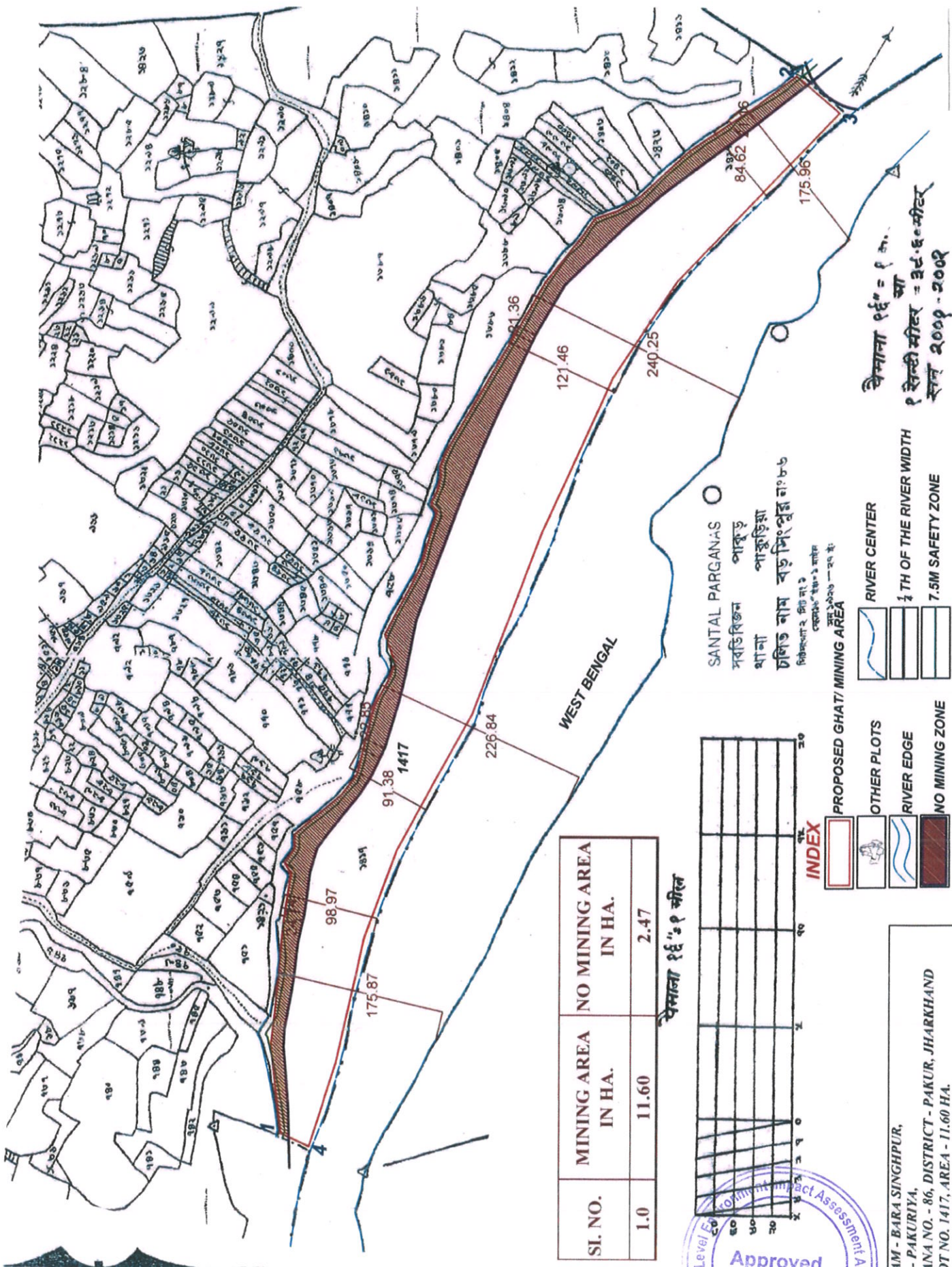
INDEX

- PROPOSED GHAT/ MINING AREA
- OTHER PLOTS
- RIVER EDGE
- NO MINING ZONE
- RIVER CENTER
- 1/4 TH OF THE RIVER WIDTH
- 7.5M SAFETY ZONE

SI. NO.	MINING AREA IN HA.	NO MINING AREA IN HA.
1.0	6.00	1.23

MOUZA - GUNPUR,
 THANA - PAKURIYA,
 THANA NO. - 52, DISTRICT - PAKUR, JHARKHAND
 PLOT NO. 1411, AREA - 6.0 HA.





SL. NO.	MINING AREA IN HA.	NO MINING AREA IN HA.
1.0	11.60	2.47

पैमाना १:६" = १ मीटर



- PROPOSED GHAT/ MINING AREA
- OTHER PLOTS
- RIVER EDGE
- NO MINING ZONE

- RIVER CENTER
- 1/4 TH OF THE RIVER WIDTH
- 7.5M SAFETY ZONE

SANTAL PARGANAS
 सबडिविजन आरकुड़
 थाना आरकुड़िया
 छगित नाम बड़मिंभुन नः ८६
 सि.नं. २११
 जिला नं. ८६

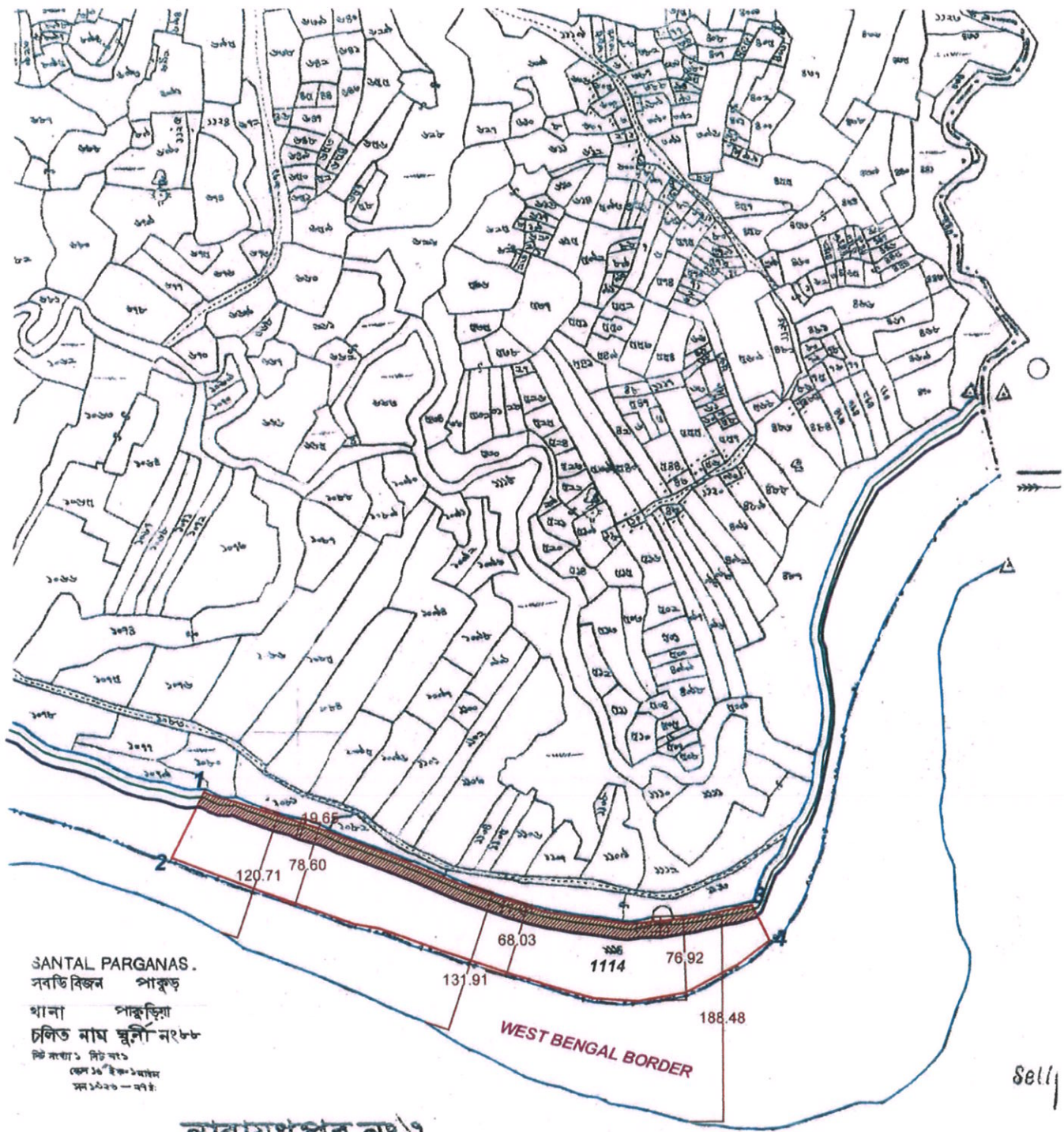
पैमाना १:६" = १ मी.
 १ सेंटी मीटर = ३६.६ मीटर
 सन् २०११-२०१२

Approved

Environment Impact Assessment

Jharkhand, Ranchi

GRAM - BARA SINGHPUR,
 P.S - PAKURIYA,
 THANA NO. - 86, DISTRICT - PAKUR, JHARKHAND
 PLOT NO. 1417. AREA - 11.60 HA.



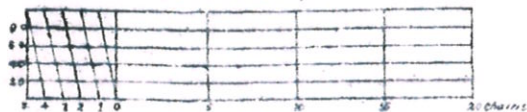
SANTAL PARGANAS.
সবডি বিজ্ঞান পাকুর

থানা পাকুরিয়া
চলিত নাম ঘূর্নী নং ৮৮
প্লট নং ১১১৪ (প)
কেন্দ্র ১৬ ইঞ্চি ১ মাস্টার
সন ১৯২৩ - ২৭৪

নারায়ণপুর নং ৩
থানা রামপুর হাট
জেলা বীরভূম

Sell

Scale 10 inches = 1 mile



Sl. NO.	MINING AREA IN HA.	NO MINING AREA IN HA.
1.0	3.60	0.75

INDEX

- PROPOSED GHAT/ MINING AREA
- OTHER PLOTS
- RIVER EDGE
- RIVER CENTER
- NO MINING ZONE
- 1/4 TH OF THE RIVER WIDTH
- 7.5M SAFETY ZONE

GRAM - GHURNI,
P.S - PAKURIYA,
THANA NO. - 88, DISTRICT - PAKUR, JHARKHAND
PLOT NO. 1114(P), AREA - 3.60 HA.



To
The Member Secretary
State Level Expert Appraisal Committee(SEAC),
Nursery Complex, Near Dhurwa Bus Stand,
Dhurwa, Ranchi, Jharkhand.

Subject: Compliance regarding Final DSR(Sand) of Pakur District

Respected Sir,

With reference to the subject cited above, DSR Sand for Pakur District has been submitted to your office Vide letter No.-432/M, Dated-09/03/2023, which has been reviewed in 102nd meeting of SEAC, Jharkhand on 21.03.2023. I am authorised to attend the above meeting vide letter No.-585/M, Dated-20/03/2023 of Deputy Commissioner.
Compliance on observation of SEAC are as follow.

S.NO	SEAC OBSERVATION	COMPLIANCE
1.	Detail of production of Sand or Bajri or Minor minerals in last five years.	Production of Sand Complied in Page No.-52
2.	Demand and Supply of the river bed material through market survey needs to be carried out.	Demand and Supply of sand are complied in Page No.-60
3.	Any Comment/Suggestion NIC web portal?	Proposed sand ghats has been advertised in newspaper and district NIC web portal for objection/suggestion from public. But no objection/suggestion have been received. Complied Page No.-74.
4.	List of Category-I detailed properly in tabulated format and given all information.	Already given Category-I in Page No.-74-75
5.	The sand ghats/leases have not to proposed on the confluence/meanders/concavities/active channels of the river.	All sand ghats are avoid near confluence/meanders/concavities/active channels of the river, ghats images are enclosed in Annexure-13
6.	Process of Deposition of sediments in the river of the district	Process of Deposition of sediments complied Page No.-118
7.	The proposed leases/ ghats should meet all the siting criteria of the State Pollution Control Board/SEIAA.	All sand ghats are prepared as per the guidelines of SPCB/SEIAA, Jharkhand. NH-100 Mtr



(Handwritten signatures and initials)

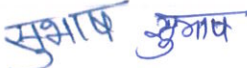
		SH-100Mtr Dist. Metal Road-50Mtr Habitation-200Mtr(CO Letter are Enclosed in Annexure-I) Report from concerned circle officer and DFO has been procured in prescribed format of SEIAA for all proposed sand ghats and attached as Annexure-1 & 2
8.	Sand sample analysis determining the bulk density of proposed sand ghats in the DSR sand.	Bulk Density report of sand from NABL Lab are complied in Annexure-16
9.	Average length and width of the river should be included and mining should be restricted to 3/4 th of the river width and mining should be restricted within 60% of the mineable reserve.	Complied in Annexure-21
10.	Point no.-9.3 of the EMGSM guidelines, 2020 regarding monitoring of the mining near inter-district or inter-state boundary should be addressed in the final DSR, if applicable.	With reference to the C.O report of Maheshpur, Amrapara, and Pakuria, (enclosed as Annexure-1), it is verified that all the identified ghats of pakur District are not crossing any inter-district or inter-state boundary.

Therefore, you are requested for kind consideration and necessary action.

Thanking You

Sincerely


**District Mining Officer
Pakur**


**Asst. Director Geology
Pakur**

