

PRE-FEASIBILITY REPORT

SAND QUARRY IN PALAR RIVER (OPEN CAST - MECHANIZED METHOD)

AREA DETAILS

Extent: 11.70.0 Hectares

S.F.NO.1 (P) & 213 (P)

Kuthambakkam and Ananganallore Village,

Gudiyatham Taluk,

Vellore District, Tamil Nadu.

PROJECT PROPONENT

THE EXECUTIVE ENGINEER,

Water Resources Department,

Mining and Monitoring Division,

Chennai, Tamil Nadu.

EIA CONSULTANT



AADHI BOOMI MINING AND ENVIRO TECH (P) LTD.

NABET Accredited EIA Consultant – “A” Category.

Certificate No: NABET/EIA/2124/RA 0228

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JUNE, 2022

Suriyakumarsemban

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Signature

PRE-FEASIBILITY REPORT

SAND QUARRY – OPENCAST MECHANIZED METHOD

IN S.F.NO.1 (P) & 213 (P) IN KUTHAMBAKKAM AND ANANGANALLORE VILLAGE, GUDIYATHAM TALUK, VELLORE DISTRICT, TAMIL NADU

1. EXECUTIVE SUMMARY

The Executive Engineer, Water Resources Department, Mining and Monitoring Division, Chennai, Tamil Nadu, has applied for grant of sand Quarrying in Palar River over an extent of 11.70.0 Hectares in S.F. No.1 (P) & 213 (P) in Kuthambakkam and Ananganallore Village, Gudiyatham Taluk, Vellore District, Tamil Nadu.

The District Collector, Vellore has directed the applicant vide his precise area communication letter **Rc.No.37/Mines/2021; dated 12.01.2022** to get approved Mining plan and Environmental Clearance from the state Environmental Impact Assessment Authority (SEIAA) for grant of Sand Quarry in Palar River over on extent of S.F. No.1 (P) & 213 (P), Kuthambakkam and Ananganallore Village, Gudiyatham Taluk, Vellore District, Tamil Nadu for a period of **One Year**.

Accordingly, Mining Plan is prepared by Thiru. S.Suriyakumar, Qualified Person under the provisions of Rule 41 of TNMMCR, 1959 with due consideration of environmental parameters so as to obtain Environmental clearance (EC) from Environment Impact Assessment Authority (SEIAA) as per EIA Notification, 2006 and approved by Assistant Director of Dept of Geology and Mining, Vellore vide letter **Rc.No.37/Mines/2021; dated 23.05.2022**.

2. INTRODUCTION OF THE PROJECT

As per the Environmental Impact Assessment (EIA) Notification dated 14th September 2006 and its amendments, the project falls under 1(a) Mining of minerals, Category – B1 in view of lease area >5 and <100 Ha. Hence, it is necessary to obtain Terms of Reference from State Environmental Impact Assessment Authority (SEIAA) to carry out EIA studies for the proposed project. The EIA report will be prepared by conducting all the studies mentioned by SEAC/SEIAA in TOR for conducting Public Hearing by TNPCB, Vellore and obtaining EC from SEIAA. AD cluster No Rc.No.37/2021(Mines) dated 27.05.2022.

The lease land\river basin is owned and maintained by Executive Engineer, WRO, MMD Dept and they are planned to remove such Sand, containing fine and coarse materials for clearing the obstacles of river flow. This project is more beneficial to the public for water supply around the flow direction of the river.

(i) Identification of project and project proponent. In case of mining project, a copy of mining lease/letter of intent should be given.

The proposed sand quarry is Govt. Project which is located in Palar River – over an extent of 11.70.0 Hectares in S.F. No.1 (P) & 213 (P) in Kuthambakkam and Ananganallore Village, Gudiyatham Taluk, Vellore District, Tamil Nadu.

Owner name and address (address for correspondence):

The Executive Engineer,

Water Resources Department
Mining and Monitoring Division,
Chennai, Tamil Nadu.

A copy of Mining lease letter issued by the District Collector Rc.No.37/Mines/2021; dated 12.01.2022 is enclosed in Annexure-I

(ii) Brief description of nature of project:

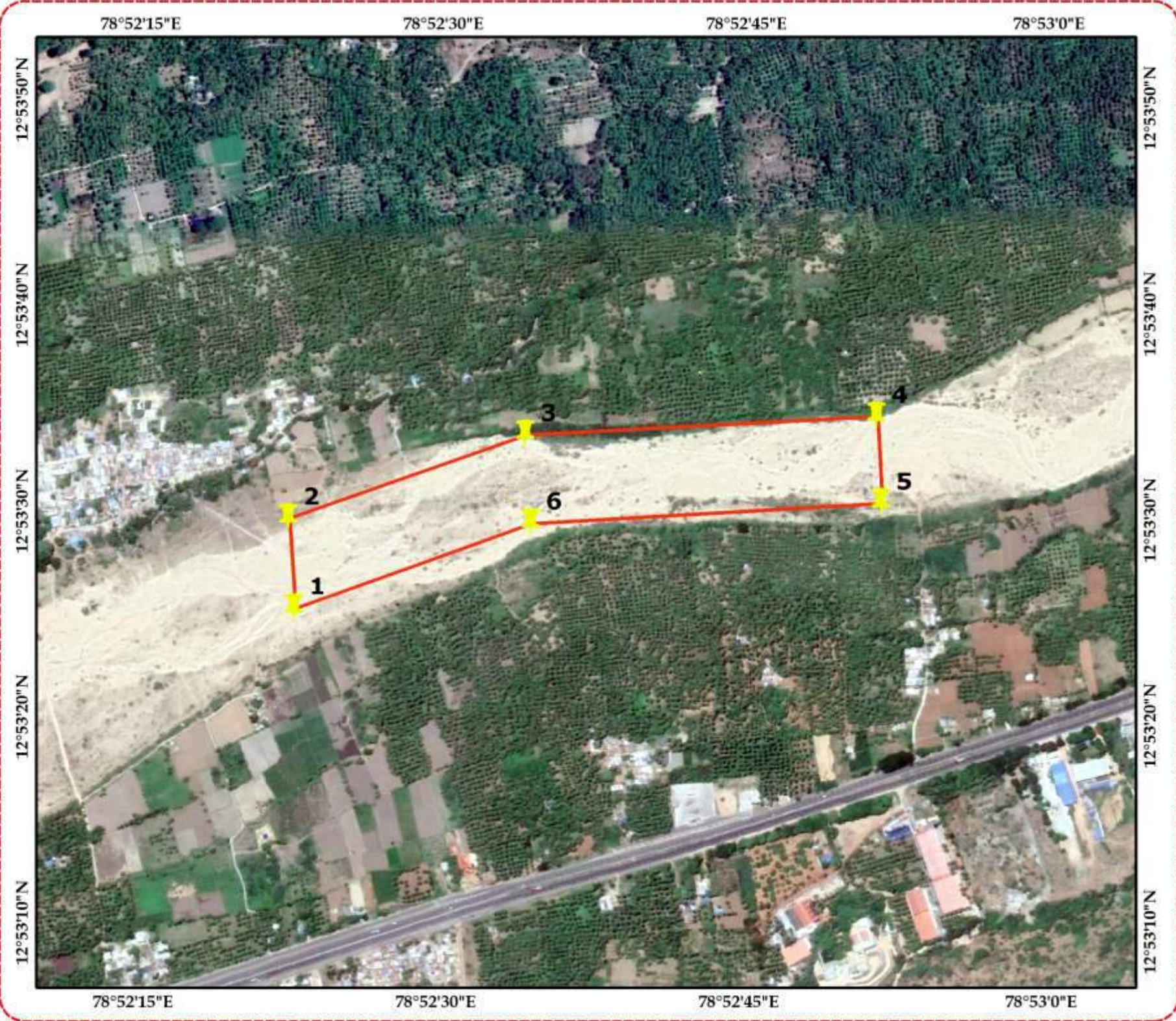
Sand quarry lease over an extent of 11.70.0 Hectares in S.F. No.1 (P) & 213 (P) in Kuthambakkam and Ananganallore Village, Gudiyatham Taluk, Vellore District, Tamil Nadu falls in at latitude & longitude are given in the table below. The area is represented by Geological Survey of India Toposheet No.57L/13 and falls between Latitude of N12°53'25.36" to N12°53'34.90" and Longitude of E78°52'22.78" to E78°52'52.13"

Table No 2.1. Geo Coordinates of Applied area by DGPS Survey

| P.No | Latitude | Longitude |
|------|---------------|---------------|
| 1 | 12°53'25.36"N | 78°52'23.12"E |
| 2 | 12°53'29.72"N | 78°52'22.78"E |
| 3 | 12°53'33.88"N | 78°52'34.49"E |
| 4 | 12°53'34.90"N | 78°52'51.86"E |
| 5 | 12°53'30.70"N | 78°52'52.13"E |
| 6 | 12°53'29.59"N | 78°52'34.79"E |

Signature

Google Image showing Geo-coordinates of Quarry Lease Boundary



Geo-Coordinates of Pillars

| P.No | Latitude | Longitude |
|------|---------------|---------------|
| 1 | 12°53'25.36"N | 78°52'23.12"E |
| 2 | 12°53'29.72"N | 78°52'22.78"E |
| 3 | 12°53'33.88"N | 78°52'34.49"E |
| 4 | 12°53'34.90"N | 78°52'51.86"E |
| 5 | 12°53'30.70"N | 78°52'52.13"E |
| 6 | 12°53'29.59"N | 78°52'34.79"E |

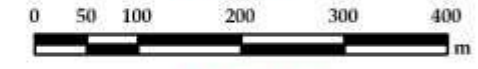
LOCATION

S.F.No: 1 (P) & 213 (P)
 Extent: 11.70.0 Ha
 Village: Koothampakkam & Ananganallur
 Taluk: Gudiyatham
 District: Vellore

APPLICANT

The Executive Engineer, PWD/WRD
 Mining and Monitoring Division
 Chennai

SCALE



LEGEND

Lease Boundary

Prepared by

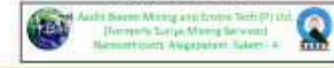


Fig.No.2.1: Google Image showing Mine Lease boundary of the Proposed Quarry Lease area

Handwritten signature in red ink.

Table No 2.2. Details of Lease Applied area

| District | Taluk | Village | S.F.No | Area (Ha) |
|-------------------------|--------------|--------------------------------------|------------------------|------------------|
| Vellore & Tamil Nadu | Gudiyatham | Kuthambakkam and Ananganallore | 1 (P) & 213 (P) (P) | 11.70.0Ha |

The name of the mineral intends to quarry is sand containing fine and coarse materials. No toxic elements or hazardous materials are reported from this river bed. The applicant has received necessary clearance from all concerned authorities for removal of such Sand from Palar River Basin. The proposed area for quarry lease is not a forest land of any category.

Signature

Location and Accessibility Map of Quarry Lease Boundary

Location:

Extent: 11.70.00 Ha

Taluk: Gudiyatham

District: Vellore

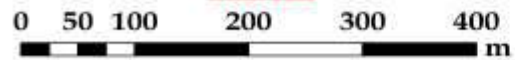
INDEX



Geo-Coordinates

Latitude: 12°53'25.36"N to 12°53'34.90"N
Longitude: 78°52'22.78"E to 78°52'52.13"E

SCALE



LEGEND

Lease Boundary

PROPONENT

The Executive Engineer
Extent: 11.70.00 Ha

Prepared by

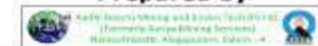


Fig.2.2 Location of the proposed sand quarry

Signature

Type of Mining: Opencast Mechanized Method of quarrying is proposed. The sand shall be excavated to a depth of 1.0m below theoretical bed level. All shall be loaded directly into the Tippers from site to PWD stock yard.

Period of Mining: One Year from the date of execution of quarry lease.

(iii) Need for the project and its importance to the country and or region:

- ❖ The Palar River Basin should be de-silted often during off season of rainy period so as to remove obstacles of flowing of water in the river, failing which the rain water will be flooded into down line stream and cause damage of paddy fields and other agricultural lands.
- ❖ Water demand and supply can be met during summer season and avoid water scarcity in this area.
- ❖ Sand is one of the important raw materials for the building construction. The sand is used as fine aggregate which is essential for preparing concrete used in foundation, beam, column, roof slab work of the buildings. The infrastructure is the sign of development of nation. So it is very need to excavate the sand for economic and infrastructure development of our Nation. No damage of land, no reclamation or back filling is required. Pollution out of this project is absolutely negligible.

iv) Demand - Supply Gap

The fine aggregate are the basic raw material for the building and bridge construction. It takes place in all villages, towns, cities and metropolitan cities. There is great demand in availability of sand. So it is necessary to fulfill the demand by starting the proposed sand quarry.

v) Export Possibility

It is a low cost product and therefore the Lessee would like to sale out the sand in domestic market through tipper on royalty basis as per the order of state Govt.

vi) Domestic Export / Markets

Not applicable since the project meets local demand only

vii) Employment generation (direct and indirect) due to the project.

The managerial supervisory staff will be employed on the merit basis and other workers will be employed by experience. The tentative man power required for the proposed mining project shall be as follows:

Table No.2.3 Employment generation due to proposed sand project

| Supervisory & Skilled Persons | | | |
|--|----------------------------|----------------|---|
| S.No | Designation | Nos | |
| 1 | WRO/MMD Assistant Engineer | 1 | |
| 2 | Technical Assistant | 1 | |
| 3 | Poclain Operator | 3 | |
| 4 | Poclain Co-Operator | 3 | |
| Total | | 8 | |
| Unskilled | | | |
| S.No | Designation | Nos | |
| 5 | Permit Slip issuer | 3 | |
| 6 | Traffic Regulator | Entrance | 2 |
| | | Exist | 2 |
| | | Quarrying Site | 3 |
| 7 | Bucket Watcher | 3 | |
| 8 | Office Helper | 1 | |
| 9. | Track Maintainer | 6 | |
| 10 | Watchman(Two Shift) | 4 | |
| Total | | 24 | |
| Grand Total | | 30 | |

3. PROJECT DESCRIPTION

(i) Type of project interlinked and interdependent projects, if any.

There is no interlinked project. It involves only mining in Palar river over an extent of 11.70.0 Ha in S.F. No.1 (P) & 213 (P), in Kuthambakkam and Ananganallore Village, Gudiyatham Taluk, Vellore District, Tamil Nadu. This project is located in Kuthambakkam and Ananganallore Village, Gudiyatham Taluk, Vellore District. As per the Environmental Impact Assessment (EIA) Notification dated 14th September 2006 and its amendments, the project falls under 1(a) Mining of minerals, Category – B1 in view of lease area >5 and <100 Ha.

For Category B1 project, the proponent has to initially apply grant of Terms of Reference to SEIAA/SEAC to carry out EIA studies. As per TOR granted by SEIAA, EIA report will be prepared for conducting PH and obtaining EC from SEAC/SEIAA.

So the proponent has made this TOR application by appointing EIA consultant “**Aadhi Boomi Mining Enviro Tech Pvt Ltd**” Salem, Tamil Nadu.

(ii) Location of the project site with coordinates.

Sand quarry lease over an extent of 11.70.0 Hectares in Kuthambakkam and Ananganallore Village, Gudiyatham Taluk, Vellore District, Tamil Nadu falls in at latitude & longitude are

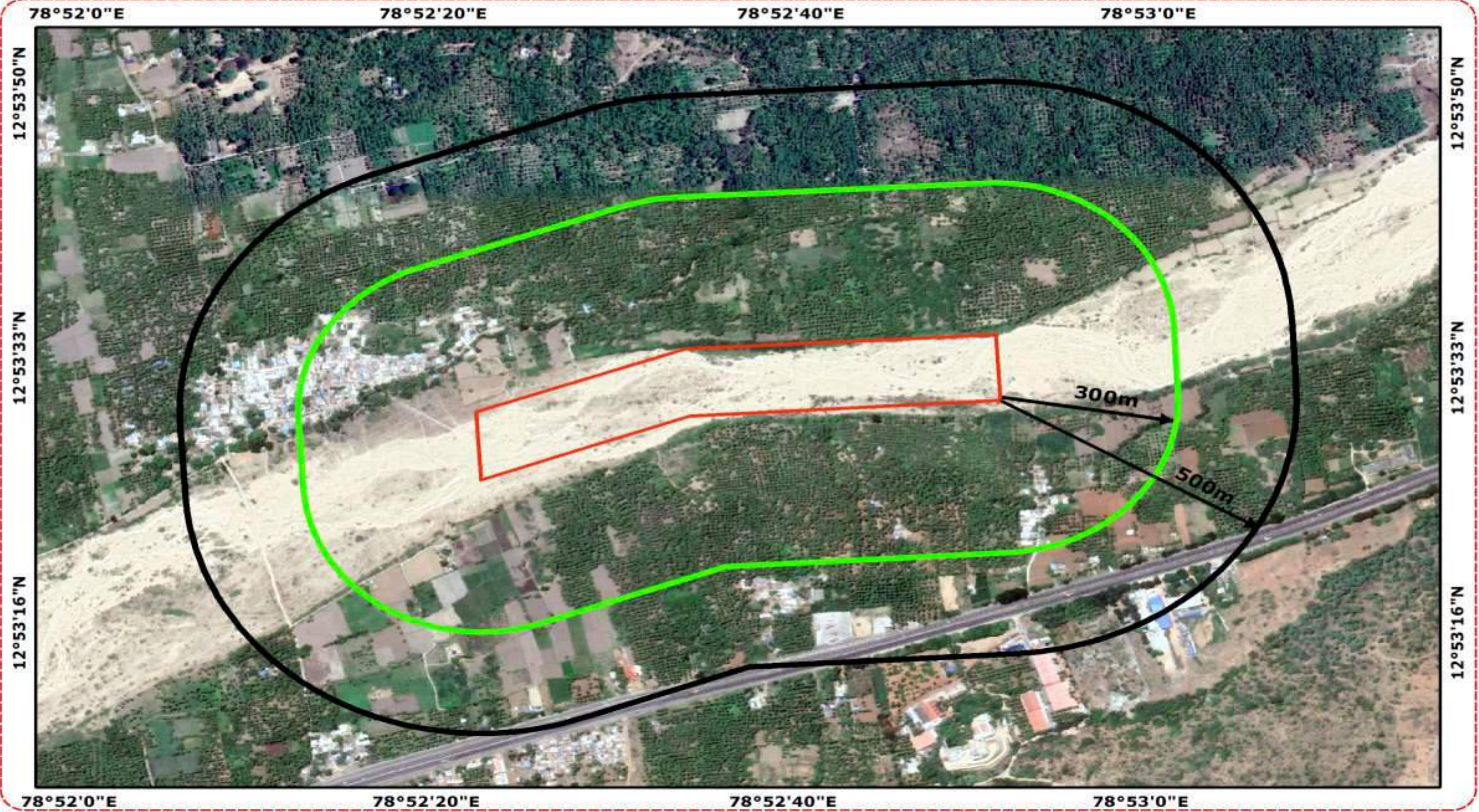
given in the table below. The area is represented by Geological Survey of India Toposheet No.57L/13 and falls between Latitude of N12°53'25.36" to N12°53'34.90" and Longitude of E78°52'22.78" to E78°52'52.13".





Table : 3.1Details of infrastructures around the project Site

| S.No. | Description | Place | Distance (km) | Direction |
|--------------|-----------------------|-----------------|----------------------|------------------|
| 1 | Railway | Melalathur | 2.79 | N |
| 3 | Post office | Kuthambakkam | 1.2 | SW |
| 4 | Airport | Chennai Airport | 139 | E |
| 5 | Police station | Gudiyatham | 5.56 | NW |
| 6 | Fire Station | Gudiyatham | 5.92 | N |
| 7 | Primary Health centre | Kuthambakkam | 1 | SW |
| 8 | DSP Office | Gudiyatham | 5.69 | N |
| 9 | School | Ananganallore | 0.33 | NW |
| 10 | Nearest Town | Gudiyatham | 5.6 | NE |
| 11 | Villages | | | |
| | i) | Ananganallore | 0.11 | NW |
| | ii) | Koothanpakkam | 0.53 | W |
| | iii) | Kulidikai | 0.15 | NW |
| | iv) | Koothampakkam | 0.54 | SW |

Signature

GIS based buffer of 300/500m radius over the Google Image



| | | | |
|---|--|--|--|
| <p>LOCATION S.F.No: 1 (P) & 213 (P) Extent: 11.70.0 Ha Village: Koothampakkam & Ananganallur Taluk: Gudiyatham District: Vellore</p> | <p>APPLICANT The Executive Engineer, PWD/WRD Mining and Monitoring Division Chennai</p> | <p>LEGEND  Lease Boundary  Buffer Zone 500m Radius  Buffer Zone 300m Radius</p> | <p>SCALE  0 75 150 300 450 600 m</p> |
|---|--|--|--|

Prepared by
 Anshu Boomi Mining and Earth Tech (P) Ltd
(Formerly Sunpa Mining Services)
Narasimharao, Alagappuram, Salem - 4

Fig.3.1: Surface features around 500m from the quarry lease area

Anshu

(iii) Details of alternate sites considered and the basis of selecting the proposed site.

This is a mining project, which is site specific due to availability of sand. Hence the site cannot be shifted. The opencast mining is proposed in the area for excavation of minerals and overburden.

(iv) Size or magnitude of operation

Targeted production of sand removal will be **117618m³** by open cast mining.

(v) Project description with Process Details

Mining Process Details



Fig.No.3.2: Photo showing DGPS survey to fix boundary pillars and GCP



Fig.No.3.3: DGPS Survey to fix GCP for Aerial Surveying

Signature

- 1) Fixing boundaries of lease area covering an extent of 11.70.0 Hectares using DGPS and Drone Technology as per the requirement of Sand Mining guidelines, 2020.
- 2) Loading of sand into tipper by hydraulic loading.
- 3) Transport of sand to the civil purposes by the tipper
- 4) Mined out land shall be used for refilling of same type of sand by natural replenishing.

a) Proposed method of mining:

Mining would be carried out by opencast method by mechanized means Poclaim/Excavators and tippers.

b) Mode of Working:

Being loose and soft material, it is proposed to remove the materials by a system of hydraulic excavator and tipper combination. No separate top soil or any overburden shall be removed. The Excavated sand shall be loaded into the PWD stock yard.

c) Proposed Bench Height & Width

It is a shallow quarrying to a depth of 1.0m and there is no benches shall be formed. The area shall be replenished during the next rainy season naturally.

d) Indicate the overburden / mineral production expected pit wise as detailed below

The following are the production and developmental works to be carried out for one year is given in the table below,

Table No.3.2 Year wise production

| Year | Shoal portion (m ³) | ROM of sand (m ³) | Saleable sand (m ³) | Sub grade ore / mineral | Mineral Rejects | Ore to overburden ratio |
|-----------------|---------------------------------|-------------------------------|---------------------------------|-------------------------|-----------------|-------------------------|
| 1 st | 618 | 117000 | 117618 | 0 | 0 | 1:0 |
| Total | 618 | 117000 | 117618 | 0 | 0 | 1:0 |

Total production for One year = 117618m³

(vi) Raw material required along with estimated quantity, likely source, marketing area of final product/s, mode of transport of raw material and finished products.

This is a mining project for mining of sand, therefore no need of raw material except water for drinking and utilities. The Product is natural river sand, it will be transported to the consuming points directly. No stocking is permitted anywhere either inside the lease area or outside the area of lease.



(vii) Resource optimization/recycling and reuse envisaged in the project.

Removal of sand is made for the purpose of clearing the obstacles of the river for free flowing of water. The sand will be replenished being a natural resource and therefore recycling is not possible for this project.

(viii) Availability of water its source, energy/power requirement and source.

Whole some drinking water shall be provided as per the Mines Rules, 1955. Quantity of water required for Drinking and utilities is 2 KLD and for Dust suppression and Green belt is 3KLD.Total 5 KLD of water is required per Day. The drinking water is obtained from Mineral water suppliers in the nearby areas. The water required for Dust suppression and green belt is obtained from the open wells of proponent site. No separate arrangements shall be made to bring water from external sources or by pumping. No electricity or fuel is required for this project.

Water balance chart:

Water balance chart on per day basis is given as under:

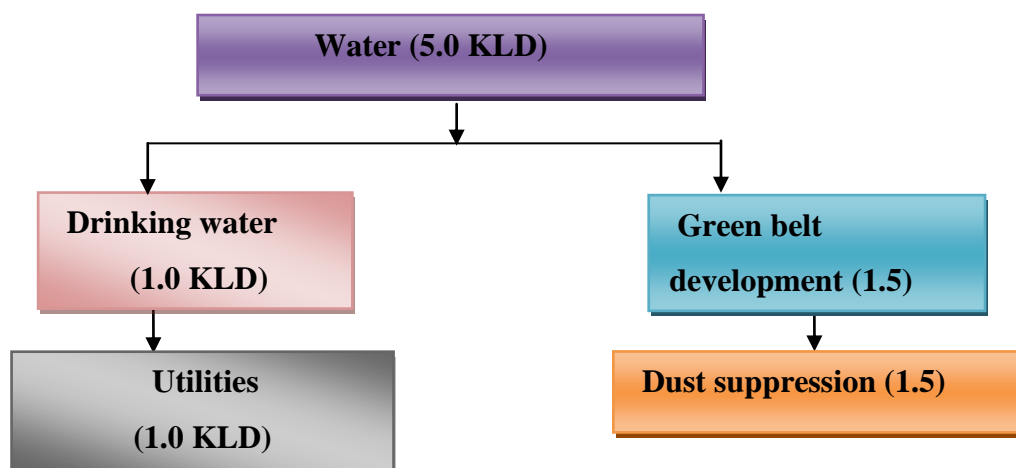


Fig. 3.4: Water Balance Chart

(ix) Quantity of waste to be generated (liquid and solid) and scheme for their management/disposal.

No rejects are expected as all quantity of sand and shoal as per approved mining plan are saleable

(x) Schematic representations of the feasibility drawing which give information of EIA purpose.

Form I and Pre-Feasibility report is essential for the application of Terms of Reference. The

Signature

EIA report will be prepared based on the TOR issued by SEIAA/SEAC for getting Environmental Clearance for the project from SEAC. EIA Report identifies all of the issues and technical requirements of a proposed operation, with particular attention to potential Environmental, Health and Safety, Social and Economic Impacts.

The purpose of EIA is to ensure the protection and conservation of the environment and natural resources including human health aspects against uncontrolled development. The long-term objective is to ensure a sustainable economic development that meets present needs without compromising future generation ability to meet their own needs. EIA is an important tool in the integrated environmental management approach.

The aim of Environmental Impact Assessment (EIA) is to enable the approving authority, the public, local and central government and the developer to properly consider the potential environmental consequences of a proposal, and to make recommendations to reduce the environmental consequences if necessary. It is important to provide sufficient information for the approving authority to make a decision on whether to approve a proposal and if so, under what conditions. The EIA provides the basis for sound ongoing environmental management.

4. SITE ANALYSIS

(i) Connectivity:

The NH-48 Bangalore– Chennai highway situated at South sidewhich is about 500 meter away from the area.

SH-130 Connecting vaniyambadi - Gudiyatham– situated at Northwest side which is about 3.7km away from the area.

A Village road is available northern direction for transportation of materials

(ii) Land form, land use and land ownership.

The land covers under the mining lease area as under.

| District & State | Tehsil | village | Area in Hect. | Type of land |
|----------------------|------------|--------------------------------|---------------|-------------------|
| Vellore & Tamil Nadu | Gudiyatham | Kuthambakkam and Ananganallore | 11.70.0 Ha | Palar River Basin |

(iii) Topography (along with map):

The area applied for mining lease is a flat ground, with an elevation of 264.25m – 266.75 meters above MSL. The area is represented by Geological Survey of India Toposheet No.57L/13 and falls **Latitude of N12°53'25.36" to N12°53'34.90" and Longitude of E78°52'22.78" to E78°52'52.13"**.The River basin is composed of sand with some amount of soil mixing. Sand is a product of erosion by natural water but, in this river sand is not purer like other river sand. The ground water level is at a depth of 5 –6m in the River basin.

There is no reserve forest, wild life sanctuary, national monument etc nearer to the area around 10kms.

The nearest reserved forest of the proposed quarry are

1. Pallalakuppam Extension Reserve Forest – 5.9km - W
2. Pallikonda Reserve Forest – 6km – SE
3. Sanankuppam Reserve Forest – 6.5km - SW
4. Paravamalai Reserve Forest – 7.3 – SE
5. Kallapadi Reserve Forest – 14.7km – N
6. Raddanaickanur & Charakkal Reserve Forest – 19.5km – W
7. Ambur Reserve Forest – 18km - SW
8. Gundalapalli Reserve forest is - 15.5Km-North West
9. Vellore Reserve Forest – 24.89 – North East
10. kannamangalam Reserve Forest – 29.9 km - South East
11. Koundinaya wildlife sanctuary-23.5Km- North West

(iv) Programme of Afforestation

There would not be any adverse impact in the existing environment arising from the mining activities. To protect the environment, the Applicant Company would do adequate a forestation program with 100 trees per annum along the bank of the side.

The phased programmed of afforestation for the whole lease period of one year is given below

TABLE NO 4.1 PROGRAMME OF AFFORESTATION

| Year | Trees | Area |
|-------------|--------------|---------------------------------------|
| One year | 100 | Along the river bund and village road |

(v) Existing land use pattern (agriculture, non-agriculture, forest, water bodies including area under CRZ), shortest distances from the periphery of the project to periphery of the forest, national park, wild life sanctuary, eco sensitive areas, water bodies (distance from the HFL of the river), CRZ. In case of notified industrial area, a copy of the gazette notification should be given.

The lands applied for removal of sand is a part of Palar River basin which carries rain and flood water to the sea during rainy season. It should be deepened or the silted area should be removed periodically for free flow of water without any obstacles.

Table No 4.2 Land use pattern

| No. | Description | Area of Land Use (In Hec.) | |
|--------------|--------------------------|----------------------------|------------------------|
| | | As at Present | At the end of One Year |
| 1. | Mining | 0.0 | 11.70.0 |
| 2. | Waste Dump | 0.0 | 0.00.0 |
| 3 | Safety zone & Plantation | Nil | Nil |
| 4 | Undisturbed area | 11.70.0 | 0.00 |
| Total | | 11.70.0 | 11.70.0 |

(vi) Existing infrastructure:

There is no existing infrastructure is available in the site. The entire requisite infrastructure required for mine shall be developed. An office room and rest room is going to be built in a portable structure in a container. A well-equipped first aid facility as per the third schedule is prescribed. Qualified First Aid personnel should be appointed or nominated to attend emergency first aid treatment.

(vii) Extent of Mechanization

No drilling and blasting. The sand shall be loaded directly into the tipper using hydraulic excavator.

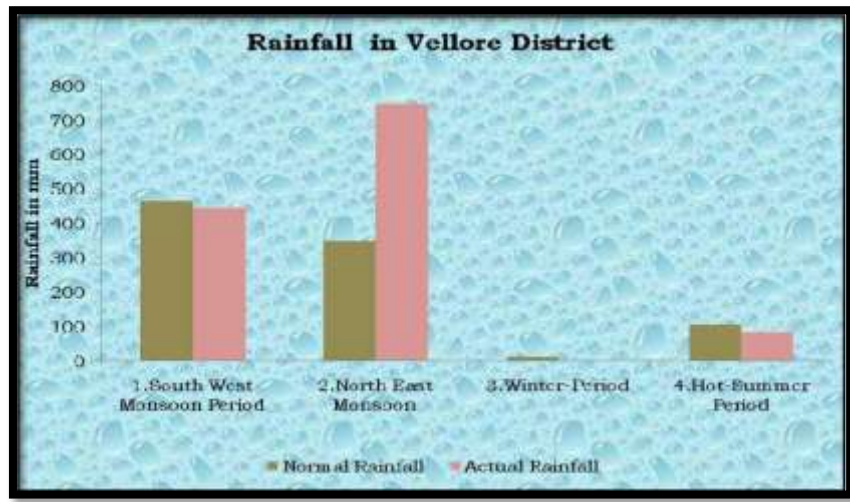
(viii) Soil classification:

It is recent sand of the river containing fine sand and coarse sand.

(ix) Climatic data from Secondary Sources:

The bulk of the rainfall is received during the Northeast monsoon in October, November and December. Humidity and rain fall data of Vellore is given as under,

Fig No 4.1 Rain fall data diagram



Signature

Humidity

The month with the highest relative humidity is November (76.82 %). The month with the lowest relative humidity is May (52.38 %). The month with the highest number of rainy days is October (18.03 days). The month with the lowest number of rainy days is February (1.90 days)

(x) Social infrastructure:

Table 4.3 Infrastructure around lease area

| S.No. | Description | Place | Distance (km) | Direction |
|-------|-----------------------|-----------------|---------------|-----------|
| 1 | Railway | Melalathur | 2.79 | N |
| 3 | Post office | Kuthambakkam | 1.2 | SW |
| 4 | Airport | Chennai Airport | 139 | E |
| 5 | Police station | Gudiyatham | 5.56 | NW |
| 6 | Fire Station | Gudiyatham | 5.92 | N |
| 7 | Primary Health centre | Kuthambakkam | 1 | SW |
| 8 | DSP Office | Gudiyatham | 5.69 | N |
| 9 | School | Ananganallore | 0.33 | NW |
| 10 | Nearest Town | Gudiyatham | 5.6 | NE |
| 11 | Villages | | | |
| | i) | Ananganallore | 0.11 | NW |
| | ii) | Koothanpakkam | 0.53 | W |
| | iii) | Kulidikai | 0.15 | SE |
| | iv) | Kuthambakkam | 0.54 | SW |

5. PLANNING BRIEF

(i) Planning concept (type of industries, facilities, transportation etc) town and country planning/development authority classification.

It is opencast mining project. The mine is proposed to run for a period of one year only. The proposed working is by opencast mechanized method. The mining will be carried out by removing and transporting the sand found in the project area.

Mining will be done by open cast method to a depth of 1.0mbelow theoretical bed level after scrapping a thin layer of sludge materials containing bushes. Being a shallow mining with single bench no much planning required for slope stability issues. However the proponent shall maintain 45° slope as per safety practices.

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(ii) Population Projection

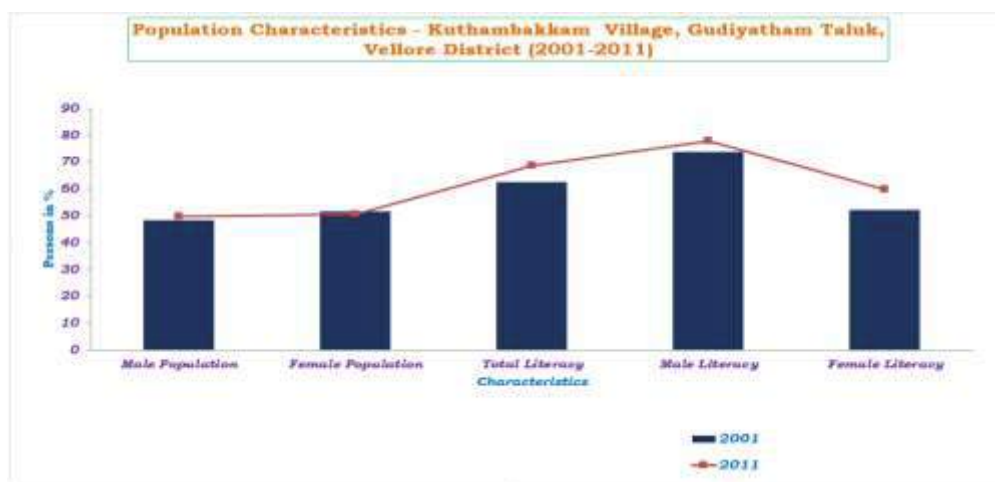
In Gudiyatham Taluk, Kuthambakkam Village had a total household 383 in 2001 which is increased to 413 in according to census 2011. Village had a total person of 1739 in 2011 census previous census 1690 persons in 2001. There were about 862 men (50%) according to 2011 census and 818 men (48 %) in 2001 census marking decrease of about 44 men over the previous census. During 2001 there were about 872 women (52%), which is an increase to 877 (50%) in 2011 census.

Kuthambakkam village had a literate accounted for 1057 persons (63%) in 2001 and increased to 1195 persons (69 %) in 2011. There were about 78 percent males in 2001 and 671 percent in 2011. There were about 454 (52%) females an increased to 524 (60%) classes as literates in 2011.

Sex composition is the most important demographic characteristics that affect the incidence of birth and death. The average sex ratio in Gudiyatham Taluk, Kuthambakkam village was 1066 during 2001 census which had decrease to 1017 in the year of 2011. The highest sex ratio may be either due to the fertility of female is very high in the village and migrants for educational purpose and employment opportunities.

Table No.5.1 Population Characteristics- Kuthambakkam Village, Gudiyatham Taluk, Vellore District (2001-2011)

| Sno | Characteristics | 2001 | % | 2011 | % |
|-----|-------------------|------|---------|------|--------|
| 1 | Total Household | 383 | | 413 | |
| 2 | Total Population | 1690 | | 1739 | |
| 3 | Male Population | 818 | 48.40 | 862 | 49.57 |
| 4 | Female Population | 872 | 51.60 | 877 | 50.43 |
| 5 | Total Literacy | 1057 | 62.54 | 1195 | 68.72 |
| 6 | Male Literacy | 603 | 73.72 | 671 | 77.84 |
| 7 | Female Literacy | 454 | 52.06 | 524 | 59.75 |
| 8 | Sex Ratio | | 1066.01 | | 1017.4 |



Signature

Fig.5.1 Population characteristics

iii) Occupational Characteristics- Kuthambakkam Village

The term workers denote the population engaged in primary, secondary and tertiary activities classified in the census reports of Indian government. During the year 2001 Kuthambakkam village had 730 workers accounting for 43 percent of the total population of the Village. During 2011 there were about 856 (49%) according to the census. There were about 458 men (56%) during 2001 which has an increase to 513 persons (60%) according to census 2011.

In Kuthambakkam village had a total main workers accounted of 458 (27%) persons during 2001 census which had decrease to 235 (13%) persons during 2011. There were about 83 (10%) women in 2001 and 27 women according to the census 2011 marking had decreases 56 women over the previous census.

This group includes the employment of workers in manufacturing activities. Agro based industries, located in the study area engages a sizeable amount of workers. The distribution of secondary workers in the study area is calculated as percent to the total workers. The proportion of secondary workers to total workers has experienced decreasing trend in the Kuthambakkam village area between 2001 and 2011. Secondary workers during 2001 and 2011 it could be stated that this may be due to the opening of a number of manufacturing units in the study area.

The tertiary workers include the labour force engaged in service sector such as education, medical, judicial, finance, administration, recreation, trade and commerce and transport. In Kuthambakkam village had tertiary workers accounted for about 14 percent of the workers during 2001 census and increase to 18% according to census 2011.

The study area has experienced a change in the occupational structure in the form of a decline in the proportion of cultivators, agricultural laborers are increase in the proportion of Non workers.

In Kuthambakkam village had non workers population accounted of 883 (51%) of the total population) according to census 2011. Which increased from census 2001 had population 960 (57%). Compare to 2011 census has and decreased previous census has 38 persons. Because of more number of people are educated most of people living the village had mining and household industries like tobacco, coolie etc., earn our daily life.

Table No.5.2 Occupational Characteristics of Population –Kuthambakkam Village, Gudiyatham Taluk, Vellore District (2001-2011)

| Sno | Characteristics | 2001 | % | 2011 | % |
|-----|-------------------|------|-------|------|-------|
| 1 | Total Population | 1690 | | 1739 | |
| 2 | Male Population | 818 | 48.40 | 862 | 49.57 |
| 3 | Female Population | 872 | 51.60 | 877 | 50.43 |

| | | | | | |
|----|-----------------------------------|-----|-------|-----|-------|
| 4 | Total Workers | 730 | 43.20 | 856 | 49.22 |
| 5 | Male Workers | 458 | 55.99 | 513 | 59.51 |
| 6 | Female Workers | 272 | 31.19 | 343 | 39.11 |
| 7 | Total Main workers | 458 | 27.10 | 235 | 13.51 |
| 8 | Male Main workers | 375 | 45.84 | 208 | 24.13 |
| 9 | Female Main Workers | 83 | 9.52 | 27 | 3.08 |
| 10 | Total Cultivators | 147 | 20.14 | 29 | 3.39 |
| 11 | Male Cultivators | 133 | 29.04 | 20 | 3.90 |
| 12 | Female Cultivators | 14 | 5.15 | 9 | 2.62 |
| 13 | Total Main Agricultural Labourers | 196 | 26.85 | 49 | 5.72 |
| 14 | Male Agri. Labourers | 144 | 31.44 | 41 | 7.99 |
| 15 | Female Agri. Labourers | 52 | 19.12 | 8 | 2.33 |
| 16 | Total Main HHI | 12 | 1.64 | 0 | 0.00 |
| 17 | Male HHI | 11 | 2.40 | 0 | 0.00 |
| 18 | Female HHI | 1 | 0.37 | 0 | 0.00 |
| 19 | Total Main Other Tertiary workers | 103 | 14.11 | 157 | 18.34 |
| 20 | Male OT | 87 | 19.00 | 147 | 28.65 |
| 21 | Female OT | 16 | 5.88 | 10 | 2.92 |
| 22 | Total Non workers | 960 | 56.80 | 883 | 50.78 |
| 23 | Male Non workers | 360 | 44.01 | 349 | 40.49 |
| 24 | Female Non workers | 600 | 68.81 | 534 | 60.89 |

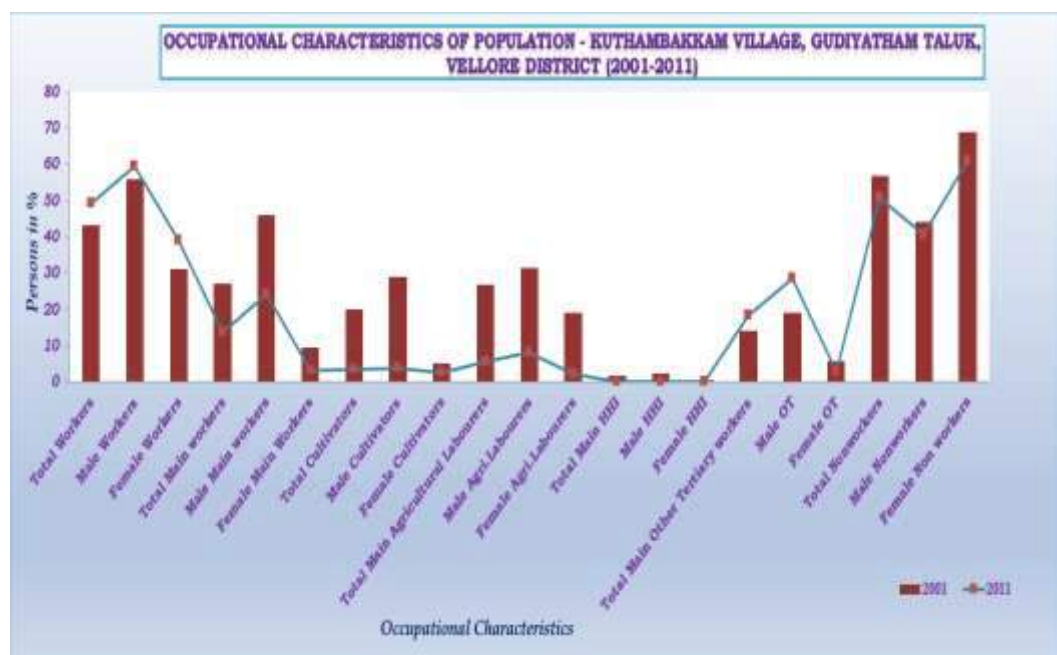


Fig.5.2 Occupational characteristics

iv) Assessment of infrastructure demand (Physical & social): Physical Infrastructure

The road facility is already available which shall be used and maintained. The labour requirement is taken from the nearest villages like Ananganallore. Other requisite infrastructure as transport of mine labours is available by way of jeep and two-wheeler.

Signature

Medical facility is available for first aid at project site. Government Dispensary is available nearest to ML area in Kuthambakkamin addition facilities in Vellore. Rest room to meet the demand of shelter and Office room for project management will be made with portable container in the project area. The will convey the excavated sand outside the quarry site to the end users.

The following measures may be taken for temporary soil erosion of bank:

Initiate stabilization measures as soon as practicable by dumping top soil over bank of the river for stability and afforestation purposes. General safety precaution shall be taken as per mining practices.

v) Access Roads

The area is accessible from Vellore to reach Pallikonda via Kuthambakkam by 11Km, further travel to reach Kuthambakkam village to site by 1 km and the site is accessible from there by a Bengaluru to Chennai highway road by 350 meter. The PWD make temporary road which connects the village road for transportation of Materials.

vi) Social Infrastructure

The NH-48 Bangalore– Chennai highway situated at South side which is about 500 meter away from the area.

SH-130 Connecting vaniyambadi - Gudiyatham– situated at North side which is about 3.7km away from the area.

A Village road is available southern direction for transportation of materials.

(vii) Amenities/facilities:

As the workers are from nearby villages, the shelter room with toilet facilities & the first aid room will be built in a portable container since the project area itself a river bed and therefore all sanitary provisions shall be made outside the Palar River Basin or in a portable container with disposal system. An office-cum-store shall be constructed. The water is required for drinking purpose as well as the drinking water is obtained from Mineral water suppliers in the nearby areas. Power is available at proximity. First aid box with all necessary materials will be kept all time in the office building for use as and when required.

6. PROPOSED INFRASTRUCTURE

(i) Industrial area (processing area):

No processing unit is required, the sand material can be directly consumed. An office-cum-store will be constructed at mine site. A shelter room with toilet facilities & the first aid facilities will be built in a portable container.

ii) Residential area (non processing area):

Not applicable, local personnel will be employed and there is no residential area proposed.

iii) Greenbelt:

There would not be any adverse impact in the existing environment arising from the mining activities. To protect the environment, the Applicant Company would do adequate a forestation program with 100trees per annum along the bank of the river.

Suggested plant species for Greenbelt development around the project:

- a) Neem
- b) Casuarinas
- c) Eucalyptus
- d) Teak

TABLE NO 6.1 PROGRAMME OF AFFORESTATION

| Year | Trees | Area |
|----------|-------|---------------------------------------|
| One year | 100 | Along the river bund and village road |

iv) Social infrastructure:

The NH-48 Bangalore– Chennai highway situated at South side which is about 500 meter away from the area.

SH-130 Connecting vaniyambadi - Gudiyatham– situated at North side which is about 3.7km away from the area.

A Village road is available southern direction for transportation of materials.

Positive community relationship proposed will be adopted by following methods:

- ❖ Care will be taken to ensure Mining Industrial Traffic not degrading public roads or jeopardize public safety.
- ❖ Consulting with local people in a sincere manner.
- ❖ Protecting drinking water and all water sources.
- ❖ Minimize visual impacts to the landscape.
- ❖ Minimize disruption of local footpaths and public areas.

Mine Supervisor and Workers will be aware and at all times meet the following requirements:

- ❖ Usage of Personal Protective equipments.
- ❖ Necessary signage at mine access point.
- ❖ First Aid Kits.
- ❖ Gates, Fences, Signs (Or) other barriers to ensure the mine site is secured against unauthorized and / or accidental entry.
- ❖ Ensure the mine site is not used for any other purpose other than mining.

v) Connectivity:

The NH-48 Bangalore– Chennai highway situated at South side which is about 500 meter

away from the area. SH-130 Connecting vaniyambadi - Gudiyatham– situated at North side which is about 3.7km away from the area. A Village road is available southern direction for transportation of materials.

vi) Drinking water management (source & supply of water):

The requirement of water will be of drinking water need for the labours, which will be around 2.0 KLD. Drinking water is obtained from Mineral water suppliers in the nearby areas. Dust suppression and green belt is obtained from the open wells of proponent site.

vii) Sewerage system:

There is no Sewerage System available in the Mining proposed area. No sewage will be generated from this project.

(viii) Industrial waste management: No wastes are anticipated.



7. REHABILITATION AND RESETTLEMENT (R&R) PLAN

(i) Policy to be adopted (central/state) in respect of the project affected persons including home ousters, land ousters, and landless labours.

a) PAP

There is no hutment in the lease area. No human being will be displaced from the project area so no person will be affected contrary local people will get job opportunities and better facilities. There is no rehabilitation & resettlement of people is required.

b) Mine Closure

Once the process of economical extraction of a mine is complete there is need for scientific mine closure which will not only restore ecology and regenerate bio mass but also take into account the socio-economic aspects of such closure. When mining activities carries out, mining communities get established and closure of the mine means not only loss of jobs but also disruption of community life. At the mine closure, it will be orderly and systematic and so planned as to help the workers and the dependent community to rehabilitate them without undue hardship. But in this case the excavation is made to deepen the water tank for storage and avoid flooding of storm water into villages and paddy fields. Therefore Mine closure plan should have proper leveling of the area before closing is advisable for this project.

Signature

8. PROJECT SCHEDULE AND COST ESTIMATION

(i) Likely date of start of construction and likely date of completion

The proposed mining operation will commence from the date of execution of quarry lease.

ii) PROJECT COST & EMP BUDGET

a) Project cost / investment

| | | |
|------------------------------------|---|----------------------|
| i) Land Cost | : | Nil |
| ii) Machinery (Hire) | : | Rs 30,00,000 |
| iii) Construction of Bank of river | : | Rs 10,00,000 |
| iv) Laboures Shed | : | Rs 2,00,000 |
| v) Sanitary facility | : | Rs 2,00,000 |
| vi) Other items | : | Rs 1,00,000 |
| Total | : | Rs 45.0 lakhs |

b) EMP

| | | |
|---------------------------------|---|---------------------|
| i) Environmental Monitoring | = | Rs 200,000 |
| ii) Dust Control | = | Rs 100,000 |
| iii) Safety kits, | = | Rs 100,000 |
| iv) Internal road & Maintenance | = | Rs 100,000 |
| v) Afforestation etc. | = | Rs 100,000 |
| Total | = | Rs 6.0 lakhs |

9. ANALYSIS OF PROPOSAL AND FINAL RECOMMENDATION

i) Financial and social benefits with special emphasis on the benefit to the local people including tribal population, if any in the area.

Social Benefits:

Mining in the project area will provide employment to nearby villagers. This employment will help in raising the standard of living on the people in the area. The mining activity in this belt will benefit the locals both directly and indirectly. The direct beneficiaries will be those who get employed in the mines as skilled and un-skilled workers. The indirect beneficiaries will be those who open small business to sell goods required by the residents whose "Per Capita income will be enhanced by the mining activity, and thereby their purchasing power. In the long run a lot of social goods are expected in the comparatively backward area when the inhabitants will be able to send their children to school, the change, though slow, is bound to be perceptible.

Financial Benefits:

It is clear from the objectives of the project that it will have significant positive impacts since it will:

- ❖ Provide filling material to the society.
- ❖ Give a boost to economic development in the region.
- ❖ Make a significant contribution to the construction and infrastructure sector of India.
- ❖ The Management will ensure good production and in turn there will be good revenue to the Government of Tamil Nadu and Government of India through taxes. The industry is an asset to the nation.

This project is planned keeping in view the above mentioned advantages.

The quarrying operations will be carried out scientifically and systematically with an integrated mining plan and mine design may not disturb the environment and ecology of the area.

**Signature of the Project Proponent
Along with name and address**

**The Executive Engineer
Project Proponent**
Water Resources Department,
Mining and Monitoring Division,
Chennai, Tamil Nadu.

Date: 01.06.2022

Place : Salem

Signature of EIA- coordinator

S.Suriyakumar
M.Sc., M. Phil, F.C.C. (Min)
PGDBA, DIPC
EIA Co-ordinator (Mining)