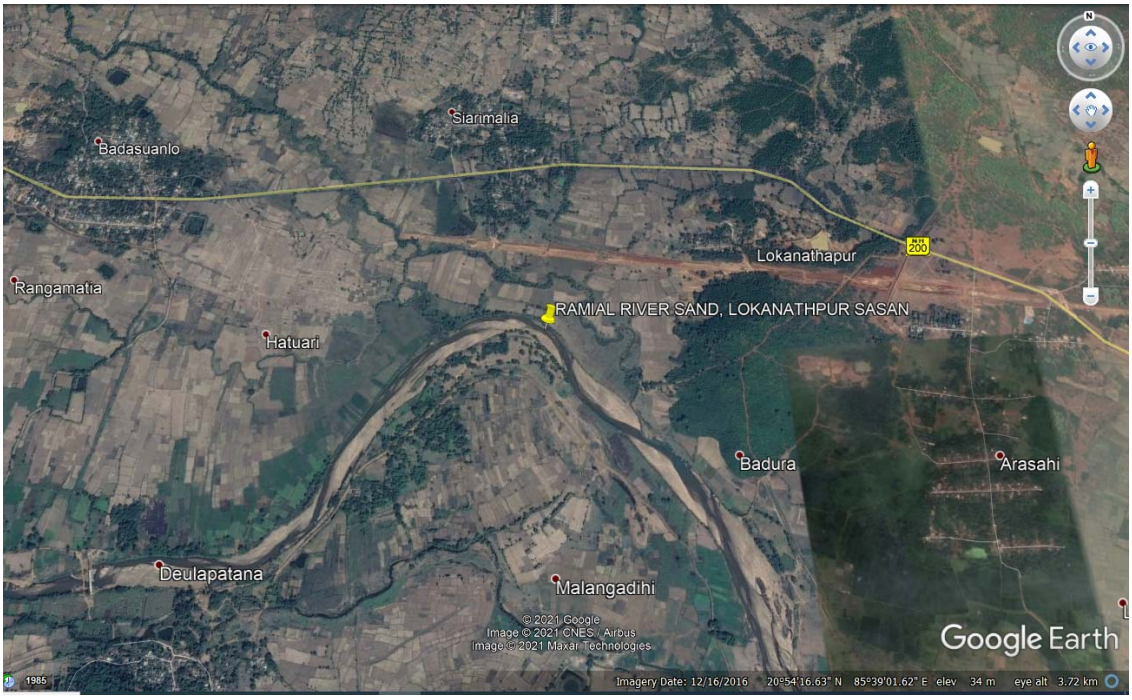
EXECUTIVE SUMMARY

DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT (DEIA) OF

RAMIAL RIVER SAND QUARRY, LOKANATHPUR SASAN

At Lokanathpur Sasan Village , 5.742 Ha. / 14.19 Ac. Kamakhyanagar Tehsil, Dhenkanal District, Odisha State, India



SUBMITTED BY

TAHASILDAR, KAMAKHYANAGAR

MONITORING PERIOD: - OCTOBER – DECEMBER 2020

PREPARED BY

Rightsource Industrial Solutions Pvt. Ltd.

AN ISO 9001-2008 & CAT A ACCREDITATED BY NABET AS EIA CONSULTANCY ORGANISATION

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FEBRUARY 2021

1.0 INTRODUCTION:

The Tahasildar , Kamakhyanagar filed an application for grant of Lokanathpur Sasan lease for Sand Mining of Ramial River over an area of 5.742 Hectares in Khata No:. 139, Plot no- 1833, 2031 & 2031/2085, Kisam : Nadi, Lokanathpur Sasan Village, Kamakhyanagar Tahasil, Dhenkanal District, Odisha.

The Quarry Lease was not granted yet. It will be leased out after obtaining statutory clearance. The Tahasildar of Kamakhyanagar issued letter to get approved mining plan and obtaining Environmental clearance vide letter no.1723, Dt.19/05/2020 after district collector, Dhenkanal approval of New Sand Mine leases. Mining plan has been approved by Joint Director of Geology, Zonal Survey, Dhenekanal, Odisha vide Letter No. 851/DZ/30.06.2020.

The proposed mining project falls under Category "B_1" Project or activity 1(a) as per EIA Notifications 2006 and subsequent amendments. As per the requirement of EIA notification, necessary application to SEIAA, Odisha was submitted for approval of Term of Reference (ToR). SEIAA, Odisha issued TOR Letter No.295/SEIAA File No.SIA/OR/MIN/58643/2020 dated 02.02.2020. The proposed mining project falls under Category "B1" Project or activity 1(a) as per EIA Notifications 2006 and subsequent amendments. The Tahasildar, Kamakhyanagar has engaged M/s. Rightsource Industrial Solutions Private limited, Hyderabad for Obtaining Environmental Clearance. As per the issued ToR they have collected the Baseline data considering the period from October 2020 to December 2020 and prepared the Environmental Impact Assessment report.

2.0 PROJECT DETAILS:

S.No.	Particulars	Details
1.	Name of the Project	Ramial River Lokanathpur Sasan Sand Mine
2.	Nature	Sand Mining
	Size of the Project	5.742 Hectares
	Type of Land	Government Land
3.	Location Details	
	Survey No/Khata No.	Khata No:.139, Plot No- 1833, 2031 & 2031/2085
	Village	Lokanathpur Sasan
	Mandal	Kamakhyanagar Tahasil
	District	Dhenkanal
	State	Odisha
	Latitude & Longitude:	20° 54' 03.46" N –20° 54' 33.17" N 85° 38' 48.53" E – 85° 39' 26.47" E
	Toposheet No	73 H/9,10
4	Government Orders	
	Tahasildar Letter	No: 1723, Dt.19/05/2020
	Mine Plan Approval	No. 851/DZ/ Dt. 30.06.2020
5	Environmental Setting	
	Nearest Village	Lokanathpur Sasan Village – 0.8 km N
	Nearest Town	Kamakhyanagar Tahasil – 10.25 km ,W
	Nearest Railway Station	Dhenkanal R.Station – 27 km ,S
	Nearest Airport	Bhubaneswar International Airport – 74 km S
	Inter State Boundary	None within 5 km
	Water Bodies	Mahapatia Jora, 0.1m, NE direction
	Forests	Mahulabanja RF B-Block 2.52 NE Mahulabanja RF A-Block 3.44 NW Jirdamali RF - 3.8 km NW Bhairipur RF - 4.58 km SW

S.No.	Particulars	Details
	Historical /Important Places	None
	Ecologically Sensitive Areas	None
6	Project Requirements	
	Water Requirement	2.5 KLD
	Man Power Requirement	11 No's
7	Mining Method	Open Cast Semi Mechanized
8	Project Cost	60 Lakhs

3.0 DETAILS OF MINING:

The proposed mine is spread over an area of 5.742 Ha with total mineable reserves of about 34235 m^3 to produce 6847m^3 /Annum (peak) of Sand Mining. Opencast Semi mechanized mining method will be adopted. Considering the mineable reserves, the life of the mine is 05 Years.

4.0 WATER REQURIMENT

The total water requirement for the project is 2.5 KLD which will be used for Dust Suppression, Greenbelt Development & Domestic purposes and will be sourced from nearby villages through Tankers.

WATER REQURIMENT

REQUIREMENT	KLD
Dust suppression	1.0
Green belt	0.5
Domestic Activities	1.0
Others	
Total water required	**2.5**

5.1 EIA STUDY:

The study area covers an area of 10km radius around the mining site. As part of Environmental Impact Assessment study, baseline environmental monitoring was carried out during the period of October 2020 – December 2020. Baseline environmental monitoring

study is very important aspect of EIA study, which covers Direct & Indirect Impacts of the project activity and measures to be adopted. The main concept of the study is to assess the present environmental status of the project area and proposed impacts due to the project activity.

5.2 AIR ENVIRONMENT

Ambient Air Quality of the study area has been assessed through a network of 8 Ambient Air Quality locations. Results of the Ambient Air Quality at all the above locations were found to be well within the limits of National Ambient Air Quality (NAAQ) standards specified for Rural and Residential areas. Concentrations of PM_{10}, $PM_{2.5}$, SO_2, NOx and CO are mainly contributed due to vehicular traffic and local activities. The following is the summary of Ambient Air Quality in the study area.

Results of Ambient Air Quality

98th Percentile Values			
PM_{10} ($\mu g/ m^3$)	**$PM_{2.5}$ ($\mu g/ m^3$)**	**SO_2 ($\mu g/ m^3$)**	**NOx ($\mu g/ m^3$)**
56.3 - 62.8	22.2 – 28.7	12.3 – 14.0	19.7 - 21.4

5.3NOISE ENVIRONMENT

To assess the Noise levels, eight monitoring location were selected in the study area. Noise levels recorded at all residential locations were found to be in the range of 41.5 to 52.4 dB (A) during day time and in the range of 35.7 to 41.9 dB (A) during night time.

5.3WATER ENVIRONMENT

To assess the quality of Ground water and Surface water, Water samples were collected from 8 locations for Ground Water and 3 locations for Surface Water. The parameters thus analyzed were compared with drinking water standards of IS 10500.

Analysis results of Ground Water

- pH varies from to 7.21 – 7.93.
- Total Hardness varies from 235 mg/l – 440 mg/l
- Total Dissolved Solids varies from 465 mg/l – 795 mg/l

Analysis results of Surface Water

- pH varies from to 7.63 – 7.78.
- Total Hardness varies from 60 mg/l – 70 mg/l
- Total Dissolved Solids varies from 129 mg/l – 151 mg/l

All the parameters were found to be well within the Limits.

5.4 SOIL ENVIRONMENT

To assess the quality of Soil in the study area, 6 Soil samples were collected in the Buffer zone from mine site.

Analysis results of Soil

- pH of the soil quality ranged from 7.23 – 7.82
- Electrical Conductivity ranged from 0.056 mS/cm –0.125 mS/cm
- Total Organic Carbon ranged from 0.34% to 0.64 %

5.5 BIOLOGICAL ENVIRONMENT:

Study of biological environment is one of the most important aspects for Environment Impact Assessment, in view of the need conservation of environmental quality and biodiversity. The biodiversity component of the study focused on a few groups of biological components comprising of Flora, Birds, Reptiles, Amphibians, Mammals, Butterflies, Fisheries as well as the surrounding ecosystems. The overall objective of this study is to establish the baseline data for flora and fauna of this proposed project study area. Ecological study was undertaken in and around mine covering an extent of 10 km radius from mine boundary. From the study it has been observed that there are no endangered, endemic or threatened species in 10 km radius of the project site.

6.1 ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATIONSMEASURES:

The air borne particulate matter is the main air pollutant contributed by open cast mining. Various emission sources are identified from the mining operations of proposed mine.

Incremental ground level concentrations are estimated considering emissions from proposed mine, fugitive dust from transport of material in the mine. Ground Level Concentration (GLC) values have been computed for considering topographical features around the mine site and applicable stability classes. The maximum incremental GLC values for PM_{10} & $PM_{2.5}$ from Mine Lease Areas are given below;

PREDICTED INCREMENTAL GROUND LEVEL CONCENTRATIONS

Pollutant	Incremental Concentrations due to Proposed Project (µg/m3)	Distance (km) w.r.t Project
PM_{10}	0.13	0.5
$PM_{2.5}$	0.04	0.5

6.2 AIR POLLUTION CONTROL MEASURES

The environmental control measures which are proposed to control the fugitive dust released are given below:

- Regular sprinkling of water on haul roads and approach roads
- Over loading of trucks and consequent spillage on the roads will be avoided. Measures such as covering with tarpaulins over the loaded material will prevent spreading of River sand from the trucks.
- Green belt will be developed Haul Roads & Service Roads to control the dust.
- Best practices at Quarry Area and Loading &Un Loading points.

6.3 NOISE POLLUTION CONTROL MEASURES

Trucks carrying the sand are the only sources of noise pollution. With the incremental value being less than the ambient noise levels, there is no likelihood of excess addition of noise, from the mine operation, on the surrounding background noise level. There will be no major impact of the mining activity on the vicinity.

Greenbelt will be developed along the buffer zone, Village Roads hence the impact on the mine vicinity due to noise levels will be nil.

The following noise abatement measurements are implemented for control of noise:

- Proper and regular maintenance of vehicles.
- The workers will be provided with protection equipment, earmuffs and ear-plugs, as a protection from the high noise level generated at the mine site wherever required.
- Speed of trucks entering or leaving the mine will be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.
- Greenbelt development will be developed along the village roads

6.4 WATER POLLUTION CONTROL MEASURES

There will be no generation of waste water from the mine lease area except domestic waste water of 0.8 KLD which will be treated in septic tank followed by soak pit.

Water required for domestic purpose will be sourced through Village Panchayat. Based on the observations in the nearby villages, the ground water level in the quarry area and its surroundings ranges between 4m – 14m below ground level. There will not be any impact on ground water due to the proposed Sand Mining activities.

6.5 LAND ENVIRONMENT

The mining activity is Sand mining and there will be Top soil generated. Sand will be excavated from Ramial River Sand Quarry, Lokanathpur Sasan which lies in Ramial river bed. The river sand deposits are derived from hard rock due to weathering, erosion and long-term transportation. Size of the sand grain is small and shape is mostly rounded because of long transportation from the source. These deposits are renewable unlike other mineral deposits. It is mostly difficult to assess the deposit of a specific stretch with certainty every year as sand gets deposited in various patches along the river course. Unlike other mineral resources sand is formed and gets deposited through physical action. However, the assessment has been made based on prevailing surface conditions. Based on the surface exposures, the updated geological reserves as well as mineable reserve have been estimated in the entire lease area.

The reserve of sand in the leasehold area has been calculated by surface area method. The total surface area of the lease area has been multiplied with the average thickness of the sand within the lease area to get the total volume of geological reserve of sand in cubic meter/ Cu.m. The surface area of the mineable reserve has been considered excluding the safety zone area. The thickness of the sand bed is 0.8 m same as the thickness taken for the geological reserve.

7.1 SOCIO ECONOMIC ENVIRONMENT:

- The mine area does not cover any habitation. Hence, the mining activity does not involve any displacement of human settlement. No public buildings, places, monuments etc. exit within the lease area or in the vicinity. The mining operations will not disturb/relocate any village or need resettlement. Thus, no adverse impact is anticipated.
- The mining activity can improve the economic status of the people around the mine area. Local people will get employment with the continued mining activities and infra-structural facilities will be developed. Hence there is possibility of positive impact on socio- economics of people living in the nearby villages.
- The budget allocated for CER is 1.0 Lakhs and the same will be used for Health

Camps, Drinking Water facility, Solar Street Lights & Plantation. Casuarina

8.0 GREENBELT DEVELOPMENT PROGRAMME:

Greenbelt will be developed in Buffer zone, Haul roads and Approach roads. The Greenbelt development programme is given below;

Year	Name of Plant	No. of Plants	Area Spacing
1	Casuarina, Pongamia,Neem& Tamarind	100	2.5 x 2.5m
2	Casuarina,Pongamia,Neem& Tamarind	100	2.5 x 2.5m
3	Casuarina, Pongamia,Neem&	100	2.5 x 2.5m
4	Casuarina, Pongamia,Neem&	100	2.5 x 2.5m
5	Casuarina, Pongamia,Neem&	100	2.5 x 2.5m
	Total	500	-

9.0 BUDGET FOR IMPLEMENTATION OF EMP:

The Project Proponent allocated an amount of Rs. 2.5 Lakhs towards Capital expenditure and Rs 6.0 Lakhs towards Recurring expenditure per annum for the implementation of Environmental Management Plan.

10.0 ENVIRONMENTAL MONITORING PROGRAMME:

To evaluate the effectiveness of Environmental Management Programme, regular monitoring of the environment parameters will be taken up. Environmental Monitoring for Air, Noise and Water will be carried once in every six months.

11.0 CONCLUSION:

The project proponent will adopt Environment friendly mining operations and will implement the Environmental Management Plan by taking up various Socio-Economic development activities to have the positive impact on the surrounding environment.