Draft EIA Report of

Proposed "Sand Mining Project"

Jamui Kiul 14-16 Balu Ghat Sand (Cluster 3)

On Kiul River

Mauza/Village – Kendih, Bhandra, Sagdaha, Parsa, Bela, & Bhaur,

Anchal Khaira, District- Jamui, and Bihar

Applied lease area is 96.7 Ha. Proposed Production – 1878552 TPA

APPLICANTS:

Ghat name	Name of Project proponent
Jamui Kiul -14 Balu Ghat	M/S Manoj Enterprises
Jamui Kiul -15 Balu Ghat	M/S Shiva Corporation (India) Ltd.
Jamui Kiul -16 Balu Ghat	Smt. Ruby Devi

ENVIRONMENT CONSULTANT

OCEAO-ENVIRO Management Solutions (India) Pvt. Ltd.

QCI – NABET Certificate No: NABET/EIA/1821/IA 0033

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ABBREVIATIONS

AAQ	Ambient Air Quality
bgl	Below Ground Level
BOD	Biochemical Oxygen Demand
COD	Chemical Oxygen Demand
CPCB	Central Pollution Control Board
SPCB	State Pollution Control Board
CSR	Corporate Social Responsibility
dB	Decibel
DO	Dissolved Oxygen
SEAC	State Expert Appraisal Committee
EIA	Environmental Impact Assessment
EMC	Environmental Management Cell
EMP	Environment Management Plan
EPA	The Environment Protection Act
GLC	Ground Level Concentration
Ha	Hectare
Ham	Hectare Meter
HFL	High Flood Level
KLD	Kilo litre Per Day
Km	Kilo Meter
Leq	Equivalent Noise Level
LFL	Low Flood Level
LOS	Level of Service
MoEF	Ministry of Environment and Forest & Climate Change
NABET	National Accreditation Board for Education and Training
NGO	Non Governmental Organisation
NH	National Highway
NOC	No Objection Certificate
OSHA	Occupational Safety and Health Administration
PCU	Passenger Car Unit
PM	Particulate Matter
PUC	Pollution Under Control
QCI	Quality Council of India
R & R	Rehabilitation & Resettlement
RBM	River Bed Material
RL	Reduced Level
SEAC	State Expert Appraisal Committee
SH	State Highway
SPCB	State Pollution Control Board
T/cum	Tons Per Cubic Meter
TKN	Total Kjeldahl Nitrogen
TOR	Term of Reference
TPA	Tonnes Per Annum
UNFC	United Nations Framework Classification
VWG	Village Working Group

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TERM OF REFERENCE (TOR)

The project proposal was submitted to State Level Environment Impact Assessment Authority-Bihar for TOR approval. Based on which standard Terms of Reference (TOR) issued by MOEFCC-GOI for mining of minor minerals, therefore as per the approved TOR, in the TOR have been considered and its compliance given below in Table No-1.1

Table 1.1: Point Wise Compliance for ToR

S.No	TOR	Compliance	Reference Chapter/Section
1	Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994'	Proposed cluster project is a new mine. No production from the mine lease area has been carried out by the project proponent. Mining will start only after getting Environmental & other statutory clearances.	--
2	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given"	Proponent is rightful lessee of the mine, The Letter of Intent of all the mines in this cluster is attached as **Annexure No. II**.	Refer, Annexure No. II.
3	All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area,	Approved mine plan is being submitted with draft EIA and draft EIA is being submitted for Public hearing. Public hearing documents will be	---

	production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.	submitted with Final EIA.	
4	All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).	Project boundary with site layout and geographical corner coordinates along the mine site is shown in pillar co-ordinate map. An Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone) are given in chapter 3.	Refer Chapter -3 for Landuse map.
5	Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics..	Information's have been provided superimposed on toposheet of survey of India in 1:50,000 scale showing all land forms of the area, important water bodies, streams and rivers etc in figure 1.1 of Chapter 1.	Refer Chapter-1, under Figure-1.1
6	Details about the land proposed for mining activities should be given with information as to	Land proposed for mining is riverbed area. The proposed area is 96.7 Ha. and falls in	---

	whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.	Anchal –Jamui & Khaira, District- Jamui, State-Bihar There is no need of land diversion in this case.	
7	It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms /conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.	Approved Environment policy has been made. The same information is given in Chapter VIII of final D-EIA report.	Refer chapter-8 for information about Environmental Policy
8	The study area will comprise of l0 km zone around the mine	The 10 km zone from periphery of the lease has been	For Buffer Map. Refer Figure 1.1

	lease from lease periphery and the data contained in the EIA.	considered as the study area. The Buffer map of the study area is attached with report.	of Chapter-1
9	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	Land Use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, National park, migratory routes of fauna, water bodies, human settlements and other ecological features has been incorporated. Refer Chapter 3. (Table no-3.1). Land use plan of the mine lease area showing the preoperational, operational and post operational phases is incorporated in the EIA/EMP Report and in approved mine plan.	Refer Chapter 3. (Table no-3.1) and approved Mine plan.
10	A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry	The proposed area is a part of Kiul river bed as per revenue record. No forest land is involved.	---

	to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.		
11	Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.	The proposed area is a part of Kiul river bed. No forest land is involved.	---
12	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.	No forest land is involved under Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006.	
13	The vegetation in the RF / PF areas in the study area, with necessary details, should be given	No any RF/PF is present in the study area.. However, the vegetation details of the study area is incorporated with the report, Refer **Chapter-3, section 3.7.**	Refer Chapter-3, section 3.7.
14	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished.	EB Study has been carried out by the Ecology and Biodiversity Expert (NABET/QCI Approved) in	Refer Chapter-4 of EIA/EMP Report.

	Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.	and around the lease area to study the wild life of the area. The details Impacts & there mitigation measures are given in chapter 4 of EIA/EMP Report.	
15	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger / Elephant Reserves / (existing as well as proposed), if any, within l0 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.	No any wild life sanctuary is present within 10km of the study area.. Topomap on Survey of India showing study area has been incorporated in EIA/EMP report. of Chapter-1, Fig-1.1	Refer Chapter-1, Fig-1.1
16	A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for	Detailed biological study of core zone and buffer zone within 10 km radius of the periphery of the mine lease for flora fauna , endangered & endemic species has been incorporated in the EIA/EMP report. Refer **Chapter-3,**	Refer Chapter-3, Section-3.7

	core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.	**Section-3.7** No any schedule –I species has been recorded in the study area, therefore no any conservation plan is required.	
17	Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.	Not applicable as the mine lease area is away from the any critically polluted areas and 'Aravalli Range',	---
18	R&R Plan/compensation details for the Project Affected People (PAP) should be furnished.	This is a River Bed Mining Project. There are no inhabited areas in	---

	While preparing the R&R Plan, the relevant State/National Rehabilitation &Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.	the allotted mine area which lies on the Kiul River, therefore no R&R Plan is proposed.	
19	One season (non-monsoon) primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site specific	Baseline data for ambient air quality (PM10, SO2 & NO2), water quality, noise level, soil and flora & fauna has been collected during Pre mansoon Season (March., 2020 to Mid June., 2020). Details regarding the same have been incorporated in Chapter III of Draft EIA/EMP	Refer Chapter-3 for all information's.

	meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the predominant downwind direction. The mineralogical composition of PM1e, particularly for free silica, should be given.	Report. Site-specific micro-meteorological data has been recorded and enclosed with the this EIA/EMP Report. The dominant wind direction is from SE & East Location of the monitoring stations was selected keeping in view the pre- dominant downwind direction and location of the sensitive receptors and also that they represent whole of the study area. One location has been selected in downwind direction at 500m from the lease boundary. Details of the same are given in Chapter III.	
20	Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. Details of the model used and input parameters used for modeling should be provided for both mining and non-mining	AERMOD version 8.1 Dispersion Model, based on steady state Gaussian Plume Dispersion, was used for the Prediction of Ground Level Concentrations (GLC) due to the Proposed Riverbed Mining Project. Impact of movement of vehicles for transportation of mineral has been considered. Details of Air modeling and	

	scenario. The air quality contours should be shown on a location map clearly indicating the location of the site, location of sensitive receptors, and the habitation, The wind roses showing predominant wind direction also be indicated on the map.	their details will be submitted with Final EIA/EMP Report.	
21	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.	The water requirement for the project is 14.5 KLD for all 3 Ghats in the cluster of which 10.5 KLD for dust suppression and 1.53 KLD for use for domestic purpose and 2.45 KLD for plantation. Water for drinking water will be sourced from the private tankers and the water for dust suppression and for green belt development will be sourced from the nearest ponds with proper permission from the owner/respective persons. A detailed water balance is being provided in the report. **Refer Chapter-2, Table-2.4**	Refer chapter 2, table 2.4.
22	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.	Water for drinking water will be sourced from the private tankers and the water for dust suppression and for green belt development will be sourced	---

		from the nearest ponds with proper permission from the owner/respective persons therefore, no any clearance is required for water drawl. Water will be sourced for dust suppression and for green belt development will be done after permission from pond/lake owner.	
23	Description of water conservation measures proposed to be adopted in the Project should be given.	The project do not consume any process water except for drinking, dust suppression & plantation. Plantation is proposed, which will increase the water holding capacity & help in recharging of ground water. No artificial rainwater harvesting is proposed for the present project in lease area.	---
24	Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided"	Mining activity will be done on Dry Bed of River so there is no impact on surface water. Details of impact of the project on the water quality both surface and groundwater & Necessary safeguard measures proposed to be adopted has been incorporated in Chapter IV of Draft EIA/EMP Report.	Refer, chapter 4 under section 4.1

25	Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.	This is a proposal for Riverbed mining project for collection of sand. Adequate protection measures will be followed for protection of river bank and its course viz. • Mining will proceed along the river in the direction from downstream to upstream in each block. No mining will be done across the river channel. • Adequate width as safety margin will be left on both sides of river banks during collection of sand to permit unhindered flow of water.	---
26	Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.	Maximum Working Depth : 3m bgl. Ground water Table: 9-12 m bgl in study area Site elevation: 92 m RL to 89 m RL	---
27	A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and Quantities coverage, plant species and time frame) and	Plantation/afforestation will be done as per program i.e along the road sides and near civic amenities, as per mine plan. Post plantation, the area will be regularly monitored in every	Refer Chapter-4. Section-4.5 under table-4.1

	Submitted keeping in mind the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.	season for evaluation of success rate. List of plants selected for green belt development if incorporated in **Chapter-4. Section-4.5 under table-4.1**	
28	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State	There will be about 739 trucks/tractors carrying the minerals per day. The projection has been done based on the mineral transportation. The details of traffic analysis are discussed in the report. **Refer Chapter-4 under section 4.7.**	Refer Chapter-4 under section 4.7.

	Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.		
29	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report	A temporary rest shelter will be provided for the workers near to the site with provisions of water, first aid facility, protective equipment's, etc. Details are given in the EIA/EMP Report. **Refer Chapter-2, Section-2.17.4**	Refer Chapter-2, Section- 2.17.4
30	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	Occupational health impact mainly is expected due air pollution due to fugitive dust emission because of movement of vehicles. However appropriate mitigation measures for air pollution control have been given in the report, discussed in **Chapter-9.** Each labour will undergo pre-placement medical examination. Thereafter periodical heath check up will be arranged as stated in the report.	Refer Chapter-9, Table-9.2 for budgetary allocation.
31	Public health implications of the Project and related activities for	Public health implication like respiratory disorder, noise	---

	the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	induced problems are major issues which will be addressed properly. Study has been performed which includes to gain an understanding of the source, identification of exposure pathway and determination of likely receptor. The impact will not be concentrated and confined to particular zone. Periodic health camps will be undertaken regularly	
32	Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time to time for implementation.	Socio economic measures for the local people have been proposed under the component of the Corporate Environmental Responsibility along with the budgetary allocation have been incorporated in the EIA/EMP Report. Proposed project will provide the employment opportunity to the local community hence project will have positive impact on the surrounding local community. An amount of Rs. 25.62 Lakhs is allocated for CER activities. Use of this amount will be assessed during public	Refer. Chapter-8, Section- 8.3

		consultation., **Refer. Chapter-8, Section- 8.3**	
33	Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project	The detailed environmental management plan to mitigate the environmental impacts has been mentioned in of the EIA/EMP Report. **Refer Chapter-9.** Separate EMP for Each ghats in a cluster is attached as Annexure III.	Refer Chapter-9 & Annexure III.
34	Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.	This is draft EIA report. Details of Public hearing will be submitted after public consultation.	---
35	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.	No litigation is pending against the project.	---
36	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.	Total cost of project will be 1280.62 lakhs for all 3 ghats in a cluster. Ghat wise details of proect cost is given in chapter 2 of section 2.18. details are given in table	Refer, Chapter-2. Section 2.18 Table-2.5 for project cost. For EMP cost refer Annexure

		2.5. EMP cost details ghat wise is given in Annexure III.	III.
37	A Disaster management Plan shall be prepared and included in the EIA/EMP Report".	A Disaster management Plan has been given in EIA report. **Refer Chapter-7, Section 7.4**	Refer Chapter-7, Section 7.4
38	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.	Physical, social and ecological benefits of the proposed sand mining project has been prepared and incorporated in the of EIA/EMP report. Benefits of the project is discussed in detail under **Chapter -8** 2% of the capital cost of the project cost will be used as CER cost, will be used for social welfare in nearby areas. Details of CER activities are given in **Chapter-8, Table-8.1**	Chapter-8, Table-8.1
39	**Additional specific conditions**		
a	Submit a report based on cumulative assessment of increase in air pollutants due to increase in traffic load in view of proposed mining activities on all the roads located within aerial distance of 10 km using suitable air model,	Cumulative assessment have been done, details will be submitted with final EIA report.	

b	Submit a map on appropriate scale to show extraction paths to be used outside the mining lease boundary to approach major public roads (Rural/District road or State/National Highway). Alternatives route shal be explored if extraction path is passing through dense population. human settlements. Also submit cumulative traffic management plan for cluster sand mining proposal	Map on appropriate scale to show extraction paths to be used outside the mining lease boundary to approach major public roads (Rural/District road or State/National Highway) is given in chapter 4. Refer Chapter 4, section 4.7.	Refer Chapter 4, section 4.7.
c	Submit a map of the area falling within 2.5 km radius from boundary of each mining lease showing all man-made public utility features such as bridge/public civil structures (including water intake points), culverts etc. and highways, and a table showing distance of the above mentioned man-made features from the mining lease boundary to facilitate decision making pertaining to relevant rules/guidelines.	Google map showing all features is given in Chapter 2 of 2.2	Refer Chapter 2 of 2.2
d	Submit District Survey Report (DSR) and other relevant documents prepared in accordance with exact MoEF&CC, Gov of India Notifications/rules/guidelines.	District Survey Report (DSR) is annexed with EIA report.	---

e	If the proposed mining lease has overlapping areas with previously allotted mining lease or already working or worked out mining lease the same should be clearly marked on current mining plan. Details about quantity of sand extracted from overlapped area should be furnished duly certified from mining officer	Noted, details will be submitted with Final EIA report.	---
f	Satellite imagery of last three years for summer, rainy and winter seasons of each proposed mining lease shall be submitted	Satellite imagery of last three years for summer, rainy and winter seasons of each proposed mining lease will be submitted with Final EIA report.	---
g	Prepare cluster EIA/EMP of mining ghats/blocks qualified to fall in a cluster on a river within a district	Compiled, Cluster wise EIA report is being submitted.	---
40	**The environment protection requires a strictly regulated mining in terms of area quantity as well as most importantly replenishment thereof EIA/EMP shall be considered only for grant of EC when following directions of SEIAA are compiled by the project proponent & Deptt. of mines and Geology, Bihar Govt. together.**		
A	**Letter of intent (LOI) issued to settles /successful tenderer to have following basic information either as addendum" or incorporating them in its revised form to be issued by Deptt. Of mines & Geology, Govt" of Bihar"**		
i	Details of Geo-co-ordinates of lease area (corner points);		
ii	Involvement of Forest land/Distance form forest		

	land/wildlife or otherwise protected areas/ Archeological sites and details of cluster situation if any;	A letter mentioning these points have been written to Mineral Development Officer, Jamui to amend the LOI as per condition, reply/ directions/ modifications received regarding this letter from Mineral Development officer will be included in Final EIA report.	
iii	Minable area and prohibited area (where mining shall remain prohibited due to safety of Bridges/structures/Archeological sites, other structures etc.);		
iv	Annual production capacity of the concerned Sand Ghat which should not be more than 50,000 Mt/ha/year.		
v	Nature of river (Perennial or non perennial etc)		
B	**Mining Plan updation-**		
i	Plan to show "Red Line" or Bench mark with respect to MSL (Mean Sea Level) in mining channel reaches (MCR) below which no mining shall be allowed.	A letter mentioning these points have been written to Mineral Development Officer, Jamui to update the mine plan as per these condition. Direction received from mining department regarding this will be included in mine plan, will be submitted with Final EIA.	
ii	Recording of the initial levei of mining lease at shorter interval, say 25m X 25m grid.		
iii	To leave buffer distance (unmined block) at least 50 m after every block of 1000 m"		
iv	To show only a maximum of 60%o leased land for removal of minerals.		
v	Mining plan to include the		

	certificate from the competent Authority in the state forest department or PCCF on Forest land, distance from wildlife protected areas. Mine plan in pieces shall only be unacceptable"		
C	District Survey Report (DSR) having DSR is precondition for grant of EC; therefore submission of duly prepared DSR either by Deptt. of mines an Geology or a copy of same by the Project Proponent shall be essential.	A letter mentioning this points has been written to Mineral Development Officer, Jamui to regarding DSR as per condition. Reply regarding this condition from Mineral Development officer will be included in Final EIA report.	
41.	**Besides the above, the below mentioned conditions points are also to be complied: -**		
a	All documents to be properly referenced with index and continuous page numberings.	All documents have been properly referenced with index and continuous page numberings.	---
b	Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.	Tables mentioned in draft EIA/EMP Report contain the period in which the data were collected and the sources.	---
c	Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports	All analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories are given in chapter 3. Original reports will be	---

	should be available during appraisal of the Project.	submitted with Final EIA report.	
d	Where the documents provided are in a language other than English, an English translation should be provided.	Complied. English translation has been provided therein.	---
e	The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.	Questionnaire of the cluster will be submitted with Final EIA report.	---
f	While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.	Instructions issued by MoEF vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, have been followed.	---
g	Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of	Agreed & compiled	---

	the P.H. process) will entail conducting the PH again with the revised documentation		
h	As per the circular no. J-11011/618/2010-IA. II (I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.	This is a proposed project and therefore, this is not applicable.	---
i	The EIA report should also include (i)Surface plan of the area indicating contours of main topographic features, drainage and mining (ii) Geological maps and sections and (iii) Sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.	Surface geological plan, conceptual plan & their sections have been annexed in Draft EIA/EMP. Mine pits will not be formed. Only collection of sand will be done. No waste will be generated.	---
42.	The application (Hard copy) submitted by the applicant/Project Proponent would require authentication by the applicant before submission of EIA/EMP failing which EC may be withheld"	Agreed, condition has been complied.	---

43.	This Terms of Reference (ToR) is issued without affecting any Hon'ble court order/NGT order / statutory order of other institutions as well as relevant other laws enacted by ministry of Environment, Forest & Climate Change, Government of India, New Delhi. ToR may be amended, or shall remain liable for cancellation if any statutory order requires so.	Agreed, condition has been complied.	---

Chapter-1

INTRODUCTION

1.0 INTRODUCTION TO EIA:-

The term Environment Impact Assessment (EIA) refers to the anticipation of various impacts a project will have on the environment and the local community. It is a decision making tool, which guides decision makers in taking appropriate decisions prior to sanctioning clearance. It aims predicting environmental impacts at an early stage of project planning and design, find ways and means to reduce adverse impacts, shape projects to suit the local environment and present the predictions and options to decision makers. The Ministry of Environment, Forests & Climate Change, Govt. of India, made environmental clearance (EC) for certain development projects mandatory through its notification of 27th January, 1994 under the Environment Protection Act, 1986. Keeping in view of the experience gained in environmental clearance process over a period of one decade, the Ministry of Environment, Forests & Climate Change came out with Environment Impact Notification, SO 1533(E), and dt.14/09/2006. It has been made mandatory to obtain environmental clearance for different kinds of developmental projects such as expansion, modernization or renewal projects. The conditions are applicable as per the MoEF guidelines and EIA notifications issued and amended time to time. In accordance with the schedule of EIA notification, September 14, 2006 and its subsequent amendments later, (specially after OM dated 12.12.2018 issued by MOEFCC) the project falls under category 'B1' of Schedule-1(a) for the purpose of seeking prior environmental clearance from MOEF, GOI, New Delhi as the mine lease area is more than 5.0 ha.

1.1 PURPOSE OF THE REPORT

The Environmental Impact Assessment Report has been prepared to assess the current environmental scenario of the area and then based on the activities of the proposed mining; prepare carry out Environment Management Plan (EMP). This plan will identify and address the impacts, where these are adverse in nature, and thereafter design mitigative measures to manage such impacts in a manner as to conserve environment and ecology of the area. The EMP has been prepared with a view to ultimately ensure that the adverse impacts are minimized if these cannot be prevented altogether.

1.2 GENERAL INFORMATION

The river along its course brings huge quantity of material consisting of sand during every monsoon. This material has to be removed every year in order to channelize the river course and to prevent it from widening. The proposed sand mining project is a cluster of 3 Sand Ghats i.e. Jamui Kiul 14 Balu Ghat, Jamui Kiul 15 Balu Ghat, & Jamui Kiul 16 Balu Ghat, on Kiul River of District- Jamui, Bihar.

Environment Consultant: The lessee has hired an Environment Consultant *i.e.* OCEAO-ENVIRO Management Solutions (India) Pvt. Ltd. (QCI – NABET Certificate No: NABET/EIA/1821/IA 0033) office at 217, 1st Floor, Sector 12, Vasundhara, Ghaziabad, U.P-201012 for preparation of Environment Impact Assessment Report for obtaining Environment Clearance from SEIAA/SEAC, Bihar.

ToR Letter: It is in this context, soft copy of Form-I and Pre-Feasibility Report has been submitted to SEIAA/SEAC on state portal requesting for issue of "Terms of Reference" (ToR) Details of Ghat wise of their proposal numbers and their approved TOR letter no. are as:-

Table 1.1:- Proposal no of the individual Sand Ghats falling in Cluster

S.No	Ghat name	Proposal nos	TOR letter no
1	Jamui Kiul -14 Balu Ghat	SIA/BR/MIN/51396/2020	SIA/1(a) /1013/2020
2	Jamui Kiul -15 Balu Ghat	SIA/BR/MIN/52721/2020	SIA/1(a) /1014/2020
3	Jamui Kiul -16 Balu Ghat	SIA/BR/MIN/51383/2020	SIA/1(a) /1015/2020

1.3 IDENTIFICATION OF PROJECT AND PROJECT PROPONENT

1.3.1 Project Proposal

The proposed Cluster of Jamui Kiul Balu Ghats , which inludes 3 balu ghats are situated on dry part of Kiul river in Anchal –Jamui & Khaira, District- Jamui, State-Bihar having cumulative production of 1878552 TPA.

Details of each sand ghats falling in cluster with their name, Area, Address and their production are as:-

Table 1.2:- Individual sand Ghat details falling in cluster

S.No	Ghat name	Area (Ha)	Address	Production in Tones per annum
1	Jamui Kiul 14 Balu Ghat	34.0	Khata no. – 172, 150 & 159. Khasra No.- 857, 920, 01 & 515. Mauza/Village – Kendih, Bhandra & Sagdaha, Post – Nariyana, P.s – Khaira, Anchal – Khaira, District- Jamui (Bihar).	795600
2	Jamui Kiul 15 Balu Ghat	32.0	Khata no. – 159 & 31 Khasra No.- 01, 515 & 136 Mauza/Village – Sagdaha & Parsa, Post – Nariyana, P.s – Khaira, Anchal – Khaira, District- Jamui (Bihar).	795600
3	Jamui Kiul 16 Balu Ghat	30.7	Khata no. – 159, 194, 31 & 164 Khasra No.- 01, 515, 01, 136, 785 & 786 Mauza/Village – Sagdaha, Bela, Parsa & Bhaur, Post – Nariyana, P.s – Khaira, Anchal – Khaira, District- Jamui (Bihar).	287352

A. Screening Category

As per EIA Notification dated 14th September, 2006, amended till date; the project under cluster situation falls under S. No. '1' (Mining of Minerals), Project or Activity '1(a) - (3)', Category "B-1".

B. Mining Lease Status:-

This is a new proposal of mining lease for which Letter of Intent (LOI) for grant of mining leases for each Sand Ghats have been issued by District Mining Department of Jamui for 5 Years. LOI of each Ghats in a cluster are attached as **Annexure-I.** Letter no and their issuing dates of sand Ghats are as:

Table 1.3:- Letter of Intent (LOI) no and their issuing date of sand ghats

S. No.	Ghat name	Letter nos	Issuing Date
1	Jamui Kiul -14 Balu Ghat	Patrank- 97/Khanan, Jamui	06/02/2020
2	Jamui Kiul -15 Balu Ghat	Patrank- 334/Khanan, Jamui	18/03/2020

3	Jamui Kiul-16 Balu Ghat	Patrank-98/Khanan, Jamui	06/02/2020

C. Status of approval of Mining Plan

Mining Plan and Progressive Mine Closure Plan of the proposed mine lease area is prepared by Shree Praveen Kumar Sinha (RQP Regn. No.: RQP/JBP/129/2011/A). Mine plan of all Sand Ghats have been approved by Mines and Geology department, Patna, Bihar. Project was first allotted to Mineral Development Officer, Jamui, and therefore mining plan of all sand Ghats have been also approved under name of Mineral Development Officer, later on it was transferred to their individual proponent. Mining Plan approval letter with their transfer latter to proponents is attached as **Annexure- II.**

1.3.2 Introduction of Project Proponent

Letter of Intent has been issued to individual proponents for each sand Ghats. Detail of project proponents and there addresses are as:-

Table 1.4:- Details of Project proponents

S. No.	Ghat name	Name of Project proponent	Proponent addresses
1	Jamui Kiul -14 Balu Ghat	M/S Manoj Enterprises,	M/S Manoj Enterprises, Prop. Manoj Singh, S/O Brahmdev Singh Balgudar, Lakhisarai Bihar-811311 Mob.No. 8521961102 Email- manojenterprises@gmail.com
2	Jamui Kiul -15 Balu Ghat	M/S Shiva Corporation (India) Ltd.	M/S Shiva Corporation (India) Ltd. Director- Sri Ashu Singh Bhati S/O- Sri Magan Singh Bhati Add- A-24, Ambabadi, Sikar Road, Jaipur Rajasthan 302012
3	Jamui Kiul -16 Balu Ghat	Smt. Ruby Devi	Smt. Ruby Devi W/O Sri Chandrashekhar Singh Purani Chowk Sikandra, Jamui. Pin- 811315 Mob.No.7782051162 Email- rd5404464@gmail.com

1.4 BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION OF THE PROJECT

S. No.	Particulars	Details
1.	**Nature and Size of the Project**	Mining of Sand as Minor Minerals with cumulative Production Capacity of 1878552 TPA (M.L. Area- 96.7 ha).
3	**Toposheet (OSM) No.**	72L/1
4.	**Lease Area Details**	
	Lease Area	96.7 Ha.
	Type of Land	River bed of Son
	Topography	Undulated (Riverbed)
	Site Elevation Range	92 m RL to 89 m RL
5.	**Production in TPA**	**1878552 TPA**
5.	**Cost Details**	
	Cost of the project	Rs. **1280.62 L**akhs (Including Auction Cost)
	Cost for EMP	Rs. 36.82 Lakhs
	Cost for CER	Rs. 25.62 Lakhs
6.	**Environmental & Infrastructural settlings of the area**	
	Ecological Sensitive Areas (National Park, Wild Life Sanctuary, Biosphere Reserve, Reserve/ Protected Forest etc.) within 10 Km radius	No Ecological Sensitive Areas within 10 Km radius.
	Nearest Town/ Major City with population	Jamui, approx. 5.0 Km and 7.0 Km towards North from the Jamui-Kiul 14 Balu Ghat and towards NW from Jamui-Kiul 16 Balu Ghat respectively.
	Nearest Railway Station	Jamui Railway station at distance of approx. 11 Km in NNE.
	Nearest National/State Highway	SH-82 is approx.300 m away in North form lease boundary Kiul 14 Balu Ghat and 1.5 Km in West direction form lease boundary all the 3 ghats.
	Nearest Airport	JPN International Airport, Patna approx. 135 Km towards NW and Gaya Airport is at distance of approx. 131 Km in SW direction.
	Nearest Post Office	Khaira post office approx, 2.5 Km towards NW.
	Medical Facilities	Sadar Hospital Jamui, Puspanjali hospital etc, within Approx. 5.5 Km towards NNE.
	Education Facilities	DAV Public school, St. Michel Public School, Oxford public school, Plus 2 high school Approx. 5.5 Km towards North.

	Seismic Zone	Zone IV (IS 1893: 2002)
	Water Body	Kiul River (Riverbed)

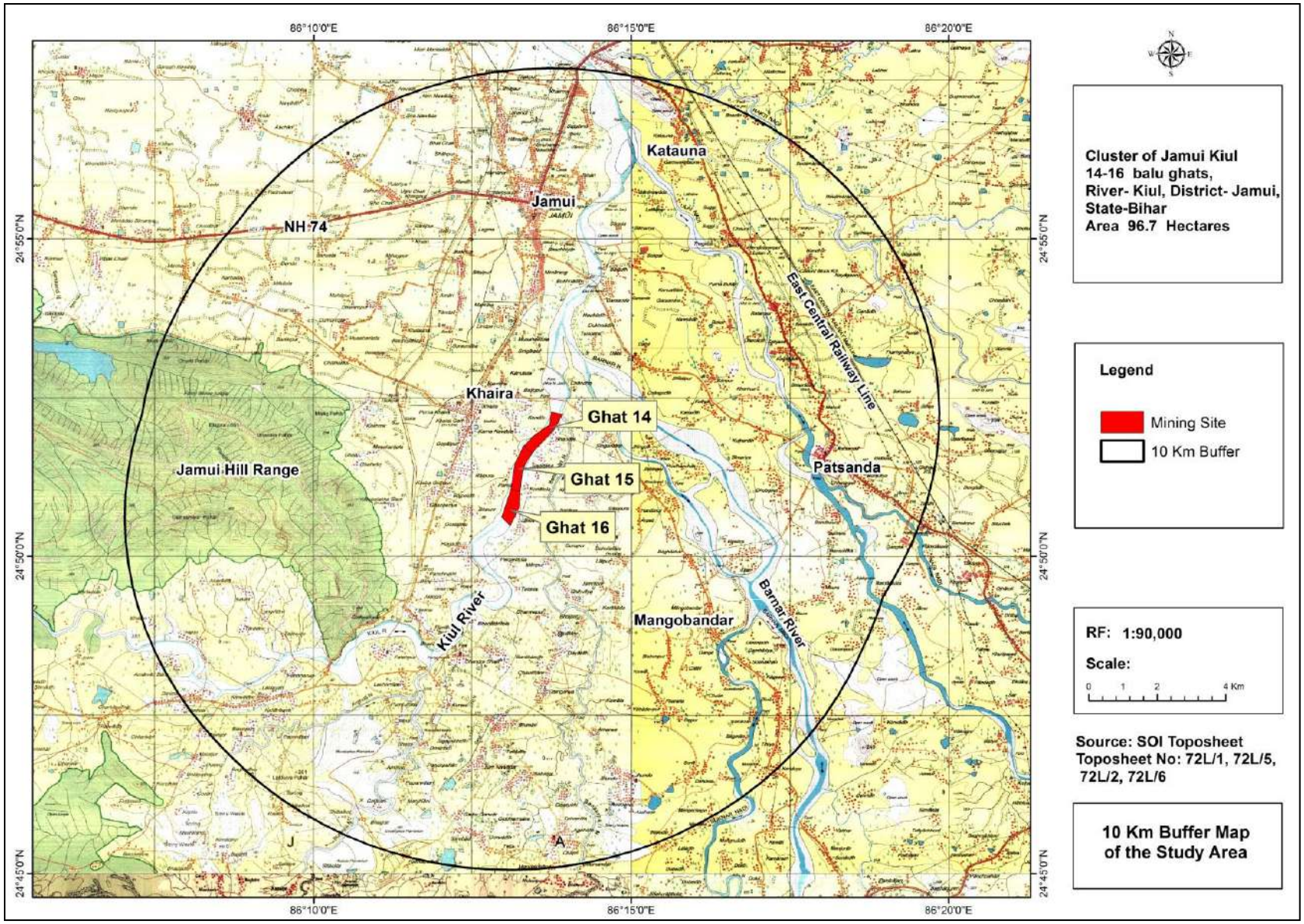


Fig: 1.1: 10 km radius Topo Sheet map

1.5. SCOPE OF STUDY

The scope of the study includes a detailed characterization of the environment in an area of 10 Km radius of the Mine Lease Area for various environmental parameters like Ambient Air, Water, Noise, and Land, Biological and Socio-economic aspects. This report contains Analytical data of ambient air monitoring as well as the ecological studies, noise environment, biological environment study, socio-economic study carried out during Post-monsoon Season, (March - 2020 to May-2020). Application (Appendix-I / Form-I / TOR and Pre-Feasibility Report) for obtaining Environmental Clearance from SEIAA-Bihar for this project was has been already submitted. The compliance of all the points suggested as per approved ToR has been incorporated in this draft EIA/EMP Report at respective places.

1.6. Preparation of EIA

The EIA includes the following details:

1) Study of the reports like Geological report, Pre-Feasibility Report (PFR) or mining plan made available by the client.
2) Present Environmental Setting
3) Identification, prediction and evaluation of Anticipated Environmental Impact due to the proposed mine and related facilities.

The environmental impacts would be anticipated in core and buffer zone on:

- Topography and drainage,
- Climate,
- Water quality (Surface/Ground),
- Hydro-geological Regime,
- Air quality,
- Noise Levels,
- Soil Quality,
- Flora and Fauna,
- Traffic density survey,
- Land-Use,
- Socio-Economic Conditions,
- Habitat,

- Health, culture, human environment including public health, occupational health and safety
- Sensitive Places/Historical Monuments.

1.7 LAWS APPLICABLE TO THIS PROJECT

The Acts, Notifications, Rules and Amendments applicable for setting up a new mining industry or its expansion of an existing mine and for operation of a mine include the following:

- Bihar Mines and Mineral Concession rules amended till date
- The Mines and Mineral (Development and Regulation) Act, 1957. (Amended till date)
- The Mines Act, 1952.
- Mines Rules, 1955.
- Mineral Concession Rules, 1960.
- Mineral Conservation and Development Rules, 1968 (Amended till date)
- The Water (Prevention & Control of Pollution) Acts1974/ Rules1975
- The Air (Prevention & Control of Pollution) Acts 1981/ Rules1982
- The Environment (Protection) Acts1986/Rules 1986
- The Factory Act 1948 (as amended till 1987) & Bihar Factory Rules, 1950
- Contract Labor (Regulation & Abolition) Act 1970 & Its Central Rule 1971
- The Central Motor Vehicle Rules 1989(Under Motor Vehicle Act 1988)
- The Workmen's Compensation Act 1923 as amended up to 2000/ Rule 1924, 1935, 1991 & 1996.

CHAPTER 2
PROJECT DESCRIPTION

2.0 TYPE OF THE PROJECT

The project is proposed for the excavation of Sand from cluster of Jamui Kiul 14 Balu Ghat to Jamui Kiul 16 Balu Ghats located on dry part of river bed of Kiul River. It's the opencast mining project in which mining will be done through the semi-mechanized manner.

2.1 NEED FOR THE PROJECT

Sand is the main material required for construction activities. River Kiul is the main source of Sand around the area since a long time. All the construction activities around Jamui & Lakhisarai, Seikhpura and Munger districts depend on Sand produced from Kiul River. The mining activities will increase better employment opportunities. Average income level which is the indicator of socio-economic status of house hold is expected to uplift the economic standard which will in turn improve quality of life. The Sand is deposited in the river bed during rainy season. To avoid risk of spreading the river and channelize the flow of river, the excavation of Sand from river bed is necessary or we can say unavoidable as assessed and estimated by State Govt. Therefore, the project will contribute towards development of infrastructure in the region.

2.2 LOCATION

The mine lease area falling in cluster is located in Kiul River, Mauza/Village – Kendih, Bhandra, Sagdaha, Parsa, Bela, & Bhaur, Anchal Khaira, District- Jamui, and Bihar. Address, Geographical co-ordinates, location map and their 500 m radius Google map of a cluster is given below:-

Table 2.1: Location details of the Cluster

Name of the project	Cluster of Jamui Kiul 14-16 Balu Ghats
Address	Mauza/Village – Kendih, Bhandra, Sagdaha, Parsa, Bela, & Bhaur, Anchal Khaira, District- Jamui, and Bihar.

<table>
<tr><td>Geographical co-ordinates</td><td>Co-ordinates:-
<table>
<tr><td colspan="2">Jamui Kiul 14 Balu Ghats</td></tr>
<tr><td>A</td><td>24°52' 16.26" N 86°13'44.45 " E</td></tr>
<tr><td>B</td><td>24°52' 3.86" N 86°13'41.99 " E</td></tr>
<tr><td>C</td><td>24°51' 54.35" N 86°13'28.24 " E</td></tr>
<tr><td>D</td><td>24°51' 44.04" N 86°13'18.03 " E</td></tr>
<tr><td>E</td><td>24°51' 37.87" N 86°13'26.24 " E</td></tr>
<tr><td>F</td><td>24°51' 56.87" N 86°13'44.55 " E</td></tr>
<tr><td>G</td><td>24°52' 1.04" N 86°13'47.52 " E</td></tr>
<tr><td>H</td><td>24°52' 14.28" N 86°13'54.85 " E</td></tr>
<tr><td colspan="2">Jamui Kiul 15 Balu Ghats</td></tr>
<tr><td>A</td><td>24°51' 44.04" N 86°13'18.03 " E</td></tr>
<tr><td>B</td><td>24°51' 27.41" N 86°13'9.76 " E</td></tr>
<tr><td>C</td><td>24°51' 3.43" N 86°13'6.15 " E</td></tr>
<tr><td>D</td><td>24°51' 1.34" N 86°13'14.85 " E</td></tr>
<tr><td>E</td><td>24°51' 16.14" N 86°13'16.45 " E</td></tr>
<tr><td>F</td><td>24°51' 26.84" N 86°13'19.48 " E</td></tr>
<tr><td>G</td><td>24°51' 37.87" N 86°13'26.24 " E</td></tr>
<tr><td colspan="2">Jamui Kiul 16 Balu Ghats</td></tr>
<tr><td>A</td><td>24°51' 3.43" N 86°13'6.15 " E</td></tr>
<tr><td>B</td><td>24°50' 37.18" N 86°12'57.29 " E</td></tr>
<tr><td>C</td><td>24°50' 28.63" N 86°13'5.49 " E</td></tr>
<tr><td>D</td><td>24°50' 47.31" N 86°13'14.31 " E</td></tr>
<tr><td>E</td><td>24°51' 1.34" N 86°13'14.85 " E</td></tr>
</table></td></tr>
<tr><td>Toposheet Number</td><td>72L/1</td></tr>
<tr><td>Nearest Highway</td><td>SH-82 is approx.300 m away in North form lease boundary Kiul 14 Balu Ghat and 1.5 Km in West direction form lease boundary all the 3 ghats.</td></tr>
<tr><td>Nearest Railway Station</td><td>Jamui Railway station at distance of approx. 11 Km in NNE.</td></tr>
<tr><td>Nearest Airport</td><td>JPN International Airport, Patna approx. 135 Km towards NW and Gaya Airport is at distance of approx. 131 Km in SW direction.</td></tr>
</table>

The location map and pillar co-ordinate maps of the project site is given below:

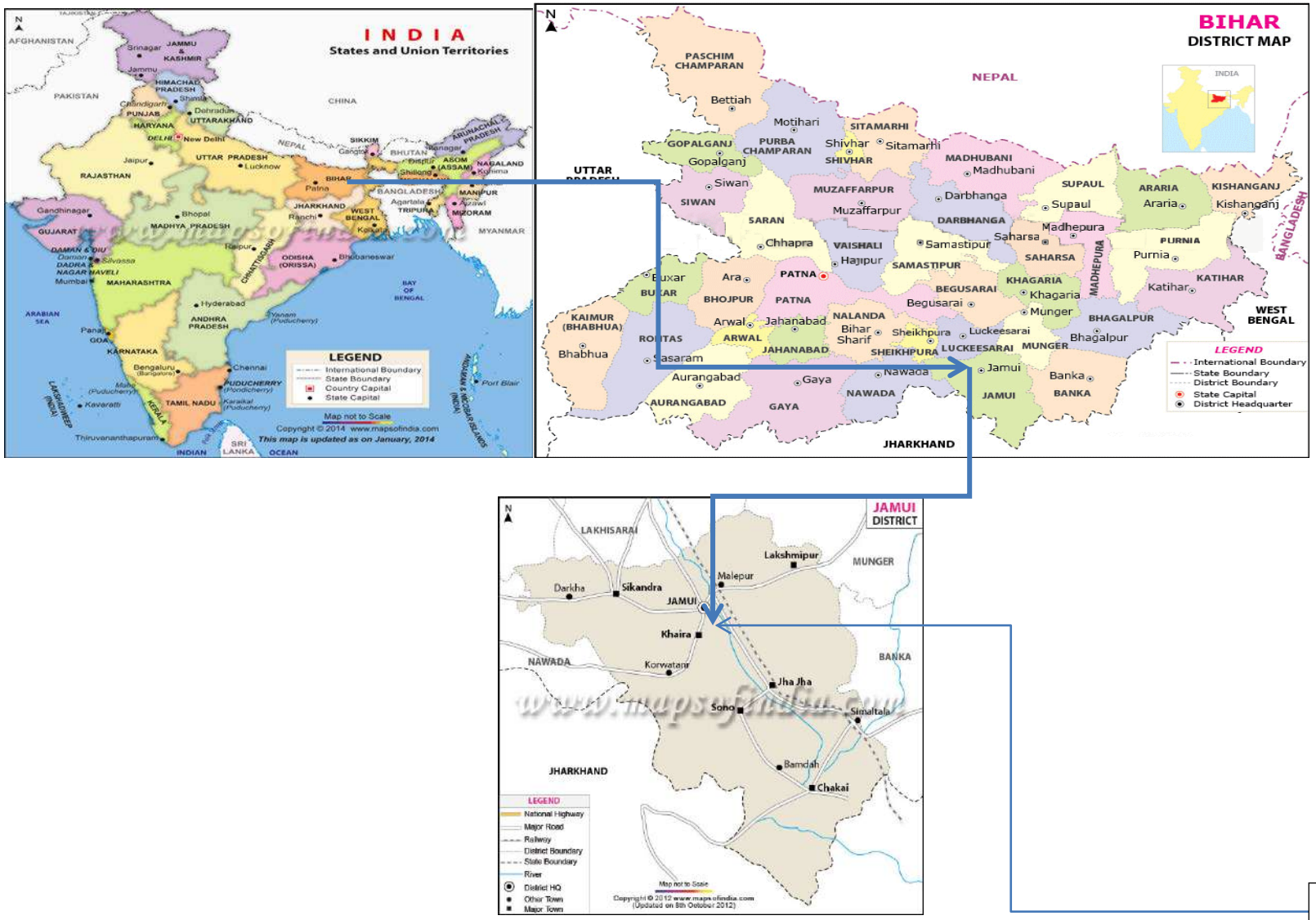


Figure: 2.1 Location Map of the Project Site

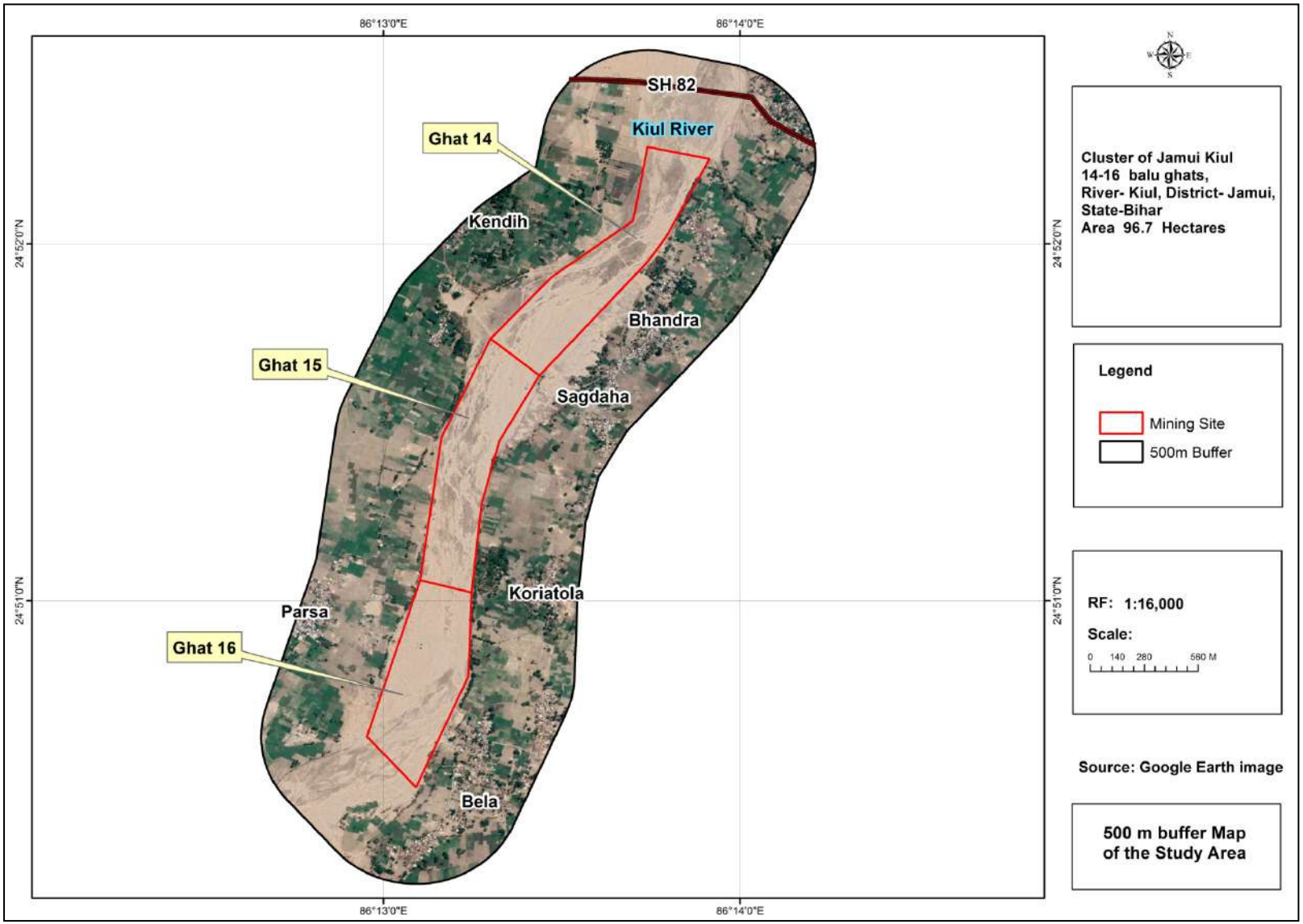


Figure 2.2: 500 m Buffer Google Map

2.3 Topography & Geology

The sand deposits of Jamui district of Bihar broadly form part and parcel of the flood plains of Kiul River as a whole formed since geological ages. Most of the part of the Jamui has hilly topography. The soil pattern of the district differs widely due to topography of the region. Important soil are sandy soils and alluvial soil of heavy texture having natural or alkaline reaction. Jhajha, Khaira, Sono, Chakai, Laxmipur block contain forest soil. A sizeable part of the plain of northern side of the district lies in the Basin of Kiul River and its tributaries. Most of the part of the district has hilly topography. Western portion of Jamui like Sikandra jamui a little part of khaira has plain area. Sikandra block is situated in alluvial zone.A sizeable part of the district comprise plains which are paddy-growing lands. Southern part of the district is covered with hill and forest characteristically reminiscent of the Chhotanagpur plateau in physical features. Hills of the district are considered to be the out –laying extension of vindhya range. Southwest part of the district has another block of hills known as Gidheswar pahar.

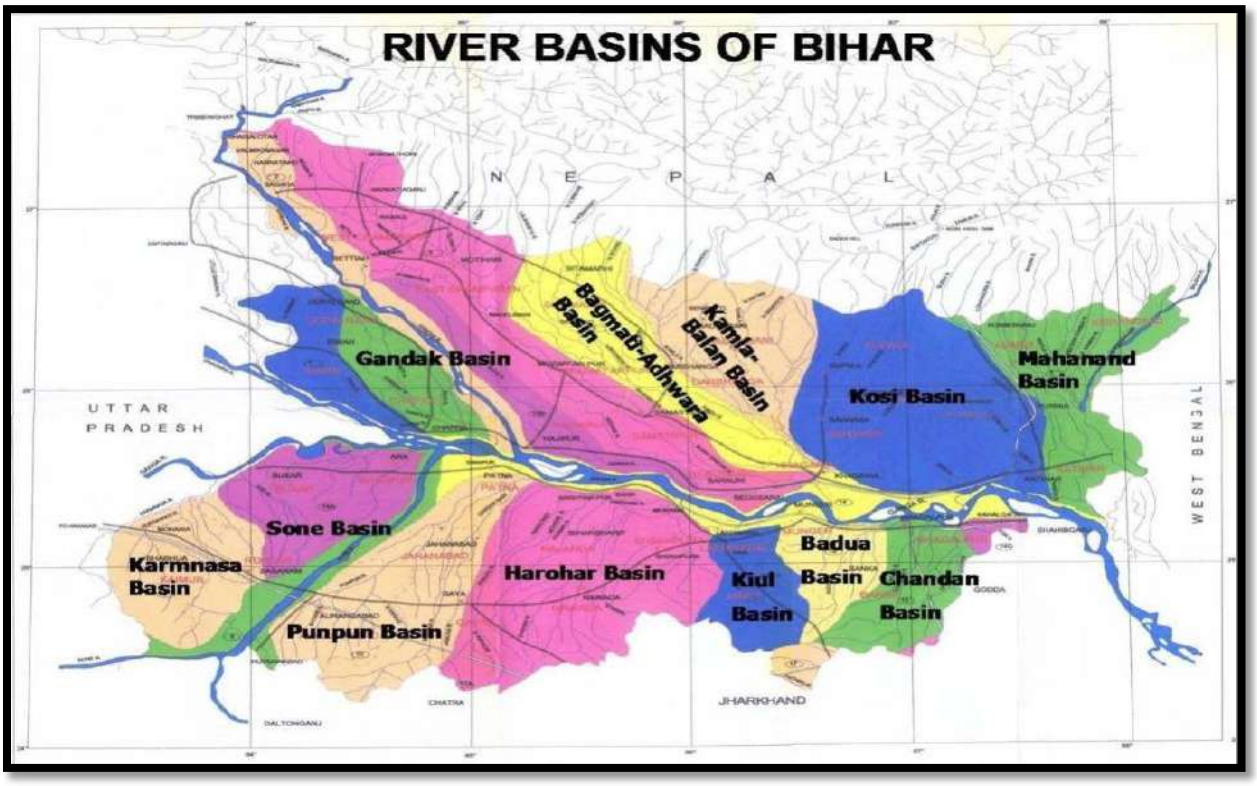


Figure 2.3: River Basins of Bihar

2.3.1 Geology

The main geological formation in the area is pre-cambrian rocks of Archaean age. The crystalline rocks in the district are mica schist, granite gneiss, quartzites & quartz schist, hornblende schist & mica pegmatites etc. These rock types constitutes the hill ranges. The entire district is underlain by the rocks of wide variety of geological formation ranging in age from Archean to Recent. The main being Archeanproterozoic, permocarboniferous & recent. Phyllite,mica-schist,granite gneiss & intrusive granite are the main geological formation of the district. Sporadic occurrence of dolerite, quartz pegmatites veins and quartzites are also found.thin deposits of alluvium are found along the course of rivers.

Availability of Minerals

Jamui is one of the important district in Bihar where different types of ores & Minerals are found. The hills of Laxmipur and Khaira are comprised of archaenschists including the iron ore. In Laxmipur, Sono and Chakai the chief formation in gneiss basement complex. Mica mines lie in the portion of adjoining Hazaribag district. Beside these there is possibility of availability of lime stone, China clay, Magnese, Graphic Pegmite Termoline quartz etc. in the southern hills of the district. Ore of gold has been observed in Sono Block. Hilly areas of Jamui are also acquainted with valuable stone like Marble, Topaz, and American diamond, Sfatik, Manic etc. coals are found in hilly area of Barhat block.

2.4 Soil

The district consists mainly of alfisols and ultisols types of soils formed under different lithological and pedogenic conditions. The alfisols are developed mainly on the marginal alluvial area in the northern fringe of hard rock terrain. It occurs mainly in Jamui, Sikandra and Aliganj blocks. The soil in these blocks are called alluvial soil composed of clay, sand and gravel. The lower horizon is highly ferrugenized. A variant of alfisols soil is red sandy soil occurring mainly in plateau and hilly regions. These soils have poor fertility and are suitable for high land crops. The ultisols occur mainly in Sono and Lakhimpur blocks. It contains argillic horizons and has low base status. Red and yellow soils occur in southern and eastern parts of Jamui town, while light brown to red yellow soil occur in the south of Jamui town in small patches.

2.5 Drainage

Jamui district forms a part of Phalgu-Kiul sub-basin of Ganga Basin. Catchments of Kiul and Barnar rivers form a major part of the district. The dominant drainage pattern is dendritic and radial in the hilly and plateau regions, while in the plains it is parallel to sub-parallel. There is a Ground Water Information Booklet I Jamuii 10 linear drainage divide along the outer fringe of Chakai plateau. Ajay, Pathro and Darua rivers flow towards east, while Kiul, Barnar, Ulal, Nakti and Nagi rivers flow towards north. Rivers are generally ephemeral in nature except the Kiul river, which has meager discharge during lean periods. Kiul river also carries a huge amount of sand- the main source of building material in the region.

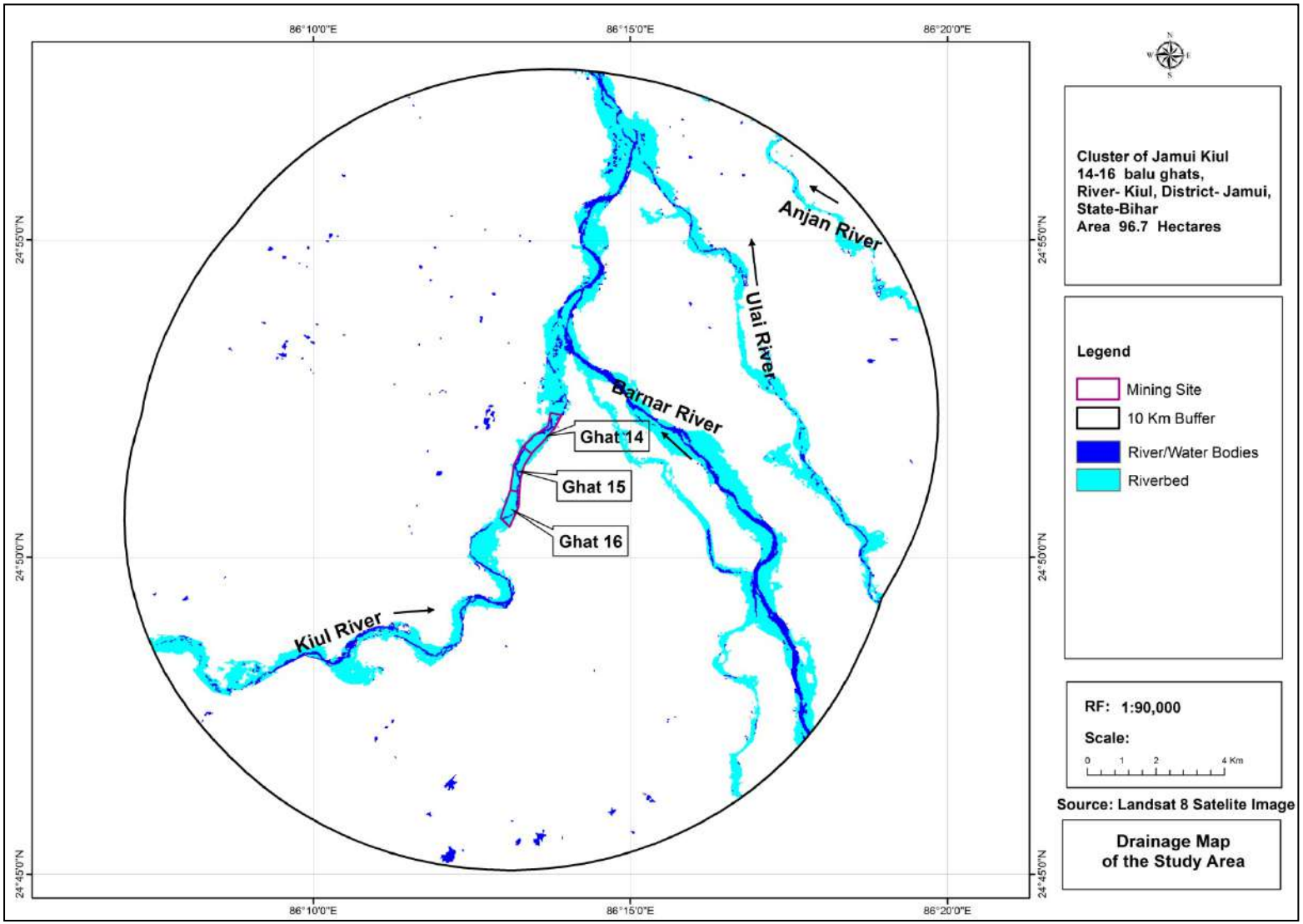


Figure 2.4: Drainage map of Study area

2.6 Climate and Rainfall

The climate of the district may be described as a mean condition of the climate of rest of Bihar and Bengal. The rainfall begins earlier and is decidedly heavier than in other parts of Bihar. Jamui is southern district of Bihar which distinctly feels the dry and hot seasons. Moisture laden breezes from West Bengal cause heavy rainfall. The year can be divided into three seasons on the rotational basis:

a) The Winter season;

b) The Summer season; and

c) The Season of Monsoon rains.

The cold weather commences by the end of October and continues till the beginning of April. It, thus, commences earlier and lasts longer than that of the most parts of Bihar. It is also colder than other southern districts of Bihar. Hoar-frost is being often found in the morning. The maximum and minimum temperatures begin to decline from October onward till January. The prevailing winds blow from west to east and are influenced by pressure distribution and trend of Himalayas.

The average annual rainfall in the district recorded during 2015 was 1358 mm. Maximum rainfall occurs during the month of June to September when the district receives almost 80 percent of its average total rainfall. The district receives minimum rainfall during the month of December. Weather conditions become hot and humid during the rainy season. The average number of rainy days in district varies between 51 and 53 during the last year. The season of rain commences from mid of June with the outburst of south-west monsoon. The advent of monsoon brings a complete change in weather with appreciable falls in temperature. The heavy rainfall during the monsoon months is due to the change of direction impressed upon the monsoon current by Himalayan range. Rainfall is more irregular in September than in other monsoon months.

Source:- http://pmksy.gov.in/mis/Uploads/2017/20170216105850890-1.pdf

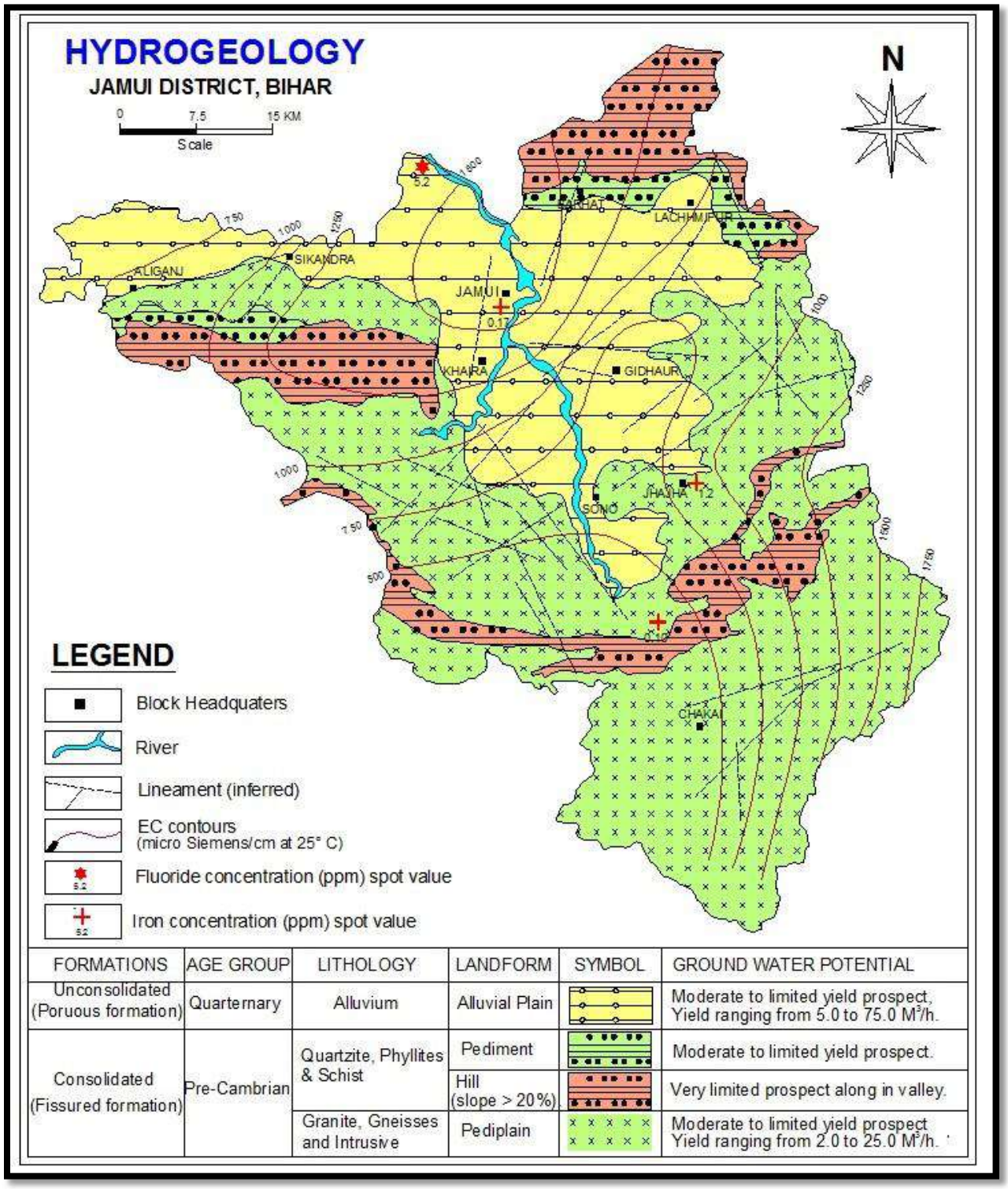
2.7 HYDROGEOLOGY

Hydro geologically, the district can be divided into two parts (a) hard rock/ fissured formation (b) unconsolidated / porous formation.

(a) The hard rock / fissured formation: It comprises granite gneisses, quartzite and phyllites, while granite gneisses belong to Chotanagpur Gneissic Complex, quartzite and phyllites belong

to Kharagpur Formation. The secondary porosities developed by means of weathering and / or fracturing. These are main repository of ground water in hard rock. In general these rocks form poor aquifers. The exploratory drilling data of this area reveal three to four sets of fractures/ joints occurs at different depths up to 200m bgl. Identification of groundwater potential area has been done based on study of lineaments picked up from satellite imageries. The zones of lineaments are potential areas for ground water exploration and recharge. Weathered residium, saprolite zone and Ground Water Information Booklet I Jamuii 13 fractures within 15-35m bgl depths constitute shallow aquifer in the hard rocks. In Jamui district 41 bore wells have been drilled in hard rock area to a maximum depth of 200m bgl at MahadeoSimaria village of Sikandra block.

(b) Porous formation: The Quaternary alluvium constitutes this hydrogeological unit. The alluvial tract is confined to the Jamui terrace with sediment thickness ranging from 10 to 70 m. The variation in thickness of the alluvium is due to uneven bed-rock topography. Alluvium comprises clay, silt and sand. The occurrence of colluvial sediments is very common especially along foothills. Aquifers in this formation are in unconfined to semi-confined conditions. CGWB has drilled 16 tube wells in this formation. Maximum thickness of 70 m has been encountered in Arha village, Aliganj block. Drilling depth of tube wells ranges from 40 to 70 m bgl. and the discharge varies from 5 to 20 lps.



FORMATIONS	AGE GROUP	LITHOLOGY	LANDFORM	SYMBOL	GROUND WATER POTENTIAL
Unconsolidated (Poruous formation)	Quarternary	Alluvium	Alluvial Plain		Moderate to limited yield prospect, Yield ranging from 5.0 to 75.0 M^3/h.
Consolidated (Fissured formation)	Pre-Cambrian	Quartzite, Phyllites & Schist	Pediment		Moderate to limited yield prospect.
			Hill (slope > 20%)		Very limited prospect along in valley.
		Granite, Gneisses and Intrusive	Pediplain		Moderate to limited yield prospect Yield ranging from 2.0 to 25.0 M^3/h.

Figure 2.5: Hydrogeology map of Jamui district

Source:- http://cgwb.gov.in/District_Profile/Bihar/Jamui.pdf

2.8 SEISMICITY OF THE AREA

The state of Bihar lies in a region with moderate to low to high seismic hazard. As per the 2002 Bureau of Indian Standards (BIS) map, this state also falls in Zones III, IV and V. Historically, this region has experienced earthquake in the M5.0-7.0 range. The mine lease area is located in seismic **Zone IV**. This region is classified as the **High Risk Zone.**

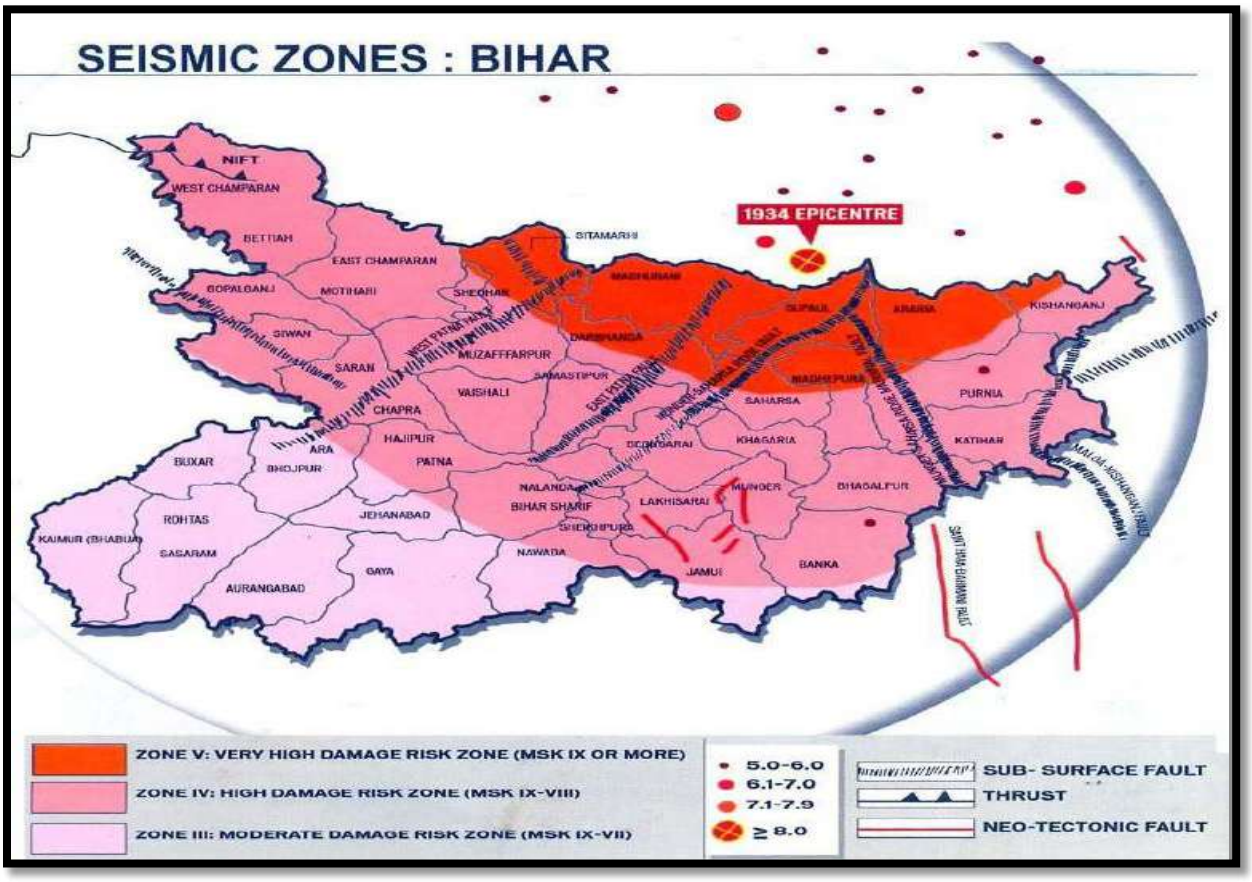


Figure 2.6: Earthquake Hazard Map of Bihar

2.9 RESERVE ESTIMATION:

For estimating the reserve of sand the following parameters are considered:

1. The Mineral reserves have been estimated as per the Indian Standard Procedures. Geological reserves have been completed through cross sectional area method. The area of each section line is multiplied by strike influence to get the volume.
2. The entire reserves of Sand up to the depth of 3.0 m are calculated for river bed area.
3. The bulk density of Sand is considered 1.8.

4. Mineral Reserves falling in the river bed area has been calculated taking the maximum permissible depth of 3 m from the river bed surface RL.
5. It is considered that river bed Sand shall be replenished every year.

Reserve estimated details of each ghat in the cluster of each ghats are as:-

Table 2.2: Ghat wise reserve details of cluster

S. No	Ghat Name	Geological Reserves	Minable reserves
1	Jamui Kiul 14 balu ghats	1836036 Tonnes or 1020020 cum	1493755 tonnes or 829864 cum
2	Jamui Kiul 15 balu ghats	1728000 Tonnes or 960000 cum	1526348 tonnes or 847971 cum
3	Jamui Kiul 16 balu ghats	1658016 Tonnes or 921120 cum	1596677 tonnes or 887043 cum
Total		**5222052 Tonnes or 2901140 Cum**	**4616780 tonnes or 2564878 cum**

Source:-Approved Mine Plan

2.10 Targeted Production

The targeted production of this cluster is 1878552 tonnes per year (1043640 cum per year) up to the lease period and their geological mineral reserves is 5222052 Tonnes or 2901140 cum.

2.11 Life of Mine

For Balance reserves in River bed it is presumed that the mineral will be replenished every year during the rainy season. New mineral will be added every year in the river bed. Mine areas have been leased for 5 years. Mining will be done 270 days in a year.

2.12 MINING PROCESS

Lease has been allotted for 5 years on the river bed of Kiul. Mining process will be as:-

- Mining will be done up to a maximum depth of 3 m in layers of 1 m each which will avoid ponding effect.
- Mining will be done 270 days in a year.
- Mining will be done as per MOEFCC guidelines amended till date and as per the Bihar Minor Mineral concession rules amended till date.
- It will be done by leaving a safety distances from the both the banks of the river and the river channel.

- Excavated area will be replenished naturally due to sediment inflow from the catchment area.

2.12.1 Method of Mining:

Mining activity will be carried out by open cast semi mechanized method.

- No overburden/ waste material will be produced in river bed. No drilling/ blasting are required as the material is loose in nature.
- Light weight excavators will be used for loading of mineral in tippers.
- Strips of 1 meter will be worked in phases and benches will be left for convenience of the mining operation.
- Mining activities will be carried out in a manner so that there is no obstruction to the movement of water flow, if any, during rainy season.
- Roads will be properly made and sprayed by water for suppression of dust.
- Extraction activities will start in the blocks from the upstream side to downstream side. This will not obstruct the movement of water, if any, during monsoon period in the river course.
- In case during any period, the replenishment was found less than 3 m or depth of excavation, the mining during said period would restrict to depth which would not be more than 3 m of the original level of the river bed.

2.12.2 Conceptual Plan of Mining

Mine area will be worked in blocks for ease of operation. However, as the digging depth will be restricted to 3.0 m only in river bed and material will still be available below. This will be further replenished during rainy season.

2.12.3 Machinery Requirement

This is a new mining project. Following equipment's are proposed to be deployed for the desired production. Details of equipment's proposed for ghat wise are as:-

Table 2.3: Ghat wise List of Machinery proposed for mining

S. NO	Ghat Name	No. of JCB & Excavator of capacity 1.0 & 2.0 m^3	No. of Truck	No of Tractors
1	Jamui Kiul 14 balu ghats	2&2	209	112

2	Jamui Kiul 15 balu ghats	2&2	209	119
3	Jamui Kiul 16 balu ghats	1&1	83	17
Total		**5&5**	**501**	**238**

Source:-Approved Mine Plan

2.13 TRANSPORTATION OF MINERALS

Mineral Sand will be transported by trucks. Loaded trucks will travel on Kuccha road made for plying of trucks. The temporary road will provide access to the river bed and the movement of loaded trucks. The village has its outlet meeting the tar road on the nearby villages and from where the mineral is sent to various destinations. Similarly, mineral will be transported on the other side through approach roads which finally merge with tar roads for final destinations.

2.14 STACKING OF MINERAL REJECTS AND DISPOSAL OF WASTE

The present sand mining locations do not have significant top soil/clay layer to be preserved elsewhere during the mining operations.

The sand deposits inherit gravels, pebbles with them being a part and parcel of river system. During the field visit and information gathered during discussions with concerned people, 5%of the geological reserves occurring in the sand ghats are provided for these inclusions and accordingly these have been considered during the minable sand reserves.

2.14.1 Disposal of Waste (Reject) materials Silt

The proposed project is the mining of sand from dry part of riverbed, all the excavated material will be saleable, therefore no mines reject will be generated. Some amount of silt may generate will be used in haul road development.

2.14.2 Land chosen for disposal of waste with proposed justification

There shall be no waste materials generated during the course of sand mining. Therefore, disposal of solid wastes resulting from the sand mine shall not be required.

2.15 USE OF MINERAL

Deposit is moderate to good quality Sand. It is widely used in construction, buildings, bridges and other infrastructure. It is free from clay and non sticky in nature.

Source: *Approved Mine Plan.*

2.16 UTILITIES AND PROPOSED SITE FACILITIES

2.16.1 Water Requirement

The total water requirement will be 14.48 can say 14.5 KLD. This water will be supplied by private tankers. Drinking water will be made available at site by the private tankers and water for plantation purposes and for dust suppression will be sourced from nearest ponds.

The details of Water uses are given below:

Table 2.4: Water Requirement in KLD

S. No	Ghat Name	For Domestic Use	For Plantation Use	For Dust Suppression	Total
1	Jamui Kiul 14 balu ghats	**0.60**	**0.85**	**10.5 KLD**	**14.48 can say 14.5 KLD**
2	Jamui Kiul15 balu ghats	**0.60**	**0.80**		
3	Jamui Kiul 16 balu ghats	**0.33**	**0.80**		
Total		**1.53KLD**	**2.45KLD**		

2.16.2 Power

The material will be excavated by open cast semi-mechanized method and loaded directly into tractors by the workers themselves. The operation will be done only from sun rise to sun set. So there is no power requirement for the mining activity.

2.16.3 Manpower

Total manpower required for entire cluster will be **151.** The mining project will also generate direct & indirect employment. Local persons will be preferred for employment.

Table 2.5: Number of workers proposed (Ghat wise)

S. No	Ghat Name	No of Workers
1	Jamui Kiul 14 balu ghats	59
2	Jamui Kiul 15 balu ghats	59
3	Jamui Kiul 16 balu ghats	33
Total		**151**

2.16.4 Infrastructure and Site Facilities

Infrastructure facilities like site office, first aid station, rest shelter, potable drinking water facility etc will be established within the mine area. The following infrastructure facilities will be made available for the workers:

a. First Aid Facility

A first aid facility will be made available at site with proper equipment will be maintained as per Mines Act and Mine Rules at the mine site office. First aid -box with all necessary facilities will be maintained and provided.

b. Temporary rest shelter

The Temporary rest shelter for the workers working in the mine and also to provide tea etc as the laborers will come from nearby villages at day time only.

c. Washroom

Washroom facility will be provided to the laborers nearby the site.

d. Water Supply

The water supply for drinking purpose proposed will be made available by hired tanker.

2.17 PROJECT COST

The project cost of the cluster will be approx. **Rs. 1280.62 Lakh s**and may vary from place to place and with magnitude of the sand mining. This will include cost of auction cost, labour, equipment Cost & site facilities cost with miscellaneous charges.

Table 2.6: Breakup of Proposed Project Cost of each ghats in a cluster

S. No	Ghat Name	Auction cost	Labour, Equipment Cost & site facilites	Miscellaneous	Total
1	Jamui Kiul 14Balu ghats	5,41,00,000/-	34, 00,000	1,00,000	5,76,00,000/-
2	Jamui Kiul 15Balu ghats	3,49,80,000/-	32,00,000	1,00,000	3,82,80,000/-
3	Jamui Kiul 16Balu ghats	2,89,82,000/-	31,00,000	1,00,000	3,21,82,000/-
Total					12,80,62,000 /-

CHAPTER 3

DESCRIPTION OF ENVIRONMENT

3.0 GENERAL

EIA process requires the primary baseline data collection to know the information on the biophysical, social and economic backgrounds of Mine Lease Area. The criteria of the baseline data collection was based on the impact zone on both the sides of the river bank. The monitoring stations were considered based on their sensitivity by considering the close proximity with the sensitive areas zones like reserve forests and expected high pollutant concentration zones like Naka etc. The baseline data have been collected as per CPCB guidelines in the month of March, - Mid June 2020 by NABL approved laboratory **M/s Global Environmental Consultancy and Research Centre (Recognized by NABL)**

Study area

Exploitation of mineral resources from the land through mining may causes environmental and ecological instability, severe land degradation besides biological physical and socio-economic imbalance. The impact of the mining activities can be quantified through Environmental Impact Assessment. Studies will be within the impact zone. The findings of EIA studies help in preparation of the environmental management plan for mitigating the adverse impacts. For the purpose of studying the baseline status of the environment, core zone and buffer zone are considered for Impact Assessment. The buffer zone comprises a 10 km from around the core area. This section contains a description of the existing baseline environmental status of the area surrounding project site, the data collected has been used to define the environmental scenario of the area, against which the potential impacts of the project has been assessed.

In order to assess the impacts of project activities on existing physical, biological and social environment, it is necessary to study the present scenario of the area by collecting the information on following parameters:

1. Land Environment
2. Meteorology
3. Air Environment
4. Noise Environment
5. Water Environment
6. Soil Environment
7. Biological Environment

8. Socio-economic Environment

3.1 LAND ENVIRONMENT

Landcover data highlights the area covered by forests, wetlands, impervious surfaces, agriculture, and other land and water types. Water types include wetlands or open water. Landuse shows how people use the landscape for development, conservation or for other purposes. Therefore its highlights the current scenario as well as predict the impact.

1. **Objectives :** Main objectives are:

   - To prepare the landuse landcover map of study area based on recent satellite imageries.
   - To assess the impact of proposed project on existing landuse and landcover
   - To suggest mitigations measures

2. **Hardware:** The equipment used during the present investigation includes ground truth hand held GARMIN 12 GPS receiver for ground truth collection, besides the visual observation and analysis.
3. **Software:** The following software were applied to extract indicators and maps:
   - **ERDAS Imagine:** The Erdas imagine version 2016 is used to process Landsat-8 satellite data and to extract the required indicators through spatial & spectral analysis.
   - **ArcGIS:** The ArcGIS version 10.3 has been used to prepare the final Maps for indicators through the outcomes of ERDAS software.

4. **Methodology:** The methodology applied for the study involved obtaining satellite images from open source, and then using a range of software to process the images and also by GPS coordinates (ground trothing) for drawing observations. The detailed methodology is explained as below:

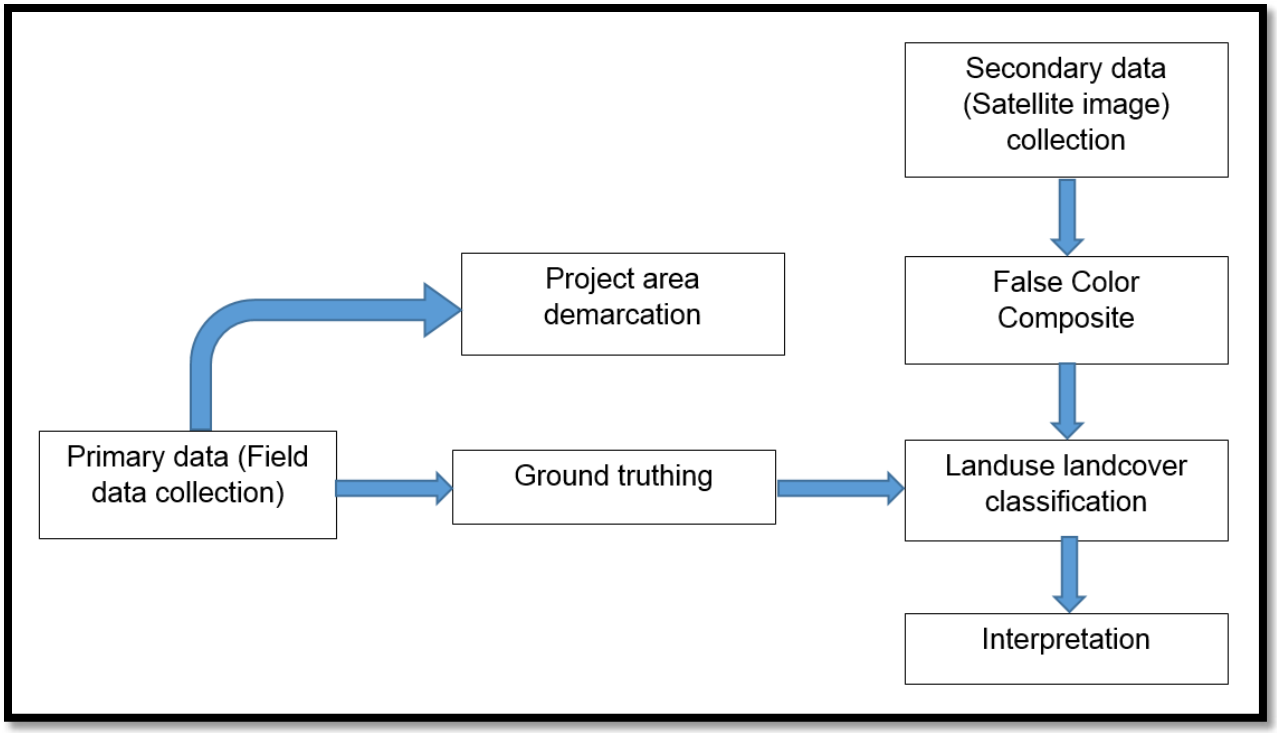


Figure 3.1 Flow Chart: Methodology

- **Primary Data:** The coordinates along land features of project area is collected with the help of GPS device for ground truthing. This data is primary data. On the basis of this data, landuse landcover analysis is appropriate.

- **Secondary Data:** Satellite image (secondary data) is required to show the current land features of the project area and buffered area (10 km). **Landsat 8** Satellite image is used, which is collected from open source.

The path, row, date, resolution of satellite data used were as follows.

Path	140
Row	43
Date of pass	16 February 2020
Resolution (panchromatic)	15 Meter

Landsat 8 Operational Land Imager (OLI) and Thermal Infrared Sensor (TIRS) images consist of nine spectral bands with a spatial resolution of 30 meters for Bands 1 to 7 and 9. The ultra-blue Band 1 is useful for coastal and aerosol studies. Band 9 is useful for cirrus cloud detection.

- **False Color Composite (FCC):** False color (or false colour) refers to a group of color rendering methods used to display images in color which were recorded in

the visible or non-visible parts of the electromagnetic spectrum. A false-color image is an image that depicts an object in colors that differ from those a photograph (a true-color image) would show. False-color image sacrifices natural color rendition in order to ease the detection of features. The FCC for 10 km buffer zone of the project area is shown in Figure 3.2.

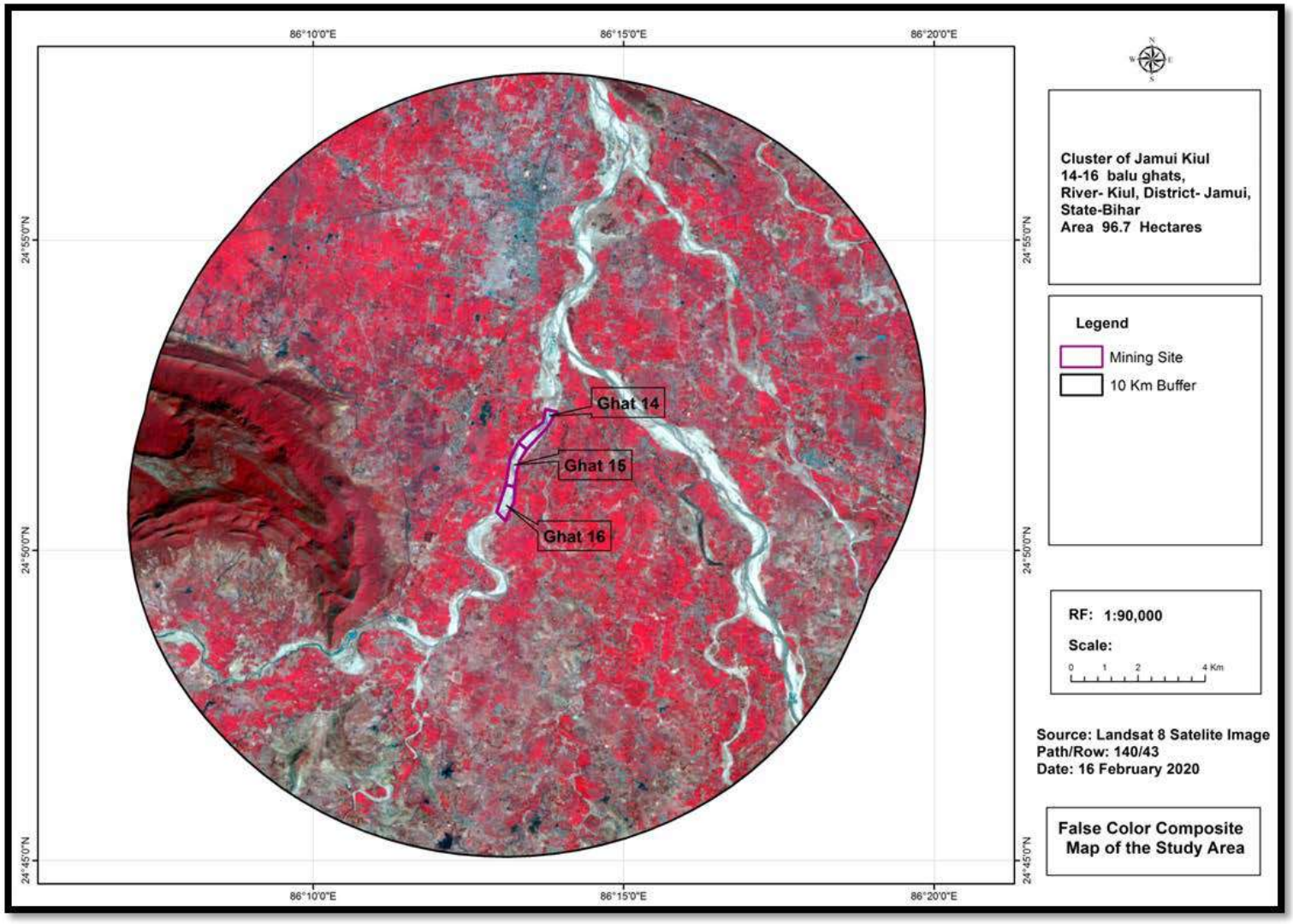


Figure 3.2: Shows the False color Composite Map of the study area

- **Landuse landcover classification & Interpretation:** The classification approach is applied on the basis of various characteristics like colour, texture, shape, association etc. The Landuse landcover map for 10 km buffer zone of the project area is shown in figure 3.

  The unsupervised classification approach was obtained for the Landuse and Landcover classification by using ERDAS Imagine software. In this approach, the pixels of the project area are clustered in several classes on the basis of spatial & spectral variation in pixel value which are following:

  I. **Built-up land:** 8.59 per cent of the total project area is covered by built-up land. The entire built-up land comes under rural areas. This area is identified by grey color and square/rectangular shape in the satellite image. Built-up land can be described as an area of intensive use with much of the land covered by structures. Areas included in this category are cities, towns, villages, strip developments along with highways, transportation, power, and communications facilities, and other areas such as those occupied by mills, shopping centers, industrial and commercial complexes, and institutions that may, in some instances, be isolated from built-up areas.

  II. **Agricultural land:** 38.68 per cent of the total project area is covered under agricultural land. Agricultural land may be defined as the land that is used primarily for the production of food and fiber. In the satellite imageries, cropland is identified by light pinkish to dark pinkish color or red, fine texture and rectangular/square shape.

  III. **Agricultural fallow land**: It is the type of cropland which is not seeded for a season so as to allow the fields become fertile again. The practice of allowing fields to remain fallow dates back to ancient times when farmers realized that using soil over and over again depletes its of its nutrients. Agricultural fallow land covers 29.23 per cent of the total project area.

  IV. **Open Land:** Open land is any degraded land or a land which is currently underutilized but can be brought under vegetative cover with reasonable efforts. This

type of land covers 5.69 per cent of the total project area. This area is identified by off-white color and rough texture in the satellite image.

V. **Forest:** A **forest** is a large area dominated by trees. This feature is identified by dark red color in the satellite image and cover only 9.28 percent of the total project area.

VI. **River/Water Bodies:** All natural and man-made ponds, reservoirs, river come under this class. A river is a natural flowing watercourse, usually freshwater, flowing towards an ocean, sea, lake or another river. In some cases a river flows into the ground and becomes dry at the end of its course without reaching another body of water. This feature is identified by dark blue to black color, fine texture in the satellite image and cover only 1.59 percent of the total project area.

VII. **Riverbed:** A riverbed or streambed is the channel bottom of a stream or river, the physical confine of the normal water flow. The riverbed of the project area is consist of sand and cover only 6.56 percent of the total project area. This area is identified by white color and fine texture in the satellite image.

VIII. **Scrub Land:** This type of land covers 0.39 per cent of the total project area.

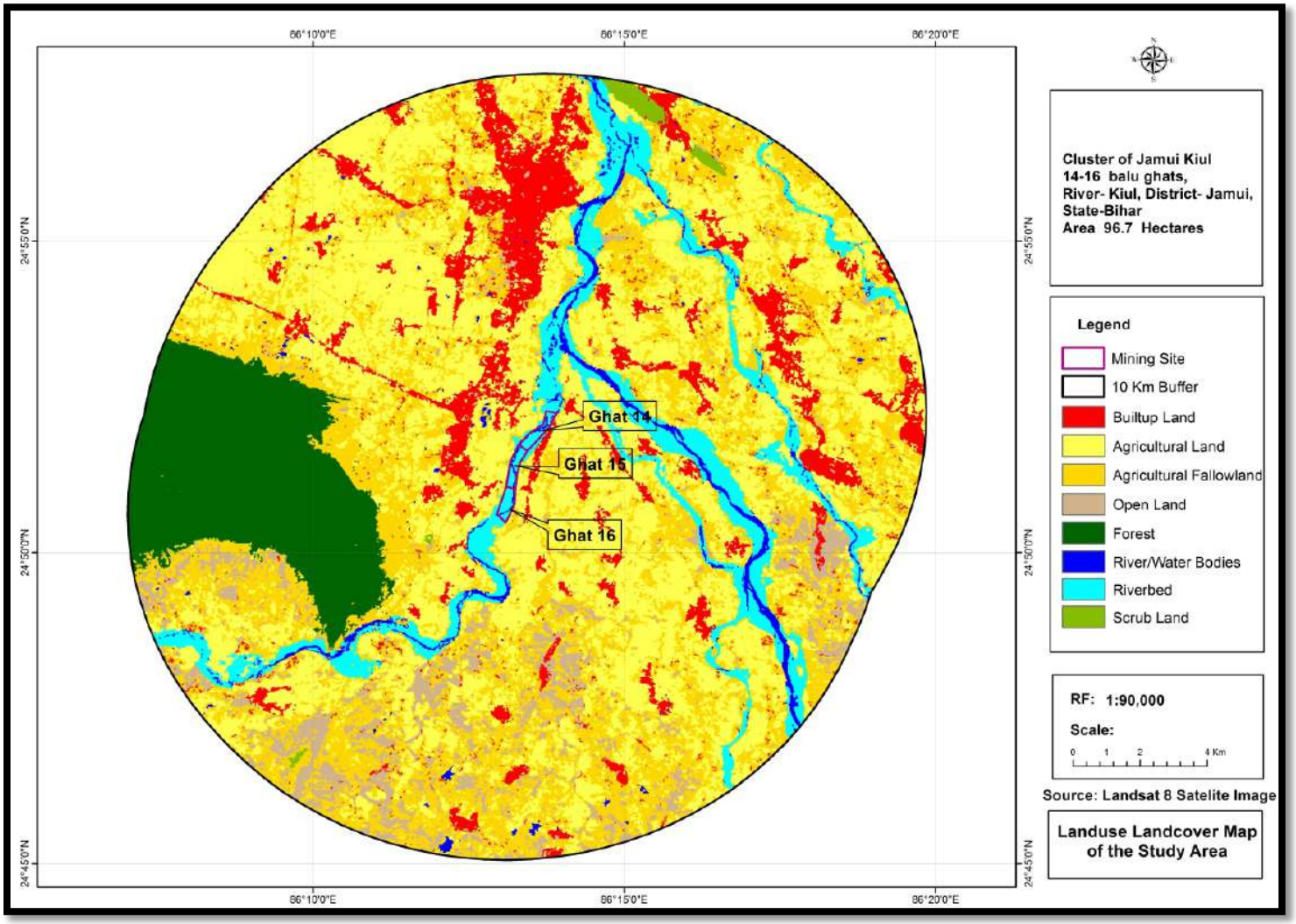


Figure 3.3: shows Landuse landcover classification

On the basis of the landuse landcover classification, the areas of different land features are as follows:

Table 3.1- Land use classification

Class Name	Area(Ha)	Area(%)
Builtup Land	3362.69	8.59
Agricultural Land	15146.50	38.68
Agricultural Fallowland	11446.40	29.23
Open Land	2227.34	5.69
Forest	3633.97	9.28
River/Water Bodies	623.14	1.59
Riverbed	2567.11	6.56
Scrub Land	154.28	0.39
Total	39161.43	100.00

3.2 MATEREOLOGY

Meteorology plays a vital role in affecting the dispersion of pollutants, once discharged into the atmosphere cannot be controlled. Since meteorological factors show wide fluctuations with time, meaningful interpretation can be drawn only from long-term reliable data. Such source of data is the India Meteorological Department (IMD), which maintains a network of meteorological stations at several important locations. The nearest IMD station to the study area is located at Patna. The Meteorological parameters obtained from this station are temperature, humidity, rainfall, wind speed, and wind direction etc. A micro meteorological station was installed at site to record micrometeorological parameters on hourly basis during study period to understand the wind pattern, temperature variation, relative humidity variation etc.

3.2.1 Meteorological Status at the Project Site

Meteorological station was set-up at site to record surface meteorological parameter during study period; 1st March – Mid June 2010. Wind speed and wind direction data recorded during the study period has enabled identifying the influence of meteorology on the air quality of the area. Based on the collected meteorological data, relative percentage frequencies of different wind directions were calculated and plotted as wind roses for twenty four hour duration. Maximum and minimum temperatures including percentage relative humidity were also recorded simultaneously. The findings of the study area are given in **Table 3.2:-**

Table 3.2 Meteorological Condition of the Study Area

Month	Temperature °C		Relative Humidity %		Wind Speed (Km/Hr)	
	Min	Max	Min	Max	Min	Max
March 2020	19	33	15	85	3	23
April 2020	24	41	11	66	1	25
May 2020	21	46	21	68	3	32
June 2020	28	42	10	90	3	23

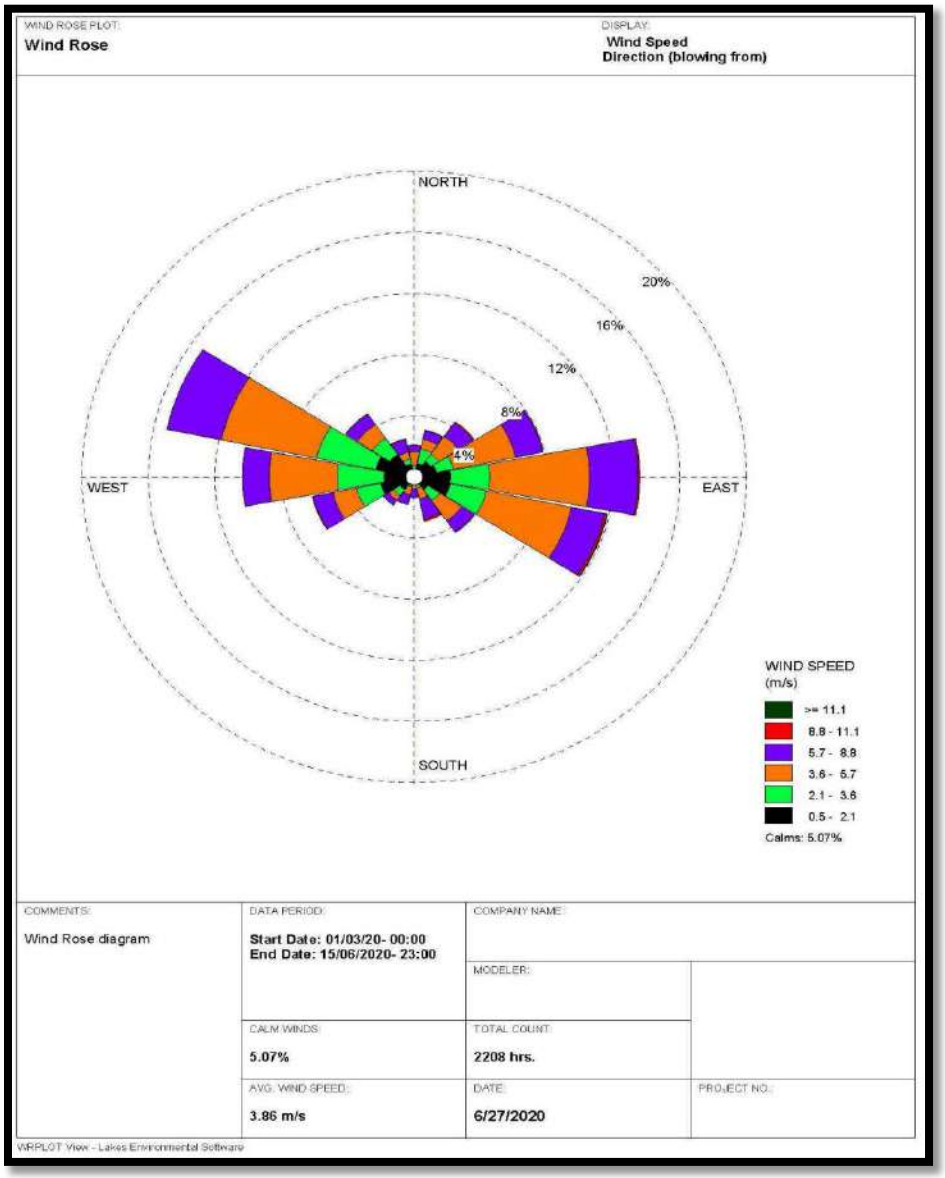


Figure 3.4: Wind Rose Diagram at Site

3.3 AIR ENVIRONMENT

Ambient air quality monitoring is done to determine the general background concentration levels. Samples were collected in the 10 km study area from the cluster to observe pollution trends throughout the region. It helps in providing a data base for evaluation of effects of a project activity in that region. It will be also useful in ascertaining the quality of air environment in conformity to standards of the ambient air quality during operation phase of project.

3.3.1 Selection of Sampling Station

The baseline status of the ambient air quality has been assessed through scientifically designed Ambient Air Quality Network. The design of monitoring network in the air quality surveillance program has been based on the following considerations:

a) Representation of Mine leases area.

b) Representation of the down wind direction and cross-sectional distribution.

c) Representation of residential areas.

d) Representation of regional background levels.

e) Representation of sensitive receptor.

f) Meteorological conditions (predominant wind direction and wind speed.)

g) Topography of the study area.

Keeping in view above mentioned points, 13 nos. of Ambient Air Quality Monitoring Stations were established with in the study area. The AAQ sampling location s and their distances are shown in Table 3.3 and in Figure 3.5.

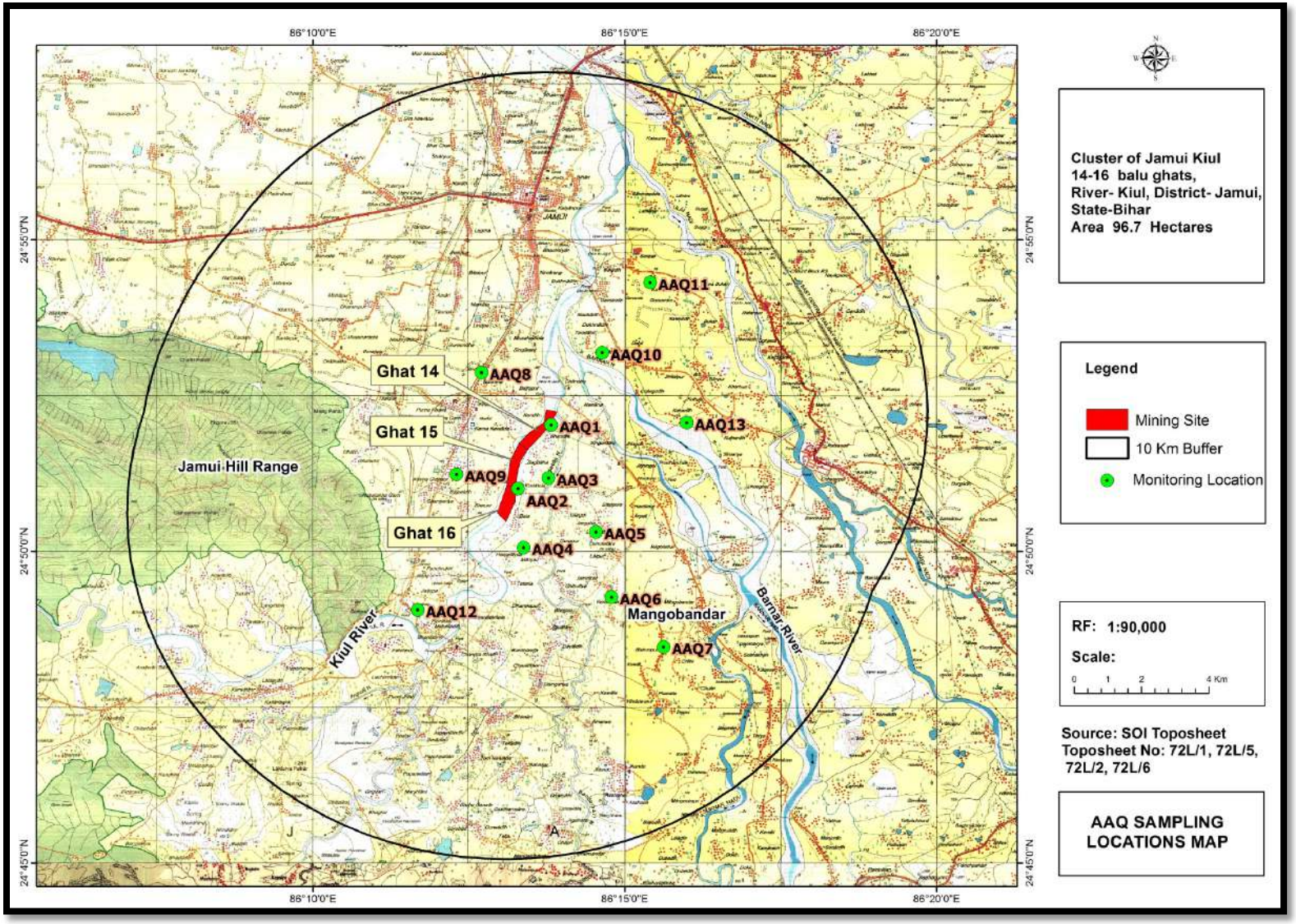


Table 3.5 AAQ Monitoring Sampling Stations

3.3.2 Baseline Data

Ambient air monitoring at 13 locations were carried out on during 1st March to 11th June 2020 (Pre Mansoon) (As per permission received from SEIAA-Bihar) in the study area to assess the ambient air quality at the source. Major air pollutants *viz.*, Particulate Matter (PM10), Sulphur Dioxide (SO2), Nitrogen Dioxide (NO2), representing the basic air quality in the region were identified for Ambient Air Quality Monitoring (AAQM). The ambient air quality results are given in **Table 3.4- Table 3.7** for each location.

Table-3.3: Ambient Air monitoring locations

AAQ MONITORING LOCATIONS			
S.No.	**Location**	**Code**	**Distance & Direction**
1.	Project Site (Near Jamui Ghat 14)	AAQ1	--
2.	Project Site (Near Jamui Ghat 15 & 16)	AAQ2	--
3.	SAGDAHA (From Jamui Ghat 14 & 15)	AAQ3	0.9 KM IN SE- Downwind
4.	BELA (From Jamui Ghat 16)	AAQ4	1.0 KM IN SE -Downwind
5.	KHANDAICH (From Jamui Ghat 14 & 15)	AAQ5	3.2 KM IN SE - Downwind
6.	KEKARDO (From Jamui Ghat 16)	AAQ6	3.8 KM IN SE - Downwind
7.	GANGTI (From CLUSTER)	AAQ7	5.5 KM IN SE- Downwind
8.	NAUDIHA (From Jamui Ghat 14 & 15)	AAQ8	2.2 KM in NW- UPWIND
9.	REHPURA (From Jamui Ghat 16)	AAQ9	1.2 KM in West - DOWNWIND
10.	Dabil (From Cluster-3)	AAQ10	2.5 KM in NE- Crosswind
11.	SONPAI (From Cluster-3)	AAQ11	5.0 KM in NE- Crosswind
12.	BARIBAG JALJOGA (From Cluster-3)	AAQ12	2.2 KM in SW- Crosswind
13.	Kolhua (From cluster-3)	AAQ13	3.7 KM in East direction

Table-3.4 Ambient Air Quality in the Study Area $PM_{2.5}$

PM2.5 (µg/m^3)							
S. No	**Location Code**	**Name of the station**	**Min**	**Max**	**Average**	**98th Percentile**	**NAAQS (For 24 hrly monitoring)**
1	AAQ1	Project Site (Near Jamui Ghat 14)	**24.3**	**44.2**	**34.0**	**43.8**	**60**
2	AAQ2	Project Site (Near Jamui Ghat 15 & 16)	**26.2**	**39.9**	**32.6**	**39.7**	**60**
3	AAQ3	SAGDAHA (From Jamui Ghat 14 & 15)	**27.0**	**48.6**	**32.6**	**43.8**	**60**
4	AAQ4	BELA (From Jamui Ghat 16)	**27.8**	**41.4**	**34.6**	**40.8**	**60**
5	AAQ5	KHANDAICH (From Jamui Ghat 14 & 15)	**27.5**	**46.5**	**35.9**	**44.3**	**60**
6	AAQ6	KEKARDO (From Jamui Ghat 16)	**27.2**	**49.7**	**35.2**	**46.7**	**60**
7	AAQ7	GANGTI (From CLUSTER)	**28.6**	**48.6**	**37.5**	**48.4**	**60**
8	AAQ8	NAUDIHA (From Jamui Ghat 14 & 15)	**27.2**	**52.8**	**35.3**	**48.5**	**60**
9	AAQ9	REHPURA (From Jamui Ghat 16)	**16.2**	**48.0**	**34.0**	**46.1**	**60**
10	AAQ10	Dabil (From Cluster-3)	**42.5**	**32.9**	**42.1**	**60**	**42.5**
11	AAQ11	SONPAI (From Cluster-3)	**24.9**	**55.4**	**36.2**	**54.3**	**60**
12	AAQ12	BARIBAG JALJOGA (From Cluster-3)	**28.7**	**52.3**	**35.4**	**47.2**	**60**
13	AAQ13	Kolhua (From cluster-3)	**24.9**	**52.2**	**39.2**	**50.5**	**60**

Table-3.5 Ambient Air Quality in the Study Area PM_{10}

PM 10 (µg/m^3)							
S. No	**Location Code**	**Name of the station**	**Min**	**Max**	**Average**	**98th Percentile**	**NAAQS (For 24 hrly monitoring**
1	AAQ1	Project Site (Near Jamui Ghat 14)	**64.0**	**90.2**	**73.7**	**89.4**	**100**
2	AAQ2	Project Site (Near Jamui Ghat 15 & 16)	**62.7**	**91.1**	**73.1**	**89.8**	**100**
3	AAQ3	SAGDAHA (From Jamui Ghat 14 & 15)	**61.2**	**93.3**	**75.7**	**89.5**	**100**
4	AAQ4	BELA (From Jamui Ghat 16)	**58.1**	**89.4**	**75.5**	**88.6**	**100**
5	AAQ5	KHANDAICH (From Jamui Ghat 14 & 15)	**61.8**	**91.2**	**74.2**	**87.2**	**100**
6	AAQ6	KEKARDO (From Jamui Ghat 16)	**58.6**	**88.3**	**76.7**	**87.8**	**100**
7	AAQ7	GANGTI (From CLUSTER)	**57.1**	**88.5**	**72.0**	**84.9**	**100**
8	AAQ8	NAUDIHA (From Jamui Ghat 14 & 15)	**58.3**	**94.5**	**77.2**	**91.1**	**100**
9	AAQ9	REHPURA (From Jamui Ghat 16)	**61.6**	**90.0**	**74.4**	**86.3**	**100**
10	AAQ10	Dabil (From Cluster-3)	**56.6**	**87.7**	**69.5**	**86.6**	**100**
11	AAQ11	SONPAI (From Cluster-3)	**49.8**	**87.6**	**67.5**	**86.2**	**100**
12	AAQ12	BARIBAG JALJOGA (From Cluster-3)	**62.0**	**90.9**	**76.0**	**90.0**	**100**
13	AAQ13	Kolhua (From cluster-3)	**61.1**	**89.0**	**74.3**	**87.2**	**100**

Table-3.6 Ambient Air Quality in the Study Area SO_2

SO_2 ($\mu g/m^3$)							
S. No	**Location Code**	**Name of the station**	**Min**	**Max**	**Average**	**98th Percentile**	**NAAQS (For 24 hrly monitoring**
1	AAQ1	Project Site (Near Jamui Ghat 14)	**6.2**	**12.4**	**9.1**	**11.9**	**80**
2	AAQ2	Project Site (Near Jamui Ghat 15 & 16)	**5.7**	**12.6**	**9.1**	**12.1**	**80**
3	AAQ3	SAGDAHA (From Jamui Ghat 14 & 15)	**6.5**	**13.5**	**9.7**	**12.6**	**80**
4	AAQ4	BELA (From Jamui Ghat 16)	**5.1**	**11.9**	**8.5**	**11.4**	**80**
5	AAQ5	KHANDAICH (From Jamui Ghat 14 & 15)	**5.5**	**11.2**	**8.6**	**10.9**	**80**
6	AAQ6	KEKARDO (From Jamui Ghat 16)	**6.4**	**12.7**	**9.8**	**12.3**	**80**
7	AAQ7	GANGTI (From CLUSTER)	**5.6**	**12.2**	**9.2**	**12.1**	**80**
8	AAQ8	NAUDIHA (From Jamui Ghat 14 & 15)	**5.9**	**12.6**	**9.5**	**12.0**	**80**
9	AAQ9	REHPURA (From Jamui Ghat 16)	**5.7**	**11.9**	**9.1**	**11.5**	**80**
10	AAQ10	Dabil (From Cluster-3)	**5.6**	**12.0**	**9.0**	**11.9**	**80**
11	AAQ11	SONPAI (From Cluster-3)	**5.3**	**12.0**	**9.0**	**12.0**	**80**
12	AAQ12	BARIBAG JALJOGA (From Cluster-3)	**5.5**	**12.1**	**9.6**	**11.9**	**80**
13	AAQ13	Kolhua (From cluster-3)	**5.1**	**12.0**	**8.9**	**12.0**	**80**

Table-3.7 Ambient Air Quality in the Study Area NO_2

NO_2 ($\mu g/m^3$)							
S. No	**Location Code**	**Name of the station**	**Min**	**Max**	**Average**	**98th Percentile**	**NAAQS (For 24 hrly monitoring**
1	AAQ1	Project Site (Near Jamui Ghat 14)	**11.4**	**20.2**	**16.2**	**20.0**	**80**
2	AAQ2	Project Site (Near Jamui Ghat 15 & 16)	**12.2**	**20.3**	**16.6**	**20.2**	**80**
3	AAQ3	SAGDAHA (From Jamui Ghat 14 & 15)	**11.6**	**20.0**	**17.2**	**19.9**	**80**
4	AAQ4	BELA (From Jamui Ghat 16)	**13.1**	**20.9**	**17.2**	**20.5**	**80**
5	AAQ5	KHANDAICH (From Jamui Ghat 14 & 15)	**10.5**	**18.8**	**16.2**	**18.7**	**80**
6	AAQ6	KEKARDO (From Jamui Ghat 16)	**12.6**	**21.0**	**17.6**	**20.9**	**80**
7	AAQ7	GANGTI (From CLUSTER)	**12.1**	**21.4**	**16.8**	**21.4**	**80**
8	AAQ8	NAUDIHA (From Jamui Ghat 14 & 15)	**13.2**	**20.5**	**17.1**	**20.5**	**80**
9	AAQ9	REHPURA (From Jamui Ghat 16)	**11.4**	**18.0**	**15.9**	**18.0**	**80**
10	AAQ10	Dabil (From Cluster-3)	**11.1**	**20.3**	**15.4**	**19.6**	**80**
11	AAQ11	SONPAI (From Cluster-3)	**12.8**	**20.1**	**16.9**	**20.1**	**80**
12	AAQ12	BARIBAG JALJOGA (From Cluster-3)	**12.5**	**21.2**	**17.0**	**20.9**	**80**
13	AAQ13	Kolhua (From cluster-3)	**12.5**	**19.5**	**16.6**	**19.3**	**80**

Results

The ambient air quality study for the 20 AAQ monitoring stations shows that the maximum and minimum ground level concentration for PM_{10} is respectively 94.5 µg/m^{3}at AAQ8 and 49.8 µg/m^{3}at AAQ11. Whereas the maximum and minimum ground level concentration for $PM_{2.5}$ ranges between 52.8 µg/m^3 at AAQ8 and 16.2 µg/m^3 at AAQ9 respectively. Similarly for SO_2, the maximum and minimum ground level concentration varies between 12.7 µg/m^3 at AAQ6 and 5.1 µg/m^3 at AAQ13 & AAQ5 stations. For NO_2 the maximum and minimum ground level concentration varies between 21.2 µg/m^3 & 10.5 µg/m^{3}for respectively AAQ12 and AAQ5 stations.

3.4 NOISE ENVIRONMENT

Noise in general is sound, which is composed of many frequency components of various loudness distributed over the audible frequency range. Various noise scales have been introduced to describe, in a single number, the response of an average human being to a complex sound made up various frequencies at different loudness levels. This is more suitable for audible range of 20 to 20,000 Hertz. The scale has been designed to weigh various components of noise according to the response of a human ear. The main objective of the noise level monitoring is to assess the background noise levels in different zones *viz.*, industrial, commercial, residential and silence zones within the study area. In order to know the baseline noise levels, in and around the mine site, noise levels were measured at site and villages in the study area. Locations of noise monitoring stations are given in Table 3.8 and shown in Figure 3.6 and ambient noise levels monitoring results are given in Table 3.9.

Table-3.8: Noise Quality Monitoring Stations

NOISE MONITORING LOCATIONS			
S.No.	**Location**	**Code**	**Distance & Direction**
1.	Project Site (Near Jamui Ghat 14)	NQ1	--
2.	Project Site (Near Jamui Ghat 15 & 16)	NQ2	--
3.	SAGDAHA (From Jamui Ghat 14 & 15)	NQ3	0.9 KM IN SE
4.	BELA (From Jamui Ghat 16)	NQ4	1.0 KM IN SE
5.	KHANDAICH (From Jamui Ghat 14 & 15)	NQ5	3.2 KM IN SE
6.	KEKARDO (From Jamui Ghat 16)	NQ6	3.8 KM IN SE

7.	GANGTI (From CLUSTER)	NQ7	5.5 KM IN SE
8.	NAUDIHA (From Jamui Ghat 14 & 15)	NQ8	2.2 KM in NW
9.	REHPURA (From Jamui Ghat 16)	NQ9	1.2 KM in West
10.	Dabil (From Cluster-3)	NQ10	2.5 KM in NE
11.	SONPAI (From Cluster-3)	NQ11	5.0 KM in NE
12.	BARIBAG JALJOGA (From Cluster-3)	NQ12	2.2 KM in SW
13.	Kolhua (From cluster-3)	NQ13	3.7 KM in East direction

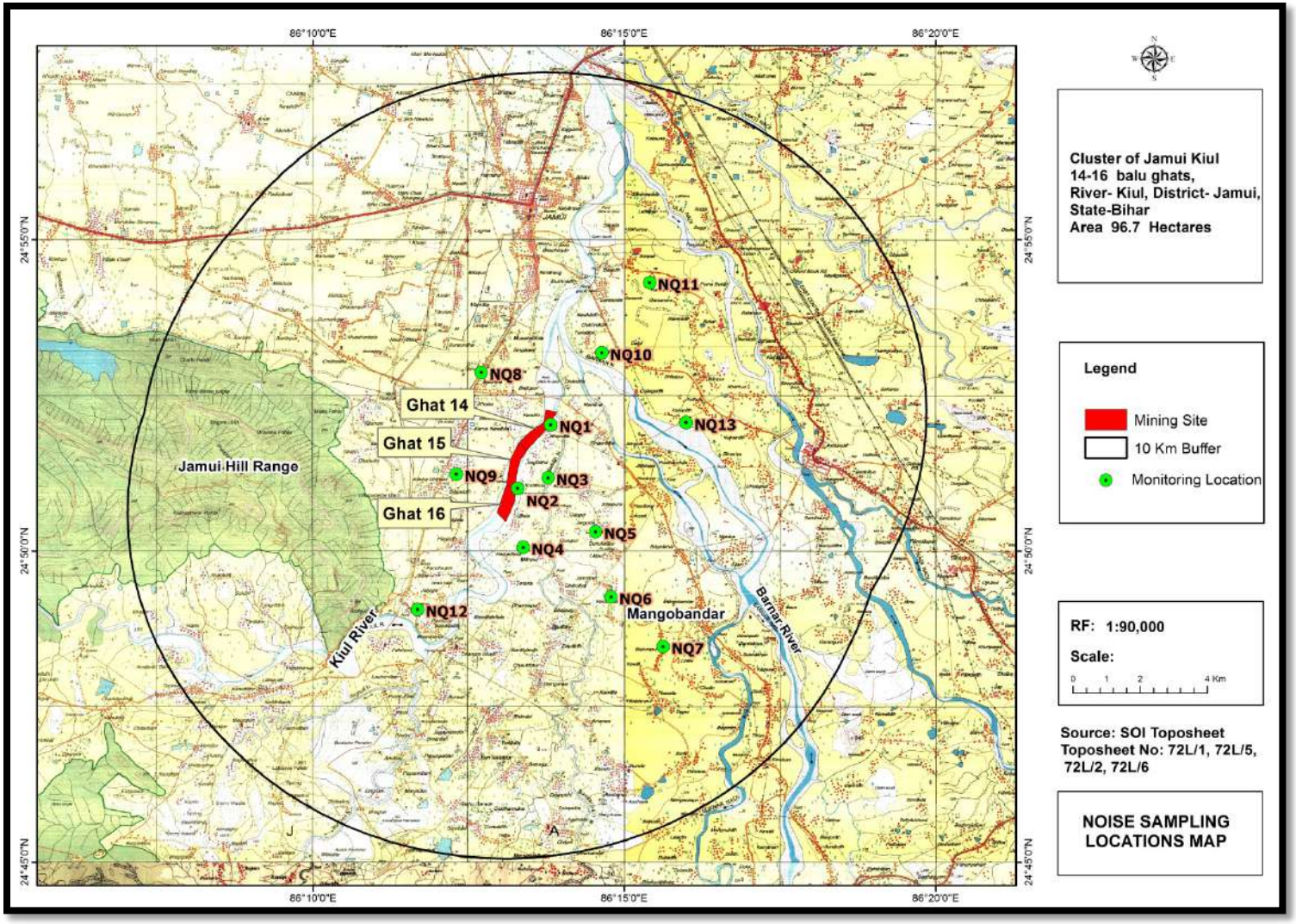


Figure 3.6:- NQ Monitoring Sampling Stations

Table-3.9: Noise Level Status

S. No	Location Code	Sampling Location	Lmax dB(A)	Lmin dB(A)	Day Time	Night Time
					Leq dB(A)	Leq dB(A)
1	NQ-1	Project Site (Near Jamui Ghat 14)	47.1	28.6	43.8	34.1
2	NQ-2	Project Site (Near Jamui Ghat 15 & 16)	46.3	25.0	41.3	28.4
3	NQ-3	SAGDAHA (From Jamui Ghat 14 & 15)	41.0	28.8	37.8	36.4
4	NQ-4	BELA (From Jamui Ghat 16)	54.6	29.9	43.1	36.7
5	NQ-5	KHANDAICH (From Jamui Ghat 14 & 15)	64.3	25.6	46.3	36.1
6	NQ-6	KEKARDO (From Jamui Ghat 16)	56.6	25.9	44.6	37.5
7	NQ-7	GANGTI (From CLUSTER)	60.4	25.1	45.2	34.2
8	NQ-8	NAUDIHA (From Jamui Ghat 14 & 15)	52.9	24.2	43.7	32.3
9	NQ-9	REHPURA (From Jamui Ghat 16)	63.3	28.3	47.7	36.2
10	NQ-10	Dabil (From Cluster-3)	59.8	26.1	46.2	38.9
11	NQ-11	SONPAI (From Cluster-3)	59.1	30.1	47.9	38.8
12	NQ-12	BARIBAG JALJOGA (From Cluster-3)	53.5	25.1	44.3	34.7
13	NQ-13	Kolhua (From cluster-3)	57.2	29.7	45.9	37.7

Results

Noise monitoring study reveals that the minimum & maximum noise levels at day time were recorded as 37.8 dB (A) at NQ3 & 47.7 dB (A) at NQ9. The minimum & maximum noise levels at night time were found to be 28.4 dB (A) at NQ2 & 38.9 dB (A) at NQ10.

There are no other major noise producing sources in the study area except some domestic activities, which contributes to the local noise level of the area. Traffic movements in nearby villages also add to the ambient noise level of the area.

3.5 WATER ENVIRONMENT

Water Environment of the area has been studied by locating Ground water sources. Water Quality sampling is done at various locations to assess the water quality of ground water. Surface water is not present in the river Kiul and also no any perennial source of surface water is present within study area at sampling time. Methodology adopted for sampling is also discussed below:

Sampling Methodology

Type of Sampling

Grab sampling has been done as single sample collected at a specific spot and at a site over a short period of time, grab samples are taken at a single selected location, depth and time.

Sampling method

Sample is collected manually from various type of sampling location by method describe below:-

Ground water: samples have been collected from the bore hole or well or hand pump.

Drinking Water: The samples have been collected from tap or pipeline directly as possible to the reservoir in the container. Water samples were collected from Ground water (6 in nos.)to study the water quality of the study area in May month of pre-monsoon season. The purpose of the study is to assess the water quality characteristics. The objective of analysis of water quality is given as follows close as possible to the reservoir in the container.

3.5.1 Ground Water Quality

Groundwater is the water located beneath the earth's surface in soil pore spaces and in the fractures of rock formations. Since groundwater moves through rocks and subsurface soil, it has a lot of opportunity to dissolve substances as it moves. Ground water quality comprises the physical, chemical and biological qualities of ground water. Temperature, colour, turbidity,

odour and taste make up the list of physical water quality parameters. Mostly, groundwater is colourless, odourless and without specific taste so quality of groundwater is mostly concerned with chemical and biological qualities. . All Ground water samples are analyzed as per IS-10500:2012. The Sampling locations of Ground water has been shown in Table . 3.10 amd shown in figure 3.7.. The results of the analyzed ground water samples are given in Table 3.11.

Table-3.10: Ground water monitoring locations

GROUNDWATER SAMPLING LOCATIONS			
S.No.	**Location**	**Code**	**Distance & Direction**
1	KHANDAICH	GW1	3.2 KM IN EAST
2	DABIL	GW2	2.2 KM IN NE
3	KHAIRA	GW3	1.9 KM IN WEST
4	BARIBAG JALJOGA	GW4	2.2 KM IN SW
5	GANGTI	GW5	5.5 KM IN SE
6	KHUTAUNA	GW6	4.7 KM IN NW

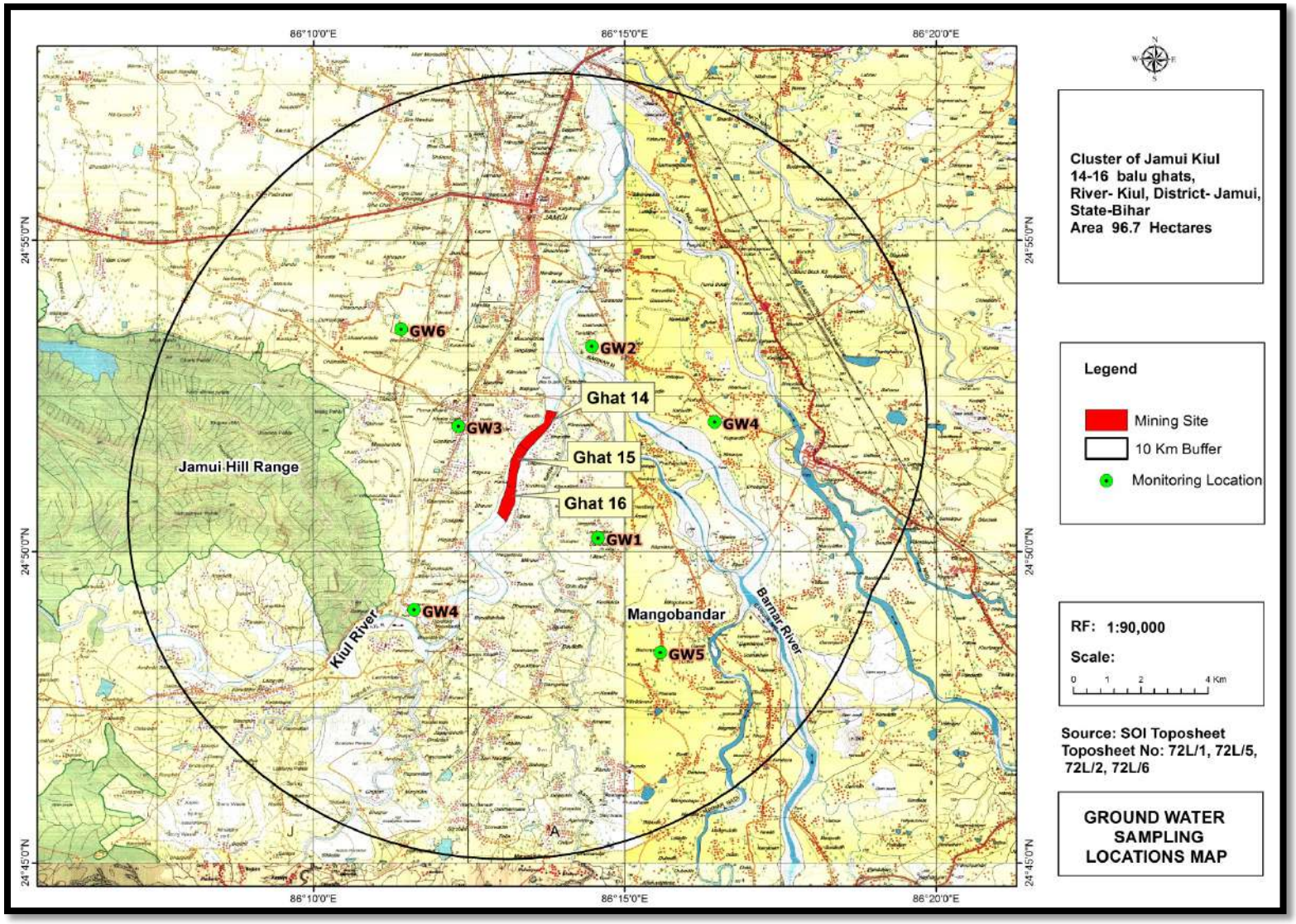


Figure 3.7:- Ground water quality results

Table-3.11: Ground water quality results

S. No	Parameters	GW1	GW2	GW3	GW4	GW5	GW6
1	PH	7.58	7.41	8.05	8.12	7.5	7.2
2	EC (µs/cm)	724	824	914	764	823.0	838.0
3	Turbidity (NTU)	0.5	0.6	0.5	0.3	0.5	0.6
4	TDS	300	320	420	480	500.0	540.0
5	Hardness	255.4	267.8	282.2	286.3	327.5	304.9
6	Calcium	45.6	48	49.6	51.2	61.6	54.4
7	Magnesium	34.4	35.9	38.4	38.5	42.2	41.0
8	Chloride	31.1	28.8	42.7	44.6	43.2	46.4
9	Total alkalinity	180	198	256.5	193.5	225.0	234.0
10	Iron	0.24	0.26	0.26	0.29	0.19	0.28
11	Nitrate	13.4	14.1	18.9	15.1	19.6	15.7
12	Sulphate	38.3	24.3	25.4	24.6	29.8	26.7
13	Fluoride	0.6	0.9	0.9	0.7	1.0	1.1
14	Total Chromium & Chromium hexavalent	0.02	0.03	0.04	0.01	0.05	0.04
15	Sodium	119.3	104.7	111.0	100.6	120.2	107.8

S. No	Parameters	GW1	GW2	GW3	GW4	GW5	GW6
16	Potassium	2.5	3.6	3.0	2.8	3.3	2.9
17	Colour	<1	<1	<2	<1	<1	<2
18	Odour	unobjectionable	unobjectionable	unobjectionable	unobjectionable	unobjectionable	unobjectionable
19	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
20	Carbonate & bicarbonate	165	170	155	185	205	220

Results:

Analysis results of Ground water reveal the following:-

- pH varies from to **7.2 to 8.12.**
- Total Hardness varies from **255.4 to 327.5mg/L.**
- Total Dissolved Solids varies from **300 to 540 mg/L.**
- **Fluoride** varies from **0.6 to 1.1 mg/L**
- **Chloride** varies from **28.8 to 46.4 mg/L**

3.6 SOIL ENVIRONMENT

Soil, defined as a thin layer of earth's crust, is the medium for the growth of plants, comprises of both physical and chemical properties significant to the project. The baseline study covers collection of soil samples and determining relevant physical and chemical properties. The district is transected with rivers like Kiul river consists of sandy loam, loamy sand and sand, where as, the area away from the river channels consist of silty sand to sandy silt. The soils in general are fine textured away from the river course and rivulets and coarse textured along their courses. The soils of coarse textured have got mixed with silt and fine sand due to the mixing of canal water being used perennially for irrigation.

3.6.1 Methodology

Soil sample collection was done making a pit about 15 inches deep and heaping the loose soil dug out. The loose soil is spread up in a circle and divided into 4 quadrants. The opposite quadrants are chosen and again the process is repeated till we get the required quantum of sample for analysis purpose. Collection of samples was done from 7 locations as shown in Table 3.12 & Figure 3.8. Samples were analyzed as per CPCB guidelines.

The physio-chemical characteristics of these soil samples are given in Table No. 3.13.

Table-3.12: Soil Quality monitoring locations

SOIL SAAMPLING LOCATIONS			
S.No.	**Location**	**Code**	**Distance & Direction**
1.	BELA (From Jamui Ghat 16)	SQ1	1.0 KM IN SE
2	KHANDAICH (From Jamui Ghat 14 & 15)	SQ2	3.2 KM IN SE
3.	NAUDIHA	SQ3	2.2 KM in NW

	(From Jamui Ghat 14 & 15)		
4.	REHPURA (From Jamui Ghat 16)	SQ4	1.2 KM in West
5.	Dabil (From Cluster-3)	SQ5	2.5 KM in NE
6	SONPAI (From Cluster-3)	SQ6	5.0 KM in NE
7	BARIBAG JALJOGA (From Cluster-3)	SQ7	2.2 KM in SW

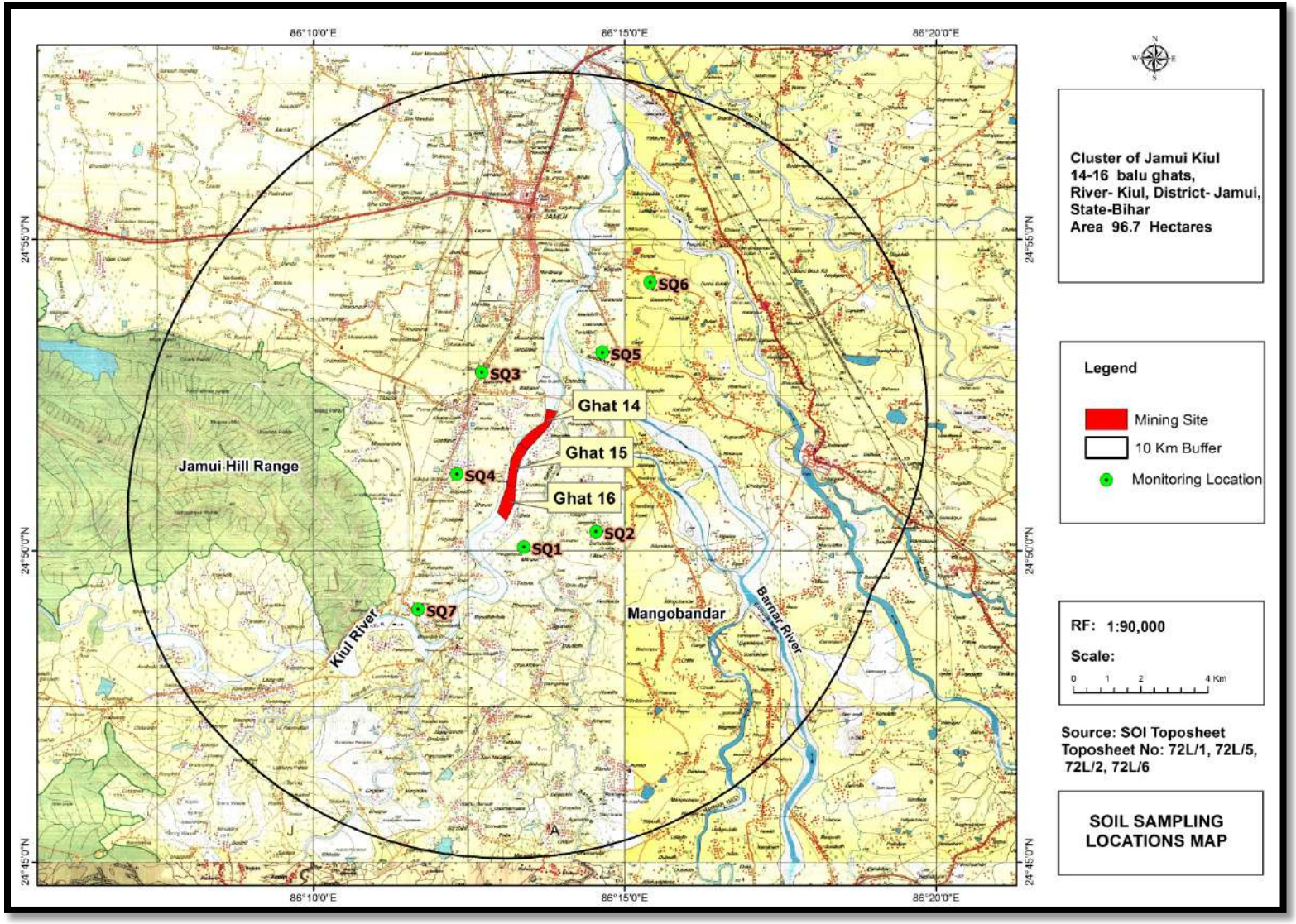


Figure 3.8:- Soil Quality Parameters

Table-3.13: Soil Quality Parameters

S. No.	Parameters	Unit	SQ1	SQ2	SQ3	SQ4	SQ5	SQ6	SQ7
1	**Organic Matter**	%	0.5	0.4	0.4	0.3	0.2	0.4	0.7
2	**Sodium**	mg/kg	86.8	78.0	70.2	103.0	73.4	82.4	84.2
3	**Potassium**	mg/kg	87.6	77.7	69.6	69.6	80.1	93.4	58.1
4	**Chloride**	Meq/l	54.4	91.4	90.5	97.7	89.6	98.6	88.3
5	**Bulk Density**	gm/cc	0.64	1.02	1.20	1.32	1.23	1.16	1.06
6	**Water Content**	%	27.2	21.0	16.5	21.6	25.9	25.9	41.4
7	**Phosphorous**	mg/kg	27.6	21.7	20.8	19.9	29.5	23.7	16.5
8	**Total Kjeldahl Nitrogen**	mg/kg	1.68	2.80	5.60	1.12	6.72	4.48	2.80
9	**Sodium Adsorption Ratio (SAR)**	–	1.02	0.81	0.61	1.54	0.97	1.13	1.18
10	**Water Holding Capacity**	%	38.3	43.5	42.8	44.7	28.3	21.8	28.3
11	**Calcium**	mg/l	1738.6	1817.9	1728.0	993.6	967.7	874.6	909.1
12	**pH**	–	6.1	6.8	7.0	7.0	6.1	6.0	6.9
13	**Conductivity**	µs/cm	248.0	211.0	182.0	271.0	270.0	155.0	156.0
14	**Calcium Plus Magnesium**	mg/l	1820.6	2324.7	3321.0	1112.4	1433.7	1330.2	1284.3

3.6.2 Results

Samples collected from identified locations indicate pH value ranging from 6.1to 7.0.. whereas the Potassium is found to be ranging from 58.1 mg/kg to 93.4 mg/kg.

3.7 BIOLOGICAL ENVIRONMENT

Introduction: The study area forms a part of north east alluvial subzone of middle Gangetic plains agro climatic zone in state of Bihar. The prevailing climate is moist sub humid to dry sub humid with alluvial tarai soil and an annual rainfall of 1417mm. Bihar is one of India's poorest states: 44% of the rural populations are below the poverty line. Bihar is characterized by diverse rural livelihoods based on rice–cattle farming systems in a risk-prone and underdeveloped environment. Wheat is a non-traditional crop in Bihar but over the last decades has become a major crop and rice–wheat a major cropping system (17% of system area in the IGP). Farm size is low whereas half the population is landless, reflecting its high rural population density and population growth. The study area is harboring very rich agro-biodiversity. This section gives an account of the biological environment of the study area.

3.7.1 Objectives: The broad objectives of the present ecological study are as follows.

1. Inventorization of existing flora along with ethno-medicinal value.
2. Phyto-social assessment for having an Idea of Important Species.
3. Inventorization of existing Fauna along with scheduling as or ILWPA
4. Description of baseline ecological status

3.7.2 Methodology

An ecological assessment is part of an EIA study for a development project which may have an impact on the natural environment including existing flora, fauna and wildlife habitats. The main objectives of Ecology and Biodiversity Assessment are to study the existing ecosystem structure and evaluate the changes in biodiversity/species richness, finally affecting the ecosystem functioning.

Following steps were followed for the ecology & biodiversity study in the context of EIA.

A. Desktop Research & Planning, Data collection using various tool and techniques.
B. Data processing and analysis

C. Prediction of Impacts.
D. Suggesting mitigation measures.

3.7.3 RESULTS AND DISCUSSION

The primary survey of study area was conducted particularly with reference to habitat types, listing of species and assessment of the existing baseline ecological (terrestrial and aquatic ecosystem) conditions.

National Park, Wildlife Sanctuary, Notified Forest, Ecologically Sensitive area and critically polluted areas in study area: There is Jamui hill range within 10 km radius in west direction while no any wildlife sanctuary/Reserve forest / Protected forest as well as critically polluted area are absent in 10km radius from the project site. The area harbors one of the best alluvial soils in India.

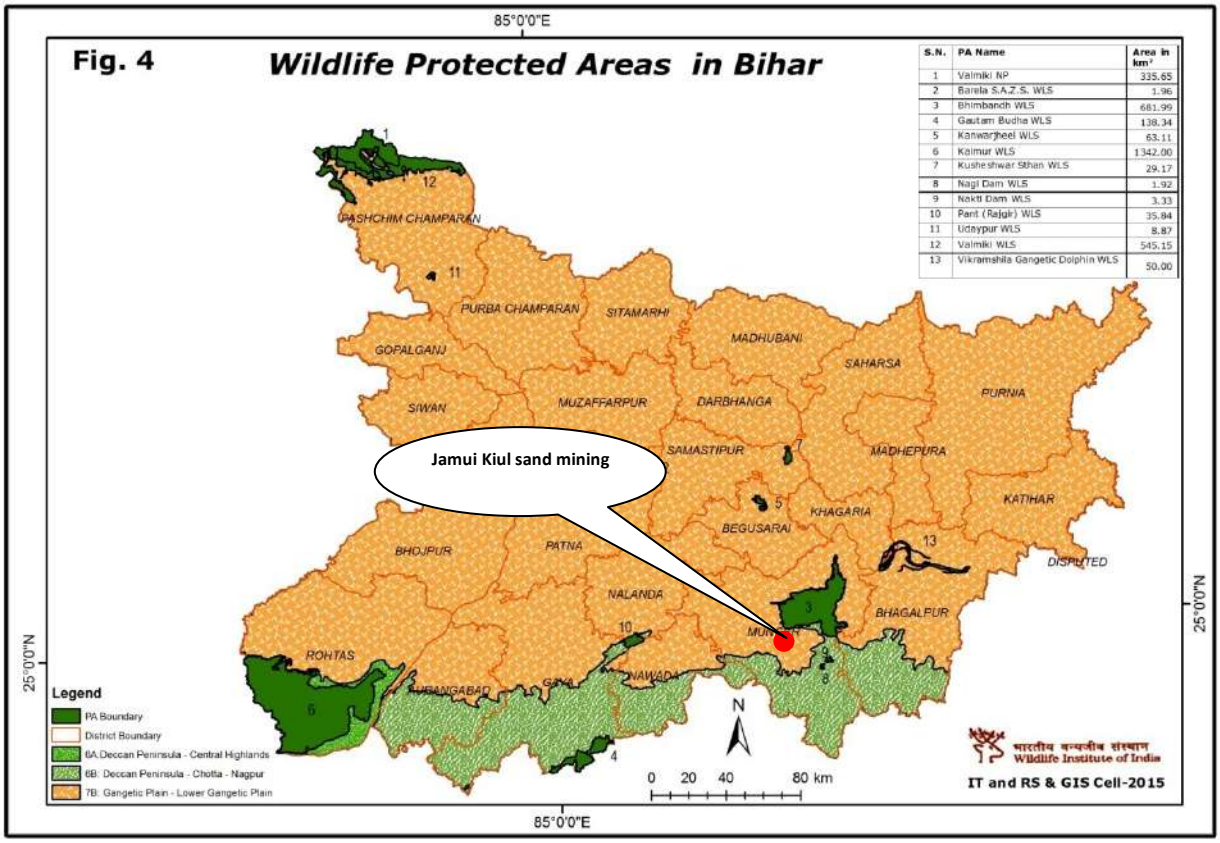


Figure 3.9:- Wildlife Protected areas of Bihar

3.7.4 Floral biodiversity:

Core Zone: The core zone was devoid of any plant or tree naturally growing over there. The agro-biodiversity of the study area is unique and there is no reserve or protected forest. The core zone is a long stretch of river sand and no flora was found in the core zone

Buffer Zone: The study area belongs to the Gangetic Plains 7A Upper Gangetic Plains Biogeographic Zone as classified by the Ministry of Environment and Forest (2009). Following the classification of forest types given by Champion and Seth (1968), the project site included following groups of forests:

Moist Tropical Forest: - Sub group (2a) dominant sps are Terminalia and Lagerstroemia

Tropical Dry Deciduous Forest: - Representing DS1 – Dry Deciduous scrub dominant sps are *Nyctanthes arbor – tristis,* **E-5 Butea forest** and **Inundation Babul Forest**.

The grass cover of the study area belongs to Dichanthium – Cenchrus- Lasiurus and Phragmites; Saccharum- Imperata types grassland. The Forest area of study area harbors tendu (*Diospyros melanoxylon* Roxb); gurjon tree (*Lannea coromandelica* (Houtt.) Merr); siddha (*Lagerstroemia parviflora);* akashmoni (*Acacia auriculiformis* A.Cunn. ex Benth); singri (*Pithecellobium dulce* (Roxb.) Benth), jamun (*Syzygium cumini* (L.) Skeels); aam (*Mangifera indica* L); khajur (*Phoenix sylvestris* (L.) Roxb); Imli (*Tamarindus indica* L); sisham (*Dalbergia sissoo* Roxb); vilayati khejra (*Prosopis juliflora* (Sw.) DC); khejri Tree (*Prosopis cineraria* (L.) Druce); gurhal (*Hibiscus rosa-sinensis* L); madar *(Calotropis procera* (Aiton) W.T.Aiton); Nirgundi (*Vitex negundo* L); kurri (*Lantana camara* L); Latjira (*Achyranthes aspera* L); garundi (*Alternanthera sessilis* (L.) R.Br. ex DC); peeli kantili (*Argemone mexicana* L); tulsi (*Ocimum tenuiflorum* L); kantakari (*Solanum virginianum* L); Chakod (*Senna tora* (L.) Roxb); congress grass (*Parthenium hysterophorus* L); sahadeva (*Sida rhombifolia* L); ghamra (*Tridax procumbens* L); dub (*Cynodon dactylon*(L.) Pers) and kumrya ghas (*Heteropogon contortus*(L.) P.Beauv. ex Roem. & Schult). Some of the most dominant species in non forest area are babool (*Vachellia nilotica*), vilayati babool (*Prosopis juliflora*), neem (*Azadirachta indica*), gulmohar (*Delonix regia*.), amaltas (*Cassia fistula*), dhatura (*Datura stramonium*), arandi (*Ricinus communis*), ber (*Ziziphusjujube*), bougainvellia (*Bougainvillea spectabilis*), peepal (*Ficus*

religiosa), shisham (*Dalbergia sissoo*), sagwan (*Tectona grandis L.f.)* etc. were observed within 10km radius of the study area.

The important floras of the study area are given in **Table 3.14, 3.15 & 3.16**

Table 3 14 : Flora (Trees) of the Study Area

Sr. No.	Local Names	English Name	Botanical Names	Family	Uses
1	Babool	Babool	*Vachellia nilotica* (L.) P.J.H.Hurter&Mabb.	Fabaceae	Produces Gum Arabic, tender twigs are used as tooth brush, good source of timber and fodder.
2	Vilayati Babool	Mesquite tree	*Prosopis juliflora* (Sw.) DC.	Fabaceae	Used as fodder and fuel wood.
3	Neem	Indian Lilac	*Azadirachta indica* A.Juss.	Meliaceae	Multipurpose tree
4	Bakain	Chinaberry	*Melia azedarach* L.	Meliaceae	Good Timber
5	Arandi	Castor-oil-plant	*Ricinus communis* L.	Euphorbiaceae	Produces castor oil
6	Dhatura	Locoweed	*Datura stramonium* L.	Solanaceae	Widely used in traditional medicine
7	Ber	Indian date	*Ziziphus jujube* Mill.	Rhamnaceae	Fruits are eaten and have medicinal value
8	Peepal	Sacred fig	*Ficus religiosa* L.	Moraceae	Religious & Multipurpose tree
9	Kagji Phul	Bougainvelia	*Bougainvillea spectabilis* Willd.	Nyctaginaceae	Ornamental Plant
10	Bamboo	Bamboo			Multipurpose plant
11	Amaltas	Golden shower tree	*Cassia fistula* L.	Fabaceae	Ornamental Plant
12	Sagwan	Teak	*Tectona grandis*	Lamiaceae	Timber plant

Sr. No.	Local Names	English Name	Botanical Names	Family	Uses
			L.f.		
13	Shaijan	Drum stick	Moringa oleifera Lam.	Moringaceae	Its young seed pods and leaves are used as vegetables. It can also be used for water purification and hand washing, and is sometimes used in herbal medicine.
14	Gulmohar	Flamboyant	*Delonix regia* (Boj. ex Hook.) Raf.	Fabaceae	Ornamental Plant
15	Arjun	Arjun Tree	*Terminalia arjuna* (Roxb.) Wight &Arn.	Combretaceae	Leaves are used for silk worms and have medicinal uses
16	Mahua	Indian butter tree	*Madhuca longifolia* (J.Konig) J.F.Macbr.	Sapotaceae	It is used as an oil and alcoholic drink, Flowers are edible, pressed cake are used killing fishes in aqua culture pond.
17	Aam	Mango	Mangifera indica L.	Anacardiaceae	Multipurpose tree
18	Kathal	Jackfruit	*Artocarpus heterophyllus Lam.*	Moraceae	Multipurpose tree
19	Imli	Tamarind	*Tamarindus indica* L.	Fabaceae	Multipurpose tree
20	Bel	Bengal quince	*Aegle marmelos* (L.) Corrêa	Rutaceae	Religious & Multipurpose tree
21	Kela	Banana	*Musa acuminata*	Musaceae	Fruit is eaten

Sr. No.	Local Names	English Name	Botanical Names	Family	Uses
			Colla		
22	Anar	Pomegranate	*Punica granatum* L.	Lythraceae	Fruit is eaten
23	Amrud	Guava	*Psidium guajava* L.	Myrtaceae	Fruit is eaten
24	Tendu	East Indian ebony	*Diospyros melanoxylon* Roxb	Ebenaceae	Multipurpose tree.
25	Gurjon tree	Indian ash tree	*Lannea coromandelica* (Houtt.) Merr	Anacardiaceae	Its wood has excellent termite resistant properties.
26	Siddha	crape myrtle	*Lagerstroemia parviflora*	Lythraceae	Ornamental plant;
27	Akashmoni	earpod wattle	*Acacia auriculiformis* A.Cunn. ex Benth	Fabaceae	Ornamental plant; used for apiculture
28	Singri	Monkeypod	*Pithecellobium dulce* (Roxb.) Benth	Fabaceae	Medicinal and ornamental tree
29	Jamun	black plum	*Syzygium cumini* (L.) Skeels	Myrtaceae	Multipurpose tree
31	Khajur	wild date palm	*Phoenix sylvestris* (L.) Roxb	Arecaceae	Indicator of high water level; fruit is eaten.
33	Sisham	North Indian rosewood	*Dalbergia sissoo* Roxb	Fabaceae	Best known economic timber species
35	Khejri Tree	Mesquites	*Prosopis cineraria* (L.) Druce	Fabaceae	Highly revered among Hindus and worshipped as part of Dasahra festival

Table 3.15: Flora (Shrubs) of the Study Area

Sr. No.	Local Names	English Name	Botanical Names	Family
1	Raat rani	lady of the night	*Cestrum nocturnum* L.	Solanaceae
2	Gurhal	China rose	*Hibiscus rosa-sinensis* L.	Malvaceae
3	Candle Bush	Candle Bush	*Senna alata* (L.) Roxb.	Fabaceae
4	Nayantara	Rosy periwinkle	*Catharanthus roseus*(L.) G.Don	Apocynaceae
5	Henna	mignonette tree	*Lawsonia inermis* L.	Lythraceae
6	Juhi	jasmine	*Jasminum auriculatum* Vahl	Oleaceae
8	Madar	king's crown	*Calotropis procera* (Aiton) W.T.Aiton	Apocynaceae
9	Nirgundi	five-leaved chaste tree	*Vitex negundo* L	Lamiaceae
10	Kurri	West Indian lantana	*Lantana camara* L	Verbenaceae

Table 3.16: Flora (Herbs) of the Study Area

Sr. No.	Local Names	English Name	Botanical Names	Family
1	Ghritakumari	Aloe vera	*Aloe vera* (L.) Burm.f.	Xanthorrhoeaceae
2	Tulsi	Holy Basil	*Ocimum tenuiflorum*L.	Lamiaceae
3	Makai	Black Cumin	*Nigella sativa* L.	Ranunculaceae
4	Satawari		*Asparagus racemosus* Willd.	Asparagaceae
5	Latjira	chaff-flower	*Achyranthes aspera* L	Amaranthaceae
6	Garundi	sessile joyweed	*Alternanthera sessilis* (L.) R.Br. ex DC	Amaranthaceae
7	Peeli kantili	Mexican prickly poppy	*Argemone mexicana* L	Papaveraceae
9	Kantakari	yellow-fruit nightshade	*Solanum virginianum* L	Solanaceae

Sr. No.	Local Names	English Name	Botanical Names	Family
10	Gajar Ghas	Congress grass	*Parthenium hysterophorus* L	Asteraceae
11	Sahadeva	Queensland hemp	*Sida rhombifolia* L	Malvaceae
12	Ghamra	tridax daisy	*Tridax procumbens* L	Asteraceae
13	Dub	Bermuda grass	*Cynodon dactylon*(L.) Pers)	Poaceae
14	Kumrya ghas	Black Speargrass	*Heteropogon contortus*(L.) P.Beauv. ex Roem. & Schult	POACEAE

Source :(i) * Field Observation and discussion with local people in Study Area,

Faunal Biodiversity:

The fauna visiting core zone includes monkeys (*Prebytis entellus*), snakes (*Trimeresurus gramineas, Dryophis nasutus*), rabbits (*Lepus nigricollis*), fish (*Catla catla, Labeo rohita* etc), crows (*Corvus splendens*) etc. As per the information collected by the field team, the common animals of the study area are toad (*Duttaphrynus melanostictus*) and frog (*Hoplobatrachus tigerinus*), Indian garden lizards (*Calotes versicolor*), House lizards (*Hemidactylus frenatus*). In addition, the commonly found domestic animals such as cow, dog, cat etc. and lower life forms, such as, ants, spider, butterfly, bee, wasp, and termite are also found in the study area. The common birds inhabiting in the study area are Bulbul (*Pycnonotus jocosus*), Pigeon (*Columba livia*), and Koel (*Eudynamys scolopaceus*). Table 3.17 gives a list of fauna in the study area.

Table 3.17: Fauna of the Study Area

S.No.	Local Names	Zoological Names	IWLPA 1972 Schedule	IUCN conservation status
Amphibians				
1	Toad	*Duttaphrynus melanostictus* Schneider	Schedule-IV	Least Concern
2	Frog	*Hoplobatrachus tigerinus* Daudin	Schedule-IV	Least Concern
Reptiles				

S.No.	Local Names	Zoological Names	IWLPA 1972 Schedule	IUCN conservation status
1	Indian garden lizards	*Calotes versicolor* Daudin	Schedule-IV	Least Concern
2	House Lizards	*Hemidactylus frenatus* Schlegel	Schedule-IV	Least Concern
3	Dhaman	*Ptyas mucosa* Linnaeus	Schedule-IV	Least Concern
Mammals				
1	Indian palm squirrel	*Funambulus pennantii* Wroughton	Schedule-IV	Least Concern
2	Monkeys	*Simia entellus* Dufresne	Schedule-II	Least Concern
3	Rabbits	*Lepus nigricollis* F. Cuvier	Schedule-IV	Least Concern
4	Blue Bull	*Boselaphus tragocamelus Pallas*	Schedule-III	Least Concern
5	Rat	*Rattus rattus* Linnaeus	Schedule-V	Least Concern
6	Mouse	*Mus booduga* Gray	Schedule-V	Least Concern
Aves				
1	Crow	*Corvus splendens* Vieillot	Schedule-IV	Least Concern
2	Sparrow	*Passer domesticus* Linnaeus	Schedule-IV	Least Concern
3	Baya	*Ploceus philippinus* Linnaeus	Schedule-IV	Least Concern
4	Parrot	*Psittacula krameri* Scopoli	Schedule-IV	Least

S.No.	Local Names	Zoological Names	IWLPA 1972 Schedule	IUCN conservation status
				Concern
5	Pigeon	*Columba livia* Gmelin	Schedule-IV	Least Concern
6	Myna	*Acridotheres ginginianus* Latham	Schedule-IV	Least Concern
7	Koel	*Eudynamys scolopaceus* Linnaeus	Schedule-IV	Least Concern
8	Spotted dove	*Spilopelia chinensis* Scopoli	Schedule-IV	Least Concern

Most of animals found in the study area are of least concern.

3.8 SOCIO-ECONOMIC ENVIRONMENT

This section of the EIA report deals with Socio-Economic Impact assessment of the proposed sand mining project cluster of Jamui Kiul 14-16 Balu Ghat **(**area 96.7 ha**)** on Kiul River of District- Jamui of State-Bihar, Country: India.

The broad objectives of the socio-economic impact assessment are as follows:

a) To study the socio-economic status of the people living in the study area of the Proposed Sand Mining Project.
b) To assess the impact on socio-economic environment due to Proposed Sand Mining Project.
c) To assess the impact of the project on State Gross Domestic Product (SGDP)
d) To evaluate the community development measures proposed to be taken up by the Project Proponent, if any.
e) To suggest Community Development measures needs to be taken for the study area

3.8.1 Methodology

The methodology adopted for impact assessment is as follows:

a) The details of the activities and population structure have been obtained from Census 2011 and analyzed.

b) Primary data was collected by a door-to-door survey in urban area and household's living therein. The data collected during the above survey was analyzed to evaluate the prevailing socio-economic profile of the area.

c) Based on the above data, impacts due to construction operation on the community have been assessed and recommendations for further improvement have been made.

3.8.2 Concept & Definition

a) Study Area: The study area, also known as impact area has been defined as the sum total of core area/project area and buffer area with a radius of 10 Kilometers from the periphery of the core area/project is. The study area includes all the land marks both natural and manmade, falling herein.

b) Household: A group of persons who normally live together and take their meals from a common kitchen are called a household. Persons living in a household may be related or unrelated or a mix of both. However, if a group of related or unrelated persons live in a house but do not take their meals from the common kitchen, then they are not part of a common household. Each such persons is treated as a separate household. There may be one member households, two member households or multi-member households.

c) Sex ratio: Sex ratio is the ratio of males to females in a population. It is expressed as number of females per 1000 males.

d) Literates: All persons aged 7 years and above who can both read and write with understanding in any language are taken as literate. It is not necessary for a persons to have received any formal education or passed any minimum educational standard for being treated as literate. People who are blind but can read in Braille are also treated as literates.

e) Literacy rate: Literacy rate of population is defined as the percentage of literates to the total population aged 7 years and above.

f) Labour Force: The labour force is the number of people employed and unemployed in a geographical entity. The size of the labour force is the sum total of persons employed and unemployed. An unemployed persons is defined as a persons not employed but actively seeking work. Normally, the labour force of a country consists of everyone of working age (around 14 to 16) and below retirement (around 65) that are participating workers, that is people actively employed or seeking employment. People not counted under labour force are students, retired persons, stay-at home parents, people in persons and discouraged workers.

g) Work: Work is defined as participation in any economically productive activity with or without compensation, wages or profit. Such participation may be physical and/or mental in nature. Work involves not only actual work but also includes effective supervision and direction of work. The work may be part time or full time or unpaid work in a farm, family enterprise or in any other economic activity.

h) Worker: All persons engaged in 'work' are defined as workers. Persons who are engaged in cultivation or milk production even solely for domestic consumption are also treated as workers.

i) Main Workers: Those workers who had worked for the major part of the reference period(i.e. 6 months or more) are termed as Main Workers.

j) Marginal Workers: Those workers who did not work for the major part of the reference period (i.e. less than 6 months) are termed as Marginal Workers

k) Work participation rate: The work participation rate is the ratio between the labour force and the overall size of their cohort (national population of the same age range). In the present study the work participation rate is defined as the percentage of total workers (main and marginal) to total population.

3.8.3 Findings of the study:

3.8.3.1 Description of the Study Area:

The study area of proposed sand mining project of cluster of Jamui Kiul 14-16 Balu Ghat (area 96.7 ha) on Kiul River of District- Jamui of State-Bihar, Country: India. The study area is

involves 104 rural villages; however it comes under District- Jamui, Bihar. There are no urban areas in the study area.

Table 3.18, Demographic Profile of the Villages in the study area

S/n	Demographic Feature	Study area	
		Core zone (Project area)	10 Km Buffer
1	Total Population	0	273960
2	Male	0	142878 (52.15)
3	Female	0	131082 (47.85)
4	Schedule caste	0	52861 (19.29)
5	Schedule Tribe	0	1118 (0.40)

***Source:** Census of India 2011, figures in parenthesis represents percent value

3.8.3.2 Demographic composition:

According to Census 2011, Core zone doesn't have any human habitation and 10 km buffer have the total population of 273960 Individuals only. There are 19.29 percent of total populations are schedule caste, schedule tribe are less than one percent (0.40 %).

Table 3.19, Demography of Study Area, District Jamui, Bihar India

S/n	Item	Number of Individuals	%	Number of Individuals	%	Number of Individuals	%	Number of Individuals	%
1	Name of area	Study area		Jamui District		Bihar		India	
4	Total Population	273960	100	17,56,078		104099452		1.2×10^9	

5	Total Male Population	142878	52.15	9,14,368	52.0	54278157	52	6.2×10^8	52
6	Total Female Population	131082	47.85	8,41,710	48.0	49821295	52	5.9×10^8	48

Source: Census of India 2011

3.8.3.3 Comparison: The of total population clears that study area is having total population very less than district population due to less population density (average 10 per ha).

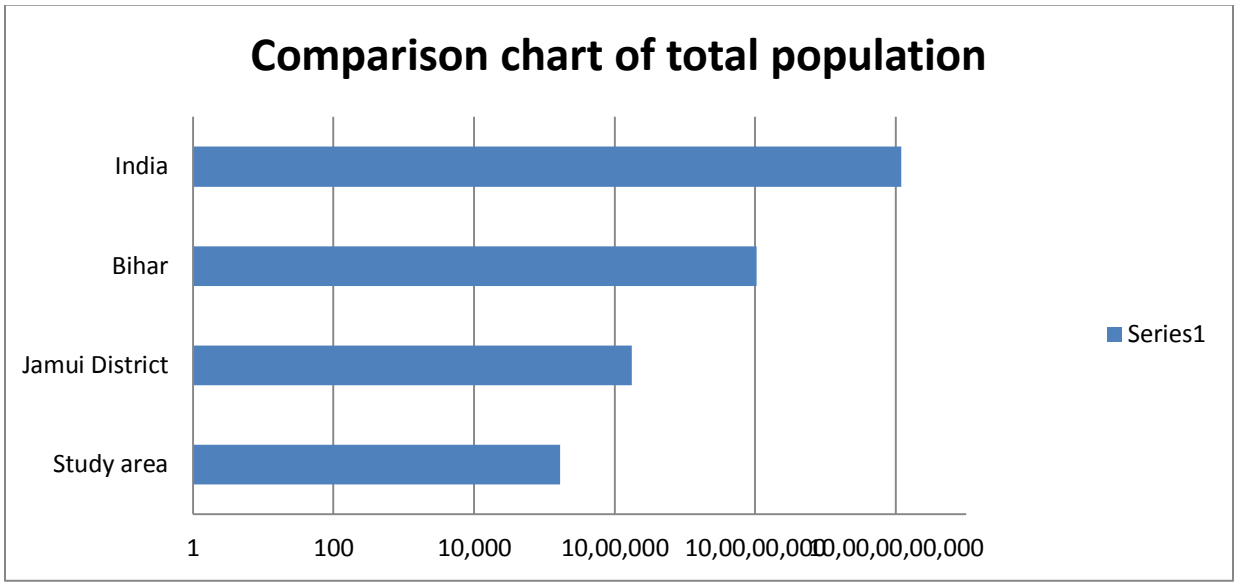


Figure 3.10- Total Populations of Study area, district, state and India

3.8.3.4 Social Infrastructure Available:

The proposed sand mining project at cluster of Jamui Kiul 14-16 Balu Ghat (area 96.7 ha) on Kiul River of District- Jamui of State-Bihar, Country: India offers a much required infrastructural input for fulfilling the requirement of quality sand in Bihar

3.8.4 Amenities

Education facilities

Residential Ramakrishna high school, Residential sainik public school, DAV public school (Jamui), Oxford public school (Malaypur), BG International school (Bhour), Hardimoh upgraded

school, Middle school (Ballopur), Primary school (Pakri), Plus 2 high school, DAV public school, Jamui, Residential Ram Ramkrishna High School, BG International school (Bhour), Hardimoh upgraded school, Middle school (Ballopur), Primary school (Pakri).

Health Facilities

Malaypur hospital, Sadar Hospital (Jamui), Sadar Hospital (Lakhisarai), Maa Jagdamba clinic (Jamui), Bachpan play school (Jamui), Primary school (Jamui), Dr. Jwahar Prasad clinic, Maa Tara hadii nas jod hospital (Jamui), Maa Laxmi medical centre, Primary health centre (Chahalka)

Religious Places

Ram mandir (Genadih), Maa Kali mandir (Jamui), Pokhar mandir, Shiv temple Bodhwan talaab, shiv temple (Narainpur), Sai baba temple, Patneshwar mandir, Surya Narayan mandir, Shiv mandir (Bithalpur), Hanuman mandir (Jamui), Kali mandir (Jamui), Shiv temple, Mahagain, Panch Mandir (Jamui), Durga mata madir (Jamui), Hardimoh chauhan Kali mandir

Drinking water

Drinking water facility will be provided by the Project proponent.

Electricity

All the habitations in the study area are provided with electricity and the same is available for domestic

3.8.5 Social Setup: The study area is dominated by General caste and other backward community, Agriculture is the predominant occupation however currently there is a wave of change of occupation. There by other worker are increasing in the study area. The immediate surroundings of the projects lack the amenities. The villagers are very optimist by the proposed opening of proposed sand mining of cluster of Jamui Kiul 14-16 Balu Ghat (area 96.7 ha) The major expectations include the solution of drinking water problem, quality education, easy availability of sand etc

Table 3.20: Demographic particulars of the study area

S.N.	Description	Number	Percentage to Respective totals
1	Gender wise Total Population of the Study Area	273960	100
	Male	142878	52.15
	Female	131082	47.85
	Sex Ratio (No. of females per 1000 males)	917	
2	Gender wise Total Population (0-6 age group)	50654	100
	Male	25935	51.20
	Female	24719	48.80
	Sex Ratio of 0-6 age group population (No. of females per 1000 males)	953	
3	Total number of Households	47939	
	Average Household size in the Study Area as a whole	5	
	Highest Household size in the Study Area	6	
	Lowest Household size in the Study Area	4	
4	Total no. of villages in the study area	104	
5	Total Population of Schedule Caste Community in the Study Area	52861	100
	Male	27211	51.48
	Female	25650	48.52
	Sex Ratio (No. Of females per 1000 males)	942	
6	Total Population of Schedule Tribe Community	1118	100
	Male	577	51.61
	Female	541	48.39
	Sex Ratio of Schedule Caste population in Study Area (No. Of females per 1000 males)	937	
7	Total Literates in the Study Area	140329	100
	Male	86778	61.84
	Female	53551	38.16
	Overall literacy rate in the study area	51.22	
	Male	31.68	
	Female	19.55	
	Gender gap in literacy rate	12.13	
8	Total Workers in the Study Area	107898	100

S.N.	Description	Number	Percentage to Respective totals
	Male	69577	64.48
	Female	38321	35.52
	Overall Work Participation Rate in the study area	39.38	
	Male	25.40	
	Female	13.99	
	Gender Gap in work participation rate	11.41	
	Overall Dependency Rate of Non-workers	42.12	
	Dependency Rate of Male Non-workers	17.28	
	Dependency Rate of Female Non-workers	24.83	
9	Total Main Workers in the Study Area	68864	100
	Male	48868	70.96
	Female	19996	29.04
10	Total Main Cultivators in the Study Area	18488	100
	Male	14919	80.70
	Female	3569	19.30
11	Total Main Agricultural Workers in the Study Area	31378	100
	Male	23333	74.36
	Female	8045	25.64
12	Total Main Household Industrial Workers in the Study Area	7839	100
	Male	2374	30.28
	Female	5465	69.72
13	Total ‘main Other Workers’ in the Study Area	11159	100
	Male	8242	73.86
	Female	2917	26.14
14	Total Marginal Workers in the Study Area	39034	100
	Male	20709	53.05
	Female	18325	46.95
15	Total non workers in the Study Area	166062	100
	Male	73301	44.14
	Female	92761	55.86

Source: Census of India, 2011

Chapter 4

ANTICIPATED IMPACTS AND THEIR MITIGATION MEASURES

4.0 GENERAL

Environmental impacts both direct and indirect on various environmental attributes due to proposed mining activity will be created in the surrounding environment, during the preoperational, operational and post–operational phases.

Several scientific techniques and methodologies are available to predict impacts of physical environment. Mathematical models are the best tools to quantitatively describe the cause and effect relationships between sources of pollution and different components of environment. In cases where it is not possible to identify and validate a model for a particular situation, predictions have been arrived at based on logical reasoning/consultation/extrapolation.

The mining activities may disturb environment in various ways such as degradation of land, dust generation, deterioration of water and soil quality, affecting the biological and socio-economic environment of the area. The impacts of mining on various environmental parameters were assessed and are given below:

- Air Environment
- Water Environment
- Noise Environment
- Land Environment
- Biological Environment
- Socio Economic Environment
- Traffic Environment

Based on the environmental baseline scenario as detailed in Chapter 3 and the proposed mining activity in Chapter 2, this chapter assesses the likely impact and their extent on various environmental parameters along with the mitigation measures.

4.1 AIR ENVIRONMENT

Anticipated Impacts:

Surface mining, including opencast sand mining has always been a source of dust generation. The various pollutants like PM, SO2 & NO2 are not expected to have considerable variation from the existing levels within study area which are generally below the limits specified for 'residential and rural use areas'. The pollutant levels within lease area will rise considerably but are expected to conform to the permissible limits for 'industrial use' with proper mitigation measures. In the river bed mining project the only source of emission is excavation, transportation, loading, hauling operation and handling of mineral bajri. Operations that cause addition to the load of ambient air in the area are:

- Operation of diesel based equipment's excavator, loader, truck, tractors, trolley & dumpers etc.
- Transportation of mineral.

Mitigation measures

The collection and lifting of minerals will be done by loaders. Therefore, the dust generated is likely to be insignificant as there will be no drilling & blasting. The only air pollution sources are the road transport network of the trucks. The mitigation measures like the following will be resorted:

- ✓ There is no major source of emissions except emission from combustion of fuels from the Transportation Vehicles and Material Handling.
- ✓ Besides this, to control the emissions further regular preventive maintenance of Equipment / Transportation Vehicles will be carried out on contractual basis.
- ✓ It will be ensured that all transportation vehicles carry a valid PUC certificate.
- ✓ Plantation will be carried out along the approach road, river banks & at all strategic places in the vicinity area.
- ✓ Periodic air quality monitoring will be done to assess the quality and for timely corrective actions.
- ✓ Water sprinkling will be done on the haul roads twice in a day. This will reduce dust emission further by 74%
- ✓ Speed limits will be enforced to reduce airborne fugitive dust from vehicular traffic.
- ✓ Spillage from the trucks will be prevented by covering tarpaulin over the trucks.

4.2 WATER ENVIRONMENT

Anticipated Impacts:

Because of the mechanization method in the mining activity, the impact of mining operations on water quality is also expected to be insignificant. There would be no impact on the quality/quantity of ground water as existing ground water level in study area is deep. Surface water does also not diverted or disturbed. Therefore, there would not be any impact on surface water and ground water quality. There is only one river (Kiul river) existing in the core and adjoining to the lease area zone. The lease area is almost flat where only direct precipitation flows down the slope during rains.

Since the mining process is totally dry, no effluent will be generated hence no adverse impact on water is anticipated. The mining activity will be restricted upto depth 3m in river bed and 3m above ground water table; neither water table (aquifer) will be intersected by the mining activities. Hence there will not be any adverse impact either on the quality or quantity of ground water.

No domestic effluent is generated at the mine site due to absence of any colony in the mining area. Hence the question of contamination of ground water does not arise. Any adverse impact on the ground water regime is not expected from the domestic effluent.

The land of the study area is semi-arid and the percentage of the sand is very high, which does not allow any surface water to accumulate. The threat of pollution of due to surface run-off is also not possible as because entire study area does have any natural surface water course.

Damage in the water body, depends on its assimilative capacity. To find out assimilative capacity of receiving water body, water samples were collected from different groundwater and surface water sources. Mining of sand, from within or near a streambed has a direct impact on the stream's physical habitat characteristics. These characteristics include geometry, bed evaluation, substrate composition and stability, in stream roughness elements, depth, velocity, turbidity, sediment transport, stream discharge and temperature.

Mitigation measures

- The channel geometry will not be disturbed as the mining will be carried out excluding the barrier zone and the active channel of the river.
- The sediments mined out will be replenished naturally and therefore change in river characteristics is not expected.

- The maximum depth of mining in the river-bed shall not exceed 3 meters from the unmined bed level at any point in time with proper bench formation.
- Ground water table will not be intersected during the mining activity.

4.3 NOISE ENVIRONMENT

The proposed mining activity is semi-mechanized in nature. There is no heavy traffic, industry or noisy habitation in the area except the existing mine. No drilling & blasting is envisaged for the mining activity. Hence, the only impact is anticipated is due to movement of vehicles deployed for transportation of minerals.

Anticipated Impacts:

The exposures to excessive noise levels can lead to:

- Prevention of sleep, insomnia and fatigue.
- Decrease in speech reception, communication, distraction and diminished concentration thus adversely affecting job performance efficiency.
- Chronic psychological disturbance including impaired hearing.
- Irreparable cardiovascular, respiratory and neuralgic damages in certain extreme cases.
- With the increase in scale of mining operations and vehicles operation and men and noise levels are expected to increase.

Mitigation measures:-

- Ambient noise monitoring is being conducted regularly at different locations in and around the mining areas.
- Proper care and maintenance of the equipment's will be carried out.
- PUC certified and well-tuned vehicles will be used during operation phase.
- Regular servicing and tuning of vehicles will reduce the noise levels. Fixing of silencers to the trucks will reduce the noise levels.
- Plantation will be taken up along the approach roads and vicinity of river bank. The plantation minimizes propagation of noise and also arrests dust.
- Speaking at low voices enough for communication reduces the excess noise levels.
- Efficient traffic management will be done with speed limits on vehicles. Drivers will be educated to minimize use of horns.

4.4 LAND ENVIRONMENT

The proposed extraction of stream bed materials, mining below the existing streambed, and alteration of channel-bed form and shape may lead to several impacts such as erosion of channel bed and banks, increase in channel slope, and change in channel morphology if, the operations are not carried out scientific & systematically.

The mining and allied activities involved due to mining result in creation of temporary haul roads and formation of mined pits, etc. affecting the land use pattern. In this project, silt and clay are also produced as a constituent along with minerals, which are considered to be waste.

Anticipated Impacts:

- Mining activity will impact river bed topography by formation of excavation voids.
- Undercutting and collapse of river banks.
- River bed mining may bring in some change in topography at the nearby area of the mine lease.
- Excessive and unscientific riverbed material mining may impact to bridges, dams and nearby structures.
- Open pits due to mining in the off-river bed blocks will increase the water logging issue in land. It will be cause of pathogenic diseases.

Mitigation measures:

Adopting suitable, site-specific mitigation measures can reduce the degree of impact of mining on land. Some of the land-related mitigation measures are as follows:

- Excavated pits will get replenished annually in monsoon itself & will be restored to original.
- Mineral will be mined out after leaving safety distances from both side from the bank as “No mining zone “ for bank stability.
- The mine working will remain confined to allotted river bed only, so it will not disturb any surface area outside the mine lease area which may affect topography or drainage.
- Solid waste will not be stacked on the bank side as it will hinder the flow of water in monsoon season.
- Pits formed due to mining will be replenished gradually in rainy season and mining will be done in a layer.
- Regular checkup of vehicles and machinery to prevent the oil spillage

- No overloading during transportation of material will be allowed to prevent the escape of material from the trucks causing scattering of Sand in nearby fields.

4.5 BIOLOGICAL ENVIRONMENT

4.5.1 DIRECT IMPACT

The project is of sand mining of area 96.7 Ha of cluster Jamui Kiul 14-16 Balu Ghat at district-Jamui of state-Bihar, India. As the sand mining will be carryout; only during non monsoon season and on the dry stretch of river bed further the mining will be restricted above the ground water table. No direct impact is anticipated from the project on biodiversity

4.5.2 INDIRECT IMPACT

The major indirect impact include following.

a. Mining activity is likely to affect the movement of the animal and birds.
b. Increase in noise may affect the feeding, breeding and movement of animals.
c. Likely settling of dust to be generated by movement of vehicles on leaves may results in to stunted growth of vegetation and may also affect the capacity of production.
d. Large numbers of labor population will influx the area during mining operation. The major threat to surrounding flora is through collection of fuel wood by labor for cooking purposes and thereby loss of trees.

4.5.3 CUMULATIVE IMPACT

a. Indirect and cumulative impacts are associated with various mining activities such as clearing of vegetation for establishment of various project units, movement of vehicles, Mining equipment s& machineries etc, interferences due to influx of labours etc.
b. The losses of land for various project units will also not adversity affect the fauna as similar habitat is present throughout the project immediate influenced area. Therefore, impact due to loss of habitat for birds, reptiles and mammals of the project area is not expected.
c. Impacts on surrounding fauna due to movement of vehicles, machinery, equipment and work force may slightly interfere in animal movements. As most of the domestic animals Cows, Buffaloes, Goats, Sheep's and Donkeys are guided & controlled by the owners/caretakers and hence any causality in terms of killing or accident are not expected.
d. Intermittent settlements any adverse impacts on wildlife if any; will be managed with corporation of forest department.

4.5.4 MITIGATION OF IMPACT:

The mitigation measures of biological impacts are aimed at (in order of preference):

A. Avoid impact,
B. Minimize impact,
C. Rectify impact,
D. Compensate for impact.

Setting aside or exclusion of critically important areas, compensatory afforestation, creation of green belts, rehabilitation of species or individuals are basic actions taken for mitigation of impact. While creating green belt and undertaking the afforestation works, only plant indigenous/local plants will be planted and exotics will not be introduced. The cost of eco-restoration of the site will be included in the project cost. This is desirable on two counts:

i) It ensures allocation of fund for undertaking the rehabilitation of the area during and also after the project period is over.

ii) It also acts as deterrent in selection of site for the project by bringing in the cost of eco-restoration which can be enormous in cases where activities are proposed on a critical ecosystems.

4.5.5 RECOMMENDATION

At present the project site is a barren waste land with sparse growth of herbs and shrub;

- Mining activities will be restricted to day hours only.
- Poaching of animals by laborers will be strictly prohibited. It may be ensured by the mine management that no hunting is practiced at the site by any of the workers.
- Ward and watch for the animal movement in and around the project area during mining operation will be provided.
- Environment and Wildlife Conservation awareness program will be organized for both work force and surrounding villages.
- All the vehicles coming to the site shall be covered to avoid spillage of material.
- Approach road used by vehicles shall be kept maintained.

Table 4.1: List of Trees proposed for Greenbelt (Evergreen, quick growing)

S/n	Botanical Name	Family	Common Name	Height	Flowering Season	Crown Shape	Crown surface area (M^2)
1	*Alstoniascholaris*(linn.)R. Br.	Apocynaceae	Chattiyan	15m	Dec - Mar.	Round	241,680.50
2	*Anonaswuamosa*Linn.	Anonaceae	Custard apple	10m	March - July extended uptosept.	Round	2178.21
3	*Anona reticulate* Linn.	Anonaceae	Bullock's Heart	10m	June.	Round	2017.44
4	*Azadirachtaindica* A. juss.	Meliaceae	Indian Lilac	20m	Jan - March, Aug. - Sept.	Spreading	300,445.30
5	*Cassia pumila*Lamk	Caesalpinaceae	Yellow Cassia	10-12m		Round	13,273.70
6	*Derris indica*(Lam.)Bennett.	Fabaceae	Pongam-Oil Tree, Karanj	10m	April - June	Round	6278.1
7	*Eucalyptus citridora Hook.*	Myrtaceae	lemon scented gum	20m	Feb. - April, Oct.- Dec.	Conical	52447.63
8	*Ficusgibbosa*Blume	Moraceae	Korotosani (Orisa)	10m	April - May	Spreading	223,45.4
9	*Guazmaulmifolia* Lamk	Sterculiaceae	Rudraki	10m	Mar - August.	Round/ Spreading	30279.8
10	*Heterophragmaroxburghiji*DC	Bignoniaceae		18m	Feb. - April.	Round/ Oblong	155217.7

Fauna

The workers shall be directed to not venture out of the leased area for collecting fuel wood, for hunting. They shall also be trained not to harm any wildlife. No work shall be carried out after sunset.

Aquatic ecology

During river bed mining of the flowing river, the water nearby the mining site will have increased turbidity owing to high TDS from mining. Increased turbidity decreases the productivity of an aquatic ecosystem as the sunlight availability under water reduces. However, the river is not very deep as well as not perennial in nature. Hence, no significant adverse impact is anticipated. The project will also cause the aquatic faunal species and fishes to move away from the project stretches. However, the river is mostly dry during mining time therefore not much impact on species of fishes and zooplankton have been anticipated at a local level.

4.6 Socio-Economic Environment

The socio-economic impacts of mining are many. Impacts of a mine project may be positive or Negative. The adverse impacts attribute to physical displacement due to land acquisition, which is followed by loss of livelihood, mental agony, changes in social structure, and risk to food security etc. People are also directly affected due to pollution. Social Impact Assessment (SIA) is a process of analysis, monitoring and managing the social consequences of a project. Study on Socio-economic status has already been carried out using primary socio-economic survey for generating the baseline data of Socio-economic status.

4.6.1 Anticipated Impacts

From the primary Socio-economic survey & through secondary data available from established literature and census data 2011, it is found that there would be positive impact on Socio-economic condition of the nearby area. There is no habitation in the mining lease area. Therefore, neither villages nor any part of villages will be disturbed during the entire life of the mine.

4.6.2 Mitigation measures

Mining in this lease will give job opportunities to the local people. Thus, mining will create beneficial effect on local people. With the operation of mining lease, various indirect employment opportunities will also be generated. Several persons of the neighboring villages have been benefited with contract works, employment through contractors, running jeeps, trucks,

tractors and buses on hire, running canteens, different kinds of shops and transport related business avenues. Villagers have been provided with either direct employment or indirect employment such as business, contract works and development work like roads etc. Villagers also get access to the other welfare amenities such as drinking water, foods and provisions, shed.

4.7 TRAFFIC ENVIRONMENT

Traffic density measurements were performed at two transportation routes identified one from State Highway - 82. Traffic analysis is carried out by understanding the existing carrying capacity of the roads near to the project site and the connecting main roads in the area. Then depending on the capacity of the mine, the number of tractor / trucks that will be added to the present scenario will be compared to the carrying capacity.

Transportation Route:

The minerals excavated will be loaded directly into trucks and transported to the concerned market. The evacuation route is shown in the map as given below

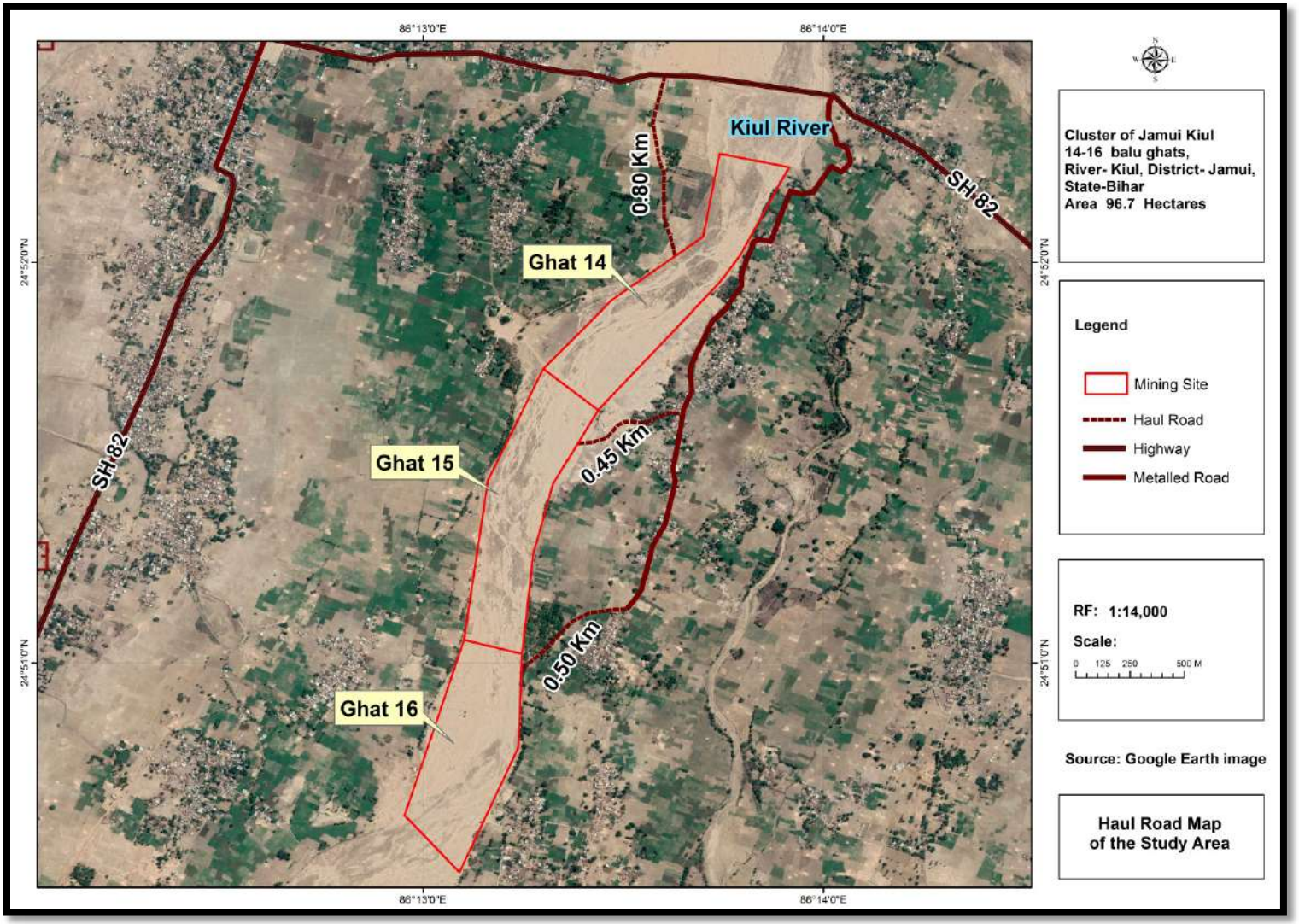


Figure 4.1 Map Showing Evacuation Route

Traffic density measurement were made continuously for 24 hours by visual observation and counting of vehicles under three categories, viz., heavy motor vehicles, light motor vehicles and two/three wheelers. The sand ghats i.e ghat 14, 15 & 16 are well connected to the State Highway-82 via kuchha road in North direction. For traffic density survey, study has been conducted with a team of skilled person at SH-82 & for a day on dated 11.3.2020- 12.03.2020. Total numbers of vehicles per hour has been calculated. The results of measurements are given in the

Table 4.2-: Existing Traffic Scenario & LOS

S. No	Vehicles distribution	NUMBER OF VEHICLES DISTRIBUTION/DAY	PASSENGER CAR UNIT (PCU)	TOTAL NUMBER OF VEHICLE (PCU)/HOUR
		SH-82		SH-82
1	Car /Jeep	779	1.0	779
2	Buses	283	3.0	849
3	2 wheelers	`1354	0.5	677
4	3 wheelers	864	1.0	864
5	Truck/tractors	1132	3.0	3396
	Total			**6565/24= 273 PCU/hour**

Table 4.3:-Existing Traffic Scenario & LOS

S. No	ROAD	V (VOLUME IN PCU/HR)	C (CAPACITY IN PCU/HR)	EXISTING V/C RATIO	LOS
1	**SH-82**	**273**	**1500**	**0.18**	**A**

V= Volume of Vehicles in PCU's/Hour& C= Capacity of Road in PCU's/Hour

The existing Level of Service (LOS) is ''B'' i.e. very good.

Table 4.4:- Capacity as per IRC: 64-1990

V/C	LOS	Performance
0.0 - 0.2	A	Excellent
0.2 - 0.4	B	Very Good
0.4 - 0.6	C	Good / Average / Fair
0.6 - 0.8	D	Poor
0.8 - 1.0	E	Very Poor

During Mine operation

No. of working days - 270 days

Truck & Tractors Capacity – 12 & 04 tonnes

No of truck & tractors deployed per day for ghats 14,15 & 16 on SH-82= 739

No. of working hours per days - 10

Frequency of trucks deployed/hour on SH-82 – 74

Increase in PCU's per hour for SH-82- 222

Table 4.5: Modified Traffic Scenario & LOS

S. No	Road	INCREASED PCUS/ STATE HIGHWAY	V (VOLUME IN PCU/HR)	C (CAPACITY IN PCU/HR)	Modified V/C Ratio	LOS
1	State Highway-82	222	273 +222= 495	1500	0.33	B

Results

From the above analysis it can be seen that the LOS changes for State highway 82 from 'A' ('Excellent) to "B" (Very Good)respectively, as per classification. Hence, there will not so much

adverse effect on the proposed evacuation roads due to additional traffic. However, Traffic management has been proposed as given below.

Traffic Management:

1. Roads will be repaired regularly and maintained in good conditions.
2. Haul roads will be sprinkled with water to keep the dust suppressed.
3. A supervisor will be appointed to regulate the traffic movement near the site.
4. Speed breakers will be constructed near accident prone areas to calm the traffic and its speed.
5. Signage will be erected at the sensitive & precarious places to caution or provide information to road users.

CHAPTER-5
ANALYSIS OF ALTERNATIVES

5.0 INTRODUCTION

Consideration of alternatives to a project proposal is a requirement of EIA process. During the scoping process, alternatives to a proposal can be considered or refined, either directly or by reference to the key issues identified. A comparison of alternatives help to determine the best method of achieving the project objectives with minimum environmental impacts or indicates the most environmentally friendly and cost effective options.

5.1 ALTERNATIVE FOR MINE LEASE

Sand (minor mineral) deposits are site specific. It is present in inside river bed (96.7 Ha.).The mining of the material will be done by opencast semi-mechanized method inside riverbed. The mining will be done as per laid down procedures Bihar Minor Mineral Concession Rules, 1972 amended till date. **No overburden** from inside riverbed block will be produced. Therefore, no alternates it e is suggested as the mineral is site specific.

5.2 ALTERNATIVE FOR TECHNOLOGY ANOTHER PARAMETERS

Some alternatives considered during EIA study are discussed below:

Table 5.1: Alternative for Technology and other Parameters

S. No.	Particular	Alternative Option 1	Alternative Option 2	Remarks
1.	Technology	Opencast Semi mechanized and mechanized mining.	Opencast Mechanized mining.	Opencast semi-mechanized for Riverbed is preferred **Benefits:** •No electric power requirement •Minimal noise will be generated •Minimal air pollution will be generated.
2.	Employment	Local employment	Outsource employment	Local employment is preferred. **Benefits:** •Provides employment to local people along with financial benefits •No residential building/housing is required.
3.	Labourer transportation	Public transport	Private transport	Local labours will be deployed so They will either reach mine site by
				Bicycle or by foot. **Benefits:** •Cost of transportation of men will be negligible.

4.	Material transportation	Public transport	Private transport	Material will be transported through trucks/trolleys on the contract basis **Benefits:** •It will give indirect employment.
5.	Water requirement	Tanker supplier	Ground water/surface water supply	Tanker supply will be preferred. **Benefits:** •No change in the surface water or ground water quality.
6.	Road	Haul road	Metallic road	Haul road will be considered for Linking mine site from. Minimum distance will be measured along with less number of trees for considering optimum haul road roots. **Benefits**: Less distance, less fuel used, minimum or negligible no. of trees will be cut in best opted haul road root.

5.3 SUMMARY

We have analyzed all the option for alternative so the proposed mine site. This project is sand specific project and existing landuse of mine lease classified as River Body which will continue to be so even after the current mining project is over, hence no alternate site is suggested for this project.

CHAPTER: 6
ENVIRONMENTAL MONITORING PROGRAM

6.0 INTRODUCTION

Regular monitoring of the various environmental parameters is necessary to evaluate the effectiveness of the management programme so that the necessary corrective measures can be taken in case there are some drawbacks in the proposed programme. Since environmental quality parameters at work zone and surrounding area are important for maintaining sound operating practices of the project in conformity with environmental regulations, the post project monitoring work forms part of Environmental Monitoring Program. Environmental Monitoring Program will be implemented once the project activity commences. Environmental Monitoring Program includes: (i) Environmental surveillance (ii) Analysis and interpretation of data (iii) Preparation of reports to support environmental management system and (iv) Organizational set up responsible for the implementation of the programme.Environmental Monitoring will be taken up for various environmental components as per conditions stipulated in Environmental Clearance Letter issued by MoEF&CC and Consent to Operate issued by the State Pollution Control Board. Compliance of same will be submitted to respective authorities on regular basis.

6.1 ENVIRONMENTAL MANAGEMENT CELL

In order to maintain the environmental quality within the stipulated standards, regular monitoring of various environmental components is necessary which will complied as per conditions. For this the lessee of each sand ghats in a cluster has taken decision to formulate an Environment Policy of the mine and constitute an Environmental Management Cell and committed to operate the proposed mine with the objectives mentioned in approved Environment Policy. The system of reporting of Non-conformances /violation of any Environmental Law/Policy will be as per quality management system. The internal audit will be conducted on periodic basis and any Non-conformances/violation to Environmental Law/Policy will be closed and discussed during Management Review Meetings of board of directors/partners.

Hierarchy

An EHS Manager will be appointed to look after all environmental issues and ensure compliance with Environmental Clearance conditions/SPCB norms. An Assistant Manager and Executive Environment Engineer will be appointed under the EHS Manager. EHS Manager will report to the

Lessee directly and discuss the non-compliance if so any. An immediate solution will be arrived to ensure compliance with norms.

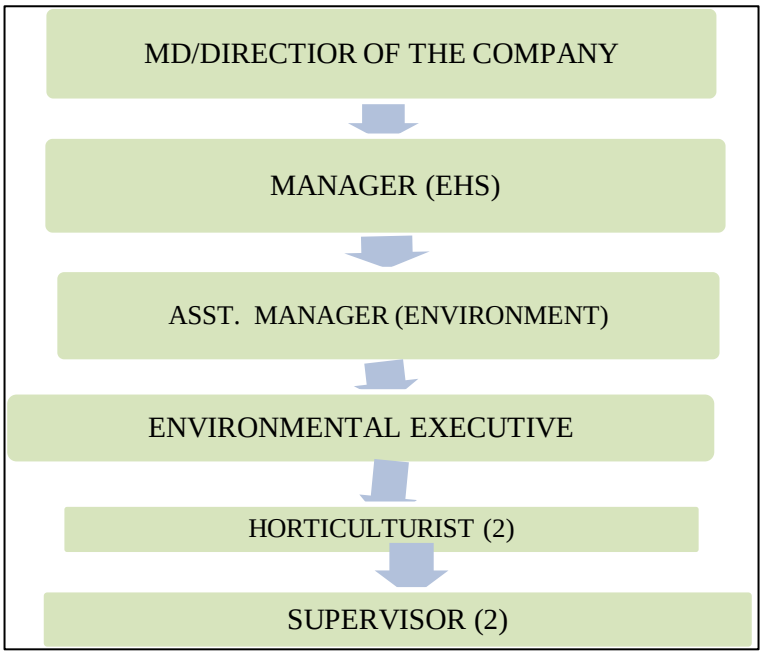


Figure 6.1: Hierarchy of Environment System for Dealing Environmental Issues

6.1.1 Responsibilities for Environmental Management Cell (EMC)

The responsibilities of the EMC include the following:

- Environmental Monitoring of the surrounding area
- Developing the green belt/Plantation
- Ensuring minimal use of water
- Proper implementation of pollution control measures
- Access the risk area
- Implementation of QMS
- Conducting Internal Audits
- Closing of NCs and conduction Management Review Meetings.

6.2 ENVIRONMENTAL MONITORING AND REPORTING PROCEDURE

Monitoring shall confirm that commitments are being met. This may take the form of direct measurement and recording of quantitative information, such as amounts and concentrations of discharges and wastes, for measurement against corporate or statutory standards, consent limits or targets. It may also require measurement of ambient environmental quality in the vicinity of a sit using ecological/biological, physical and chemical indicators. Monitoring may include socio-economic interaction, through local liaison activities or even assessment of complaints.

The key aims of environmental monitoring are:

- To ensure that results/ conditions are as forecast during the planning stage, and where they are not, to pinpoint the cause and implement action to remedy the situation.
- To verify the evaluations made during the planning process, in particular with risk and impact assessments and standards and target setting and to measure operational and process efficiency.
- Monitoring will also be required to meet compliance with statutory and corporate requirements. Finally, monitoring results provide the basis for auditing, *i.e*. to identify unexpected changes.

6.3 MONITORING SCHEDULE

Regular Monitoring of all the environmental parameters *viz.*, air, water and noise as per the formulated program based on CPCB and MoEF&CC guidelines will be carried out every year in order to detect any changes from the baseline status.

Table 6.1: Monitoring Schedule

S.No.	Description of Parameters	Schedule of Monitoring
1	Air Quality	24 hourly samples twice a week in each season except monsoon
2	Water Quality (Surface &Groundwater)	Once a season for 4 seasons in a year
3	Soil Quality	Once in a year in project area
4	Noise Level	Twice a year for first two years & then once a year
5	Socio-economic Condition	Once in 3 years
6	Plantation Monitoring	Once in a season

6.4 LOCATIONS OF MONITORING STATIONS

The location of the monitoring stations was selected on the basis of prevailing micro meteorological conditions of the area like; wind direction and wind speed, relative humidity, temperature. Locations for the post project monitoring shall be as under.

Table 6.2: Locations of Monitoring Stations

S. No.	Description	Location
1	Ambient Air Quality	Lease area, Villages in down Wind direction from the Lease Boundary
2	Noise Level Monitoring	Lease Boundary, High noise generating areas within the lease boundary
3	Water Level and Quality	Nearby Ground water sources
4	Soil Quality	Lease area and Villages within study area.

Table 6.3-Budget for monitoring for each sand Ghats

S. No.	Description	Cost to be incurred (in lakhs/annum)
1	Water Quality (Groundwater)	0.5
2	Air Quality	1.0
3	Noise Level	0.5
TOTAL		**2.0**

Monitoring budget for each sand ghat will be approx. 2.0 Lakhs, i.e for cluster of Jamui Kiul 14-16 balu Ghats monitoring budget will be approx. 6.0 Lakhs.

Reporting Schedule during Operation of Mine

After completion of analysis, copies of all the analysis reports will be sent to MoEF&CC Regional Office and SPCB. Copies of the reports will be maintained in the office and will be made available to the concerned inspecting authorities.

6.5 BUDGET ALLOCATION FOR MONITORING

Budget for monitoring of Air, water and Noise will be Rs. 2.0 Lakhs of each ghats to be incurred by the project proponents for undertaking pollution prevention measures during the mining activity.

6.6 SUMMARY

In order to maintain the environmental quality within the stipulated standards, regular monitoring of various environmental components is necessary which will complied as per conditions. For this lessee of each ghats in a cluster have taken decision to formulate an Environment Policy of the mine and constitute an Environmental Management Cell and committed to operate the proposed mine with the objectives mentioned in approved Environment Policy. EMP may also require measurement of ambient environmental quality in the vicinity of a sit using ecological/biological, physical and chemical indicators. Monitoring may include socio-economic interaction, through local liaison activities or even assessment of complaints. Regular Monitoring of all the environmental parameters *viz.*, air, water and noise as per the formulated program based on CPCB and MoEF&CC guidelines will be carried out every year. The location of the monitoring stations was selected on the basis of prevailing micro meteorological conditions of the area like; wind direction and wind speed, relative humidity, temperature. A budget for monitoring of Air, water and Noise will be incurred by the project proponent for undertaking pollution prevention measures during the mining activity.

Chapter 7

ADDITIONAL STUDIES

7.0 GENERAL

All types of industries face certain types of hazards like failure of machinery, explosion etc. and disasters like fires, inundation, earthquake etc. which can disrupt normal activities abruptly. Mining and allied activities are associated with several potential hazards to both the employees and the public at large. Therefore, it is necessary to consider specific issues as applicable to individual projects to take precautions against these issues. A worker in a mine should be able to work under condition, which are adequately safe and healthy. At the same time the environmental conditions should be such as not to impair his working efficiency. Therefore, the EIA report and EMP address such issues.

7.1 ITEMS IDENTIFIED BY PROPONENT

The project proponent has identified some issues which are important from environmental point of view for the proposed project or site selected. A sedimentation study has also been carried out for the proposed project. Points of consideration are given below.

- Mining unwanted material including mineral or spillage (if any) should not be stacked on the banks as it will hinder the flow of water in monsoon season.
- The sand will be mined out in a uniform way so that the river flow/course shall not get disturbed.
- River banks will not be excavated to from access ramps.
- Only excavated river gravel should be used to deposit against the river bank to form access ramps.

7.2 ITEMS IDENTIFIED BY REGULATORY AUTHORITY

All studies identified by regulatory authority have been discussed in detail in Chapter 4.

7.3 ITEMS IDENTIFIED BY THE PUBLIC AND OTHER STAKEHOLDERS

The public hearing will be conducted after the draft EIA submission to the concerned authorities. The issues and items identified by the public and other stake holders will be granted in the form of public hearing minutes, accordingly it will be included in Final EIA report.

7.4 RISK ANALYSIS AND DISASTER MANAGEMENT PLAN

All types of industries face certain types of hazards which can disrupt normal activities abruptly. Similar inside river bed mines also have risks which need to be addressed for which a disaster management plan has been formulated with an aim of taking precautionary steps to avert disasters

and also take such action after disasters which limits the damage to minimum. In the sections below, the identification of various hazards, probable risks during the operational phase of the mining, maximum credible accident analysis and consequences analysis are addressed either qualitatively or quantitatively.

Risk assessments will help mine operators to identify high, medium and low risk levels. This is a requirement of the Occupational Health and Safety Act 2000. Risk assessments will help to priorities the risks and provide information on the need to safely control the risks. In this way, mine owners and operators will be able to implement safety improvements. The following natural/industrial problem may be encountered during the mining operation.

- ✓ Inundation: Filling of the mine pit due to excessive rains
- ✓ Slope failures at the mine faces or stacks
- ✓ Accident due to fire (in forested areas)

As per proposal made under the mining plan the area will be developed by means opencast mining method. Extraction of minerals is to be carried out by open cast semi-mechanized method. Water table will not be touched during the mining process. No high risk accidents like landslides, subsidence flood etc. have been apprehended.

7.4.1 Risks due to Inundation

Mining will be done during the non-monsoon periods (October-June); therefore problem of inundation is not likely to happen.

7.4.2 Risks Due to Failure of Pit Slope

In order to allay dangers due to open cast slope failure, final pit, slope stability estimations will be made for the existing mines. Determining the factor of safety, the slopes should be monitored at regular intervals to check for any possible failure.

7.4.3 Risks due to Failure of Waste Dumps

All the Material excavated during mining will be saleable, therefore no waste dumps are proposed.

7.4.4 Risks of Accidents due to Trucks and Dumpers

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- ✓ Rough access roads
- ✓ Time pressure

- ✓ Inadequate brakes (Possibly from lack of maintenance)
- ✓ Carelessly parked vehicles(*e.g.* being parked on a slope without being adequately secured)
- ✓ Unsafe coupling and uncoupling of trailers, and
- ✓ Untrained drivers
- ✓ Overturning vehicles

To avoid such instances we will talk to the workers and their representatives and will involve them in the risk assessment process and tell them what to do, to reduce risk. All transportation nearby the mine lease area should be carried out directly under the supervision and control of management.

The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.

- ✓ Road signs will be provided at each and every turning point up to the main road (wherever required)
- ✓ Toavoiddangerwhilereversingthevehiclesespeciallyatworkingplace/loadingpoints,stopper should be posted to properly guide reversing/spotting operating.
- ✓ Only trained drivers will be hired.

7.5 DISASTER AND ITS MANAGEMENT

Mining and allied activities are associated with several potential hazards to both the employees and the public at large. A worker in a mine will be able to work under conditions, which are adequately safe and healthy. At the same time the environmental conditions also will not impair his working efficiency. This is possible only when there is adequate safety in mines. Hence mine safety is one of the most essential aspects of any working mine. The safety of the mine and the employees is taken care of by the Mines Act1952, which is well defined with laid down procedure to ensure safety and constantly monitored and supervised by Directorate General of Mines Safety and Department of Mines, State Government.

7.5.1 Identification of Hazards

There are various factors, which can create disaster in sand mine. These hazards are as follows:

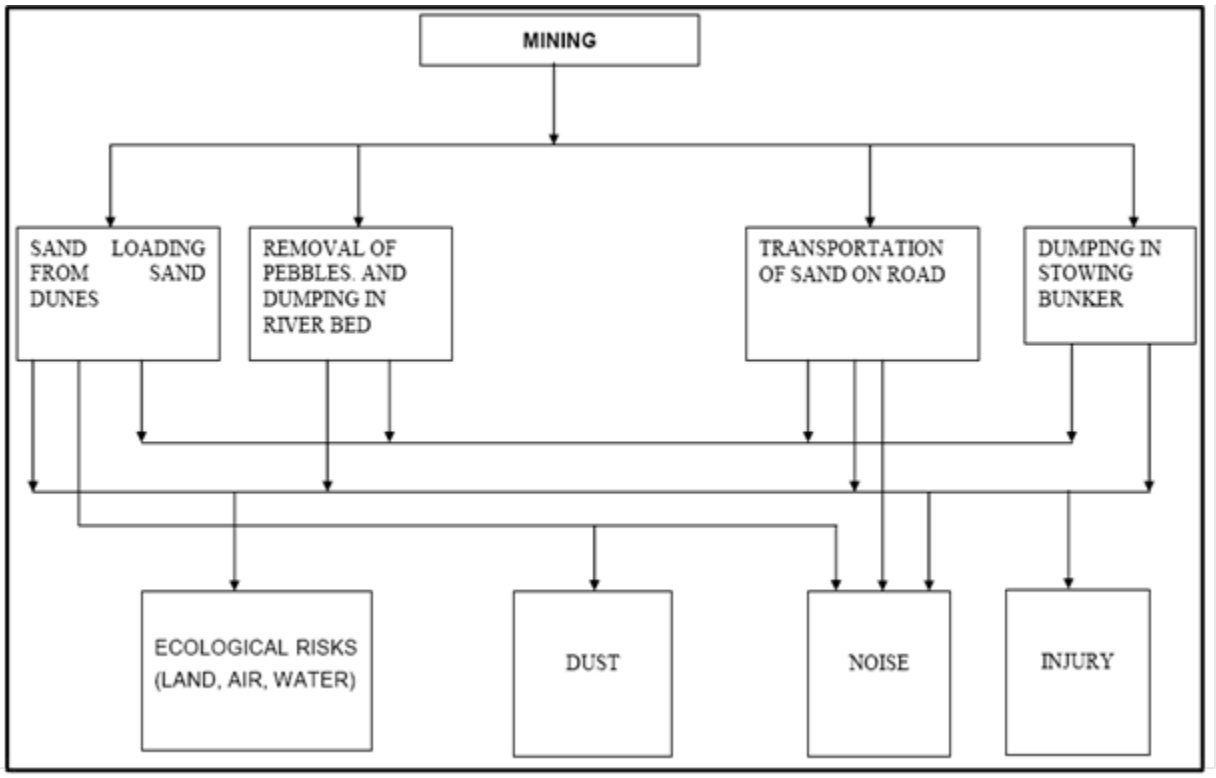
- ✓ Inundation / Flooding.
- ✓ Quick Sand Condition.
- ✓ Drowning.
- ✓ Accident due to vehicular movement.

- ✓ Accident during sand loading, transporting and dumping.

7.5.2 Sand Loading

The sand is loaded in the trucks using hand shovels and back-hoe. There are possibilities of injury in the hands during loading with shovels and staying under bucket movement.

- ✓ There are possibilities that the workers standing on the other side of loading may get injury due to over thrown sands with pebbles.
- ✓ There are possibilities of workers getting injured during opening of side covers of the trucks to facilitate sand loading.
- ✓ There are possibilities of riverbank collapse due to close proximity of sand extraction.
- ✓ There are chances of falling of cattle/children into sand pit in river bed-- instances of death due to fall in such pits were reported from other areas to the Department of Mines.
- ✓ Chance of workers getting injured due to improper balancing of truck while loading.



7.5.3 Heavy Machinery

Most of the accidents occur during transportation by dumpers, trucks and other heavy vehicles and are often attributable to mechanical failures, in which the factor of human errors cannot be ruled out.

7.5.4 Inundation / Flooding

- ✓ The possibility of inundation/flooding of the sand mines are very high during monsoon or during heavy rains in lean season as the mine area lies over the sand dunes of a riverbed.
- ✓ There are dangers to the trucks and other machineries due to flooding.
- ✓ There are dangers to the workers working in the sand dunes. Inundation or flooding is expected and beneficial for these sand mines as during this time only the sand reserve gets replenished.

7.5.5 Safety Features Required in Tippers/Trucks

- ✓ **Rear Vision System:** For assisting operator to have back view during reversing.
- ✓ **Auto dipping System:** To reduce glaring of eyes of operator during night.
- ✓ **Load Indicator and Recorder:** Enables management to detect and prevent over loading.
- ✓ **Global Positioning system:** To prevent illegal transport and selling of sand, restricting short-cut routes other than stipulated routes and computerized monitoring.
- ✓ **Seat belt reminder:** To alert operator for using the seat belt.

7.5.6 Mitigation of Hazards

7.5.6.1 Measures to Prevent Accidents during Sand Loading.

- ✓ Protective equipment like dust masks, earplugs/muffs and other equipment's shall be provided for use by the work persons.
- ✓ The trucks will be brought to a level so that the sand loading operation suits to the ergonomic Condition of the workers and the back-hoe.
- ✓ The loading will be done from one side of the truck only.
- ✓ Danger signs shall be displayed near the excavations.
- ✓ The workers will be provided with gloves and safety shoes during loading.
- ✓ Opening of the side covers (pattas) will be done carefully and with warning to prevent injury to the loaders.
- ✓ No sand will be collected within safety distances from bank, especially from outer bank of the meandering river. Safe clearance will be mainly determined by the height of the river bank and thickness of sand to be extracted from the close vicinity of that bank.
- ✓ Ponding in the river bed shall not be allowed.
- ✓ Operations during daylight only.

- ✓ No foreign material (garbage's) will be allowed to remain/spill in river bed and catchment area, or no pits/pockets are allowed to be filled with such material.
- ✓ Stockpiling of harvested sand on the river bank will be avoided.
- ✓ For particular operations, approaching river bed from both the banks will be avoided.
- ✓ Excavation will be 3 m in river bed and 9.0 m outside the river bed.
- ✓

7.6 REPLENISHMENT OF SAND DEPOSITS

The rivers are dynamic in nature. The rivers carry Sediment transport is a direct function of water movement. During transport in a water body, sediment particles become separated into three categories: suspended material which includes silt + clay + sand; the coarser, relatively inactive bed load and the saltation load. Suspended load comprises sand + silt + clay-sized particles that are held in suspension because of the turbulence of the water.

The size grades defined in the circular of the Central Water Commission (CWC), Government of India, are coarse (> 0.2 mm), medium (0.2- 0.075 mm) and fine (< 0.075 mm) fractions. They correspond to fine sand; very fine sand and silt-clay on the Udden Went worth scale. The coarse and medium fractions are interpreted as 'temporarily suspended bed load' whereas the fine fraction is the 'wash load' or 'long term suspended load'.

The suspended load is further divided into the wash load which is generally considered to be the silt + clay-sized material (< 62 μm in particle diameter) and is often referred to as "fine-grained sediment". The wash load is mainly controlled by the supply of this material (usually by means of erosion) to the river. The amount of sand (>62 μm in particle size) in the suspended load is directly proportional to the turbulence and mainly originates from erosion of the bed and banks of the river. In many rivers, suspended sediment (i.e. the mineral fraction) forms most of the transported load. Bed load is stony material, such as gravel and cobbles that moves by rolling along the bed of a river because it is too heavy to be lifted into suspension by the current of the river. Bed load is especially important during periods of extremely high discharge and in landscapes of large topographical relief, where the river gradient is steep (such as in mountains). It is rarely important in low-lying areas. The tributaries of Kiul River are mentioned in Table no.7.1 given below.

Table No.7.1: Tributaries of Kiul River considered for Sediment Deposition

River	Tributaries
Kiul	Barnar & Harohar

Source: *Hydrological inventory of South Bihar River Basin (National Institute of Hydrology)*

7.7 SOCIAL IMPACT ASSESSMENT, REHABILITATION & RESETTLEMENT (R&R) ACTION PLAN

Socio Economic Impact Assessment (SEIA) refers to systematic analysis of various social and economic characteristics of human being living in a given geographical area during a given period. SEIA is carried out separately but concurrently with Environment Impact Assessment (EIA). It focuses the effect of the project on social and economic well-being of the community.

7.7.1 Impact on Demographic Composition

The proposed project will hardly make any difference in the demographic composition of the study area as the additional employment it envisages to create will be met locally to the maximum extent. Hence, the chances of immigration of people from outside the study area are remote. Accordingly, there will be no variation in the total population of the study area including that of sex ratio, when the mine starts operating.

7.7.2 Employment Opportunities

The proposed project will provide employment to the local people. It has been estimated that 151 people will get direct employment in this mining project for this cluster mine sites. It is a positive impact of the project since it is providing employment opportunities to the local people.

7.7.3 Increased Supply of Sand in the Market

With the commencement of the proposed mining project the supply of sand will increase and the gap between demand and supply will decrease to some extent, if not fully.

7.7.4 Impact on Agriculture

The entire mining area is part of river bed. It is a non forest land and the proposed activity is to take place in the bed of river Kiul & agriculture field. There will be no negative impact on agriculture because compensation will be made to the land owners and agriculture land is reclaimed & give back to the land owners after the completion of mining contract so that they will again use the field for cultivation, if required. Scientific mining will be adopted in the proposed mining project the area will be free from annual floods, which destroy standing crops, land and property. This is a positive impact of the proposed mining project.

7.7.5 Impact on Road Development

Movement of tractor-trolleys and other vehicles to and fro the mining site is expected to increase substantially, when mining will start. The existing roads connecting the quarry with the National and State Highways are mostly narrow mud roads. There will be mud slide and traffic bottle neck if these roads are not widened and their conditions are not improved. Hence, there is good scope for road development in the mining area. Further, there are risks of accidents during loading of extracted minerals into tractor-trolleys and transportation to markets for sell. However, accidents can be avoided by taking due care & precautions.

7.7.6 Income to Government

The proposed mining activity will benefit the State in the form of royalty, dead rent, fees & earning from taxes.

7.7.7 Impact on Law and Order

As most of the workers to be employed in the proposed mining project are local residents no law & order problem is envisaged. It is expected that the workers will attend to their duties from their residence and return to their homes after the day's work. There would have been law & order problem if the workers were migrants and lived in shanties closed to the mining area. However, to meet any untoward incident one police post may be set up closed to the mining area.

7.7.8 Impact on Health

There are no chances of occurring diseases, due to mining of sand. Sand is non-toxic. However, sand mining activities such as excavation and loading unloading of sand require precautions since it create respiratory problems among mine workers. Excessive inhalation of sand is a serious health concern. To avoid respiratory problem from sand necessary protection should be taken.

Rehabilitation and Resettlement (R&R) action plan is not applicable for this project.

7.8 SUMMARY

Risk assessments will help to priorities the risks and provide information on the need to safely control the risks. In this way, mine owners and operators will be able to implement safety improvements. Mining and allied activities are associated with several potential hazards to both the employees and the public at large. A worker in a mine will be able to work under conditions, which are adequately safe and healthy. At the same time the environmental conditions also will not impair his working efficiency. This is possible only when there is adequate safety in mines. Hence mine safety is one of the most essential aspects of any working mine. It is very important

to conserve the scheduled fauna in the area by the local authority as well as by the forest officials. People are not aware about the wildlife and protection of wild animals. There is an urgent need of education and awareness to local people about the wild life and their importance. A green belt will be developed around the core zone. Green belt plantation will be started with the beginning of the mining and will be completed at the end of mine lease. This mining project has positive impact on social and economic well-being of the community because this project provides employment opportunities to local people and many social welfare works done by project proponent. There is no displacement of the population within the project area and adjacent nearby area.

Chapter-8

PROJECT BENEFITS

8.0 GENERAL

Various benefits are envisaged while planning for the mining of sand, from Kiul River Bed. Sand are very important minor mineral and is the principal raw material for meeting the huge demand of construction material required in building construction and infrastructure works, road material for construction and maintenance of roads / highway; elastic ballast material for rail tracks in the State of Bihar and nearby cities and towns of Uttar Pradesh. The natural available materials in shoal deposits of river bed quarry site have been found suitable from techno-economic consideration.

8.1 PHYSICAL BENEFITS

- ✓ Generate useful economic resource for construction.
- ✓ Improve Socio-economic conditions of surrounding areas.
- ✓ Protecting river banks.
- ✓ Reduce the probability of submergence of adjoining agricultural lands.
- ✓ Protection of crops being cultivated along the river bank.
- ✓ Reducing aggradations of river level.
- ✓ **Improvements in the physical infrastructure:-**The proposed Sand mine will have numerous induced impacts on society such as growth in schools, hospitals, hotels & resorts, transport etc. It will also attract other entrepreneur to establish their venture in the region.
- ✓ **Improvements in the social infrastructure: -**The social infrastructure like religious places (temple, mosque, church, gurdwara); marriage homes, Bus stations, railway stations, play grounds, stadium will be improved due to the induced impact of the proposed drug manufacturing.
- ✓ **Employment potential –skilled; semi-skilled and unskilled: -** The present project will provide direct employment i.e. Total worker are 151 will be engaged in proposed mining activity.
- ✓ **Other tangible benefits:-**The other tangible benefits includes metrics and improvements demonstrating process and system cost savings, compliant inspections and customer audits, faster product approvals and manufacturing throughput, less rejected material, reduced nonconformance issues, and more efficient continuous improvement and project implementation.

Intangible benefits include improved staff morale, faster, more accurate transparent decision making, less employee turnover, increased staff accountability, and an enhanced culture of quality throughout the organization.

8.2 SOCIAL BENEFITS

The mining in the area will create rural employment. It has been observed that conditions of the villages around mining areas are better than that of distant villages. The mining activity in the region will have positive impact on the social economic condition of the area by way of providing employment to the local in-habitants; wages paid to them will increase the per capita income, housing, education, medical and transportation facilities, economic status, health and agriculture.

A detailed programme for socio economic development of the area has been framed. The salient features of the programme are as follows:

- ✓ Social welfare programme like provision of medical facilities educational facilities, water supply for the employees as well as for nearby villagers will be taken.
- ✓ A well laid plan for employment of the local people has been prepared by giving priority to local people.
- ✓ Supplementing Govt. efforts in health monitoring camps, social welfare and various awareness programs among the rural population.
- ✓ Assisting social forestry programme.
- ✓ Adoption of villages for general development.
- ✓ Supply of water to village nearby villages.
- ✓ Development of facilities within villages like roads, etc.

8.3 CORPORATE ENVIRONMETAL RESPONSIBILITIES

A Budget of 2.0 % of the total Project cost is incurred as Corporate Environmental Responsibility **(CER)** and the utilization of this amount will be decided during the time of Public Consultation. The amount of CER cost of each ghats of Cluster of Jamui Kiul 14-16 balu ghats are given in Table 8.1:

Table 8.1: Budget for CER Rupees

S. No	Ghat Name	CER cost (in Lakhs)
1	Jamui Kiul 14 Balu ghats	11.52
2	Jamui Kiul 15 Balu ghats	7.66
3	Jamui Kiul 16 Balu ghats	6.44
Total		**25.62**

8.4 ECOLOGICAL BENEFITS

A green belt will be developed along the boundary of the mining lease area. The area for green belt plantation consists of undisturbed soil; hence plantation could be made as in any garden or road side plantation. Green belt is erected not from biodiversity conservation point of view but is basically developed as a screen to check the spread of dust pollution. It is proposed to plant approx. 484 Nos. native species per during the mining plan periods for this cluster by assuming 5 plant per hectare of mining lease area.

8.5 CONCLUSION

The management will recruit the semi-skilled and unskilled workers from the nearby villages. The project activity and the management will definitely support the local Panchayat and provide other form of assistance for the development of public amenities in this region. The company management will contribute to the local schools, dispensaries for the welfare of the villagers. A suitable combination of trees that can grow fast and also have good leaf cover will be adopted to develop the green belt. It is proposed to plant 484 Nos. native species per during the mining plan periods for this cluster by assuming 5 plant per hectare of mining lease area.

Chapter-9
ENVIRONMENT MANAGEMENT PLAN

9.0 GENERAL

The environmental management must be integrated into the process of mine planning so that ecological balance of the area is maintained and adverse effects are minimized. The Environmental Management Plan (EMP) consists of a set of monitoring programme, mitigation measures, and management control strategies to minimize adverse environmental impacts.

Environment Management Plan, which is to be implemented in the project has detailed under the following heads:

- River course environment
- Air Environment
- Water Environment
- Noise Environment
- Biological Environment including Plantation Development
- Occupational Safety and Health
- Socio-economic and cultural environment
- EMP Budget

9.1 RIVER COURSE ENVIRONMENT

Land degradation is one of the major adverse impacts of opencast mining activities related to mining and any effort to control adverse impacts would be incomplete without appropriate land reclamation strategy.

Deviation from planned mining procedure can lead to bank erosion/cutting and thereby river channel shifting degradation of land, causing loss of properties and degradation surrounding of landscape. Thus for environment friendly river bed mining the following control/abatement measures will be followed.

- Removal of sand is from dry part in river bed it is during non monsoon from dried area and sufficient safety barrier say 7.5m of width will be left towards bank side. So that the river flow / course will not get disturbed.
- Unwanted material including mineral or spillage (if any) will not be stacked by the side of the excavation area. If need be done then it should be dozed afterwards in excavation voids created. This is to be done so, because it will otherwise hinder the flow of water in monsoon season.

- Removal of sand is to done leaving safety barrier on both sides and maximum barrier should be on concave side of river preferably the flow channel (excavation void created) should be kept straight so as to help avoid erosion as side cutting.

9.2 AIR ENVIRONMENT

During the course of sand mining, no toxic substances are released into the atmosphere, so there seems to be no potential threat to health of human beings. In river bed mining activities, dust will be generated during mining, loading ad transportation. The only source of fugitive gaseous emission during mining is vehicles which will be used for transportation. The environmental management for air pollution control includes:

- The un-metalled haul roads should be adequately compacted before being put into use.
- Water should be sprinkled on these roads periodically every-day (twice in a day), to wet the surface.
- Over loading of transport equipment's should be avoided to prevent spillage.
- Transportation of sand should be in covered vehicles to prevent fugitive dust emission.
- Regular checking and maintenance of vehicles should be conducted once in every two months and pollution under control certificate be obtained.
- It will be ensured that all transportation vehicles carry a valid PUC certificate.
- Masks will be provided to the workers daily during working hours of the mine.
- Plantation will be taken up along the approach roads and vicinity of river bank. The plantation arrests dust

9.3 WATER ENVIRONMENT

Removal/collection of sand in the area will be done well above the water table; therefore impact on water regime is not anticipated. The ground water level of lease area is 8m to 10 m from the surface level. Removal/collection of sand will be done up to a depth of 3m in the river bed, which will be replenished during monsoon season, more or less restoring to original position thus not affecting normal drainage in the river channel also. Mining will be done with scientific method only.

Waste Water Management

No waste water is generated due to proposed working as project only involves removal/ collection of sand from river bed in dry state.

9.4 NOISE ENVIRONMENT

The noise level monitoring carried out in the area has indicated that the present noise levels in applied mine site is generally within limits. No drilling or blasting will be done in the proposed project of sand, bajri, boulder mining.

The environmental management for noise pollution control includes:

- Proper maintenance of hand equipment's will be carried out every month, which will help in reducing generation of noise during operations.
- Regular checking and maintenance of vehicles should be conducted once in every two month to avoid noise pollution.
- Ear plugs will be provided to workers during the operational hours of mine.
- Periodical monitoring of noise will be done to adopt corrective actions wherever needed.
- Plantation will be taken up along the approach roads and vicinity of river bank. The plantation minimizes propagation of noise and also arrests dust.

9.5 BIOLOGICAL ENVIRONMENT INCLUDING PLANTATION DEVELOPMENT

Although, there are no significant adverse impacts from the project, the following measures are proposed to minimize anticipated impacts:

- The project area shall be strictly used for only the activities permitted.
- **Boundary demarcation:** The boundary of the leased area will be marked prior to start of work at the site. All workers shall be informed of the boundary of the project and the forest. No trespassing of the workers into the adjoining forest land shall be permitted.
- **Greenery development:** The project will not lead to any tree cutting. However, as social responsibility, greenery will be developed within two km of the project area. River banks, both side of haul roads and Panchayat land in consultation with the local panchayats will be used for plantation. Community services will be deployed in raising these plantations. Trees of economic importance and native origin such as fruit trees shall be planted.

Table 9.1: List of Species for Greenbelt Development

S/n	Botanical Name	Family	Common Name	Height	Flowering Season	Crown Shape	Crown surface area (M^2)
1	*Alstoniascholaris*(linn.)R. Br.	Apocynaceae	Chattiyan	15m	Dec - Mar.	Round	241,680.50

S/n	Botanical Name	Family	Common Name	Height	Flowering Season	Crown Shape	Crown surface area (M^2)
2	*Anonaswuamosa*Linn.	Anonaceae	Custard apple	10m	March - July extended uptosept.	Round	2178.21
3	*Anona reticulate* Linn.	Anonaceae	Bullock's Heart	10m	June.	Round	2017.44
4	*Azadirachtaindica* A. juss.	Meliaceae	Indian Lilac	20m	Jan - March, Aug. - Sept.	Spreading	300,445.30
5	*Cassia pumila*Lamk	Caesalpinaceae	Yellow Cassia	10-12m		Round	13,273.70
6	*Derris indica*(Lam.)Bennett.	Fabaceae	Pongam-Oil Tree, Karanj	10m	April - June	Round	6278.1
7	*Eucalyptus citridora Hook.*	Myrtaceae	lemon scented gum	20m	Feb. - April, Oct.- Dec.	Conical	52447.63
8	*Ficusgibbosa*Blume	Moraceae	Korotosani (Orisa)	10m	April - May	Spreading	223,45.4
9	*Guazmaulmifolia* Lamk	Sterculiaceae	Rudraki	10m	Mar - August.	Round/ Spreading	30279.8
10	*Heterophragmaroxburghiji*DC	Bignoniaceae		18m	Feb. - April.	Round/ Oblong	155217.7

Source: Guidelines for development of greenbelt CPCB-2007

9.6 OCCUPATIONAL SAFETY AND HEALTH

Occupational Health and Safety professionals develop and coordinate safety and health systems and strategies within organizations. They identify workplace hazards, assess risks to employee health and safety, and recommend solutions. Increasingly, Health and Safety Professionals are

also responsible for many of the environmental aspects of their workplace. As this profession matures there is an increased emphasis on risk management strategy and on the development of workplace culture.

Occupational Health and Safety professionals in the minerals industry may perform the Following tasks-

I. The collection of minor minerals from the Sand mine does not cause any occupational ill effects.
II. Except fugitive dust generation there is no source which can show a probability for health related diseases and proper dust suppression will control dust generation and dispersion.
III. Dust masks will be provided to the workers working in the dust prone areas as additional personal protective equipment.
IV. The occupational health hazards have so far not been reported.
V. Awareness program will be conducted about likely occupational health hazards so as to have preventive action in place.
VI. Any workers health related problem will be properly addressed.
VII. Periodical medical checkup will be conducted.
VIII. Promote occupational health and safety within their organization and develop safer and healthier ways of working;
IX. Help supervise the investigation of accidents and unsafe working conditions, study possible causes and recommend remedial action;
X. Develop and implement training sessions for management, supervisors and workers on health and safety practices and legislation;
XI. Coordinate emergency procedures, mine rescues, firefighting and first aid crews;
XII. Communicate frequently with management to report on the status of the health and safety strategy and risk management strategy, and Develop occupational health and safety strategies and systems, including policies, procedures and manuals.

Table-9.2-Budget for occupational health

S. No.	Activities recommended for communities level services	Tentative cost (Lakh Rs)
1	Awareness campaigns regarding health issues in the nearby villages.	**1.0**

2	Provide free health checkups & medicines to the nearby villagers of the project site.	**3.0**
3	Assistance to set up a temporary health center during the lease tenure.	**1.0**

Budget for occupation health and safety will be approx. 5.0 Lakhs per project in a cluster. Therefore combined budget for a cluster will be approx. 15.0 Lakhs.

9.7 SOCIO-ECONOMIC AND CULTURAL ENVIRONMENT

Study on socio economic status has already been carried out using primary socio economic survey for generating the base line data of socio economic status.

HUMAN SETTLEMENT

The villages and their inhabitants in the buffer zone will not be disturbed from their settlements due to the mining operations. There is no inhabitation within the lease area being on riverbed. Therefore neither villages nor any part of village or any hamlet will be disturbed during the entire life of the mine. As the mining operations will not disturb or relocate any village or settlement, no adverse impact is anticipated on any human settlement.

EMPLOYMENT

The area is considered as industrially backward in the absence of any high employment potential activates, the people are economically backward. The mining operation will provide employment to local people various indirect employment opportunities, will also we generated. Such as employment through contractors, running of trucks, tractors and buses on hire different kind of shop and transport related business avenues.

9.8 EMP BUDGET

Following provisions are proposed to be taken for improving, control and monitoring of environment protection measures. Separate EMP budget and their breakup of each ghats of a cluster are attached as Annexure- III. The Combined EMP budget of the total cluster project will be 36.82 Lakhs.

9.9 SUMMARY

As per Above discussion there is no measure impact on the environment due to mining except fugitive mission in the form of dust generated during handling of mineral. The adequate

preventive measures will be adopted to contain the various pollutants within permissible limits. Plantation development will be carried out in the mine premises, along the approach roads, around Govt. buildings, schools approx**.** 485 trees during plan period**.** It will prove an effective pollution mitigate technique, and help avoid soil erosion during monsoon season. Employment opportunities will be provided to the locals only as providing extraction of minerals from the mine site is the only prevailing occupation for them for their livelihood. The total EMP budget for this cluster will be 36.82 Lakhs.

CHAPTER 10

SUMMARY & CONCLUSION

10.0INTRODUCTION

As per MoEF&CC, New Delhi Gazette dated 14th September 2006 and amended thereof, the proposed mining project is categorized as category B-1 due to project area is more than 5.0 Ha. The LOI was granted for the period of 5 years (A copy of LOI is attached as Annexure-II.)

The Proposed Sand Mining Project is a Cluster of Jamui Kiul balu ghats , which inludes 3 balu ghats (i.e Jamui Kiul 14-16 Balu ghats) are situated on dry part of Kiul river in Anchal – Jamui, District- Jamui, State-Bihar having cumulative production of 1878552 TPA.

Table 10.1: Details of the Project

S. No.	Particulars	Details
1.	**Nature and Size of the Project**	Mining of Sand as Minor Minerals with cumulative Production Capacity of 1878552 TPA (M.L. Area- 96.7 ha).
3	**Toposheet (OSM) No.**	72L/1
4.	**Lease Area Details**	
	Lease Area	96.7 Ha.
	Type of Land	River bed of Son
	Topography	Undulated (Riverbed)
	Site Elevation Range	92 m RL to 89 m RL
5.	**Production in TPA**	**1878552 TPA**
5.	**Cost Details**	
	Cost of the project	Rs. **1280.62 L**akhs (Including Auction Cost)
	Cost for EMP	Rs. 36.82 Lakhs
	Cost for CER	Rs. 25.62 Lakhs
6.	**Environmental & Infrastructural settlings of the area**	
	Ecological Sensitive Areas (National Park, Wild Life Sanctuary, Biosphere Reserve, Reserve/ Protected Forest etc.) within 10 Km radius	No Ecological Sensitive Areas within 10 Km radius. Bhimbandh wild life sanctuary is situated at the distance of 12.5 Km from the project boundary of Jamui-Kiul 14 Balu Ghat in North direction which is nearest to the Sanctuary.
	Nearest Town/ Major City with population	Jamui, approx. 5.0 Km and 7.0 Km towards North from the Jamui-Kiul 14 Balu Ghat and towards NW from Jamui-Kiul 16 Balu Ghat respectively.
	Nearest Railway	Jamui Railway station at distance of approx. 11 Km in NNE.

	Station	
	Nearest National/State Highway	SH-82 is approx.300 m away in North form lease boundary Kiul 14 Balu Ghat and 1.5 Km in West direction form lease boundary all the 3 ghats.
	Nearest Airport	JPN International Airport, Patna approx. 135 Km towards NW and Gaya Airport is at distance of approx. 131 Km in SW direction.
	Nearest Post Office	Khaira post office approx, 2.5 Km towards NW.
	Medical Facilities	Sadar Hospital Jamui, Puspanjali hospital etc, within Approx. 5.5 Km towards NNE.
	Education Facilities	DAV Public school, St. Michel Public School, Oxford public school, Plus 2 high school Approx. 5.5 Km towards North.
	Seismic Zone	Zone IV (IS 1893: 2002)
	Water Body	Kiul River (Riverbed)

10.1 PROJECT DESCRIPTION

The proposed project is for mining of Sand (Minor Mineral) by open cast semi-mechanized method in over an area of **96.70 Ha.** Of a cluster of 3 sand ghats throughout of district Jamui, The district experiences severe cold during winter whereas on the other hand in summer it is very hot. The project site falls under seismic zone IV which is a high damage risk zone (MSK VIII-IX). About 73.63 percent of the geographical area of North Bihar is considered to be prone to floods. Bihar often faces drought situation of different scales/levels that intrinsically lead to famine situations. The total geological and minable reserve of a cluster will be **5222052 Tonnes** and **4616780 tonnes.** Mine lease area will be worked in benches and the digging depth will be restricted to 3.0 m only. This will be further replenished during rainy season. Mineral Sand will be transported by trucks. The deposit is moderate to good quality sand. It is widely used in construction, buildings, bridges and other infrastructure. It is free from clay and non sticky in nature. Total water requirement for the all 3 ghats will be **14.5 KLD**. Total man power requirement for the project is **151.** The site facilities like temporary, rest-shelter, first aid facility, drinking water facility etc. will be provided as per requirement. There is no litigation pending against this project.

10.2 DESCRIPTION OF ENVIRONMENT

The generation of primary data as well as collection of secondary data and information from the site and surroundings was carried out during Pre-Monsoon Season i.e. March 2020 to June 2020 (as per the permission received from SEIAA-Bihar). The EIA study is being done for the Mine

Lease (core zone) and area within 10 Km distance from mine lease boundary (buffer zone), both of which together comprise the study area. Baseline environment was determined within the study area, which represents 10 km radius of the surrounding area to the project site. This collected data was further used to identify potential impacts of the mining activity on the surrounding environment and formulate mitigation measures.

Summary of the baseline data collected is detailed in Table 10.2

Table 10.2: Baseline Environmental Status

Attribute	Baseline status
Ambient Air Quality	The ambient air quality study for the 20 AAQ monitoring stations shows that the maximum and minimum ground level concentration for PM_{10} is respectively 94.5 µg/m^3at AAQ8 and 49.8 µg/m^3at AAQ11. Whereas the maximum and minimum ground level concentration for $PM_{2.5}$ ranges between 52.8 µg/m^3 at AAQ8 and 16.2 µg/m^3 at AAQ9 respectively. Similarly for SO_2, the maximum and minimum ground level concentration varies between 12.7 µg/m^3 at AAQ6 and 5.1 µg/m^3 at AAQ13 & AAQ5 stations. For NO_2 the maximum and minimum ground level concentration varies between 21.2 µg/m^3 & 10.5 µg/$m^3$for respectively AAQ12 and AAQ5 stations.
Noise Levels	Noise monitoring study reveals that the minimum & maximum noise levels at day time were recorded as 37.8 dB (A) at NQ3 & 47.7 dB (A) at NQ9. The minimum & maximum noise levels at night time were found to be 28.4 dB (A) at NQ2 & 38.9 dB (A) at NQ10.
Water Quality	6 Groundwater samples were analyzed and concluded that: The ground water from all sources remains suitable for drinking purposes as all the constituents are within the limits prescribed by drinking water standards by Indian Standards IS: 10500.
Soil Quality	Samples collected from identified locations indicate pH value ranging from 6.1to 7.0.. whereas the Potassium is found to be ranging from 58.1 mg/kg to 93.4 mg/kg.

10.2.1 ANTICIPATED IMPACTS AND MITIGATION MEASURES

Based on the Baseline Environment, as determined in Chapter 3, environmental impacts of the mining activity on the surrounding environment are described in following sub-sections.

10.2.2 Impact on Land Use Pattern

Presently there is no activity on the land. The project site is located on bank of river. There is no human settlement in the near vicinity of the project. Restoration of mine lease area is a natural process. There would not be cutting & felling of trees.

10.2.3 Impact on Air Quality

Information on air quality was studied and predicted that the mining activity will not affect the air quality in a significant manner. In mining operations, loading, and transportation operations may cause deterioration in air quality. In the present case, only wet materials will be handled. The collection and lifting of minerals will be done Semi mechanized mining method shall be adopted for the mining of sand. Therefore the dust generated is insignificant. Water sprinkling will be done in regular manner for dust suppression.

10.2.4 Impact of Noise Levels

Noise level will increase due to transportation. The project site away from the villages no major impact of the noise level will be there. Vehicle with low noise level will be preferred for the project.

10.2.5 Impact on Water Quality

More over due to small scale of mining operation using minimum machineries, dust suppression is by water spraying through water sprinkler limited to haulage road. Rainwater flowing through the exposed mine cuts would carry some sediment of soil and rock. These are found to be nontoxic in nature. Surface runoff water from mines has only high turbidity during monsoon. As discussed, the mining activity will require very less quantity of water in comparison to the recharging. Hence, it will not affect the water regime of the area.

10.2.6 Impact on Soil Quality

The soil textures a yellowish, light-coloured variety of red soil. The basin land of the rivers is mostly sandy soil, and the land adjacent to the rivers is sandy loam. It is due to settling of air borne dust or due to wash off of solid particulates by surface or ground water. This may lead to change in porosity, permeability & other such physical characteristics of soil of the area.

10.2.7 Flora & Fauna

Flora

Floral environment is affected by mining activities due to:

- Air Pollution i.e. both dust & gaseous pollution
- Water pollution
- Land Pollution

Pollutant like dust, gaseous emanations, solid & liquid effluents will be minimized at the generation point itself and adequate measures will be taken to prevent their impact on environment.

ii) There is no forest in the core zone of mining lease area. So, there will be no deforestation due to mining.

iii) The mining lease area is devoid of vegetation. So, the greenery to be developed under green belt development programme will improve the floral environment of the area.

Fauna

There is no likelihood of any adverse impact on the faunal environment too due to mining activities.

10.2.8 Socio-Economic Profile

The social demographic profile of the area is not likely to be much affected, as there is not much displacement of people due to the project. The mining in the area has created rural employment. The mining activity in the region has positive impact on the social economic condition of the area by providing employment to the local in habitants; wages paid increase the per capita income.

10.3ANALYSIS OF ALTERNATIVES (TECHNOLOGY AND SITE)

We have analyzed all the option for alternatives of the proposed mine site. This project is sand specific project and existing land use of mine lease classified as River Body which will continue

to be so even after the current mining project is over, hence no alternate site is suggested for this project.

10.4 ENVIRONMENTAL MONITORING PROGRAM

This chapter includes the technical aspects of monitoring the effectiveness of mitigation measures (including measurement methodologies, data analysis, reporting schedules, emergency procedures, detailed budget & procurement schedules).In order to maintain the environmental quality within the stipulated standards, regular monitoring of various environmental components is necessary which will complied as per conditions. For this lessee has taken decision to formulate an Environment Policy of the mine and constitute an Environmental Management Cell and committed to operate the proposed mine with the objectives mentioned in approved Environment Policy. EMP may also require measurement of ambient environmental quality in the vicinity of a sit using ecological/biological, physical and chemical indicators. Monitoring may include socio-economic interaction, through local liaison activities or even assessment of complaints. Regular Monitoring of all the environmental parameters *viz.*, air, water, noise and soil as per the formulated program based on CPCB and MoEF&CC guidelines will be carried out every year. The location of the monitoring stations was selected on the basis of prevailing micro meteorological conditions of the area like; wind direction and wind speed, relative humidity, temperature. A budget for monitoring of Air, water, Noise will be approx. **Rs.2.0 Lakhs per Ghats** to be incurred by the project proponent for undertaking pollution prevention measures during the mining activity.

10.5ADDITIONAL STUDIES

Risk assessments will help to priorities the risks and provide information on the need to safely control the risks. In this way, mine owners and operators will be able to implement safety improvements. Mining and allied activities are associated with several potential hazards to both the employees and the public at large. A worker in a mine will be able to work under conditions, which are adequately safe and healthy. At the same time the environmental conditions also will not impair his working efficiency. This is possible only when there is adequate safety in mines. Hence mine safety is one of the most essential aspects of any working mine. It is very important to conserve the scheduled fauna in the area by the local authority as well as by the forest

officials. People are not aware about the wildlife and protection of wild animals. There is an urgent need of education and awareness to local people about the wild life and their importance. A green belt will be developed around the core zone. Green belt plantation will be done upto completion of plan period. This mining project has positive impact on social and economic well-being of the community because this project provides employment opportunities to local people and many social welfare works done by project proponent. There is no displacement of the population within the project area and adjacent nearby area.

10.6 PROJECT BENEFITS

The management will recruit the semi-skilled and unskilled workers from the nearby villages. The project activity and the management will definitely support the local Panchayat and provide other form of assistance for the development of public amenities in this region. The company management will contribute to the local schools, dispensaries for the welfare of the villagers. A suitable combination of trees that can grow fast and also have good leaf cover will be adopted to develop the green belt. It is proposed to plant 484 Nos. of native species will be planted during the mining plan period. The project proponent has allocated 2 % of total project cost annum for CER Activities. Other than this social development of village will be considered as per social activities Socio-economic environment will have positive impact due to the mining project in the area. The mining activity will create employment opportunities to local communities. The project will not only improve the living standard of local people but also create an aesthetic value to the river banks where green belt will be developed.

10.7 ENVIRONMENT MANAGEMENT PLAN

As per Above discussion there is no measure impact on the environment due to mining except fugitive emission in the form of dust generated during handling of mineral. The adequate preventive measures will be adopted to contain the various pollutants within permissible limits. Plantation development will be carried out nearby the mine site, along the approach roads, around Govt. buildings, schools approx**.** 484 trees during plan period. It will prove an effective pollution mitigate technique, and he provided to the locals only as providing extraction of minerals from the mine site is the only prevailing occupation for them for their livelihood. A combined EMP budget **of this cluster will be Rs. 36.82 Lakhs** for **EMP** is incurred by Project Proponent.

10.7.1 Air Quality Management

The only air pollution sources are the road transport network of the trucks. The dust suppression measures like water spraying will be done on the roads. Utmost care will be taken to prevent spillage from the trucks. Overloading will be prevented. Plantation activities along the roads will also reduce the impact of dust in the nearby villages.

10.7.2 Management for Noise Pollution

As the only impact is due to transportation of sand to the construction though village roads, emphasis will be given on the following points.

- Minimum use of Horns at the village area.
- Timely maintenance of vehicles and their silencers to minimize vibration and sound.
- Phasing out of old and worn out trucks.
- Provision of green belts along the road networks.
- Care will be taken to produce minimum sound during loading.

It was found that the sand mining activity will not have any significant impact on the biological environment of the region. Since mining activity is carried out only during the day time, the movement of animals during the night will not be hindered.

10.7.3 Water Management

The deposits occur in the middle/bottom of the river. During the entire lease period, the deposit will be worked from the top surface to 3 m bgl. The ultimate depth of the open cast pits will be 3 m below ground level.

10.7.4 Soil Management

No top soil has been found within mine site. Green belt development around the area minimizes the impact of mining on soil characteristics like its texture, chemistry & even Soil Erosion in the area. Transportation of the trucks carrying mined material will be covered to avoid dust pollution on soil.

10.7.5 Green Belt Development

The green belts will be designed to control PM 10, gaseous pollutants, noise, surface run off and soil erosion etc. Approx. 485 local and fast growing plant species will be planted in nearby the

mine site, along the approach roads, around Govt. buildings, schools for green belt development for this cluster.

10.8 CONCLUSION

This Project will provide several benefits to the nearby Villages by a proper planning and management. This project will employ most of the worker from nearby villages. Only supervisor Staff will be hired from outside. There will not be any increase in population due to the project. However, few people from other area may migrate in this area for business opportunities. During the operation of this project no adverse impact on the surrounding environment. So project is beneficiary for the surrounding village. From the baseline study and various discussion on probable impacts of all the operational activity, it has been concluded that this project will more positive impact and will generate the revenue and employment in the area. On the above facts and baseline study, the proposed activity is recommended for the commencement with proper mitigation measure as suggested.

CHAPTER - 11

DISCLOSURE OF CONSULTANTS

Declaration by Experts contributing to the Draft EIA/EMP report of Jamui Kiul 14-16 Balu Ghat Sand Mining Project on Kiul River at, Mauza/Village – Kendih, Bhandra, Sagdaha, Parsa, Bela, & Bhaur, Anchal Khaira, District- Jamui, and Bihar. Applied lease area is 96.7 Ha. Proposed Production – 1878552 TPA

I, hereby, certify that,

I was a part of the Draft EIA/EMP team in the following capacity that developed the above Draft EIA/EMP.

EIA Coordinator	
Name	Mr. Himanshu Goel
Period of involvement	March 2020 to till date

Functional Area Experts: -

S. No.	Functional Areas	Name of the Expert/s	Involvement (Proposed) (Period & Task)
1	FAE-WP	Mr. Himanshu Goel	Preparation of WP input, impact assessment & mitigation measures
2	FAE-AP	Mrs. Neha Singh	Preparation of AP input, impact assessment & mitigation measures
3	FAE-AQ	Mrs. Neha Singh	Preparation of AQ input, impact assessment & mitigation measures
4	FAE-LU	Mr. Punit Lal Mahto	Preparation of LU LC input, impact assessment & mitigation measures
5	FAE-EB	Mrs. Amita Jain	Preparation of EB input, impact assessment & mitigation measures
6	FAE-SE	Mr. Arun Tyagi	Preparation of SE input impact assessment & mitigation measures

S. No.	Functional Areas	Name of the Expert/s	Involvement (Proposed) (Period & Task)
7	FAE-HG	Mr. Punit Lal Mahto	Preparation of HG input, impact assessment & mitigation measures
8	FAE-Geo	Mr. Punit Lal Mahto	Preparation of Geo input, impact assessment & mitigation measures
9	FAE-SC	Mrs. Sanjeev Kumar Sharma	Preparation of SC input, impact assessment & mitigation measures
10	FAE-RH	Mr. Sanjay Manwani	Preparation of RH input, impact assessment & mitigation measures
11	FAE-SHW	Mr. Rajeev Gupta	Preparation of SHW input, impact assessment & mitigation measures

Declaration by the Head of the Accredited Consultant Organization

I, Mr. Himanshu Goel, hereby, confirm that the above mentioned experts prepared the Draft EIA/EMP report of **Jamui Kiul 14-16 Balu Ghat Sand Mining Project on Kiul River at, Mauza/Village – Kendih, Bhandra, Sagdaha, Parsa, Bela, & Bhaur, Anchal Khaira, District- Jamui, and Bihar. Applied lease area is 96.7 Ha. Proposed Production – 1878552 TPA**

I also confirm that I shall be fully accountable for any mis-leading information mentioned in this statement.

Signature	
Name	Mr. Himanshu Goel
Designation	Managing Director
Name of the EIA Consultant Organization	Oceao Enviro Management Solutions (India) Pvt. Ltd.

Name of the Consultancy Company	**Oceao Enviro Management Solutions (India) Pvt. Ltd.**

Accrediation Status	A QCI Accredited Environmental Organization. Mentioned at S. No. 111 in QCI list of Accredited Consultants.
Address	**Office:** Oceao Enviro Management Solutions (India) Pvt. Ltd. Address: 217, Ist Floor, Judge Colony, Sector 12, Vasundhara – 201012
E - mail Address	solutionsaps@gmail.com; clime.enviro@gmail.com
Website	www.oceaoenviro.com
Nature of Services	EIA Consultancy, Environmental, Health & Safety Auditing, EMS, Greens Concept Development, CDM etc.
Base Line Data	M/s Global Environmental Consultancy and Research Centre (Recognized by NABL)

OCEAO-ENVIRO Management Solutions (INDIA) PVT. LTD. is a multi-disciplinary Environmental Engineering & Project Management Consulting organization, based at Ghaziabad (NCR), India with the objective to "BE A PART OF SUSTAINABILITY". We serve for “development for all” across the globe. The underlying philosophy is to provide analytical solutions and policy advices for decision-making to promote green growth, leading to sustainable socio-economic conditions. With the pool of qualified and experienced associates, our expertise assimilate spans with over 300 successful assignments in different states/cities in India and project offices in all the major states across the country.

The business viewpoint of the firm is to provide an exceptional level of service to its patrons, clients and deliver innovative and composite solutions to resolve complex issues and problems related to the overall development of the project.

Quality Council of India

National Accreditation Board for Education & Training

CERTIFICATE OF ACCREDITATION

OCEAO-ENVIRO Management Solutions (India) Pvt. Ltd.
217, Ist Floor, Judge Colony, Sector 12, Vasundhara, Ghaziabad, U.P – 201012

Accredited as **Category** - A 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 – opencast only	1	1 (a) (i)	A
2	Building and construction projects	38	8 (a)	B
3	Townships and Area development projects	39	8 (b)	A

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in IA AC minutes dated February 16, 2018 posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no. QCI/NABET/ENV/ACO/18/0625 dated May 23, 2018. The accreditation needs to be renewed before the expiry date by OCEAO ENVIRO Management Solutions India Pvt. Ltd., Ghaziabad, following due process of assessment.

Sr. Director, NABET
Dated: May 23, 2018

Certificate No.
NABET/ EIA/1821/ IA 0033

Valid till
23.01.2021

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.

ANNEXURE-I
TERM OF REFERENCE

सत्यमेव जयते

F. No. - SIA/1(a)/1013/2020

STATE LEVEL ENVIRONMENT IMPACT ASSESSMENT AUTHORITY, BIHAR

2nd Floor, Beltron Bhawn
Shastri Nagar
Patna - 800 023
E-mail:- seiaabihar@gmail.com
seiaa.ms.br@gmail.com
Telephone No.:- 0612 - 2281255

Dated:- 22/7/2020

To,

Shri Manoj Singh,
Proprietor,
M/s Manoj Enterprises,
S/o Brahmdev Singh,
Balgudar, Lakhisarai,
Pin - 811 311,
Email- manojenterprises@gmail.com,
Mob. No.- 8521961102.

Sub: **Proposed Sand Mining Project on Kiul River at Jamui Kiul 14 Balu Ghat, Mauza / Village:– Kendih, Bhandra & Sagdaha, P.O.:- Nariyana, P.S.:- Khaira, Anchal:– Khaira, District:- Jamui, State:- Bihar; with proposed production Area of 34.0 Ha) - Terms of Reference regarding.**

Ref:

1. Online Application - SIA/BR/MIN/51396/2020.
2. Your application dated 10-06-2020 (hard copy submission).

Member Secretary
SEIAA, Bihar

3. Minutes of the SEAC meeting held on 11-06-2020 and 12-06-2020.

4. Minutes of the SEIAA meeting held on 07-07-2020 and 08-07-2020.

Sir/Madam,

This has reference to your online proposal submitted in the State Level Environment Impact Assessment Authority to prescribe the Terms of Reference (ToR) for undertaking detailed EIA study for the purpose of obtaining Environmental Clearance in accordance with the provisions of the EIA Notification, 2006. For this purpose, you have submitted online information in the prescribed format (Form - I) along with a Pre-feasibility Report. The details of the proposal as described in the application are as follows:

1.	**Online Proposal No.**	SIA/BR/MIN/51396/2020
2.	**File No.:**	SIA/1(a)/1013/2020
3.	**Name of the Proposal**	Sand Mining Project on Kiul River at Jamui Kiul 14 Balu Ghat, Mauza / Village:– Kendih, Bhandra & Sagdaha, P.O.:- Nariyana, P.S.:- Khaira, Anchal:– Khaira, District:- Jamui, State:- Bihar
4.	**Category of the Proposal:**	Mining of Minerals.
5.	**Project/Activity applied for**	1(a) Mining of Minerals.
6.	**Name of River**	Kiul River
7.	**Area of the Project**	34.0 Ha
8.	**Khata, Khesra and Thana No.**	Khata No.- 172, 150 & 159, Khesra No.- 857, 920, 01 & 515.
9.	**Proposed Production**	7,95,600 TPA
10.	**Bulk Density**	1.8
11.	**Method of Mining**	Open Cast Semi-mechanized method (as per Bihar Minor Mineral Concession Rule).
12.	**No of working days/year**	270 days
13.	**Water demand**	Domestic Water : 0.60 KLD Dust Suppression : 5.0 KLD Green Belt Development : 0.85 KLD Total Water Requirement : 6.45 KLD
14.	**Man Power**	59

Member Secretary
SEIAA, Bihar

In this regard, under the provisions of the EIA Notification, 2006 as amended from time to time Sustainable Sand Management Guidelines 2016 and Enforcement & Monitoring Guidelines for the sand mining-2020 the ToR for the purpose of preparing Environment Impact Assessment report and Environment Management Plan for obtaining prior Environmental Clearance is prescribed as follows:-

1. Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.

2. A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.

3. All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.

4. All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery / toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).

5. Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.

6. Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.

7. It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms /

Member Secretary
SEIAA, Bihar

conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.

8. The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA.

9. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.

10. A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.

11. Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.

12. Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.

13. The vegetation in the RF / PF areas in the study area, with necessary details, should be given.

14. A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.

15. Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger / Elephant Reserves / (existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.

16. A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and Rare Endangered and Threatened (RET) Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled - I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.

17. Proximity to Areas declared as 'Critically Polluted' or the Project areas attracting court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered.

18. R&R Plan / compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.

19. One season primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil flora and fauna shall be collected and the AAQ and

Member Secretary

other data so compiled presented date-wise in the EIA and EMP Report. Site specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM_{10}, particularly for free silica, should be given.

20. Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. Details of the model used and input parameters used for modeling should be provided for both mining and non-mining scenario. The air quality contours should be shown on a location map clearly indicating the location of the site, location of sensitive receptors, and the habitation. The wind roses showing pre-dominant wind direction also be indicated on the map.

21. The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.

22. Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.

23. Description of water conservation measures proposed to be adopted in the Project should be given.

24. Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.

25. Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.

26. Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.

27. A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on

commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.

28. Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck / tractor and other vehicular traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.

29. Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.

30. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.

31. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.

32. Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.

33. Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.

34. Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA / EMP Report of the Project.

35. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.

36. The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.

37. A Disaster management Plan shall be prepared and included in the EIA / EMP Report.

38. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.

39. **Additional conditions-**

(a) Submit a report based on cumulative assessment of increase in air pollutants due to increase in traffic load in view of proposed mining activities on all the roads located within aerial distance of 10 km using suitable air mode

(b) Submit a map on appropriate scale to show extraction paths to be used outside the mining lease boundary to approach major public roads (Rural / District road or State / National Highway). Alternative route shall be explored if extraction path is passing through dense population / human settlements. Also submit cumulative traffic management plan for cluster sand mining proposal.

(c) Submit a map of the area falling within 2.5 km radius from boundary of each mining lease showing all man-made public utility features such as bridge/public civil structure (including water intake points), culverts etc. and highways, and a table showing distance of the above mentioned man-made features from the mining lease boundary to facilitate decision making pertaining to relevant rules / Guidelines.

(d) Submit District Survey Report (DSR) and other relevant documents prepared in accordance with extant MoEF&CC, Govt. of India Notifications / rules / guidelines.

(e) If the proposed mining lease has overlapping areas with previously allotted mining lease or already working or worked out mining lease the same should be clearly marked on current mining plan. Details about quantity of sand extracted from overlapped area should be furnished duly certified from District Mining Officer.

Member Secretary
SEIAA, Bihar

(f) Satellite imagery of last three years for summer, rainy and winter seasons of each proposed mining lease shall be submitted.

(g) Prepare cluster EIA / EMP of mining Ghats / blocks qualified to fall in a cluster on a river within a district.

40. The environment protection requires a strictly regulated mining in terms of area quantity as well as most importantly replenishment thereof EIA/EMP shall be considered only for grant of EC when following directions of SEIAA are compiled by the project proponent & Deptt. of mines and Geology, Bihar Govt. together.

A. Letter of intent (L.o.I) issued to settles /successful tenderer to have following basic information either as addendum'' or incorporating them in its revised form to be issued by Deptt. Of mines & Geology, Govt. of Bihar.

(i) Details of Geo-co-ordinates of lease area (corner points);

(ii) Involvement of Forest land/Distance form forest land/wildlife or otherwise protected areas/ Archeological sites and details of cluster situation if any;

(iii) Minable area and prohibited area (where mining shall remain prohibited due to safety of Bridges/structures/Archeological sites, other structures etc.);

(iv) Annual production capacity of the concerned Sand Ghat which should not be more than 60,000 Mt/ha/year.

(v) Nature of river (Perennial or Non-perennial etc.).

B. Mining Plan updation-

(i) Plan to show "Red line" or Bench mark with respect to MSL (Mean Sea Level) in mining channel reaches (MCR) below which no mining shall be allowed.

(ii) Recording of the initial level of mining lease at shorter interval, say 25m X 25m grid.

(iii) To leave buffer distance (unmined block) at least 50m after every block of 1000 m.

(iv) To show only a maximum of 60% leased land for removal of minerals.

Member Secretary
SEIAA, Bihar

(v) Mining plan to include the certificate from the competent Authority in the state forest department or PCCF on Forest land, distance from wildlife protected areas. Mine plan in pieces shall only be unacceptable.

C. District Survey Report (DSR) having DSR is precondition for grant of EC; therefore submission of duly prepared DSR either by Deptt. of Mines an Geology or a copy of same by the Project Proponent shall be essential.

41. Besides the above, the below mentioned conditions points are also to be complied: -

a) All documents to be properly referenced with index and continuous page numbering.

b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.

c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC / NABL accredited laboratories. All the original analysis / testing reports should be available during appraisal of the Project.

d) Where the documents provided are in a language other than English, an English translation should be provided.

e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.

f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.

g) Changes, if any made in the basic scope and project parameters (as submitted in Form - I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA / EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.

h) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environment Clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.

Member Secretary
SEIAA, Bihar

i) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

42. The application (Hard copy) submitted by the applicant/Project Proponent would require authentication by the applicant before submission of EIA/EMP failing which EC may be withheld.

43. This Terms of Reference (ToR) is issued without affecting any Hon'ble court order / NGT order / statutory order of other institutions as well as relevant other laws enacted by Ministry of Environment, Forest & Climate Change, Government of India, New Delhi. ToR may be amended, or shall remain liable for cancellation if any statutory order requires so.

(Kamal Jeet Singh)
Member Secretary
SEIAA, Bihar

Member Secretary
SEIAA, Bihar

सत्यमेव जयते

F. No. - SIA/1(a)/1014/2020

STATE LEVEL ENVIRONMENT IMPACT ASSESSMENT AUTHORITY, BIHAR

2nd Floor, Beltron Bhawn
Shastri Nagar
Patna - 800 023
E-mail:- seiaabihar@gmail.com
seiaa.ms.br@gmail.com
Telephone No.:- 0612 - 2281255

Dated:- 24/7/2020

To,

Shri Ashu Singh Bhati,
Director,
M/s Shiva Corporation (India) Limited,
S/o- Sri Magan Singh Bhati,
A-24, Ambabadi, Sikar Road,
Jaipur, Rajasthan,
Pin - 302 012,
Email:- shivacorporation1998@gmail.com,
Mob. No.:- 9413339643, 9783771175.

Sub: **Proposed Sand Mining Project on Kiul River at Jamui Kiul 15 Balu Ghat, Mauza / Village:- Sagdaha & Parsa, P.O.:- Nariyana, P.S.:- Khaira, Anchal:- Khaira, District:- Jamui, State:- Bihar; with proposed production Area of 32.0 Ha) - Terms of Reference regarding.**

Ref:

1. Online Application - SIA/BR/MIN/52721/2020.
2. Your application dated 10-06-2020 (hard copy submission).

Member Secretary
SEIAA, Bihar

3. Minutes of the SEAC meeting held on 11-06-2020 and 12-06-2020.

4. Minutes of the SEIAA meeting held on 07-07-2020 and 08-07-2020.

Sir/Madam,

This has reference to your online proposal submitted in the State Level Environment Impact Assessment Authority to prescribe the Terms of Reference (ToR) for undertaking detailed EIA study for the purpose of obtaining Environmental Clearance in accordance with the provisions of the EIA Notification, 2006. For this purpose, you have submitted online information in the prescribed format (Form - I) along with a Pre-feasibility Report. The details of the proposal as described in the application are as follows:

1.	**Online Proposal No.**	SIA/BR/MIN/52721/2020
2.	**File No.:**	SIA/1(a)/1014/2020
3.	**Name of the Proposal**	Sand Mining Project on Kiul River at Jamui Kiul 15 Balu Ghat, Mauza / Village:- Sagdaha & Parsa, P.O.:- Nariyana, P.S.:- Khaira, Anchal:- Khaira, District:- Jamui, State:- Bihar
4.	**Category of the Proposal:**	Mining of Minerals.
5.	**Project/Activity applied for**	1(a) Mining of Minerals.
6.	**Name of River**	Kiul River
7.	**Area of the Project**	32.0 Ha
8.	**Khata, Khesra and Thana No.**	Khata No.- 159, 31, Khesra No.- 01, 515, 136.
9.	**Proposed Production**	7,95,600 TPA
10.	**Bulk Density**	1.8
11.	**Method of Mining**	Open Cast Semi-mechanized method (as per Bihar Minor Mineral Concession Rule).
12.	**No of working days/year**	270 days
13.	**Water demand**	Domestic Water : 0.60 KLD Dust Suppression : 5.0 KLD Green Belt Development : 0.80 KLD Total Water Requirement : 6.40 KLD
14.	**Man Power**	59

Member Secretary
SEIAA, Bihar

In this regard, under the provisions of the EIA Notification, 2006 as amended from time to time Sustainable Sand Management Guidelines 2016 and Enforcement & Monitoring Guidelines for the sand mining-2020 the ToR for the purpose of preparing Environment Impact Assessment report and Environment Management Plan for obtaining prior Environmental Clearance is prescribed as follows:-

1. Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.

2. A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.

3. All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.

4. All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery / toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).

5. Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.

6. Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.

7. It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms /

Member Secretary
SEIAA, Bihar

conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.

8. The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA.

9. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.

10. A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.

11. Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.

12. Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.

13. The vegetation in the RF / PF areas in the study area, with necessary details, should be given.

14. A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.

Member Secretary
SEIAA, Bihar

15. Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger / Elephant Reserves / (existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.

16. A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and Rare Endangered and Threatened (RET) Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled - I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.

17. Proximity to Areas declared as 'Critically Polluted' or the Project areas attracting court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered.

18. R&R Plan / compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.

19. One season primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil flora and fauna shall be collected and the AAQ and

other data so compiled presented date-wise in the EIA and EMP Report. Site specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM_{10}, particularly for free silica, should be given.

20. Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. Details of the model used and input parameters used for modeling should be provided for both mining and non-mining scenario. The air quality contours should be shown on a location map clearly indicating the location of the site, location of sensitive receptors, and the habitation. The wind roses showing pre-dominant wind direction also be indicated on the map.

21. The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.

22. Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.

23. Description of water conservation measures proposed to be adopted in the Project should be given.

24. Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.

25. Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.

26. Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.

27. A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on

commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.

28. Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck / tractor and other vehicular traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.

29. Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.

30. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.

31. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.

32. Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.

33. Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.

Member Secretary
SEIAA, Bihar

34. Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA / EMP Report of the Project.

35. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.

36. The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.

37. A Disaster management Plan shall be prepared and included in the EIA / EMP Report.

38. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.

39. **Additional conditions-**

(a) Submit a report based on cumulative assessment of increase in air pollutants due to increase in traffic load in view of proposed mining activities on all the roads located within aerial distance of 10 km using suitable air mode

(b) Submit a map on appropriate scale to show extraction paths to be used outside the mining lease boundary to approach major public roads (Rural / District road or State / National Highway). Alternative route shall be explored if extraction path is passing through dense population / human settlements. Also submit cumulative traffic management plan for cluster sand mining proposal.

(c) Submit a map of the area falling within 2.5 km radius from boundary of each mining lease showing all man-made public utility features such as bridge/public civil structure (including water intake points), culverts etc. and highways, and a table showing distance of the above mentioned man-made features from the mining lease boundary to facilitate decision making pertaining to relevant rules / Guidelines.

(d) Submit District Survey Report (DSR) and other relevant documents prepared in accordance with extant MoEF&CC, Govt. of India Notifications / rules / guidelines.

(e) If the proposed mining lease has overlapping areas with previously allotted mining lease or already working or worked out mining lease the same should be clearly marked on current mining plan. Details about quantity of sand extracted from overlapped area should be furnished duly certified from District Mining Officer.

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SEIAA, Bihar

(f) Satellite imagery of last three years for summer, rainy and winter seasons of each proposed mining lease shall be submitted.

(g) Prepare cluster EIA / EMP of mining Ghats / blocks qualified to fall in a cluster on a river within a district.

40. The environment protection requires a strictly regulated mining in terms of area quantity as well as most importantly replenishment thereof EIA/EMP shall be considered only for grant of EC when following directions of SEIAA are compiled by the project proponent & Deptt. of mines and Geology, Bihar Govt. together.

A. Letter of intent (L.o.I) issued to settles /successful tenderer to have following basic information either as addendum'' or incorporating them in its revised form to be issued by Deptt. Of mines & Geology, Govt. of Bihar.

(i) Details of Geo-co-ordinates of lease area (corner points);

(ii) Involvement of Forest land/Distance form forest land/wildlife or otherwise protected areas/ Archeological sites and details of cluster situation if any;

(iii) Minable area and prohibited area (where mining shall remain prohibited due to safety of Bridges/structures/Archeological sites, other structures etc.);

(iv) Annual production capacity of the concerned Sand Ghat which should not be more than 60,000 Mt/ha/year.

(v) Nature of river (Perennial or Non-perennial etc.).

B. Mining Plan updation-

(i) Plan to show "Red line" or Bench mark with respect to MSL (Mean Sea Level) in mining channel reaches (MCR) below which no mining shall be allowed.

(ii) Recording of the initial level of mining lease at shorter interval, say 25m X 25m grid.

(iii) To leave buffer distance (unmined block) at least 50m after every block of 1000 m.

(iv) To show only a maximum of 60% leased land for removal of minerals.

Member Secretary
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(v) Mining plan to include the certificate from the competent Authority in the state forest department or PCCF on Forest land, distance from wildlife protected areas. Mine plan in pieces shall only be unacceptable.

C. District Survey Report (DSR) having DSR is precondition for grant of EC; therefore submission of duly prepared DSR either by Deptt. of Mines an Geology or a copy of same by the Project Proponent shall be essential.

41. Besides the above, the below mentioned conditions points are also to be complied: -

a) All documents to be properly referenced with index and continuous page numbering.

b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.

c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC / NABL accredited laboratories. All the original analysis / testing reports should be available during appraisal of the Project.

d) Where the documents provided are in a language other than English, an English translation should be provided.

e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.

f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.

g) Changes, if any made in the basic scope and project parameters (as submitted in Form - I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA / EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.

h) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environment Clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.

Member Secretary
SEIAA, Bihar

i) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

42. The application (Hard copy) submitted by the applicant/Project Proponent would require authentication by the applicant before submission of EIA/EMP failing which EC may be withheld.

43. This Terms of Reference (ToR) is issued without affecting any Hon'ble court order / NGT order / statutory order of other institutions as well as relevant other laws enacted by Ministry of Environment, Forest & Climate Change, Government of India, New Delhi. ToR may be amended, or shall remain liable for cancellation if any statutory order requires so.

(Kamal Jeet Singh)
Member-Secretary
SEIAA, Bihar

F. No. - SIA/1(a)/1015/2020

STATE LEVEL ENVIRONMENT IMPACT ASSESSMENT AUTHORITY, BIHAR

2nd Floor, Beltron Bhawn
Shastri Nagar
Patna - 800 023
E-mail:- seiaabihar@gmail.com
seiaa.ms.br@gmail.com
Telephone No.:- 0612 - 2281255

Dated:- 24/3/2020

To,

Smt. Ruby Devi,
W/o Sri Chandra Shekhar Singh,
Purani Chowk Sikandra,
Jamui, Bihar,
Pin- 811315,
Email- rd5404464@gmail.com,
Mob.No.- 7782051162.

Sub: **Proposed Sand Mining Project on Kiul River at Jamui Kiul 16 Balu Ghat, Mauza / Sagdaha, Bela, Parsa & Bhaur, P.O. – Nariyana, Anchal– Khaira, District- Jamui, State:- Bihar; with proposed production Area of 30.70 Ha) - Terms of Reference regarding.**

Ref:

1. Online Application - SIA/BR/MIN/51383/2020.
2. Your application dated 10-06-2020 (hard copy submission).
3. Minutes of the SEAC meeting held on 11-06-2020 and 12-06-2020.

Member Secretary,
SEIAA, Bihar

4. Minutes of the SEIAA meeting held on 07-07-2020 and 08-07-2020.

Sir/Madam,

This has reference to your online proposal submitted in the State Level Environment Impact Assessment Authority to prescribe the Terms of Reference (ToR) for undertaking detailed EIA study for the purpose of obtaining Environmental Clearance in accordance with the provisions of the EIA Notification, 2006. For this purpose, you have submitted online information in the prescribed format (Form - I) along with a Pre-feasibility Report. The details of the proposal as described in the application are as follows:

1.	**Online Proposal No.**	SIA/BR/MIN/51383/2020
2.	**File No.:**	SIA/1(a)/1015/2020
3.	**Name of the Proposal**	Sand Mining Project on Kiul River at Jamui Kiul 16 Balu Ghat, Mauza / Sagdaha, Bela, Parsa & Bhaur, P.O. – Nariyana, Anchal–Khaira, District- Jamui, State:-Bihar
4.	**Category of the Proposal:**	Mining of Minerals. 1(a)
5.	**Project/Activity applied for**	Mining of Minerals.
6.	**Name of River**	Kiul River
7.	**Area of the Project**	30.70 Ha
8.	**Khata, Khesra and Thana No.**	Khata No.- 159, 194, 31 & 164, Khesra No.- 01, 515, 01, 136, 785 & 786.
9.	**Proposed Production**	2,87,352 TPA
10.	**Bulk Density**	2.0
11.	**Method of Mining**	Open Cast Semi-mechanized method (as per Bihar Minor Mineral Concession Rule).
12.	**No of working days/year**	240 days
13.	**Water demand**	Domestic Water : 33 KLD Dust Suppression : 5.0 KLD Green Belt Development : 0.80 KLD Total Water Requirement : 6.13 KLD
14.	**Man Power**	33

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In this regard, under the provisions of the EIA Notification, 2006 as amended from time to time Sustainable Sand Management Guidelines 2016 and Enforcement & Monitoring Guidelines for the sand mining-2020 the ToR for the purpose of preparing Environment Impact Assessment report and Environment Management Plan for obtaining prior Environmental Clearance is prescribed as follows:-

1. Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.

2. A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.

3. All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.

4. All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery / toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).

5. Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.

6. Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.

7. It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms /

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SEIAA, Bihar

conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.

8. The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA.

9. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.

10. A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.

11. Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.

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13. The vegetation in the RF / PF areas in the study area, with necessary details, should be given.

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19. One season primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil flora and fauna shall be collected and the AAQ and

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other data so compiled presented date-wise in the EIA and EMP Report. Site specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM_{10}, particularly for free silica, should be given.

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Member Secretary
SEIAA, Bihar

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Member Secretary

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(a) Submit a report based on cumulative assessment of increase in air pollutants due to increase in traffic load in view of proposed mining activities on all the roads located within aerial distance of 10 km using suitable air mode

(b) Submit a map on appropriate scale to show extraction paths to be used outside the mining lease boundary to approach major public roads (Rural / District road or State / National Highway). Alternative route shall be explored if extraction path is passing through dense population / human settlements. Also submit cumulative traffic management plan for cluster sand mining proposal.

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Member Secretary
SEIAA, Bihar

(f) Satellite imagery of last three years for summer, rainy and winter seasons of each proposed mining lease shall be submitted.

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A. Letter of intent (L.o.I) issued to settles /successful tenderer to have following basic information either as addendum'' or incorporating them in its revised form to be issued by Deptt. Of mines & Geology, Govt. of Bihar.

(i) Details of Geo-co-ordinates of lease area (corner points);

(ii) Involvement of Forest land/Distance form forest land/wildlife or otherwise protected areas/ Archeological sites and details of cluster situation if any;

(iii) Minable area and prohibited area (where mining shall remain prohibited due to safety of Bridges/structures/Archeological sites, other structures etc.);

(iv) Annual production capacity of the concerned Sand Ghat which should not be more than 60,000 Mt/ha/year.

(v) Nature of river (Perennial or Non-perennial etc.).

B. Mining Plan updation-

(i) Plan to show "Red line" or Bench mark with respect to MSL (Mean Sea Level) in mining channel reaches (MCR) below which no mining shall be allowed.

(ii) Recording of the initial level of mining lease at shorter interval, say 25m X 25m grid.

(iii) To leave buffer distance (unmined block) at least 50m after every block of 1000 m.

(iv) To show only a maximum of 60% leased land for removal of minerals.

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(v) Mining plan to include the certificate from the competent Authority in the state forest department or PCCF on Forest land, distance from wildlife protected areas. Mine plan in pieces shall only be unacceptable.

C. District Survey Report (DSR) having DSR is precondition for grant of EC; therefore submission of duly prepared DSR either by Deptt. of Mines an Geology or a copy of same by the Project Proponent shall be essential.

41. Besides the above, the below mentioned conditions points are also to be complied: -

a) All documents to be properly referenced with index and continuous page numbering.

b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.

c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC / NABL accredited laboratories. All the original analysis / testing reports should be available during appraisal of the Project.

d) Where the documents provided are in a language other than English, an English translation should be provided.

e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.

f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.

g) Changes, if any made in the basic scope and project parameters (as submitted in Form - I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA / EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.

h) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environment Clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.

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i) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

42. The application (Hard copy) submitted by the applicant/Project Proponent would require authentication by the applicant before submission of EIA/EMP failing which EC may be withheld.

43. This Terms of Reference (ToR) is issued without affecting any Hon'ble court order / NGT order / statutory order of other institutions as well as relevant other laws enacted by Ministry of Environment, Forest & Climate Change, Government of India, New Delhi. ToR may be amended, or shall remain liable for cancellation if any statutory order requires so.

(Kamal Jeet Singh)
Member-Secretary
SEIAA, Bihar

Member Secretary
SEIAA, Bihar

ANNEXURE-II
LETTER OF INTENT
(LOI)

समाहरणालय, जमुई

(खनन शाखा)

पत्रांक – 97 /खनन, जमुई, दिनांक– 06-02-2020

प्रेषित,

Manoj Enterprises
Prop-Manoj Singh
पिता–ब्रहमदेव सिंह
पता–सा0+पो0–बालगुदर
थाना–लखीसराय, 811311
Email-manojenterprises@gmail.com
Mob No-8521961102

विषय :– **पंचाग वर्ष 2020 से अगले पाँच वर्षों के लिए बालूघाट जमुई–किउल–14 की ई–नीलामी द्वारा बंदोबस्ती के उपरांत सैद्धांतिक स्वीकृत्यादेश।**

उपर्युक्त विषयक दिनांक–17.01.2020 को सम्पन्न हुई ई–नीलामी में बालूघाट जमुई किउल–14 के लिए आपके द्वारा सुरक्षित जमा राशि 2,21,00,000/-रू0 (दो करोड़ एक्कीस लाख रू0) के विरूद्ध उच्चतम नीलामी राशि 5,41,00,000/-रू0 (पाँच करोड़ इकतालीस लाख रू0) की बोली लगाये जाने के फलस्वरूप आपको सफल निविददाता घोषित करते हुए निम्नांकित शर्तों/बंधेजो पर सैद्धांतिक स्वीकृत्यादेश निर्गत की जाती है :–

1.

i. प्रथम किस्त की राशि (नीलामी राशि का 50 प्रतिशत) का भुगतान कार्यादेश निर्गत होने के पूर्व करेंगें।

ii. प्रथम किस्त की राशि के साथ जी0एस0टी0, आयकर एवं देय अधिभार का भुगतान संबंधित विभाग की अद्यतन अधिसूचना के अनुसार कार्यादेश निर्गत होने के पूर्व करेंगें।

iii. डी0एम0एफ0 में प्रथम किस्त की राशि की 2 प्रतिशत की राशि का भुगतान डी0एम0एफ0 नियमावली 2018 के अनुसार करेंगें।

iv. संबंधित बालूघाट के लिए तैयार एवं अनुमोदित खनन योजना कार्यादेश निर्गत होने के पूर्व कार्यालय/विभाग में समर्पित करेंगें।

v. पर्यावरण एवं वन मंत्रालय, भारत सरकार की पर्यावरण समाघात मूल्यांकन अधिसूचना तथा पर्यावरण संरक्षण अधिनियम के उपबंधो के अनुसार सक्षम प्राधिकार से नियत अवधि में पर्यावरण स्वच्छता प्रमाण पत्र कार्यादेश निर्गत होने के पूर्व कार्यालय/विभाग में समर्पित करेंगें।

vi. विहित प्रपत्र में बंदोबस्ती विलेख/संविद संबंधित नियम अथवा उसके समरूप एक प्रपत्र में कार्य आरंभ करने के पहले निष्पादित करेंगें तथा यथा विहित अपेक्षित प्रतिभूति राशि जमा करेंगे। बंदोबस्ती अवधि वैधानिक कार्य प्रारंम्भ करने/संविद निष्पादित की तिथि से 05 वर्षों के लिए विधिमान्य होगी। क्षेत्राधिकार में विलम्ब संबंधि कोई दावा भविष्य में स्वीकार नही की जायेगी।

vii. आवेदित क्षेत्र का मानचित्र की (ग्राम मूल मानचित्र के अनुरूप) ट्रेसिंग क्लाथ में तीन प्रति।

viii. स्टाम्प शुल्क और निबंधन शुल्क का भुगतान संबंधित विभाग की अद्यतन अधिसूचना के अनुसार करना होगा।

2. **बालू खनन की अनुमति** – सभी अपेक्षित वैद्यानिक कार्रवाई पूरी करने के बाद बालू खनन की अनुमति दी जायगी।

3. निष्पादित संविद विलेख का निबंधन एक माह के अंदर कराकर समर्पित कराना होगा।

4. बंदोबस्ती राशि के शेष किस्तों का भूगतान निम्न प्रकार करेंगें :–

किस्त	भुगतान की नियत तारीख
प्रथम किस्त (50%)	(क) कार्य आदेश निर्गत होने के पहले (पहले वर्ष के लिए) (ख) 15 दिसम्बर (दूसरे वर्ष और उसके बाद)
द्वितीय किस्त (25%)	15वीं मार्च
तृतीय किस्त (25%)	15वीं जून

5. यदि किस्तो का भुगतान करने मे असफल रहने पर आगे ई–चालान सिस्टम द्वारा बंद कर दिया जाएगा और केवल अग्रिम भुगतान के बाद खोला जाएगा।

6. साथ ही विहित तिथि के अंदर किसी किस्त का भुगतान में चूक की स्थिति में वार्षिक 24 प्रतिशत की दर से साधारण ब्याज पर प्रभारित किया जायेगा।

7. **बालू खनन की अधिकतम गहराई:–** नदी तल में खनन की अधिकतम गहराई उस समय बिना खुदाई वाले तल स्तर से अथवा जल स्तर जो भी कम हो, से 3 मीटर से अधिक नही होगी।

8. **बालू उत्खनन के प्रतिबंधित क्षेत्र :–**

i. बालू का उत्खनन किसी रेलवे पुल अथवा किसी राष्ट्रीय राजमार्ग/राज्य राजमार्ग के अर्न्तगत आने वाले किसी पुल के दोनो ओर 300 (तीन सौ) मी0 दूरी के अर्न्तगत निषिद्ध होगी और किसी भी पुल के दोनो ओर की 100 (एक सौ) मी0 की दूरी के अंदर निषिद्ध होगी। तथापि इसके संबंध में किसी अधिसूचना के माध्यम से राज्य सरकार के द्वारा किसी पुल के बारे में इस निषिद्ध क्षेत्र का विस्तार किया जा सकेगा, यदि वैसी आवश्यकता सुरक्षा के कारणों से हो।

ii. सार्वजनिक स्थल यथा श्मशान घाट/कोई धार्मिक स्थल आदि के 50 मी0 अंदर उत्खनन की अनुमति नही दी जायेगी।

iii. नदी के दोनो किनारे से 05 (पाँच) मी0 के अर्न्तगत उत्खनन की अनुमति नही दी जायेगी।

iv. बालू की उत्खनन, सिचाई प्रयोजन के लिए बनाए गए किसी डैम, बांधारा अथवा कोई अन्य संरचना का उपरिधारा और निचली धारा के 100 मी0 के अर्न्तगत निषिद्ध रहेगी।

v. अधिमानतः बालूघाट तटबंध के नदी भाग में रहेगा। 06 (छः) मी0 से कम उँचाई वाले तटबंधो के लिए तटबंध के टो/हील से 25 मी0 तक उत्खनन प्रतिबंधित होगा एवं इसके परे 1.00 (एक) मी0 गहराई के लिए उत्खनन की अनुमति होगी। उच्च तटबंध के मामले में तटबंध के टो/हील से 50 मी0 तक उत्खनन प्रतिबंधित होगा एवं इसके परे 75 मी0 की दूरी तक अधिकतम 1.50 मीटर गहराई तक तथा 75 मी0 की दूरी के आगे अधिकतम 2.00 मी0 गहराई तक उत्खनन की अनुमति होगी। तटबंध के लिए समानांतर प्रवाह के विकास को कम करने के लिए माईनिंग

पिट्स के गहराई के आठ गुणा चौड़ाई का क्रॉसबार 50 से 60 मी0 केन्द्र से केन्द्र अंतराल पर रखा जाना अनिवार्य होगा।

vi. सिंचाई मार्ग को उसी स्तर पर बनाये रखा जायेगा जैसा कि नदी तल का स्तर है और किसी भी दशा में नदी तल का स्तर सिंचाई मार्ग के स्तर से निचे रखने की अनुमति नही दी जायेगी। अतः स्तूप/कूप/अन्तग्राही कूप के चारो ओर 5 मी0 की दूरी तक उत्खनन की अनुमति नही दी जायेगी।

vii. वैसी नदियों जहाँ से सिंचाई नहर का प्रवाह निकलता है, के मामले में जल संसाधन विभाग से अनापत्ति प्रमाण–पत्र की प्रति के उपरांत ही बालू निकासी की अनुमति प्रदान की जायेगी।

viii. बंदोबस्तधारी से भिन्न किसी अन्य व्यक्ति की रैयती भूमि में बालू उत्खनन की अनुमति तबतक नही दी जायेगी जब तक कि बंदोबस्तधारी द्वारा संबंधित भू–स्वामी (रैयत) की सहमति प्राप्त नही कर ली जाती है।

ix. वैसे किसी क्षेत्र में बालू उत्खनन की अनुमति नही दी जायेगी, जिसे राज्य सरकार ने प्रतिबंधित क्षेत्र के रूप में अधिसूचित किया है।

9. <u>सामान्य शर्तें :–</u>

(i) बन्दोबस्तीधारी को बालू के परिवहन हेतु वाहन के चालक को ऑन लाईन ई0चालान (परिवहन चालान) निर्गत करना होगा।

(ii) बंदोबस्तधारी नदी तट से 300 मी0 तक बालू का भंडारण कर सकते है जिसके लिए किसी प्रकार के भंडारण अनुज्ञप्ति की आवश्यकता नही होगी। नदी तट से 300 मी0 के बाद बालू भंडारण करने के लिए किसी भी व्यक्ति को अलग से भंडारण अनुज्ञप्ति लेना होगा।

(iii) बालू के उत्पादन एवं प्रेषण के लिये पंजी संधारित करनी होगी। बंदोबस्तधारी विहित प्रपत्र में बालू के उत्पादन तथा प्रेषण से संबंधित साप्ताहिक, मासिक एवं वार्षिक रूप से विवरणी (रिटर्न) समर्पित करेगा।

(iv) बंदोबस्तधारी नदी तल से बालू प्रेषण के बिन्दु पर एक साईनबोर्ड लगाएगा जिसपर बंदोबस्तधारी का नाम एवं पता, बंदोबस्ती की अवधि, स्थानीय मैनेजर का नाम एवं पता तथा बालू का विक्रय मूल्य प्रदर्शित किया जाएगा।

(v) बंदोबस्तधारी श्रम विधियों के प्रावधानों के अनुसार आश्रय गृह, पीने का पानी, शिशु गृह (क्रेचेज) तथा फर्स्ट एड किट की व्यवस्था संबंधित बालूघाटों में लगे श्रमिकों के लिए करेगा।

(vi) बंदोबस्तधारी संबंधित क्षेत्रों का निरीक्षण करेगा तथा स्वयं/ अथवा अपने द्वारा अधिकृत प्रतिनिधियों के माध्यम से बालूघाटों का प्रचालन करेगा। किसी रूप में किये गये उपपट्टा (सबलेटिंग) से बंदोबस्ती रद्द कर दी जाएगी। बालूघाटों/नदी तल तक बालू के परिवहन के प्रयोजनार्थ पहुँच पथ (अप्रोच रोड़) का निर्माण बंदोबस्तधारी द्वारा स्वयं किया जाएगा।

(vii) दो जिलों के बीच किसी सीमा विवाद की दशा में, उसे संबंधित जिला पदाधिकारियों द्वारा जो इस संबंध में संयुक्त निर्णय लेगें, संयुक्त रूप से हल किया जाएगा और उसे विभाग को संसूचित कर दिया जाएगा।

(viii) बंदोबस्तधारी द्वारा सतत् बालू खनन प्रबंधन मार्गदर्शन, 2016/पर्यावरणीय स्वच्छता प्रमाण पत्र में विनिर्दिष्ट शर्त्तों के अनुरूप मशीन का प्रयोग किया जाएगा। महिला श्रमिकों से सूर्यास्त के बाद कोई कार्य नही लिया जायेगा।

(ix) बालू लदे सभी वाहनों को तारपोलिन से ढककर बालू का परिवहन करना अनिवार्य होगा।

(x) बंदोबस्तधारी को धर्मकॉटा की स्थापना आवश्यकतानुसार सरकार के निदेश पर करनी होगी।

(xi) खनिज की अनुपलब्धता, मार्ग व्यवधान, सीमाना से संबंधित कोई व्यवधान अथवा अन्यान्य कारण से उत्तोलन में बाधा उत्पन्न होने पर सरकार द्वारा कोई क्षतिपूर्त्ति देय नहीं होगा।

(xii) बंदोबस्तधारी पर्यावरण, वन एवं जलवायु परिवर्त्तन मंत्रालय SEIAA/ DEIAA द्वारा मॉनसून अवधि (जुलाई, अगस्त एवं सितम्बर माह में अथवा पर्यावरणीय स्वीकृति में यथा कथित) में नदी तल से खनन के लिए अधिरोपित रोक, खनिज संसाधनों की अनुपलब्धता, पहुँच पथ में किसी बाधा, सीमा विवाद अथवा उसके किसी अन्य कारण के चलते उत्पन्न किसी समस्या के कारण बालू के उत्पादन/प्रेषण में उत्पन्न अवरोध की दशा में किसी प्रतिपूर्ति का हकदार नही होगा।

(xiii) बंदोबस्तधारी वाहनों में सूखा बालू लादने की व्यवस्था यह सुनिश्चित करने के लिए करेगा कि बालू ढोने वाले वाहनों से सड़क पर पानी नही टपके। इसके लिए बंदोबस्तधारी नदी के किनारे से 300 मीटर की दूरी के भीतर बालू लादने के लिए सेकेण्डरी लोडिंग की व्यवस्था करेगा जिसके लिए अपेक्षित बालू जमा करने हेतु किसी लाईसेन्स की आवश्यकता नहीं होगी। इसके लिए कोई क्षतिपूर्ति देय नही होगी।

(xiv) बालूघाट बंदोबस्तधारी खान एवं खनिज (विकास और विनियमन) अधिनियम, 1957 तथा बिहार खनिज (समनुदान, अवैध खनन, परिवहन एवं भंडारण निवारण) नियमावली, 2019 के सुसंगत प्रावधानों तथा उसमें किये गये संशोधनों तथा सरकार द्वारा समय–समय पर निर्गत निदेशों का पालन करेगा। बंदोबस्तधारी पर यह भी बाध्यकारी होगा कि अन्य सुसंगत अनिधिनियमों तथा नियमावलियों के प्रावधानों का पालन करेगें।

(xv) बंदोबस्तधारी बंदोबस्त क्षेत्र के भीतर किसी अवैध खनन के लिए जिम्मेवार होगें और पाई गई किसी शिकायत, यदि कोई हो, पर गंभीरता से विचार किया जाएगा तथा बंदोबस्तधारी के विरूद्ध अपराधिक मामला दायर किया जाएगा।

(xvi) बंदोबस्तधारी समाहर्त्ता द्वारा बालूघाटों के संचालन के संबंध में लोकहित में जारी निर्बंधनों और शर्त्तों तथा निदेशों का पालन करेगा।

(xvii) उपर्युक्त शर्त्तों का पालन नहीं करने पर कारण पृच्छा निर्गत कर बंदोबस्ती रद्द करने की कार्रवाई की जा सकेगी ।

(xviii) बंदोबस्तधारी को खनन राजस्व/जी0एस0टी0/आयकर/स्टाम्प शुल्क/रजिस्ट्रेशन फीस का भुगतान नही करने की दशा में 30 दिनों का कारणपृच्छा नोटिस तामील की जाएगी और उक्त अवधि के दौरान बकाए का भुगतान करने में असफल रहने की दशा में बंदोबस्ती रद्द करने की कार्रवाई की जाएगी।

(xix) नीलामी हेतु प्रस्तावित बालूघाटों से संबंधित तकनीकी तथा अन्य बिन्दुओं यथा भूमि के अंचल, थाना, मौजा, खाता, खेसरा, रकबा तथा GPS Co-ordinate के संबंध में विवाद/त्रुटी पाए जाने पर संशोधन का अधिकार संबंधित जिला खनन कार्यालय का होगा। बालूघाटों का सीमांकन GPS Co-ordinate के अनुसार बालू बंदोबस्तधारी को कराना होगा तथा खनन के क्रम में संधारित कराना बंदोबस्तधारी की जवाबदेही होगी, जिसे RQP/ अंचलाधिकारी की उपस्थिति में प्रमाणित कराकर खनन कार्य कराना होगा।

(xx) बालू बंदोबस्तधारी को बालू लदे भारी वाहनों का परिवहन जल संसाधन विभाग द्वारा नहरों एवं बांधो पर निर्मित प्रतिबंधित सड़कों से नही करना होगा।

(xxi) बालूघाट में रैयती/बंदोबस्त जमीन होने पर रैयत से सहमति प्राप्त कर बालू का खनन करना होगा।

(xxii) सफल निविदादाता को विभाग द्वारा एजेन्सी के माध्यम से तैयार एवं अनुमोदित कराई गई खनन योजना पर होने वाले व्यय का भुगतान करना होगा। जो विभागीय निदेशालोक में निर्धारित समय सीमा के अन्दर/सैद्धांतिक स्वीकृति के पूर्व करना होगा। संबंधित जिला के जिला खनन पदाधिकारी/सक्षम पदाधिकारी द्वारा खनन योजना हस्तान्तरण सफल निविदादाता को किया जाएगा। खनन योजना में उल्लेखित प्रावधानों/शर्त्तों का पूर्ण अनुपालन सफल निविदादाता को करना होगा।

(xxiii) वैधानिक पर्यावरणीय तथा अन्य स्वीकृतियाँ प्राप्त करने में होने वाले व्यय का भुगतान करना होगा तथा सक्षम प्राधिकार से पर्यावरणीय स्वीकृति प्राप्त करने हेतु सभी सहयोग प्रदान करना होगा। वैधानिक पर्यावरणीय तथा अन्य स्वीकृतियाँ सफल निविदादाताओं के पक्ष में हस्तान्तरण किया जाएगा। वैधानिक पर्यावरणीय तथा अन्य स्वीकृतियॉ में उल्लेखित प्रावधानों/शर्तों का पूर्ण अनुपालन सफल निविदादाता/बंदोबस्तधारी को करना होगा।

(xxiv) बालूघाट क्षेत्र में पूर्व का किसी प्रकार का कोई सम्पति पड़े रहने पर उनका अधिकार वर्त्तमान बंदोबस्तधारी का नही होगा।

(xxv) बंदोबस्ती विलेख निष्पादन के पूर्व धारित क्षेत्र को सीमांकन कर खनन विभाग की संतुपिट के अनुरूप सीमा स्तंभ लगाने संबंधि शपथ पत्र दाखिल करना होगा।

(xxvi) नियमानुसार Progressive mine closure plan तथा Final mine closure plan प्रस्तुत करना होगाा।

(xxvii) बंदोबस्ती समाप्ति के पूर्व नदी तट से 300 मीटर के अन्दर भंडारित बालू को हटा लेना होगा अन्यथा भंडारित खनिज (बालू) सरकार की सम्पति मानकर उसका निष्पादन किया जायेगा।

(xxviii) मॉनसून के पहले और बाद नदी तल में बालू की मात्रा की भराई अभिनिश्चत करने के लिए अध्ययन मान्यता प्राप्त संस्थानों/एजेसियों से कराकर विभाग/कार्यालय को समर्पित करना होगा। विभाग द्वारा अध्ययन कराने की दशा में अध्ययन का खर्च बंदोबस्तधारी से वसूल किया जायेगा।

(xxix) बंदोबस्तधारी को अपने उत्पाद का कुछ अनुपात जो उनके उत्पाद का 50 प्रतिशत से अनाधिक होगा, निगम को पिट हेड मूल्य पर उपलब्ध कराना होगा।

(xxx) बंदोबस्तधारी को सर्वप्रथम कार्य विभागों की आवश्यकता के अनुरूप उन्हे बालू खनिज की आपूर्ति सुनिश्चित करनी होगी। विभिन्न कार्य विभागों को उनकी आवश्यकता के अनुरूप उन्हे बालू खनिज की आपूर्ति सुनिश्चित हो जाने के पश्चात ही किसी अन्य व्यक्ति को बालू खनिज का विक्रय/आपूर्ति किया जाएगा।

(xxxi) समाहर्त्ता को सरकार के हित में, सुनवाई का मौका देकर तर्कसंगत आदेश पारित करते हुये निविदा एवं बन्दोबस्ती रद्द करने का अधिकार होगा।

06/2/20

समाहर्त्ता,
जमुई।

समाहरणालय, जमुई

(खनन शाखा)

पत्रांक –334 /खनन, जमुई, दिनांक– 18-03-2020

प्रेषित,

Shiva Corpotation (India) Ltd.
डायरेक्टर–श्री आसु सिंह भाटी
पिता–श्री मगन सिंह भाटी
पता–ए–24, अम्बाबाड़ी, सीकर रोड,
जयपुर–302012 (राजस्थान)
मो0–9413339643
Email-shivacorporation1998@gamil. Com

विषय :– **पंचाग वर्ष 2020 से अगले पाँच वर्षों के लिए बालूघाट जमुई–किउल–15 की ई–नीलामी द्वारा बंदोबस्ती के उपरांत सैद्धांतिक स्वीकृत्यादेश।**

उपर्युक्त विषयक दिनांक–06.03.2020 को सम्पन्न हुई ई–नीलामी में बालूघाट जमुई–किउल–15 के लिए आपके द्वारा सुरक्षित जमा राशि 1,24,80,000/-रू0 (एक करोड़ चौबीस लाख अस्सी हजार रू0) के विरूद्ध उच्चतम नीलामी राशि 3,49,80,000/- रू0 (तीन करोड़ उन्नचास लाख अस्सी हजार रू0) की बोली लगाये जाने के फलस्वरूप आपको सफल निविददाता घोषित करते हुए निम्नांकित शर्तों/बंधेजो पर सैद्धांतिक स्वीकृत्यादेश निर्गत की जाती है :–

1.

i. प्रथम किस्त की राशि (नीलामी राशि का 50 प्रतिशत) का भुगतान कार्यादेश निर्गत होने के पूर्व करेंगें।

ii. प्रथम किस्त की राशि के साथ जी0एस0टी0, आयकर एवं देय अधिभार का भुगतान संबंधित विभाग की अद्यतन अधिसूचना के अनुसार कार्यादेश निर्गत होने के पूर्व करेंगें।

iii. डी0एम0एफ0 में प्रथम किस्त की राशि की 2 प्रतिशत की राशि का भुगतान डी0एम0एफ0 नियमावली 2018 के अनुसार करेंगें।

iv. संबंधित बालूघाट के लिए तैयार एवं अनुमोदित खनन योजना कार्यादेश निर्गत होने के पूर्व कार्यालय/विभाग में समर्पित करेंगें।

v. पर्यावरण एवं वन मंत्रालय, भारत सरकार की पर्यावरण समाघात मूल्यांकन अधिसूचना तथा पर्यावरण संरक्षण अधिनियम के उपबंधो के अनुसार सक्षम प्राधिकार से नियत अवधि में पर्यावरण स्वच्छता प्रमाण पत्र कार्यादेश निर्गत होने के पूर्व कार्यालय/विभाग में समर्पित करेंगें।

vi. विहित प्रपत्र में बंदोबस्ती विलेख/संविद संबंधित नियम अथवा उसके समरूप एक प्रपत्र में कार्य आरंभ करने के पहले निष्पादित करेंगें तथा यथा विहित अपेक्षित प्रतिभूति राशि जमा करेंगे। बंदोबस्ती अवधि वैधानिक कार्य प्रारंम्भ करने/संविद निष्पादित की तिथि से 05 वर्षों के लिए विधिमान्य होगी। क्षेत्राधिकार में विलम्ब संबंधि कोई दावा भविष्य में स्वीकार नही की जायेगी।

vii. आवेदित क्षेत्र का मानचित्र की (ग्राम मूल मानचित्र के अनुरूप) ट्रेसिंग क्लाथ में तीन प्रति।

viii. स्टाम्प शुल्क और निबंधन शुल्क का भुगतान संबंधित विभाग की अद्यतन अधिसूचना के अनुसार करना होगा।

2. **बालू खनन की अनुमति** – सभी अपेक्षित वैद्यानिक कार्रवाई पूरी करने के बाद बालू खनन की अनुमति दी जायगी।

3. निष्पादित संविद विलेख का निबंधन एक माह के अंदर कराकर समर्पित कराना होगा।

4. बंदोबस्ती राशि के शेष किस्तों का भूगतान निम्न प्रकार करेंगें :–

किस्त	भुगतान की नियत तारीख
प्रथम किस्त (50%)	(क) कार्य आदेश निर्गत होने के पहले (पहले वर्ष के लिए) (ख) 15 दिसम्बर (दूसरे वर्ष और उसके बाद)
द्वितीय किस्त (25%)	15वीं मार्च
तृतीय किस्त (25%)	15वीं जून

5. यदि किस्तो का भुगतान करने मे असफल रहने पर आगे ई–चालान सिस्टम द्वारा बंद कर दिया जाएगा और केवल अग्रिम भुगतान के बाद खोला जाएगा।

6. साथ ही विहित तिथि के अंदर किसी किस्त का भुगतान में चूक की स्थिति में वार्षिक 24 प्रतिशत की दर से साधारण ब्याज पर प्रभारित किया जायेगा।

7. **बालू खनन की अधिकतम गहराईः–** नदी तल में खनन की अधिकतम गहराई उस समय बिना खुदाई वाले तल स्तर से अथवा जल स्तर जो भी कम हो, से 3 मीटर से अधिक नही होगी।

8. **बालू उत्खनन के प्रतिबंधित क्षेत्र :–**

i. बालू का उत्खनन किसी रेलवे पुल अथवा किसी राष्ट्रीय राजमार्ग/राज्य राजमार्ग के अर्न्तगत आने वाले किसी पुल के दोनो ओर 300 (तीन सौ) मी0 दूरी के अर्न्तगत निषिद्ध होगी और किसी भी पुल के दोनो ओर की 100 (एक सौ) मी0 की दूरी के अंदर निषिद्ध होगी। तथापि इसके संबंध में किसी अधिसूचना के माध्यम से राज्य सरकार के द्वारा किसी पुल के बारे में इस निषिद्ध क्षेत्र का विस्तार किया जा सकेगा, यदि वैसी आवश्यकता सुरक्षा के कारणों से हो।

ii. सार्वजनिक स्थल यथा श्मशान घाट/कोई धार्मिक स्थल आदि के 50 मी0 अंदर उत्खनन की अनुमति नही दी जायेगी।

iii. नदी के दोनो किनारे से 05 (पाँच) मी0 के अर्न्तगत उत्खनन की अनुमति नही दी जायेगी।

iv. बालू की उत्खनन, सिचाई प्रयोजन के लिए बनाए गए किसी डैम, बांधारा अथवा कोई अन्य संरचना का उपरिधारा और निचली धारा के 100 मी0 के अर्न्तगत निषिद्ध रहेगी।

v. अधिमानतः बालूघाट तटबंध के नदी भाग में रहेगा। 06 (छः) मी0 से कम उँचाई वाले तटबंधो के लिए तटबंध के टो/हील से 25 मी0 तक उत्खनन प्रतिबंधित होगा एवं इसके परे 1.00 (एक) मी0 गहराई के लिए उत्खनन की अनुमति होगी। उच्च तटबंध के मामले में तटबंध के टो/हील से 50 मी0 तक उत्खनन प्रतिबंधित होगा एवं इसके परे 75 मी0 की दूरी तक अधिकतम 1.50 मीटर गहराई तक तथा 75 मी0 की दूरी के आगे अधिकतम 2.00 मी0 गहराई तक उत्खनन की अनुमति होगी। तटबंध के लिए समानांतर प्रवाह के विकास को कम करने के लिए माईनिंग

पिट्स के गहराई के आठ गुणा चौड़ाई का क्रॉसबार 50 से 60 मी0 केन्द्र से केन्द्र अंतराल पर रखा जाना अनिवार्य होगा।

vi. सिंचाई मार्ग को उसी स्तर पर बनाये रखा जायेगा जैसा कि नदी तल का स्तर है और किसी भी दशा में नदी तल का स्तर सिंचाई मार्ग के स्तर से निचे रखने की अनुमति नही दी जायेगी। अतः स्तूप/कूप/अन्तग्राही कूप के चारो ओर 5 मी0 की दूरी तक उत्खनन की अनुमति नही दी जायेगी।

vii. वैसी नदियों जहाँ से सिंचाई नहर का प्रवाह निकलता है, के मामले में जल संसाधन विभाग से अनापत्ति प्रमाण–पत्र की प्रति के उपरांत ही बालू निकासी की अनुमति प्रदान की जायेगी।

viii. बंदोबस्तधारी से भिन्न किसी अन्य व्यक्ति की रैयती भूमि में बालू उत्खनन की अनुमति तबतक नही दी जायेगी जब तक कि बंदोबस्तधारी द्वारा संबंधित भू–स्वामी (रैयत) की सहमति प्राप्त नही कर ली जाती है।

ix. वैसे किसी क्षेत्र में बालू उत्खनन की अनुमति नही दी जायेगी, जिसे राज्य सरकार ने प्रतिबंधित क्षेत्र के रूप में अधिसूचित किया है।

9. <u>सामान्य शर्तें :–</u>

(i) बन्दोबस्तीधारी को बालू के परिवहन हेतु वाहन के चालक को ऑन लाईन ई0चालान (परिवहन चालान) निर्गत करना होगा।

(ii) बंदोबस्तधारी नदी तट से 300 मी0 तक बालू का भंडारण कर सकते है जिसके लिए किसी प्रकार के भंडारण अनुज्ञप्ति की आवश्यकता नही होगी। नदी तट से 300 मी0 के बाद बालू भंडारण करने के लिए किसी भी व्यक्ति को अलग से भंडारण अनुज्ञप्ति लेना होगा।

(iii) बालू के उत्पादन एवं प्रेषण के लिये पंजी संधारित करनी होगी। बंदोबस्तधारी विहित प्रपत्र में बालू के उत्पादन तथा प्रेषण से संबंधित साप्ताहिक, मासिक एवं वार्षिक रूप से विवरणी (रिटर्न) समर्पित करेगा।

(iv) बंदोबस्तधारी नदी तल से बालू प्रेषण के बिन्दु पर एक साईनबोर्ड लगाएगा जिसपर बंदोबस्तधारी का नाम एवं पता, बंदोबस्ती की अवधि, स्थानीय मैनेजर का नाम एवं पता तथा बालू का विक्रय मूल्य प्रदर्शित किया जाएगा।

(v) बंदोबस्तधारी श्रम विधियों के प्रावधानों के अनुसार आश्रय गृह, पीने का पानी, शिशु गृह (क्रेचेज) तथा फर्स्ट एड किट की व्यवस्था संबंधित बालूघाटों में लगे श्रमिकों के लिए करेगा।

(vi) बंदोबस्तधारी संबंधित क्षेत्रों का निरीक्षण करेगा तथा स्वयं/ अथवा अपने द्वारा अधिकृत प्रतिनिधियों के माध्यम से बालूघाटों का प्रचालन करेगा। किसी रूप में किये गये उपपट्टा (सबलेटिंग) से बंदोबस्ती रद्द कर दी जाएगी। बालूघाटों/नदी तल तक बालू के परिवहन के प्रयोजनार्थ पहुँच पथ (अप्रोच रोड़) का निर्माण बंदोबस्तधारी द्वारा स्वयं किया जाएगा।

(vii) दो जिलों के बीच किसी सीमा विवाद की दशा में, उसे संबंधित जिला पदाधिकारियों द्वारा जो इस संबंध में संयुक्त निर्णय लेगें, संयुक्त रूप से हल किया जाएगा और उसे विभाग को संसूचित कर दिया जाएगा।

(viii) बंदोबस्तधारी द्वारा सतत् बालू खनन प्रबंधन मार्गदर्शन, 2016/पर्यावरणीय स्वच्छता प्रमाण पत्र में विनिर्दिष्ट शर्त्तों के अनुरूप मशीन का प्रयोग किया जाएगा। महिला श्रमिकों से सूर्यास्त के बाद कोई कार्य नही लिया जायेगा।

(ix) बालू लदे सभी वाहनों को तारपोलिन से ढककर बालू का परिवहन करना अनिवार्य होगा।

(x) बंदोबस्तधारी को धर्मकॉटा की स्थापना आवश्यकतानुसार सरकार के निदेश पर करनी होगी।

(xi) खनिज की अनुपलब्धता, मार्ग व्यवधान, सीमाना से संबंधित कोई व्यवधान अथवा अन्यान्य कारण से उत्तोलन में बाधा उत्पन्न होने पर सरकार द्वारा कोई क्षतिपूर्त्ति देय नहीं होगा।

(xii) बंदोबस्तधारी पर्यावरण, वन एवं जलवायु परिवर्त्तन मंत्रालय SEIAA/ DEIAA द्वारा मॉनसून अवधि (जुलाई, अगस्त एवं सितम्बर माह में अथवा पर्यावरणीय स्वीकृति में यथा कथित) में नदी तल से खनन के लिए अधिरोपित रोक, खनिज संसाधनों की अनुपलब्धता, पहुँच पथ में किसी बाधा, सीमा विवाद अथवा उसके किसी अन्य कारण के चलते उत्पन्न किसी समस्या के कारण बालू के उत्पादन/प्रेषण में उत्पन्न अवरोध की दशा में किसी प्रतिपूर्ति का हकदार नही होगा।

(xiii) बंदोबस्तधारी वाहनों में सूखा बालू लादने की व्यवस्था यह सुनिश्चित करने के लिए करेगा कि बालू ढोने वाले वाहनों से सड़क पर पानी नही टपके। इसके लिए बंदोबस्तधारी नदी के किनारे से 300 मीटर की दूरी के भीतर बालू लादने के लिए सेकेण्डरी लोडिंग की व्यवस्था करेगा जिसके लिए अपेक्षित बालू जमा करने हेतु किसी लाईसेन्स की आवश्यकता नहीं होगी। इसके लिए कोई क्षतिपूर्ति देय नही होगी।

(xiv) बालूघाट बंदोबस्तधारी खान एवं खनिज (विकास और विनियमन) अधिनियम, 1957 तथा बिहार खनिज (समनुदान, अवैध खनन, परिवहन एवं भंडारण निवारण) नियमावली, 2019 के सुसंगत प्रावधानों तथा उसमें किये गये संशोधनों तथा सरकार द्वारा समय–समय पर निर्गत निदेशों का पालन करेगा। बंदोबस्तधारी पर यह भी बाध्यकारी होगा कि अन्य सुसंगत अनिधिनियमों तथा नियमावलियों के प्रावधानों का पालन करेगें।

(xv) बंदोबस्तधारी बंदोबस्त क्षेत्र के भीतर किसी अवैध खनन के लिए जिम्मेवार होगें और पाई गई किसी शिकायत, यदि कोई हो, पर गंभीरता से विचार किया जाएगा तथा बंदोबस्तधारी के विरूद्ध अपराधिक मामला दायर किया जाएगा।

(xvi) बंदोबस्तधारी समाहर्त्ता द्वारा बालूघाटों के संचालन के संबंध में लोकहित में जारी निर्बंधनों और शर्त्तों तथा निदेशों का पालन करेगा।

(xvii) उपर्युक्त शर्त्तों का पालन नहीं करने पर कारण पृच्छा निर्गत कर बंदोबस्ती रद्द करने की कार्रवाई की जा सकेगी ।

(xviii) बंदोबस्तधारी को खनन राजस्व/जी0एस0टी0/आयकर/स्टाम्प शुल्क/रजिस्ट्रेशन फीस का भुगतान नही करने की दशा में 30 दिनों का कारणपृच्छा नोटिस तामील की जाएगी और उक्त अवधि के दौरान बकाए का भुगतान करने में असफल रहने की दशा में बंदोबस्ती रद्द करने की कार्रवाई की जाएगी।

(xix) नीलामी हेतु प्रस्तावित बालूघाटों से संबंधित तकनीकी तथा अन्य बिन्दुओं यथा भूमि के अंचल, थाना, मौजा, खाता, खेसरा, रकबा तथा GPS Co-ordinate के संबंध में विवाद/त्रुटी पाए जाने पर संशोधन का अधिकार संबंधित जिला खनन कार्यालय का होगा। बालूघाटों का सीमांकन GPS Co-ordinate के अनुसार बालू बंदोबस्तधारी को कराना होगा तथा खनन के क्रम में संधारित कराना बंदोबस्तधारी की जवाबदेही होगी, जिसे RQP/ अंचलाधिकारी की उपस्थिति में प्रमाणित कराकर खनन कार्य कराना होगा।

(xx) बालू बंदोबस्तधारी को बालू लदे भारी वाहनों का परिवहन जल संसाधन विभाग द्वारा नहरों एवं बांधो पर निर्मित प्रतिबंधित सड़कों से नही करना होगा।

(xxi) बालूघाट में रैयती/बंदोबस्त जमीन होने पर रैयत से सहमति प्राप्त कर बालू का खनन करना होगा।

(xxii) सफल निविदादाता को विभाग द्वारा एजेन्सी के माध्यम से तैयार एवं अनुमोदित कराई गई खनन योजना पर होने वाले व्यय का भुगतान करना होगा। जो विभागीय निदेशालोक में निर्धारित समय सीमा के अन्दर/सैद्धांतिक स्वीकृति के पूर्व करना होगा। संबंधित जिला के जिला खनन पदाधिकारी/सक्षम पदाधिकारी द्वारा खनन योजना हस्तान्तरण सफल निविदादाता को किया जाएगा। खनन योजना में उल्लेखित प्रावधानों/शर्त्तों का पूर्ण अनुपालन सफल निविदादाता को करना होगा।

(xxiii) वैधानिक पर्यावरणीय तथा अन्य स्वीकृतियाँ प्राप्त करने में होने वाले व्यय का भुगतान करना होगा तथा सक्षम प्राधिकार से पर्यावरणीय स्वीकृति प्राप्त करने हेतु सभी सहयोग प्रदान करना होगा। वैधानिक पर्यावरणीय तथा अन्य स्वीकृतियाँ सफल निविदादाताओं के पक्ष में हस्तान्तरण किया जाएगा। वैधानिक पर्यावरणीय तथा अन्य स्वीकृतियॉ में उल्लेखित प्रावधानों/शर्तों का पूर्ण अनुपालन सफल निविदादाता/बंदोबस्तधारी को करना होगा।

(xxiv) बालूघाट क्षेत्र में पूर्व का किसी प्रकार का कोई सम्पति पड़े रहने पर उनका अधिकार वर्त्तमान बंदोबस्तधारी का नही होगा।

(xxv) बंदोबस्ती विलेख निष्पादन के पूर्व धारित क्षेत्र को सीमांकन कर खनन विभाग की संतुपिट के अनुरूप सीमा स्तंभ लगाने संबंधि शपथ पत्र दाखिल करना होगा।

(xxvi) नियमानुसार Progressive mine closure plan तथा Final mine closure plan प्रस्तुत करना होगाा।

(xxvii) बंदोबस्ती समाप्ति के पूर्व नदी तट से 300 मीटर के अन्दर भंडारित बालू को हटा लेना होगा अन्यथा भंडारित खनिज (बालू) सरकार की सम्पति मानकर उसका निष्पादन किया जायेगा।

(xxviii) मॉनसून के पहले और बाद नदी तल में बालू की मात्रा की भराई अभिनिश्चत करने के लिए अध्ययन मान्यता प्राप्त संस्थानों/एजेसियों से कराकर विभाग/कार्यालय को समर्पित करना होगा। विभाग द्वारा अध्ययन कराने की दशा में अध्ययन का खर्च बंदोबस्तधारी से वसूल किया जायेगा।

(xxix) बंदोबस्तधारी को अपने उत्पाद का कुछ अनुपात जो उनके उत्पाद का 50 प्रतिशत से अनाधिक होगा, निगम को पिट हेड मूल्य पर उपलब्ध कराना होगा।

(xxx) बंदोबस्तधारी को सर्वप्रथम कार्य विभागों की आवश्यकता के अनुरूप उन्हे बालू खनिज की आपूर्ति सुनिश्चित करनी होगी। विभिन्न कार्य विभागों को उनकी आवश्यकता के अनुरूप उन्हे बालू खनिज की आपूर्ति सुनिश्चित हो जाने के पश्चात ही किसी अन्य व्यक्ति को बालू खनिज का विक्रय/आपूर्ति किया जाएगा।

(xxxi) समाहर्त्ता को सरकार के हित में, सुनवाई का मौका देकर तर्कसंगत आदेश पारित करते हुये निविदा एवं बन्दोबस्ती रद्द करने का अधिकार होगा।

समाहर्त्ता,
जमुई।

समाहरणालय, जमुई

(खनन शाखा)

पत्रांक – 98 /खनन, जमुई, दिनांक– 06-02-2020

प्रेषित,

रूबी देवी
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विषय :– **पंचाग वर्ष 2020 से अगले पाँच वर्षों के लिए बालूघाट जमुई–किउल–16 की ई–नीलामी द्वारा बंदोबस्ती के उपरांत सैद्धांतिक स्वीकृत्यादेश।**

उपर्युक्त विषयक दिनांक–17.01.2020 को सम्पन्न हुई ई–नीलामी में बालूघाट जमुई किउल–16 के लिए आपके द्वारा सुरक्षित जमा राशि 79,82,000/-रू0 (उन्नासी लाख बेरासी हजार रू0) के विरूद्ध उच्चतम नीलामी राशि 2,89,82,000/-रू0 (दो करोड़ नवासी लाख बेरासी हजार रू0) की बोली लगाये जाने के फलस्वरूप आपको सफल निविददाता घोषित करते हुए निम्नांकित शर्तों/बंधेजो पर सैद्धांतिक स्वीकृत्यादेश निर्गत की जाती है :–

1.

i. प्रथम किस्त की राशि (नीलामी राशि का 50 प्रतिशत) का भुगतान कार्यादेश निर्गत होने के पूर्व करेंगें।

ii. प्रथम किस्त की राशि के साथ जी0एस0टी0, आयकर एवं देय अधिभार का भुगतान संबंधित विभाग की अद्यतन अधिसूचना के अनुसार कार्यादेश निर्गत होने के पूर्व करेंगें।

iii. डी0एम0एफ0 में प्रथम किस्त की राशि की 2 प्रतिशत की राशि का भुगतान डी0एम0एफ0 नियमावली 2018 के अनुसार करेंगें।

iv. संबंधित बालूघाट के लिए तैयार एवं अनुमोदित खनन योजना कार्यादेश निर्गत होने के पूर्व कार्यालय/विभाग में समर्पित करेंगें।

v. पर्यावरण एवं वन मंत्रालय, भारत सरकार की पर्यावरण समाघात मूल्यांकन अधिसूचना तथा पर्यावरण संरक्षण अधिनियम के उपबंधो के अनुसार सक्षम प्राधिकार से नियत अवधि में पर्यावरण स्वच्छता प्रमाण पत्र कार्यादेश निर्गत होने के पूर्व कार्यालय/विभाग में समर्पित करेंगें।

vi. विहित प्रपत्र में बंदोबस्ती विलेख/संविद संबंधित नियम अथवा उसके समरूप एक प्रपत्र में कार्य आरंभ करने के पहले निष्पादित करेंगें तथा यथा विहित अपेक्षित प्रतिभूति राशि जमा करेंगे। बंदोबस्ती अवधि वैधानिक कार्य प्रारंम्भ करने/संविद निष्पादित की तिथि से 05 वर्षों के लिए विधिमान्य होगी। क्षेत्राधिकार में विलम्ब संबंधि कोई दावा भविष्य में स्वीकार नही की जायेगी।

vii. आवेदित क्षेत्र का मानचित्र की (ग्राम मूल मानचित्र के अनुरूप) ट्रेसिंग क्लाथ में तीन प्रति।

viii. स्टाम्प शुल्क और निबंधन शुल्क का भुगतान संबंधित विभाग की अद्यतन अधिसूचना के अनुसार करना होगा।

2. **बालू खनन की अनुमति** – सभी अपेक्षित वैद्यानिक कार्रवाई पूरी करने के बादं बालू खनन की अनुमति दी जायगी।

3. निष्पादित संविद विलेख का निबंधन एक माह के अंदर कराकर समर्पित कराना होगा।

4. बंदोबस्ती राशि के शेष किस्तों का भूगतान निम्न प्रकार करेंगें :–

किस्त	भुगतान की नियत तारीख
प्रथम किस्त (50%)	(क) कार्य आदेश निर्गत होने के पहले (पहले वर्ष के लिए) (ख) 15 दिसम्बर (दूसरे वर्ष और उसके बाद)
द्वितीय किस्त (25%)	15वीं मार्च
तृतीय किस्त (25%)	15वीं जून

5. यदि किस्तो का भुगतान करने मे असफल रहने पर आगे ई–चालान सिस्टम द्वारा बंद कर दिया जाएगा और केवल अग्रिम भुगतान के बाद खोला जाएगा।

6. साथ ही विहित तिथि के अंदर किसी किस्त का भुगतान में चूक की स्थिति में वार्षिक 24 प्रतिशत की दर से साधारण ब्याज पर प्रभारित किया जायेगा।

7. **बालू खनन की अधिकतम गहराई:–** नदी तल में खनन की अधिकतम गहराई उस समय बिना खुदाई वाले तल स्तर से अथवा जल स्तर जो भी कम हो, से 3 मीटर से अधिक नही होगी।

8. **बालू उत्खनन के प्रतिबंधित क्षेत्र :–**

i. बालू का उत्खनन किसी रेलवे पुल अथवा किसी राष्ट्रीय राजमार्ग/राज्य राजमार्ग के अर्न्तगत आने वाले किसी पुल के दोनो ओर 300 (तीन सौ) मी0 दूरी के अर्न्तगत निषिद्ध होगी और किसी भी पुल के दोनो ओर की 100 (एक सौ) मी0 की दूरी के अंदर निषिद्ध होगी। तथापि इसके संबंध में किसी अधिसूचना के माध्यम से राज्य सरकार के द्वारा किसी पुल के बारे में इस निषिद्ध क्षेत्र का विस्तार किया जा सकेगा, यदि वैसी आवश्यकता सुरक्षा के कारणों से हो।

ii. सार्वजनिक स्थल यथा श्मशान घाट/कोई धार्मिक स्थल आदि के 50 मी0 अंदर उत्खनन की अनुमति नही दी जायेगी।

iii. नदी के दोनो किनारे से 05 (पाँच) मी0 के अर्न्तगत उत्खनन की अनुमति नही दी जायेगी।

iv. बालू की उत्खनन, सिचाई प्रयोजन के लिए बनाए गए किसी डैम, बांधारा अथवा कोई अन्य संरचना का उपरिधारा और निचली धारा के 100 मी0 के अर्न्तगत निषिद्ध रहेगी।

v. अधिमानतः बालूघाट तटबंध के नदी भाग में रहेगा। 06 (छः) मी0 से कम उँचाई वाले तटबंधो के लिए तटबंध के टो/हील से 25 मी0 तक उत्खनन प्रतिबंधित होगा एवं इसके परे 1.00 (एक) मी0 गहराई के लिए उत्खनन की अनुमति होगी। उच्च तटबंध के मामले में तटबंध के टो/हील से 50 मी0 तक उत्खनन प्रतिबंधित होगा एवं इसके परे 75 मी0 की दूरी तक अधिकतम 1.50 मीटर गहराई तक तथा 75 मी0 की दूरी के आगे अधिकतम 2.00 मी0 गहराई तक उत्खनन की अनुमति होगी। तटबंध के लिए समानांतर प्रवाह के विकास को कम करने के लिए माईनिंग

पिट्स के गहराई के आठ गुणा चौड़ाई का क्रॉसबार 50 से 60 मी0 केन्द्र सें केन्द्र अंतराल पर रखा जाना अनिवार्य होगा।

vi. सिंचाई मार्ग को उसी स्तर पर बनाये रखा जायेगा जैसा कि नदी तल का स्तर है और किसी भी दशा में नदी तल का स्तर सिंचाई मार्ग के स्तर से निचे रखने की अनुमति नही दी जायेगी। अतः स्तूप/कूप/अन्तग्राही कूप के चारो ओर 5 मी0 की दूरी तक उत्खनन की अनुमति नही दी जायेगी।

vii. वैसी नदियों जहाँ से सिंचाई नहर का प्रवाह निकलता है, के मामले में जल संसाधन विभाग से अनापत्ति प्रमाण–पत्र की प्रति के उपरांत ही बालू निकासी की अनुमति प्रदान की जायेगी।

viii. बंदोबस्तधारी से भिन्न किसी अन्य व्यक्ति की रैयती भूमि में बालू उत्खनन की अनुमति तबतक नही दी जायेगी जब तक कि बंदोबस्तधारी द्वारा संबंधित भू–स्वामी (रैयत) की सहमति प्राप्त नही कर ली जाती है।

ix. वैसे किसी क्षेत्र में बालू उत्खनन की अनुमति नही दी जायेगी, जिसे राज्य सरकार ने प्रतिबंधित क्षेत्र के रूप में अधिसूचित किया है।

9. <u>सामान्य शर्तें :–</u>

(i) बन्दोबस्तीधारी को बालू के परिवहन हेतु वाहन के चालक को ऑन लाईन ई0चालान (परिवहन चालान) निर्गत करना होगा।

(ii) बंदोबस्तधारी नदी तट से 300 मी0 तक बालू का भंडारण कर सकते है जिसके लिए किसी प्रकार के भंडारण अनुज्ञप्ति की आवश्यकता नही होगी। नदी तट से 300 मी0 के बाद बालू भंडारण करने के लिए किसी भी व्यक्ति को अलग से भंडारण अनुज्ञप्ति लेना होगा।

(iii) बालू के उत्पादन एवं प्रेषण के लिये पंजी संधारित करनी होगी। बंदोबस्तधारी विहित प्रपत्र में बालू के उत्पादन तथा प्रेषण से संबंधित साप्ताहिक, मासिक एवं वार्षिक रूप से विवरणी (रिटर्न) समर्पित करेगा।

(iv) बंदोबस्तधारी नदी तल से बालू प्रेषण के बिन्दु पर एक साईनबोर्ड लगाएगा जिसपर बंदोबस्तधारी का नाम एवं पता, बंदोबस्ती की अवधि, स्थानीय मैनेजर का नाम एवं पता तथा बालू का विक्रय मूल्य प्रदर्शित किया जाएगा।

(v) बंदोबस्तधारी श्रम विधियों के प्रावधानों के अनुसार आश्रय गृह, पीने का पानी, शिशु गृह (क्रेचेज) तथा फर्स्ट एड किट की व्यवस्था संबंधित बालूघाटों में लगे श्रमिकों के लिए करेगा।

(vi) बंदोबस्तधारी संबंधित क्षेत्रों का निरीक्षण करेगा तथा स्वयं/ अथवा अपने द्वारा अधिकृत प्रतिनिधियों के माध्यम से बालूघाटों का प्रचालन करेगा। किसी रूप में किये गये उपपट्टा (सबलेटिंग) से बंदोबस्ती रद्द कर दी जाएगी। बालूघाटों/नदी तल तक बालू के परिवहन के प्रयोजनार्थ पहुँच पथ (अप्रोच रोड़) का निर्माण बंदोबस्तधारी द्वारा स्वयं किया जाएगा।

(vii) दो जिलों के बीच किसी सीमा विवाद की दशा में, उसे संबंधित जिला पदाधिकारियों द्वारा जो इस संबंध में संयुक्त निर्णय लेगें, संयुक्त रूप से हल किया जाएगा और उसे विभाग को संसूचित कर दिया जाएगा।

(viii) बंदोबस्तधारी द्वारा सतत् बालू खनन प्रबंधन मार्गदर्शन, 2016/पर्यावरणीय स्वच्छता प्रमाण पत्र में विनिर्दिष्ट शर्त्तों के अनुरूप मशीन का प्रयोग किया जाएगा। महिला श्रमिकों से सूर्यास्त के बाद कोई कार्य नही लिया जायेगा।

(ix) बालू लदे सभी वाहनों को तारपोलिन से ढककर बालू का परिवहन करना अनिवार्य होगा।

(x) बंदोबस्तधारी को धर्मकॉटा की स्थापना आवश्यकतानुसार सरकार के निदेश पर करनी होगी।

(xi) खनिज की अनुपलब्धता, मार्ग व्यवधान, सीमाना से संबंधित कोई व्यवधान अथवा अन्यान्य कारण से उत्तोलन में बाधा उत्पन्न होने पर सरकार द्वारा कोई क्षतिपूर्त्ति देय नहीं होगा।

(xii) बंदोबस्तधारी पर्यावरण, वन एवं जलवायु परिवर्त्तन मंत्रालय SEIAA/ DEIAA द्वारा मॉनसून अवधि (जुलाई, अगस्त एवं सितम्बर माह में अथवा पर्यावरणीय स्वीकृति में यथा कथित) में नदी तल से खनन के लिए अधिरोपित रोक, खनिज संसाधनों की अनुपलब्धता, पहुँच पथ में किसी बाधा, सीमा विवाद अथवा उसके किसी अन्य कारण के चलते उत्पन्न किसी समस्या के कारण बालू के उत्पादन/प्रेषण में उत्पन्न अवरोध की दशा में किसी प्रतिपूर्ति का हकदार नही होगा।

(xiii) बंदोबस्तधारी वाहनों में सूखा बालू लादने की व्यवस्था यह सुनिश्चित करने के लिए करेगा कि बालू ढोने वाले वाहनों से सड़क पर पानी नही टपके। इसके लिए बंदोबस्तधारी नदी के किनारे से 300 मीटर की दूरी के भीतर बालू लादने के लिए सेकेण्डरी लोडिंग की व्यवस्था करेगा जिसके लिए अपेक्षित बालू जमा करने हेतु किसी लाईसेन्स की आवश्यकता नहीं होगी। इसके लिए कोई क्षतिपूर्ति देय नही होगी।

(xiv) बालूघाट बंदोबस्तधारी खान एवं खनिज (विकास और विनियमन) अधिनियम, 1957 तथा बिहार खनिज (समनुदान, अवैध खनन, परिवहन एवं भंडारण निवारण) नियमावली, 2019 के सुसंगत प्रावधानों तथा उसमें किये गये संशोधनों तथा सरकार द्वारा समय–समय पर निर्गत निदेशों का पालन करेगा। बंदोबस्तधारी पर यह भी बाध्यकारी होगा कि अन्य सुसंगत अनिधिनियमों तथा नियमावलियों के प्रावधानों का पालन करेगें।

(xv) बंदोबस्तधारी बंदोबस्त क्षेत्र के भीतर किसी अवैध खनन के लिए जिम्मेवार होगें और पाई गई किसी शिकायत, यदि कोई हो, पर गंभीरता से विचार किया जाएगा तथा बंदोबस्तधारी के विरूद्ध अपराधिक मामला दायर किया जाएगा।

(xvi) बंदोबस्तधारी समाहर्त्ता द्वारा बालूघाटों के संचालन के संबंध में लोकहित में जारी निर्बंधनों और शर्त्तों तथा निदेशों का पालन करेगा।

(xvii) उपर्युक्त शर्त्तों का पालन नहीं करने पर कारण पृच्छा निर्गत कर बंदोबस्ती रद्द करने की कार्रवाई की जा सकेगी ।

(xviii) बंदोबस्तधारी को खनन राजस्व/जी0एस0टी0/आयकर/स्टाम्प शुल्क/रजिस्ट्रेशन फीस का भुगतान नही करने की दशा में 30 दिनों का कारणपृच्छा नोटिस तामील की जाएगी और उक्त अवधि के दौरान बकाए का भुगतान करने में असफल रहने की दशा में बंदोबस्ती रद्द करने की कार्रवाई की जाएगी।

(xix) नीलामी हेतु प्रस्तावित बालूघाटों से संबंधित तकनीकी तथा अन्य बिन्दुओं यथा भूमि के अंचल, थाना, मौजा, खाता, खेसरा, रकबा तथा GPS Co-ordinate के संबंध में विवाद/त्रुटी पाए जाने पर संशोधन का अधिकार संबंधित जिला खनन कार्यालय का होगा। बालूघाटों का सीमांकन GPS Co-ordinate के अनुसार बालू बंदोबस्तधारी को कराना होगा तथा खनन के क्रम में संधारित कराना बंदोबस्तधारी की जवाबदेही होगी, जिसे RQP/ अंचलाधिकारी की उपस्थिति में प्रमाणित कराकर खनन कार्य कराना होगा।

(xx) बालू बंदोबस्तधारी को बालू लदे भारी वाहनों का परिवहन जल संसाधन विभाग द्वारा नहरों एवं बांधो पर निर्मित प्रतिबंधित सड़कों से नही करना होगा।

(xxi) बालूघाट में रैयती/बंदोबस्त जमीन होने पर रैयत से सहमति प्राप्त कर बालू का खनन करना होगा।

(xxii) सफल निविदादाता को विभाग द्वारा एजेन्सी के माध्यम से तैयार एवं अनुमोदित कराई गई खनन योजना पर होने वाले व्यय का भुगतान करना होगा। जो विभागीय निदेशालोक में निर्धारित समय सीमा के अन्दर/सैद्धांतिक स्वीकृति के पूर्व करना होगा। संबंधित जिला के जिला खनन पदाधिकारी/सक्षम पदाधिकारी द्वारा खनन योजना हस्तान्तरण सफल निविदादाता को किया जाएगा। खनन योजना में उल्लेखित प्रावधानों/शर्त्तों का पूर्ण अनुपालन सफल निविदादाता को करना होगा।

(xxiii) वैधानिक पर्यावरणीय तथा अन्य स्वीकृतियाँ प्राप्त करने में होने वाले व्यय का भुगतान करना होगा तथा सक्षम प्राधिकार से पर्यावरणीय स्वीकृति प्राप्त करने हेतु सभी सहयोग प्रदान करना होगा। वैधानिक पर्यावरणीय तथा अन्य स्वीकृतियाँ सफल निविदादाताओं के पक्ष में हस्तान्तरण किया जाएगा। वैधानिक पर्यावरणीय तथा अन्य स्वीकृतियॉ में उल्लेखित प्रावधानों/शर्तों का पूर्ण अनुपालन सफल निविदादाता/बंदोबस्तधारी को करना होगा।

(xxiv) बालूघाट क्षेत्र में पूर्व का किसी प्रकार का कोई सम्पति पड़े रहने पर उनका अधिकार वर्त्तमान बंदोबस्तधारी का नही होगा।

(xxv) बंदोबस्ती विलेख निष्पादन के पूर्व धारित क्षेत्र को सीमांकन कर खनन विभाग की संतुपिट के अनुरूप सीमा स्तंभ लगाने संबंधि शपथ पत्र दाखिल करना होगा।

(xxvi) नियमानुसार Progressive mine closure plan तथा Final mine closure plan प्रस्तुत करना होगाा।

(xxvii) बंदोबस्ती समाप्ति के पूर्व नदी तट से 300 मीटर के अन्दर भंडारित बालू को हटा लेना होगा अन्यथा भंडारित खनिज (बालू) सरकार की सम्पति मानकर उसका निष्पादन किया जायेगा।

(xxviii) मॉनसून के पहले और बाद नदी तल में बालू की मात्रा की भराई अभिनिश्चत करने के लिए अध्ययन मान्यता प्राप्त संस्थानों/एजेसियों से कराकर विभाग/कार्यालय को समर्पित करना होगा। विभाग द्वारा अध्ययन कराने की दशा में अध्ययन का खर्च बंदोबस्तधारी से वसूल किया जायेगा।

(xxix) बंदोबस्तधारी को अपने उत्पाद का कुछ अनुपात जो उनके उत्पाद का 50 प्रतिशत से अनाधिक होगा, निगम को पिट हेड मूल्य पर उपलब्ध कराना होगा।

(xxx) बंदोबस्तधारी को सर्वप्रथम कार्य विभागों की आवश्यकता के अनुरूप उन्हे बालू खनिज की आपूर्ति सुनिश्चित करनी होगी। विभिन्न कार्य विभागों को उनकी आवश्यकता के अनुरूप उन्हे बालू खनिज की आपूर्ति सुनिश्चित हो जाने के पश्चात ही किसी अन्य व्यक्ति को बालू खनिज का विक्रय/आपूर्ति किया जाएगा।

(xxxi) समाहर्त्ता को सरकार के हित में, सुनवाई का मौका देकर तर्कसंगत आदेश पारित करते हुये निविदा एवं बन्दोबस्ती रद्द करने का अधिकार होगा।

समाहर्त्ता,
जमुई।
06/08/20

ANNEXURE-III

COMPILED EMP

ENVIRONMENT MANAGEMENT PLAN

OF

CLUSTER OF JAMUI KIUL GHAT 14-16

OF JAMUI DISTRICT FOR

RIVER BED MINING PROJECT

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1-INTRODUCTION

1.1 Project Introduction

The proposed river sand mining projects are cluster of 3 ghats i.e Jamui Kiul 14 balu ghat – Jamui Kiul 16 balu ghat on Kiul river (Stretch) of Jamui District, Bihar. The entire stretch contains 3 Sand ghats of total area 96.7 Hectares area. Mainly the quarrying of ordinary sand is to fulfil the needs in the field of construction. Mining will be done as per Sustainable sand mining guidelines-2016,Bihar Minor Mineral Concession Rules as well as on applicable guidelines issued by MOEFCC till date. Sand has become a very important mineral for our society due to its many uses. It can be used for making concrete, filling roads, building sites, brick-making, making glass, sandpapers, reclamations, and etc. On average, people 'use' over 200kg of sand per person per year. The project lies on the bed of Kiul River. The sediment in the form of river bed material (RBM) deposited in the last many years had changed the shape of the river bed from a valley to a raised land. Hence, it is necessary to remove the materials so that the stream gets channelized. Due to rapid infrastructure development in India, the demand of construction material has increased. To supply this demand, mining of sand is done. This project operation will provide employment directly and indirectly to the people residing in vicinity, thus improving the Socio-economic status of the area. This sand is taken from what are essentially non-renewable resources. All the proposed sand ghats in a cluster on Kiul river bed falls under Category- “B1” as per amended notification EIA Notification 2006 by Ministry of Environment Forests & Climate Change, GOI.

1.2 Salient Feature of The Project:-

S.No.	Information	Details
1.	Project name	Proposed Sand Mining Project on Kiul River of Jamui district of Cluster of Jamui Kiul 14-16 balu ghats
2.	Mining Lease Area	96.7 Hectare
3.	River/Nalla/Nadi	Kiul River
4.	Minerals of mine	Sand
5.	Mining Period	For 5 years
6.	Proposed Production	1878552 TPA
7.	Bulk Density	1.8
8.	Method of mining	Open Cast semi-mechanized method (as per Bihar Minor Mineral Concession Rules amended till date).
9.	Drilling or Blasting	No
10.	No of working days	270 days
11.	Water Requirement per day	-Drinking –Approx. 1.53 KLD (10 Liters/person/Day) -Green Belt Development- Approx. 2.45 KLD -Dust Suppression- Approx. 10.5 KLD Total- Approx. 14.5 KLD.
12.	Source of Water	Water will be sourced from the nearby ponds for dust suppression & Green belt development. Drinking water will be made available at site by private tankers.
13.	Man Power	Approx 151.0 Persons

1.3 Location and area accessibility:-

Details of Location of sand ghats their area & co-ordinates, Reserves and proposed Annual production are shown in **Table no-1.**

Table-1:- Sand Ghat details of Kiul river in Jamui

S. No	Name of Ghats	Area in Hectares	Proposed production in tonnes per annum
1	Jamui Kiul 14 Balu Ghat	34.0	795600
2	Jamui Kiul 15 Balu Ghat	32.0	795600

3	Jamui Kiul 16 Balu Ghat	30.7	287352
4	Jamui Kiul 14 Balu Ghat	34.0	795600
Total		**96.7**	**1878552 TPA**

1.4 Topography of the Area:-

The area represents a rough and rugged topography. The area shows a general slope toward N-E while the highest RL of 92 m occurring on the South to North side of the stretch whereas the lowest RL of 89 m in the stretch is found along N-E slope. Stretch cover under Topopsheet 72L/1

2-QUARRYING

2.1 Proposed Method of Mining

The Ordinary sand is well exposed right on the surface, Quarrying will be continued from the downstream to upstream of the Stretch. An open cast quarrying by semi-mechanized mining will be done to operate the quarry. The mining for the entire stretch of proposed sand ghats of river shall be performed using Semi Mechanised Method comprising use of crawler mounted JCB /Poclain back hoe for primary excavation/winning and loading of sand , and JCB loader for secondary loading of sand on the river banks. Trucks and Tractors of 12 & 4 metric tone capacity and requisite manpower shall be put to use to support the operating machinery . The sand shall be mined out in successive vertical benches/slices from top of ground surface or sand surface downwards, and shall be 1.0 meter thick. Mining will be done at the depth of 3 meter only.

2.2 Year Wise Production

Year wise production of each ghats of Kiul river is mentioned in **Table-1**. Total production from entire cluster will be 1043640 cum per year or 1878552 TPA.

2.3 Loading

From the pit head excavations (primary loading) the sand shall be hauled to secondary loading point on the river bank. The trucks carrying sand shall be despatched to the destinations or to the buyers or builders as may be required. Secondary loading of sand into trucks or tractor trailers as the case may be , shall be done from the river bank where a suitable piece of land has been identified and taken into possession by the proponent on lease hold basis. This is advantageous because it shall prevent direct loading of sand from the pit heads into trucks. However, this may be practiced before the onset of monsoon so that reasonable stock of sand may be made on the river bank to meet the requirement during lean period. Skilled workers shall be required to operate the back hoe excavators and also the loaders at secondary loading locations at each of the sand ghat. Similarly unskilled workers shall also be required to assist the operators of sand excavators and secondary loaders.

2.4 Hauling and Transport

Truck & tractors required to transport the sand from the secondary loading point to different destinations. Sand is transported to the sites by road through trucks. The sand will be wetted after loading in to the truck/tractors and shall be covered by tarpaulin sheets. Following cares will be taken to reduce vehicular pollution

- The vehicles should be with good engine condition and should maintain pollution control

certificate (PUC) issued by appropriate authorities.

- Regular maintenance of transport vehicles and monitoring of vehicular emission levels at periodical intervals.

2.5. Disposal of Waste

These sand deposits are highly variable in quantum, locations, thickness, and shape by the virtue of their nature i.e. being river sediments carried away due to erosional process of river flow. Due to this peculiarity and virtue of origin/genesis, there is no generation of waste rock or sub grade mineral during the course of proposed sand mining. Therefore no disposal of waste rocks and over burden is envisaged for the plan period.

No foreign material like polythene bag, jute bag and useless articles should be allowed to remain/spill in river bed and catchment area, or no pits/pockets will be allowed to be filled with such material.

2.6 Employment Potential

The location of proposed sand mining activity lies around neighbourhood of hamlets and villages which are predominantly agricultural based. Farming is the main activity of the rural folks. The proposed sand mining in this stretch shall require 151 workers involved directly in the sand excavations.

Also, the transportation of sand shall require operations of trucks and tippers which shall require additional manpower indirectly. The plying of trucks and tippers shall cause indirect employment by opening of shops, telecommunication facilities, transport facilities and eateries along the roads. Preferences will be given to the local persons.

3-BASELINE ENVIRONMENT

3.1 Land environment

In the proposed Mining activity there will not be much impact on the land environment due to the following reasons:-

- There is no removal of vegetation such as plants, bushes in the reach area.
- The proposed sand blocks area is situated on the inactive surface of river bed. The land is not utilized for any other purposes.
- No effluent generation as any further processing of mineral is proposed. Hence no ground water contamination due to the proposed mining activity.
- The depth of mining shall be restricted to 3 m/water level, whichever is less.

3.2 Water Quality

The quality of ground water is fairly good. There is no liquid waste discharge from mining activity, which is likely to pollute water. Various Ground water samples has been collected from the various locations All Ground water Monitoring results shows that the water can be used for drinking purpose.

Surface water quality results shows that the water is fit for wild life habitat and for fisheries.

3.3. Noise Quality

There is no drilling and blasting is proposed, there will be no back ground noise levels at the site. The area is away from roads where frequent traffic is encountered. 14 Monitoring Locations have been selected on the entire cluster to find out existing Nose level. All monitoring results shows that the sound are well within the limit prescribed by CPCB.

3.4 Ambient Air Quality

All the sand mining locations on river are in village area, therefore not much pollution has been observed in terms of AAQ parameters. To find out the existing quality of Ambient Air sampling have been done for 13 locations for each projects. The Monitoring Reports of all the locations shows that all the values of ambient air quality is well within the limit prescribed by CPCB.

3.5 Climatic Conditions

Warm and humid climate prevails in the district. The temperature touches 39^0C on an average during the months of April and May, and that of the minimum 6.3^0C during the month of January. The monsoon starts mostly from the mid of June and continues up to the end of the September. From seventy years (1901- 1970) annual rainfall data it has been observed that the normal rainfall of the district is at 1080 mm/yr. The annual rainfall of the district varies within 1025.2 to 1106.2 mm. About 85.46 % of the total annual rainfall is received during monsoon period and the rest (only 14.54 % approximately) comes in the months of November to May of non-monsoon period.

3.6 Socio-Economic Environment

More than 100 villages including hamlets within the buffer zone (10 km) and they all depend on agriculture and related activities. Since the quarrying is on large scale, therefore possibility of employment will be more. Wherever possible and subject to the availability of the necessary skills and expertise, employment of people from the local region will be favored.

3.7 Flora and Fauna

Some of the most dominant species in study area are babool (Vachellia nilotica), vilayati babool (Prosopis juliflora), neem (Azadirachta indica), gulmohar (Delonix regia.), amaltas (Cassia fistula), dhatura (Datura stramonium), arandi (Ricinus communis), ber (Ziziphusjujube), bougainvellia (Bougainvillea spectabilis), peepal (Ficusreligiosa), shisham (Dalbergiasissoo), sagwan (Tectona grandis L.f.) etc. were observed within 10km radius of the study area. Predominant plant vegetation is Dalbergia shisoo ,Acacia catechu, Borassus flaberiformis and Bombax ceiba respectively. The other plant is Acacia nilotica, Acacia sp, Azadirachta indica, Eucalyptus, Dhatura sp, Zizyphus sp, Cassia tora, Dalbergia sisoo, Parthenium sp, Cassia sp.

The fauna visiting core zone includes monkeys (*Prebytis entellus*), snakes (*Trimeresurus gramineas, Dryophis nasutus*), rabbits (*Lepus nigricollis*), fish (*Catla catla, Labeo rohita* etc),

crows (*Corvus splendens*) etc. As per the information collected by the field team, the common animals of the study area are toad (*Duttaphrynus melanostictus*) and frog (*Hoplobatrachus tigerinus*), Indian garden lizards (*Calotes versicolor*), House lizards (*Hemidactylus frenatus*). In addition, the commonly found domestic animals such as cow, dog, cat etc. and lower life forms, such as, ants, spider, butterfly, bee, wasp, and termite are also found in the study area. The common birds inhabiting in the study area are Bulbul (*Pycnonotus jocosus*), Pigeon (*Columba livia*), and Koel (*Eudynamys scolopaceus*).

4. ENVIRONMENT MANAGEMENT PLAN

4.1 INTRODUCTION

Environmental Management Plan is a guiding document for environmental impacts associated with the proposed projects. It is a guiding document for management of good environmental condition on the site & surrounding of the proposed sand mine. The Environmental Management Plan (EMP) has been formulated and integrated with the sand mine planning keeping in view overall scientific development of local habitat and the adverse impact that may be caused due to the sand mining operation.

A scientific assessment of these impacts those are likely to influence the existing environmental scenario is needed. This could also facilitate in formulating a suitable environmental management plan depicting all mitigation measures. It can help in implementing the project in an eco-friendly manner. The project activities influencing the following environmental attributes have been studied and the impacts on the following attributes have been assessed:-

- Air Environment
- Water Environment
- Land Environment
- Noise Environment
- Ecological and Biological Environment
- Waste Management

4.2 OBJECTIVES

- To ensure that sand extraction will be carried out in a sustainable way.
- To obtain an increased understanding of the potential impacts of sand mining and gravel extraction operations on the in stream and riparian habitats of streams, rivers.
- To provide guidelines for evaluation of potential impact.
- To adopt asystematic way of operation that a voids the impacts to the greatest extent possible.

4.3 ANTICIPATED IMPACTS AND MITIGATION MEASURES

The pollution potential of the proposed project, its 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 hereunder.

4.3.1 AIR ENVIRONMENT

A. Anticipated impacts

i) Due to Haul road/ Access Road

Plying of trucks from public road to river sand collection points needs access roads. Majority of such access roads are following the same alignment of existing roads/tracks being used by pedestrians/cart owners. Movement of heavy vehicles sometimes causes problems to cattle, agriculture land, and human habitations due to dust, noise and movement of public. These environmental problems are felt more as the background is rural in nature.

ii) Due to Mining process

Air pollution is likely to be caused at various stages of sand mining operations such as excavation, loading of material. Particulate Matter (PM10) is the main pollutants during Sand mining operations. Most of the dust will be generated from loading. This dust becomes airborne and gets carried away to surrounding areas. The impact on air is mainly localized in nature as the dust particles are not carried to longer distances and the effect is felt within the core zone of the project involving active Sand mining operations.

B. Mitigation Measures

i) Mitigation of Impacts on Access Roads

Movement of the vehicles on the road will be increased; however, unmetalled road in the mining area will be sprinkled with water at regular intervals. In addition to prevent spillage by trucks over loading should be controlled along with speed limit (10 tonnes/truck).

There will be minimum numbers of access roads to riverbed, as cutting river banks should be avoided and ramps are to be maintained. Access points to the river bed shall be as follows-

- Least steep ness of river bank.
- Where steepness of banks can not be avoided access ramps shall be constructed
- Haulage roads parallel to the river bank and roads connecting access (ramps) to the river
- Mining shall be away from bank from lease boundary.
- Approaching riverbed from both the banks shall be avoided.

ii) For Fugitive Dust Emission:

- To avoid fugitive dust emissions at the time of excavation, the mining area will be wetted by water spraying.
- Effective dust suppression arrangements will be made at the mine.

- Sand is transported to the sites by road through trucks. The sand will be wetted after Loading in to the truck and shall be covered by tarpaulin sheets.
- To minimize the vehicular pollution from the sand transporting vehicles, the following conditions are insisted to permit the vehicles of the transporters:
- The vehicles should be with good engine condition and should maintain pollution control certificate (PUC) issued by appropriate authorities.
- Regular maintenance of transport vehicles and monitoring of vehicular emission levels at periodical intervals.
- Green belt development on the access roads and the land provided by local authority.

4.3.2 WATER ENVIRONMENT

A. Anticipated impacts

As the project activity is carried out in the inactive channel of the river bed, none of the project activities will affect the water environment or riverian habitats. In this project ,it is not proposed to divert or truncate any stream. In the lean months ,the proposed sand mining will not expose the base flow of the river and hence there will not be any adverse impact on surface hydrology and ground water regime due to this project. Thus, the project activities will not have any adverse effect on the physical components of the environment and therefore may not have any effect on there charge of ground waters or affect the water quality. The sand mining activity will not have any significant impact on the water environment to the region.

The haulage of trucks /tippers/tractor trailors may damage some of the natural drains/streams/ nullahs enroute due to heavy laden weights this may cause shifting or diversion or impounding of the natural flows.

B. Mitigation measures:-

- The lessee shall be responsible for the maintenance of all haul roads and ensure natural flows of streams/nallahs which may be crossing the haul roads. He shall also ensure the truck contractors or their respective drivers to avoid damaging the natural flows of streams/nullahs.
- The leasee shall arrange to impart training to the truck drivers and other Machinery operators to protect the environment and follow the measures in the EMP report.
- Mining is avoided during the monsoon season and at the time of floods. This will help in replenishment of sand in the riverbed.
- Mining below subterranean water level will be avoided as safeguard against Environmental contamination and over exploitation of resources.
- Stream will not be diverted to or from the active channels.
- Ground water levels will be monitored regularly in and around sand mining project.
- Mining schedule is synchronized with the river flow direction and the gradient of the land

- Mining at the concave side of the river channel was avoided to prevent bank erosion.

- Utmost care will be taken to minimize or control leakage vehicles to be used for sand transportation.
- The washing of trucks in the river will be avoided.
- Workers shall be provided with Bio Toilets at the site so as not to damage with release of untreated sewage. The bio technology ensures self treatment of sewage collected within the specially made usable modules.
- Mining would be avoided during the monsoon season and at the time of floods.
- The contractor will follow all guidelines and rules for scientific method of mining during the period of extracting the sand.

4.3.2 LAND ENVIRONMENT

The type of mining and the characteristics of the particular mineral deposit both affect the degree to which mining disturbs the landscape. Sand Mining and allied activities will be done in the fluvial plain formed by river meandering. Mining of sand may cause a few environmental degradations.

A. Anticipated impacts

- Damage of river bank due to access ramps to river bed, may cause soil erosion.
- Destruction of river bank hinter land and ecological due to extraction of sand by probability of damage to the flood control bunds (built along the river side) due to heavy movements of vehicles over the bund to approach the mine are and further during transportation for sand from the mine area.
- Disposal of packing material, carried by the workers, would not be allowed. This packing material would include used sachet/gutka/pan masala pouches.
- Movement of heavy vehicles sometimes cause problems to agricultural land, human habitations, borehole users due to dust, noise and it also causes traffic hazards.
- Surface degradation due to road network.

B. Mitigation measures

- No sand will be collected from the safety zone. Safe clearance should be mainly determined by the height of the river bank to be extracted from the close vicinity of that bank.
- No foreign material like polythene bag, jute bag and useless articles should be allowed to remain/spill in river bed and catchment area, or no pits/pockets will be allowed to be filled with such material.

- Minimum number of access roads to river bed for which cutting of river banks will be avoided and ramps are to be maintained.
- Care will be taken to ensure that ponding is not formed in the river bed.
- Mining will not exceeds beyond the allowed extraction capacity.
- Green belt will be developed along the access roads at mine premises and the land provided by concerned authority. While selecting the plant species, preference will be given for planting native species of the area.

4.3.4 NOISE ENVIRONMENT

A. Anticipated impacts:-

Noise environment in this project will be affected by the equipment at the site and vehicular transportation. Since mining is done mechanically, slight increase in noise levels can be expected.

B. Mitigation measures:-

- Minimum use of Horns around the village area.
- Timely maintenance of vehicles and their silencers to minimize vibration and Sound.
- Phasing out of old and worn out trucks.
- Provision of green belts along the road networks.
- Care will be taken to produce minimum sound during sand loading.
- Ear plugs shall be provided and ensured to protect the labors from noise during working at the site.

4.3.5 BIOLOGICAL ENVIRONMENT

A. Anticipated impacts

a) Aquatic environment

The proposed mining will be on the inactive channel i.e. flood plain of the river, so there will not be any effect on aquatic life. However , the following mitigation measures shall be practiced.

b) Flora and Fauna

The mining activity will have insignificant affect on the existing flora and fauna. The project area is surrounded with agricultural land. The purpose of the project itself is to save the flora around the project area from river widening, excessive erosion and floods. The sand mining activity therefore, will not have any significant impact on the biological environment of the region.

B. Mitigation measures

- Improvement in river bank stability
- No mining will be carried out during the rainy season to minimize impact on aquatic life.
- Large woody debris in the riparian zone will be left undisturbed or replaced when moved and shall not be burnt.
- Operation and storage of heavy vehicles within riparian habitat will be restricted.
- Conservation of biological diversity of plants, birds and animals.
- Greenbelt Development with adaptable and useful floral varieties along haul roads
- Plantation activities will be carried out in consultation with village Panchayat and also local Forest officials..

4.3.6 TERRESTRIALENVIRONMENT

Terrestrial environment consist of trees, herbs, shrubs. The river streams which harbor a good biodiversity are playing an important role in sustenance and protection of terrestrial environment. Green belt will be developed along the access roads at mine premises. While selecting the plant species, preference will be given for planting native species of the area. The avian biodiversity have its home near the streams and depend on it for their life.

A. Anticipated Impact:

- The avian biodiversity may be badly affected and birds may shift to other place.
- Trees and shrubs may be affected by the sand mining activities.

B. Mitigation measures

- As the mining site has no vegetation, thus clearance of vegetation not required. However the trucks and tractors approaching the sand mining site will be directed where the least damage to plant is ensured.
- The entire vehicle will be kept fit for making least noise and making horn will be avoided in and around the lease area.
- Grass Cultivation can be done along the river bank for river back protection.

4.3.7. GREEN BELT DEVELOPMENT

The implementation for development of green belt will be of paramount importance as it will not only add up as an aesthetic feature, but also act as a pollution sink. The species to be grown in the area should be dust tolerant and fast growing species so that permanent green belt is created. To stabilize the river bank erosion the plantation of native species of that area along the river bank. Apart from the green belt and aesthetic plantation for elimination fugitive of emission and

noise control, all other plantation efforts shall be decided and executed with the assistance and co-operation of the local community. 5 trees per hectares of Mining lease area of local and fast growing species will be planted in the local areas. Saplings will be planted on the both sides of the connecting roads and in community area with proper permission. Tree guard will be provided for plant saplings. A person will be hired for proper take care of the planted trees.

The list of floral species is suggested for the development of greenbelt .The same is given in Table no.2

Table 2:-Trees Proposed For Green Belt Development

S/n	Botanical Name	Family	Common Name	Height	Flowering Season	Crown Shape	Crown surface area (M^2)
1	*Alstoniascholaris* (linn.)R. Br.	Apocynaceae	Chattiyan	15m	Dec - Mar.	Round	241,680.50
2	*Anonaswuamosa* Linn.	Anonaceae	Custard apple	10m	March - July extended uptosept.	Round	2178.21
3	*Anona reticulate* Linn.	Anonaceae	Bullock's Heart	10m	June.	Round	2017.44
4	*Azadirachtaindica*A. juss.	Meliaceae	Indian Lilac	20m	Jan - March, Aug. - Sept.	Spreading	300,445.30
5	*Cassia pumila*Lamk	Caesalpinaceae	Yellow Cassia	10-12m		Round	13,273.70
6	*Derris indica*(Lam.)Bennett.	Fabaceae	Pongam-Oil Tree, Karanj	10m	April - June	Round	6278.1
7	*Eucalyptus citridora Hook.*	Myrtaceae	lemon scented gum	20m	Feb. - April, Oct.-Dec.	Conical	52447.63
8	*Ficusgibbosa*Blume	Moraceae	Korotosani (Orisa)	10m	April - May	Spreading	223,45.4

S/n	Botanical Name	Family	Common Name	Height	Flowering Season	Crown Shape	Crown surface area (M^2)
9	*Guazmaulmifolia* Lamk	Sterculiaceae	Rudraki	10m	Mar - August.	Round/ Spreading	30279.8
10	*Heterophragmaroxburghiji*DC	Bignoniaceae		18m	Feb. - April.	Round/ Oblong	155217.7

Table No. 3: Afforestation Programme and EMP cost proposed for the project

S. No	Ghat name	Address	Area in Hectares	No of plants proposed
1	Jamui Kiul 14 Balu Ghat	Khata no. – 172, 150 & 159. Khasra No.- 857, 920, 01 & 515. Mauza/Village – Kendih, Bhandra & Sagdaha, Post – Nariyana, P.s – Khaira, Anchal – Khaira, District- Jamui (Bihar).	34.0	170
2	Jamui Kiul 15 Balu Ghat	Khata no. – 159 & 31 Khasra No.- 01, 515 & 136 Mauza/Village – Sagdaha & Parsa, Post – Nariyana, P.s – Khaira, Anchal – Khaira, District- Jamui (Bihar).	32.0	160
3	Jamui Kiul 16 Balu Ghat	Khata no. – 159, 194, 31 & 164 Khasra No.- 01, 515, 01, 136, 785 & 786 Mauza/Village – Sagdaha, Bela, Parsa & Bhaur, Post – Nariyana, P.s – Khaira, Anchal – Khaira, District- Jamui (Bihar).	30.7	155
TOTAL			**96.7**	**483 can say 485**

4.3.8 WASTE MANAGEMENT

The monsoonal river flow brings in fresh load of clay and soil every year. This clay or soil has rich content of plant nutrients. This soil /clay shall be hand sorted. Also the sand shall be

sieved through a mesh/sieve which shall further separate the sand and clay/soil contents. The present sand mining locations do not have significant top soil/clay layer to be preserved elsewhere during the mining operations.

A. Mitigation measures

Gravels, pebbles etc. coming along with the flood of river will be used in haul road development and filling of low lying area.

5. IMPLEMENTATION OF EMP

Environmental Management Plan serves no purpose if it is not implemented with true spirit. Some loopholes in the EMP can also be detected afterwards when it is implemented and monitored. Thus, an implementation and monitoring programmed has to be prepared. Implementation of proposed control measures and monitoring programmed has an implication on the surrounding area as well as for the region. Therefore, sand mining management should be strengthen the existing control measures as elaborated earlier in this report and monitor the efficacy of the control measures implemented within the sand mining area relating to the following specific areas:

Coordinate with environment monitoring laboratory for collecting and analyzing air, water, soil & noise quality of the area.

- Implementing the control and protective measures.
- Co-coordinating the environment related activities within the project as well as with outside agencies.
- Collecting statistics of health of workers and population of surrounding villages.
- Monitoring the progress of implementation of environmental management program.
- Greenbelt development along the access road at sand mining site.

Table No. 4: Environment Management Plan cost proposed for the each projects in a cluster

S. No	Ghat names	Pollution Control & Dust Suppression		Pollution Monitoring i) Air pollution ii) Water pollution iv) Noise Pollution		Plantation and salary for one gardener (part time basis).		Haul road Maintenance Cost		Total (In Lakhs)
		Capital (In lakhs)	Recurring (In lakhs)	Capital (In lakhs)	Recurring (In lakhs)	Capital (In lakhs)	Recurring (In lakhs)	Capital (In lakhs)	Recurring (In lakhs)	
1	Jamui Kiul 14 Balu Ghat	Nil	5.0	Nil	2.0	1.7	0.6	2.0	1.6	**12.9**
2	Jamui Kiul 15 Balu Ghat	Nil	5.0	Nil	2.0	1.6	0.6	1.12	1.6	**11.92**
3	Jamui Kiul 16 Balu Ghat	Nil	5.0	Nil	2.0	1.55	0.6	1.25	1.6	**12.0**
Total		Nil	**15**	**Nil**	**6.0**	**4.85**	**1.8**	**4.37**	**4.8**	**36.82**

Capital cost = 9.22 Lakhs for cluster of 3 Ghats
Recurring cost = 27.6 Lakhs for cluster of 3 Ghats

Note: For each plants including hedges and fences = 1000

- Salary of Labour for haul road maintenance 2 labor x 300=600 Rs. per day

  600* 270 days = 160000/-

- * 2.5 lakh per kilometer for haul road maintenance
- * 5000/month for Gardener i.e 5000 x 12 months = 0.6 Lakhs
- Proponents have there own tanker of capacity 12000 Litre for water sprinkling

ANNEXURE-IV

ENGLISH EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

INTRODUCTION

As per MoEF&CC, New Delhi Gazette dated 14th September 2006 and amended thereof, the proposed mining project is categorized as **Category 'B1'** project.

The proposed sand mining project is a cluster of 3 sand ghats i.e. Jamui Kiul 14 Balu Ghat, Jamui Kiul 15 Balu Ghat, & Jamui Kiul 16 Balu Ghat on Kiul River of District- Jamui, Bihar

The estimated project cost for the proposed project is Rs. 1280.62 Lakhs (Including Auction Cost).

PROJECT DESCRIPTION

LOCATION

The proposed mining lease area falls in Survey of India Toposheet 72L/1. The lease area is located on Kiul river of Jamui District Bihar. The mine lease co-ordinates are listed below:

Mine lease Pillar Co-ordinates

Jamui Kiul 14 Balu Ghats	
A	24°52' 16.26" N 86°13'44.45 " E
B	24°52' 3.86" N 86°13'41.99 " E
C	24°51' 54.35" N 86°13'28.24 " E
D	24°51' 44.04" N 86°13'18.03 " E
E	24°51' 37.87" N 86°13'26.24 " E
F	24°51' 56.87" N 86°13'44.55 " E
G	24°52' 1.04" N 86°13'47.52 " E
H	24°52' 14.28" N 86°13'54.85 " E
Jamui Kiul 15 Balu Ghats	
A	24°51' 44.04" N 86°13'18.03 " E
B	24°51' 27.41" N 86°13'9.76 " E
C	24°51' 3.43" N 86°13'6.15 " E
D	24°51' 1.34" N 86°13'14.85 " E
E	24°51' 16.14" N 86°13'16.45 " E
F	24°51' 26.84" N 86°13'19.48 " E
G	24°51' 37.87" N 86°13'26.24 " E

Jamui Kiul 16 Balu Ghats	
A	24°51' 3.43" N 86°13'6.15 " E
B	24°50' 37.18" N 86°12'57.29 " E
C	24°50' 28.63" N 86°13'5.49 " E
D	24°50' 47.31" N 86°13'14.31 " E
E	24°51' 1.34" N 86°13'14.85 " E

Area & production: The total lease area of cluster is 96.7 Ha Proposed rate of production will be 1878552 TPA.

The details of individual sand ghats in a cluster showing their area, production, proponent details, geographical co-ordinates and their proponent details are as:-

Individual Ghats Details in a Cluster of 3 Sand Ghats

S.No	Ghat name	Area (Ha)	Address	Production in Tones per annum	Proponent addresses
1	Jamui Kiul 14 Balu Ghat	34.0	Khata no. – 172, 150 & 159. Khasra No.- 857, 920, 01 & 515. Mauza/Village – Kendih, Bhandra & Sagdaha, Post – Nariyana, P.s – Khaira, Anchal – Khaira, District- Jamui (Bihar).	795600	M/S Manoj Enterprises, Prop. Manoj Singh, S/O Brahmdev Singh Balgudar, Lakhisarai Bihar-811311 Mob.No. 8521961102 Email- manojenterprises@gmail.com
2	Jamui Kiul 15 Balu Ghat	32.0	Khata no. – 159 & 31 Khasra No.- 01, 515 & 136 Mauza/Village – Sagdaha & Parsa, Post – Nariyana, P.s – Khaira, Anchal – Khaira, District- Jamui (Bihar).	795600	M/S Shiva Corporation (India) Ltd. Director- Sri Ashu Singh Bhati S/O- Sri Magan Singh Bhati Add- A-24, Ambabadi, Sikar Road, Jaipur Rajasthan 302012
3	Jamui Kiul 16 Balu Ghat	30.7	Khata no. – 159, 194, 31 & 164 Khasra No.- 01, 515, 01, 136, 785 & 786 Mauza/Village – Sagdaha, Bela, Parsa & Bhaur, Post – Nariyana, P.s – Khaira, Anchal – Khaira, District- Jamui (Bihar).	287352	Smt. Ruby Devi W/O Sri Chandrashekhar Singh Purani Chowk Sikandra, Jamui. Pin- 811315 Mob.No.7782051162 Email- rd5404464@gmail.com

Connectivity:

Nearest Railway Station is Jamui Railway station at distance of approx. 11 Km in NNE. SH-82 is approx.300 m away in North form lease boundary Kiul 14 Balu Ghat and 1.5 Km in West direction form lease boundary all the 3 ghats. JPN International Airport, Patna approx. 135 Km towards NW and Gaya Airport is at distance of approx. 131 Km in SW direction.

MINING

The mining process is opencast semi-mechanized method without drilling & blasting. Light weight excavators will be used for loading of mineral in tippers. No drilling/ blasting are required as the material is loose in nature.

The sand shall be exploited up to depth of 3.0m. The sand shall be exploited with the deployment of an excavator & filled into tippers & transported to various buyers.

RESERVE AND PRODUCTION

Safety zone of 7.5 meter will be left all around the lease area. Working depth will be 3 meter from the surface. Volume is multiplied by bulk density (1.8) to get tones. The annual exploitation of sand of the proposed ghats in a cluster will be **1878552 TPA**.

It is a river bed deposit and mined out area shall be replenished each year during monsoon period and depth of quarry shall be filled back by river sand each year and area will restore its original topography.

SITE FACILITIES AND UTILITIES

Water Supply

Water requirement for the proposed project will be provided for the workers for drinking & domestic purpose. Water will also be provided for dust suppression. Fresh water will be only used for drinking purpose. The water will be supplied from available sources from nearby village. Total 14.5 KLD of water will be used for this cluster.

Temporary Rest Shelter

A temporary rest shelter will be provided for the workers near to the site for rest. In addition, First aid box will be made available at the site. Sanitation facility i.e. septic tank or community toilet facility will be provided for the workers.

BASELINE ENVIRONMENTAL STATUS

Environmental data has been collected in relation to proposed mining for Air, Noise, Water, Soil, Flora & Fauna. The baseline environment study was carried out over an area with radial distance of 10 km around the mining lease area during winter season from March to Mid June 2020.

Meteorology

The Summarized Meteorological Data for the Monitoring Period (March 2020 to Mid June 2020)is given below:

Table 1:- Baseline Environmental Status

Month	Temperature °C		Relative Humidity %		Wind Speed (Km/Hr)	
	Min	Max	Min	Max	Min	Max
March 2020	19	33	15	85	3	23
April 2020	24	41	11	66	1	25
May 2020	21	46	21	68	3	32
June 2020	28	42	10	90	3	23

Attribute	Baseline status
Ambient Air Quality	The ambient air quality study for the 20 AAQ monitoring stations shows that the maximum and minimum ground level concentration for PM_{10} is respectively 94.5 µg/m^3at AAQ8 and 49.8 µg/m^3at AAQ11. Whereas the maximum and minimum ground level concentration for $PM_{2.5}$ ranges between 52.8 µg/m^3 at AAQ8 and 16.2 µg/m^3 at AAQ9 respectively. Similarly for SO_2, the maximum and minimum ground level concentration varies between 12.7 µg/m^3 at AAQ6 and 5.1 µg/m^3 at AAQ13 & AAQ5 stations. For NO_2 the maximum and minimum ground level concentration varies between 21.2 µg/m^3 & 10.5 µg/$m^3$for respectively AAQ12 and AAQ5 stations.
Noise Levels	Noise monitoring study reveals that the minimum & maximum noise levels at day time were recorded as 37.8 dB (A) at NQ3 & 47.7 dB (A) at NQ9. The minimum & maximum noise levels at night time were found to be 28.4 dB (A) at NQ2 & 38.9 dB (A) at NQ10.

Water Quality	6 Groundwater samples were analyzed and concluded that: The ground water from all sources remains suitable for drinking purposes as all the constituents are within the limits prescribed by drinking water standards by Indian Standards IS: 10500.
Soil Quality	Samples collected from identified locations indicate pH value ranging from 6.1to 7.0.. whereas the Potassium is found to be ranging from 58.1 mg/kg to 93.4 mg/kg.

ANTICIPATED ENVIRONMENTALIMPACTS

Impact on Air Environment

The collection and lifting of minerals will be done semi-mechanically. Therefore, the dust generated is likely to be insignificant as there will be no drilling & blasting. The only air pollution sources are the road transport network of the trucks.

Water sprinkling will be done on the haul roads twice in a day. This will reduce dust emission further by 74%. Monitoring to ensure compliance with emission limits would be carried out during operation

Impact on Water Environment

Mining of sand from within or near river has an indirect impact on the physico-chemical habitat characteristics during monsoon season. These characteristics include in stream roughness elements, depth, velocity, turbidity, sediment transport and stream discharge.

The detrimental effects, if any, to biota resulting from bed material mining are caused by following:

- Alteration of flow patterns resulting from modification of the *river*
- An excess of suspended sediment during monsoon season.

Project activity will be carried out only in the dry part of the Kiul River. Hence, none of the project activities affect the water environment directly. In the project, it is not proposed to divert or truncate any stream in monsoon season only. No proposal is envisaged for pumping of water either from the *River* (in monsoon) or tapping the ground water.

Impact on Land Environment

The proposed extraction of stream bed materials, mining below the existing streambed, and alteration of channel-bed form and shape may lead to several impacts such as erosion of channel bed and banks, increase in channel slope, and change in channel morphology if, the operations are not carried out systematically.

The systematic and scientific removal of sand will not cause bed degradation. The silt and clay generated as waste will be used for plantation or filling up low lying area elsewhere. The mining is planned in non monsoon seasons only, so that the excavated area gets replenished gradually during the monsoons each year.

Impact on Noise Environment

The proposed mining activity is semi-mechanized in nature. No drilling & blasting is envisaged for the mining activity. Hence, the only impact is anticipated is due to movement of vehicles deployed for transportation of minerals. The vehicles will be maintained in good running condition so that noise will be reduced to minimum possible level.

Impact on Biological Environment

As the proposed mining will be carried out in a scientific manner, not much significant impact is anticipated. No mining will be carried out during the monsoon season to minimize impact on aquatic life which is mainly breeding season for many of the species. The mining site has no vegetation, no clearance of vegetation will be done. Haul roads will be sprinkled with water which would reduce the dust emission, thus avoiding damage to the crops.

Impact on Socio Economic Environment

The impact of mining activity in the area is positive on the socio-economic environment of the region. Sand mining will be providing employment to local people whenever there is requirement of manpower.

POST PROJECT ENVIRONMENTAL MONITORING

S.No.	Description of Parameters	Schedule of Monitoring
1	Air Quality	24 hourly samples twice a week in each season except monsoon
2	Water Quality (Surface &Groundwater)	Once a season for 4 seasons in a year
3	Soil Quality	Once in a year in project area
4	Noise Level	Twice a year for first two years & then once a year
5	Socio-economic Condition	Once in 3 years
6	Plantation Monitoring	Once in a season

ADDITIONAL STUDIES

Public Hearing

Draft EIA is being submitted to conduct Public Hearing.

Risk Assessment

The complete mining operation will be carried out under the management control and direction of a qualified mine manager holding. The DGMS have been regularly issuing standing orders, model standing orders and circulars to be followed by the mine management in case of disaster, if any. Moreover, mining staff will be sent to refresher courses from time to time to keep them alert.

Disaster Management Plan

Emergency preparedness is an important aspect in the planning of Disaster Management. Personnel would be trained suitably and prepared mentally and physically in emergency response through carefully planned, simulated procedures. Similarly, the key personnel and essential personnel shall be trained in the operations.

PROJECT BENEFITS

Physical Benefits: Road Transport, Market, Enhancement of green cover & Creation of community assets.

Social Benefits: Increase in Employment Potential, Contribution to the Exchequer, Increased Health related activities, Educational attainments & Strengthening of existing community facilities

Environmental Benefits:

- Controlling *river* channel and protection of banks.
- Reducing submergence of adjoining agricultural lands due to flooding.
- Reducing aggradation of *river* level.
- A check on illegal mining activity.

CORPORATE ENVIRONMENTAL RESPONSIBILITY

2% of the capital cost of the project cost will be allotted for the Corporate Environmental Responsibility for activities related to education, social causes, healthcare & environmental.

ENVIRONMENTAL MANAGEMENT PLAN (EMP)

- Extraction will be done from the bed leaving safety zone from bank.
- The maximum working depth will remain above ground water table of the area.
- Provide health facilities to the workers & surrounding people in the impact area to reduce the health impacts.
- Ensuring wildlife protection & arranging awareness campaigns for the same.
- Minimize activities that release fine sediment to the *river*.
- Effective mitigation measures will be adopted to minimize disturbance during transportation & handling of minerals
- Establishment of reclamation program with plantation of local/native & fast growing species
- Establishment of restoration plan during the closure of mine at the onset of monsoon season.

- Establishment of effective Disaster Management Plan to take timely precautionary measures to avoid effects of impending disasters.
- Establishment of effective Monitoring Program monitored by Environment Management Cell.

CONCLUSION

Based on the EIA study it is observed that there will be an increase in the dust pollution, which will be controlled by sprinkling of water and plantation. There will be an insignificant impact on ambient environment and ecology due to the mining activities moreover the mining operation will lead to direct and indirect employment generation in the area. Green belt development around the area will also be taken up as an effective pollution mitigative technique, as well as to control the pollutants released from the premises of the Mine. Monitoring program will be followed till the mining operations continue. Hence, it can be summarized that the development of the mine will have a positive impact on the socio-economic environment of the area and lead to sustainable development of the region.

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ANNEXURE-V

HINDI EXECUTIVE SUMMARY

कार्यकारी सारांश

पर्यावरण प्रभाव आंकलन

जमुई 14-16 बालू घाट का क्लस्टर (किउल नदी)

मौजा-केनडीह, भंडरा सग्दाहा, भोर, परसा एवं बेला ,अंचल - खैरा, जिला- जमुई, राज्य-बिहार

द्वारा

पर्यावरण परामर्शकर्ता

ओसिओ इन्वाइरो मैनेजमेंट सोल्युशन्स (इंडिया) प्राइवेट लिमिटेड

ग़ाज़ियाबाद, उत्तर प्रदेश

कार्यकारी सारांश

➢ परियोजना और प्रस्तावक का परिचय

प्रस्तावित बालू घाट का जमुई किउल 14 बालू घाट से जमुई किउल 16 बालू घाटों क्लस्टर का है जो मौजा- केनडीह, भंडरा सग्दाहा, भोर, परसा एवं बेला , अंचल - खैरा, जिला- जमुई, राज्य-बिहार में कुल 96.7 हेक्टेयर क्षेत्रफल के अन्तर्गत आता है। अतः आवेदकों ने ईआईए अधिसूचना, 2006 के तहत ई० सी० के लिए आवेदन किया है। इस परियोजना की कुल लागत 1280.62 लाख रूपये का आकलन किया गया है।

पर्यावरण और वन मंत्रालय, भारत सरकार की ईआईए अधिसूचना, दिनांकित 14 सितम्बर 2006 जिसे दिसम्बर 2009, और अप्रैल 2011 और जनवरी 2016 में संशोधित किया गया है, के अनुसार, परियोजना गतिविधि 1 ए, के तहत श्रेणी 'बी' में आती है। ड्राफ्ट ई0 आई0 ए0/ई0 एम0 पी0 एप्रूव्ड टी0ओ0आर0 के आधार पर तैयार की गई हैं। इस खदान के द्वारा पर्यावरण में होने वाले प्रभाव का आकलन करने के लिए वर्तमान स्थिति में पर्यावरण पर खान के द्वारा पड़ने वाले प्रभाव का जायजा लेना आवश्यक है।

परियोजना का प्रस्ताव जिन आवेदकों द्वारा किया गया है उनका विवरण टेबल संख्या 1 में दी गई है। प्रस्तावकर्ता ने खनन विभाग से किउल नदी के बालू घाटों से बालू खनन के लिए पट्टा लिया है।

उत्पादन

प्रस्ताव प्रति वर्ष लगभग सभी 3 बालू घाटों से कुल 1878552 टन बालू के उत्पादन का है।
प्रतिवर्ष घटवार उत्पादन का विवरण टेबल संख्या 1 में दिया गया है।

खनन पट्टे की अवधि

लीज़ की अवधि 5 वर्षों के लिए निर्धारित की गई है

स्थल

पट्टा क्षेत्र बिहार के मौजा- केनडीह, भंडरा सग्दाहा, भोर, परसा एवं बेला , अंचल - खैरा, जिला- जमुई, राज्य-बिहार में स्थित है। पट्टे का यह क्षेत्र भारतीय सर्वेक्षण की टोपोशीट नम्बर 72L/1 में आता है।

कुल 9 बालू घाटों में से सभी बालू घाटों का अलग अलग विवरण इस प्रकार है:-

क्र0 सं0	बालू घाट का नाम	क्षेत्रफल (हेक्टेयर में)	परियोना प्रस्तावक	परियोजना स्थल का पता	जिओ-कोऑर्डिनटस	प्रतिवर्ष उत्पादन	परियोजना लागत
1	जमुई किउल 14 बालू	34.0	मेसर्स मनोज इंटरप्राइज़ेज़	खाता संख्या– 172, 150 & 159. खसरा संख्या.- 857, 920, 01 & 515. मौजा / गांव – केनडीह, भंडरा, सग्दाहा, अंचल - खैरा, जिला- जमुई, राज्य-बिहार	A 24°52' 16.26" N 86°13'44.45 " E B 24°52' 3.86" N 86°13'41.99 " E C 24°51' 54.35" N 86°13'28.24 " E D 24°51' 44.04" N 86°13'18.03 " E E 24°51' 37.87" N 86°13'26.24 " E F 24°51' 56.87" N 86°13'44.55 " E G 24°52' 1.04" N 86°13'47.52 " E H 24°52' 14.28" N 86°13'54.85 " E	795600	5,76,00,000/-
2	जमुई किउल 15 बालू	32.0	मेसर्स शिवा कारपोरेशन (इंडिया) लिमिटेड	खाता संख्या-159 & 31 खसरा संख्या.- 01, 515 & 136 मौजा / गांव - सग्दाहा एवं परसा, अंचल - खैरा, जिला- जमुई, राज्य-बिहार	A 24°51' 44.04" N 86°13'18.03 " E B 24°51' 27.41" N 86°13'9.76 " E C 24°51' 3.43" N 86°13'6.15 " E D 24°51' 1.34" N 86°13'14.85 " E E 24°51' 16.14" N 86°13'16.45 " E F 24°51' 26.84" N 86°13'19.48 " E G 24°51' 37.87" N	795600	3,82,80,000/-

क्र0 सं0	बालू घाट का नाम	क्षेत्रफल (हेक्टेयर में)	परियोना प्रस्तावक	परियोजना स्थल का पता	जिओ-कोऑर्डिनटस		प्रतिवर्ष उत्पादन	परियोजना लागत
						86°13'26.24 " E		
3	जमुई किउल 16 बालू	30.7	श्रीमती रूबी देवी	खाता संख्या– 159, 194, 31 & 164 खसरा संख्या.- 01, 515, 01, 136, 785 & 786 मौजा / गांव - सग्दाहा, भोर, परसा एवं बेला , अंचल - खैरा, जिला- जमुई, राज्य- बिहार	A	24°51' 3.43" N 86°13'6.15 " E	287352	3,21,82,000/-
					B	24°50' 37.18" N 86°12'57.29 " E		
					C	24°50' 28.63" N 86°13'5.49 " E		
					D	24°50' 47.31" N 86°13'14.31 " E		
					E	24°51' 1.34" N 86°13'14.85 " E		

संयोजकता

खनन क्षेत्र जमुई शहर से 7.0 किलोमेटेर की दूरी पे स्थित है| खनन क्षेत्र में स्टेट हाईवे-82 दवारा जाया जा सकता है ।

2.2 परियोजना की मूल आवश्यकताएं

क्रम संख्या	आवश्यकताएं	मात्रा	स्रोत
1	कुल क्षेत्रफल	96.7 हेक्टेयर	यह एक नया खान है।
2	कुल पानी की लागत	14.5 KLD	आस पास के गांव या प्रकृतिक वसंत से
3	कुल मेनपॉवर	151	मुख्य रूप से आस पास के गांवों से

2.3 खनन पद्वति का विवरण

खनन की विधि	खुली खदान अर्ध्य यांत्रिकीकृत
बेंच की उंचाई और चौड़ाई	उंचाई: 1 मीटर चौड़ाई: 9 मीटर
गड्ढो की अधिकतम गहराई	3 मीटर
खान का जीवनकाल	प्रस्तावित क्षेत्र नदी तट है, अतः ये प्रत्येक वर्ष मानसून के बाद बालू से पुनः भर जाता है

ड्रिलिंग

ड्रिलिंग एवं ब्लास्टिंग की आवश्यकता नहीं हैं।

खनिज का उपयोग

बालू का उपयोग निर्माण कार्यो में किया जाता है सड़क निर्माण में भी इसका उपयोग किया जाता है

- **<u>खनन</u>**

यह एक ओपन – कास्ट खनन परियोजना है। कार्य अर्ध यांत्रिकी विधि से किया जायेगा। हस्तचालित उपकरणों में फावड़ों, पल्लों, चलनियों, गैंतियों आदि का उपयोग किया जाएगा।

अर्ध यांत्रिकी विधि में **एक्सकेवटर/JCB** उपकरणों का उपयोग किया जाएगा। ड्रिलिंग और ब्लास्टिंग की आवश्यकता नहीं होगी।

खनन 3 मीटर की गहराई तक या भूजल के 3 मीटर ऊपर तक किया जाएगा ।

खनन केवल दिन में किया जाएगा और मानसून के दौरान पूरी तरह बंद रखा जाएगा।

रिजर्व

रिजर्व की गणना के लिए खनन योग्य क्षेत्र की सीमा पर विचार सतह से 3 मीटर की अधिकतम गहराई के मद्देनजर किया गया है।

➢ स्थल सुविधाएं एवं उपयोगिताएं

जल आपूर्ति

खनन के दौरान पानी की आवश्यकता मुख्या रूप से धूल के संदमन, हरित पट्टी के विकाश, पेय प्रयोजन और अन्य घरेलु कार्यों के लिए होगी, पानी की यह आवश्यकता नजदीकी स्रोतों जैसे हैंड पंप एवं प्राइवेट टैंकरों से पूरी की जाएगी ।

अस्थायी आवास :

श्रमिकों को विश्राम के लिए **खनन** स्थल के नजदीक एक अस्थायी आवास उपलब्ध कराया जाएगा। इसके अतिरिक्त, श्रमिकों के लिए प्रथम उपचार दवाओं के साथ–साथ विष–रोधी दवाओं और साफ–सफाई की व्यवस्था अर्थात सेप्टिक टैंक या सामुदायिक पैखाने की सुविधा मुहैया कराई जाएगी। **खनन कार्य में लगे श्रमिकों की उनकी सुरक्षा देखते हुए उन्हें दस्तानो और जूतों पहनने को दिया जाएगा ।**

पर्यावरणी स्थिति

पर्यावरण संवेदी स्थल की स्थिति :-

10 किमी के अध्यन क्षेत्र में कोई पर्यावरण संवेदी स्थल नहीं है, केवल जमुई हिल रेंज 4 किमी की दूरी पर पश्चिम दिशा में स्थित है।

आधाररेखा पर्यावरणी गुणत्ता का परीक्षण मार्च 2020 से जून मध्य 2020 तक के दौरान बालू खदान से 10 किलोमीटर की त्रिज्या में चारों और किया गया।

➢ **बेसलाईन आंकड़े :**

प्रस्तावित खनन के प्रति वायु, ध्वनि, जल, मृदा, पारिस्थितिकी और जैवविविधता के पर्यावरणीय आंकड़ों का संग्रह किया गया है।

पर्यावरण की आधारिक स्थिति

विशेषता	आधारिक स्थिति
वायु गुणवत्ता	वायु गुणवत्ता का अध्ययन 20 स्थानों पर किया गया। कुछ मानकों के अधिकतम मानों जैसे PM $_{2.5}$ (52.8 ug/m^3), PM $_{10}$ (94.5 µg/m^3) है। इन मानकों के न्यूनतम मान PM $_{2.5}$ (16.2 µg/m^3), PM $_{10}$ (49.8 µg/m^3) है, SO_2 और NO_2 का मान लिमिट के अंदर है।
ध्वनि गुणवत्ता	शोर का अध्ययन 20 स्थानों पर किया गया। इस अध्ययन के परिणाम दर्शाते हैं कि दिन और रात दोनों समय में शोर के स्तर सभी स्थानों पर NAAQ(राष्टीय मानंको द्वारा) निर्धारित सीमा में थे।
जल गुणवत्ता	सभी स्रातों से भूमिगत जल पेय प्रयोजन के लिए उपयुक्त है, क्योंकि सभी अवयव भारतीय मानक आईएस:10500 के मानदण्डों के अनुसार निर्धारित सीमा से कम पाये गये।
मृदा गुणवत्ता	चिह्नित स्थलों से लिए गए नमूनों से पता चलता है कि मिट्टी बलुअई है और इसका pH 6.1 से 7.0 के बीच है।

पर्यावरण पर प्रभाव एवं उसकी रोकथाम

- **वायु वातावरण**

प्रत्याषित प्रभाव और मूल्यांकन

वायु की गुणवत्ता का अध्ययन किया गया तथा विभिन्न मॉडलिंग तकनीकों में पाया गया कि खनन की गतिविधी से वायु की गुणवत्ता पर कोई खास प्रभाव नहीं पड़ेगा। खनन की गतिविधियों में, लोडिंग, स्थानान्तरण और अनलोडिंग के कारण शुष्क सामग्री की वजह से वायु की गुणवत्ता में कुछ गिरावट आ सकती है। वर्तमान मामले में, वायु के मॉडलिंग परिणामों से अनुमान लगाया गया है कि प्रदूषण के बढ़ने की दर सीमित होगी तथा खनन के लीज़ क्षेत्र के बाहर यह नगण्य हो जायेगी।

शमन के उपाय

वायु प्रदूषण का एकमात्र स्रोत ट्रकों का सड़क स्थानान्तरण नेटवर्क है। धूल के संदमन के लिए सड़कों पर पानी का छिड़काव किया जायेगा। ट्रकों से रिसाव न हो, इसका खास ध्यान रखा जायेगा।

ओवरलोडिंग नहीं की जायेगी। सड़कों के किनारे पेड़ लगाये जायेंगे ताकि आस पास के गांवों में धूल के प्रभाव को कम किया जा सके।

- **पानी का वातावरण**

भूमिगत जल पर प्रभाव को जानने के लिए एक व्यापक जल-भूवैज्ञानिक अध्ययन किया गया है। अध्ययन से निष्कर्ष निकाला गया है कि खनन के कारण आस पास के भूमिगत जल के स्रोतों पर कोई प्रत्यक्ष प्रभाव नहीं पड़ेगा। खनन की गतिविधी के लिए जल की आवश्यकता नहीं होती है। खनन कार्य नदी के सूखे भाग पर ही किया जाएगा । नदी के मुख्या चॅनेल से कोई छेड़.छार नहीं की जाएगी ।

- **शोर वातावरण**

प्रत्याषित प्रभाव एवं मूल्यांकन

खान में उत्पन्न शोर अर्द्ध-यांत्रिक खनन गतिविधियों और ट्रकों की स्थानान्तरण गतियों के कारण होगा। खनन की गतिविधी के कारण उत्पन्न शोर खान के भीतर ही सीमित रहेगा। आस पास के गांवों पर खनन की गतिविधी का कोई खास प्रभाव नहीं पड़ेगा। हालांकि, शोर के उपरोक्त स्तर का प्रभाव केवल सक्रिय कार्यशील क्षेत्र के आस पास ही महसूस किया जायेगा।

निम्न स्तर का शोर सहनीय है और इसका मानव पर कोई बुरा प्रभाव नहीं पड़ता, लेकिन जब यह बहुत ज्यादा होता है- तब इसके हानिकर प्रभाव हो सकते हैं।

इस मामले में आस पास की आबादी पर शोर का प्रभाव नगण्य है क्योंकि आबादी के ये स्थान खानों से दूर स्थित हैं। चूंकि किसी बड़ी मशीन का यहां कोई काम नहीं है, इसलिए शोर के स्तर का प्रभाव न्यूनतम होगा।

शमन के उपाय

साईट पर

इसलिए, खनिकों के कानों की सुरक्षा के लिए ईयर- मफ उपलब्ध कराये जायेंगें। वाहनों की गतियों के दौरान शोर को कम करने के लिए वाहनों का उचित रखरखाव किया जायेगा।

साईट से दूर

साईट से दूर ग्राहियों पर खास प्रभाव नहीं पड़ेगा क्योंकि वे खान की साईट से पर्याप्त दूरी पर होंगे। लेकिन वाहनों के गतियों के कारण कुछ परेशानी ज़रूर होगी। सड़कों के किनारे तथा नागरिक सुविधाओं के आस पास कुल 485 की संख्या में पेड़ लगाये जायेंगें, जिससे साईट से दूर शोर का प्रभाव कुछ कम हो जायेगा।

➢ पर्यावरण प्रबंधन योजना (इएमपी) एवं उसका कार्यान्वयन

- नदी के किनारों के संरक्षण के लिए किनारों से सुरक्षित दुरी को छोड़कर खनन किया जाएगा ।
- पर्यावरण प्रबंध योजना के लिए सभी 3 परियोजनाओं के लिए कुल 36.82 लाख रूपये की व्यवस्था की गई है जो हॉल रोड को बनाने, कच्चे सड़क पर धूल शमन , वृक्षारोपण एवं उनके रखरखाव के माध में खर्च किये जाएंगे।
- घाटवार पर्यावरण प्रबंध योजना की राशि का का विवरण इस प्रकार है:-

क्र0 सं0	बालू घाट का नाम	राशि (लाख में)
1	12.9	11.95
2	11.92	11.80
3	12.0	9.8
कुल राशि		**36.82 लाख**

- खनन कार्य की अधिकतम गहराई क्षेत्र के भूजल स्तर के ऊपर रहेगी।
- बालू खदानों से जुड़े सड़कों पर नियमित अंतराल पर धूल उत्सर्जन की रोकथाम के लिए पानी का छिड़काव किया जाएगा
- स्वास्थ्य पर पड़ने वाले प्रभावों को कम करने के लिए प्रभाव क्षेत्र में श्रमिकों और आसपास के लोगों को स्वास्थ्य सुविधाएं मुहैया कराई जाएंगी।
- वन्यजीव संरक्षण सुनिश्चित की जाएगी और इसके लिए जागरूकता अभियान चलाए जाएंगे।
- खनन कार्य में लगे मजदूरों के स्वस्थ्य की नियमित जाँच की जाएगी।
- नदी के किनारों और सड़कों के दोनों तरह वृक्षारोपण का कार्य किया जाएगा ।
- ऐसी गतिविधियां कम की जाएंगी जिनके फलस्वरूप सूक्ष्म तलछट नदी में पहुंच सके।

- ढुलाई और निकास मार्ग के रखरखाव के चलते परिवहन पर पड़ने वाले भार पर नियंत्रण रखा जाएगा।
- परिवहन और **बालू ढुलाई** के दौरान उत्पन्न होने वाली गड़बड़ी को कम करने के लिए प्रभावशाली उपाय अपनाए जाएंगे :
- संभावित आपदाओं से बचने के लिए समय पर एहतियाती उपाय अपनाने हेतु प्रभावशाली आपदा प्रबंधन योजना का क्रियान्वयन किया जाएगा ।
- पर्यावरण प्रबंधन प्रकोष्ठ द्वारा प्रभावशाली निगरानी कार्यक्रम का क्रियान्वयन किया जाएगा ।

➢ खनन के लाभ

भौतिक लाभ

प्रस्तावित परियोजना के प्रारंभ होने से आसपास के निम्नलिखित क्षेत्रों में भौतिक बुनियादी ढांचे को बढावा मिलेगा

क. सड़क परिवहन या सड़कों संपर्क में वृद्धि

ख. खनिज से अच्छे बाज़ारी अवसर मिलेंगे।

ग. हरियाली /वृक्षारोपण को बढावा

घ. समुदायिक परिसंपत्तियों का सृजन (बुनियादी ढांचे)

सामाजिक लाभः

क) रोजगार में वृद्धि

ख) राजकोष में अंशदान (खनिज कि बिक्री से राजस्व प्राप्त होगा)

ग) स्वास्थ्य संबंधि गतिविधिया को बढावा

घ) निगमित ;कार्पोरेटद्ध सामाजिक दायित्व के माध्यम से शैक्षिक गतिविधियां बनाने और उनको बढ़ावा देने की योजना।

ड.) तत्कालीन समुदाय का सुदृढ़ीकरण सामुदायिक विकाय कार्यक्रम के माध्यम से सुविधा कार्यक्रम।

पर्यावरणीय लाभः

क) वैज्ञानिक खनन से पर्यावरण दुष्प्रभाव में कमी।

ख) **वैज्ञानिक खनन से** नदी के किनारों के आस पास पर उगी फसलों की सुरक्षा।

ग) अवैध खनन रोकने के उपाय।

- निगमित **(कार्पोरेट) सामाजिक दायित्व**

निगमित **(कार्पोरेट)** समाजिक दायित्व गतिविधियों के लिए परियोजना लागत का 2% अंश आवंटित किया जाएगा, जैसे शिक्षा, **सामाजिक कल्याण एवं आस पास के सामुदायिक विकास के मद में खर्च किया जाएगा** , स्वास्थ्य एवं पर्यावरण देखभाल। **कुल 25.62 लाख रूपये इस मद में खर्च किये जाने का प्रावधान है।**

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ANNEXURE-VI

MINE PLAN APPROVAL LETTER

बिहार सरकार,
खान एवं भूतत्व विभाग।

पत्रांक–2/एम.एम.(बा0)– 50/19–...../एम0, पटना, दिनांक–

प्रेषक,

सुशील कुमार
सरकार के अवर सचिव।

सेवा में,

फैक्स/
ई0 मेल

खनिज विकास पदाधिकारी,
जिला खनन कार्यालय, जमुई।

विषयः– **जमुई जिला के जमुई किउल–14 बालूघाट के खनन योजना के अनुमोदन के संबंध में।**

महाशय,

उपर्युक्त विषयक मामले में निदेशानुसार कहना है कि बिहार बालू नीति–2019 एवं बिहार खनिज (समानुदान अवैध खनन, परिवहन एवं भंडारण निवारण) नियमावली, 2019 के नियम–17 में वर्णित प्रावधानों के तहत् **जमुई जिला के जमुई किउल–14 बालूघाट** से संबंधित समर्पित खनन योजना के अनुमोदन पर प्राधिकृत समिति द्वारा समीक्षा की गई। समीक्षोपरांत निम्न शर्त्तों एवं बंधेजों के तहत् खनन योजना अनुमोदित की जाती है –

1. उक्त खनन योजना केन्द्र सरकार/राज्य सरकार द्वारा विनियमित अन्य सभी अधिनियम/नियमावली में वर्णित प्रावधानों को तथा किसी न्यायालय/अन्य न्यायिक संस्था द्वारा पारित किये गये न्यायादेश को बिना प्रभावित किये अनुमोदित किया जा सकता है।
2. उक्त खनन योजना का अनुमोदन खान एवं खनिज (विकास एवं विनियमन) अधिनियम, 1957 (यथा संशोधित), बिहार खनिज (समानुदान अवैध खनन, परिवहन एवं भंडारण निवारण) नियमावली, 2019 के नियम–17, वन संरक्षण अधिनियम, 1980, पर्यावरण सुरक्षा अधिनियम, 1986, श्रम संबंधी नियम तथा अन्य सभी सुसंगत अधिनियम/ नियमावली तथा उनमें वर्णित प्रावधानों के प्रतिकूल नही होगा
3. खनन योजना में निहित शर्त्तों का पालन करते हुए ही बालू खनिज का खनन् तथा प्रेषण किया जायेगा।
4. संबंधित सक्षम प्राधिकार से यथा वांछित प्रमाण–पत्र प्राप्त कर विभाग को अवगत कराना अनिवार्य होगा।
5. यदि किसी भी समय खनन योजना में वर्णित शर्त्तों के अनुपालन में अनियमितता पायी जाती है, तो खनन पदाधिकारी को नियमानुसार आवश्यक कार्रवाई करने का अधिकार होगा।
6. संबंधित बालूघाट में खनिज की उपलब्धता, पहुँच पथ का निर्माण तथा अन्य खनन् कार्यों से संबंधित सम्पूर्ण जबाबदेही बालूघाट संचालनकर्त्ता की होगी तथा इसमें किसी भी तरह का कोई दावा अथवा क्षतिपूर्ति मान्य नहीं होगा।
7. खनन योजना मे वर्णित सभी तकनीकि तथा अन्य बिन्दुओं से संबंधित ऑकड़ों की सत्यता / वैधता की जिम्मेवारी RQP की होगी तथा भविष्य में उपर्युक्त के संबंध में किसी प्रकार की भिन्नता/अनियमितता की पूरी जबावदेही RQP की होगी।
8. खनन् कार्य के दौरान घाट संचालनकर्त्ता द्वारा पर्यावरण संबंधी मानकों का नियमित रूप से अनुश्रवण करने की व्यवस्था करनी होगी।खनन् कार्य के दौरान नदियों के प्राकृतिक बहाव आदि में किसी भी तरह का व्यवधान/रूकावट/बदलाव करना पूर्ण रूप से प्रतिबंधित होगा।

9. बालूघाट में Secondary Loading की व्यवस्था इस प्रकार सुनिश्चित की जाएगी ताकि गीला बालू का परिवहन नहीं हों।

10. यद्यपि खनन योजना में Semi-mechanised mining को प्राथमिकता दी गयी है तथापि Manual Mining पर कोई प्रतिबंध नहीं रखा जाएगा एवं स्थानीय व्यक्तियों को नियोजन देने के दृष्टिकोण से Manual Mining को उचित अवसर प्रदान करना होगा।

11. घाट संचालनकर्त्ता द्वारा खान एवं खनिज (विकास एवं विनियमन) अधिनियम, 1957, बिहार खनिज (समानुदान अवैध खनन, परिवहन एवं भंडारण निवारण) नियमावली, 2019 तथा बिहार बालू खनन नीति, 2019 के प्रावधानों का अनिवार्य रूप से पालन किया जायेगा।

12. घाट संचालनकर्त्ता को पर्यावरण सुरक्षा हेतु सभी उपाय करने होगें तथा नियमित रूप से जल/वायु की गुणवत्ता की जाँच/अनुश्रवण की व्यवस्था सुनिश्चित करनी होगी।

13. घाट संचालनकर्त्ता को उत्पादन/प्रेषण का आँकड़ा एवं पंजी संधारित करना अनिवार्य होगा जिसे नियमित रूप से अद्यतन किया जाएगा।

14. संचालन करने वाले घाटों की सीमांकन कराना एवं उसे खनन के क्रम में संधारित कराना घाट संचालनकर्त्ता की जवाबदेही होगी, जिसे RQP/अंचलाधिकारी की उपस्थिति में प्रमाणित करवाकर खनन कार्य करना होगा।

15. खनन योजना में वर्णित सभी तकनीकि तथा अन्य बिन्दुओं से संबंधित ऑकड़ों की सत्यता/वैधता की सम्पूर्ण जिम्मेवारी घाट संचालनकर्त्ता की होगी तथा भविष्य में उपर्युक्त के संबंध में किसी प्रकार की भिन्नता/अनियमितता की पूरी जबावदेही घाट संचालनकर्त्ता की होगी।

16. माननीय NGT में दायर O.A. No. 53/2019 चैम्पियन ग्रुफ ऑफ कम्पनी बनाम भारत संघ एवं अन्य, तथा अन्य समरूप वादों में दिनांक–21.10.2019 को पारित अंतरिम आदेश से यह खनन योजना आच्छादित रहेगी।

17. बिहार खनिज (समानुदान अवैध खनन, परिवहन एवं भंडारण निवारण) नियमावली, 2019 में वर्णित प्रतिबंधित क्षेत्रों में किसी प्रकार का खनन् कार्य वर्जित होगा।

18. बालूघाटों से बालू का निष्कासन एवं प्रेषण आबादी से सटे ग्रामीण सड़क को छोड़कर अलग मार्ग से करना होगा।

19. खनन योजना की एक–एक प्रति, जो संबंधित RQP द्वारा प्रत्येक पृष्ठ पर हस्ताक्षरित होगी, निदेशक, खान एवं भूतत्व विभाग के कार्यालय के अतिरिक्त समाहर्त्ता, जमुई के गोपनीय कोषांग, उपनिदेशक, मुंगेर अंचल, मुंगेर के कार्यालय में उपलब्ध कराना सुनिश्चित किया जायेगा, ताकि किसी भी समय इसकी जाँच की जा सके।

प्राधिकृत समिति की अनुशंसा के आलोक में उपरोक्त शर्त्तों के साथ **जमुई किउल** –14 बालूघाटों से संबंधित समर्पित खनन योजना के अन्तर्गत ही बालू उत्खनन् कार्य सुनिश्चित कराया जाय।

विश्वासभाजन
ह०/–
(सुशील कुमार)
सरकार के अवर सचिव

ज्ञापांक–4143 /एम0, पटना, दिनांक–20/11/19

प्रतिलिपिः– RQP श्री प्रवीण कुमार सिन्हा को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।

सरकार के अवर सचिव।

बिहार सरकार,
खान एवं भूतत्व विभाग।

पत्रांक–2 / एम.एम.(बा0)–50 / 19–..... / एम0, पटना, दिनांक–

प्रेषक,

सुशील कुमार
सरकार के अवर सचिव।

सेवा में,

फैक्स / ई0 मेल

खनिज विकास पदाधिकारी,
जिला खनन कार्यालय, जमुई।

विषयः– **जमुई जिला के जमुई किउल–15 बालूघाट के खनन योजना के अनुमोदन के संबंध में।**

महाशय,

उपर्युक्त विषयक मामले में निदेशानुसार कहना है कि बिहार बालू नीति–2019 एवं बिहार खनिज (समानुदान अवैध खनन, परिवहन एवं भंडारण निवारण) नियमावली, 2019 के नियम–17 में वर्णित प्रावधानों के तहत् **जमुई जिला के जमुई किउल–15 बालूघाट** से संबंधित समर्पित खनन योजना के अनुमोदन पर प्राधिकृत समिति द्वारा समीक्षा की गई। समीक्षोपरांत निम्न शर्त्तों एवं बंधेजों के तहत् खनन योजना अनुमोदित की जाती है –

1. उक्त खनन योजना केन्द्र सरकार / राज्य सरकार द्वारा विनियमित अन्य सभी अधिनियम / नियमावली में वर्णित प्रावधानों को तथा किसी न्यायालय / अन्य न्यायिक संस्था द्वारा पारित किये गये न्यायादेश को बिना प्रभावित किये अनुमोदित किया जा सकता है।
2. उक्त खनन योजना का अनुमोदन खान एवं खनिज (विकास एवं विनियमन) अधिनियम, 1957 (यथा संशोधित), बिहार खनिज (समानुदान अवैध खनन, परिवहन एवं भंडारण निवारण) नियमावली, 2019 के नियम–17, वन संरक्षण अधिनियम, 1980, पर्यावरण सुरक्षा अधिनियम, 1986, श्रम संबंधी नियम तथा अन्य सभी सुसंगत अधिनियम / नियमावली तथा उनमें वर्णित प्रावधानों के प्रतिकूल नही होगा
3. खनन योजना में निहित शर्त्तों का पालन करते हुए ही बालू खनिज का खनन् तथा प्रेषण किया जायेगा।
4. संबंधित सक्षम प्राधिकार से यथा वांछित प्रमाण–पत्र प्राप्त कर विभाग को अवगत कराना अनिवार्य होगा।
5. यदि किसी भी समय खनन योजना में वर्णित शर्त्तों के अनुपालन में अनियमितता पायी जाती है, तो खनन पदाधिकारी को नियमानुसार आवश्यक कार्रवाई करने का अधिकार होगा।
6. संबंधित बालूघाट में खनिज की उपलब्धता, पहुँच पथ का निर्माण तथा अन्य खनन् कार्यों से संबंधित सम्पूर्ण जबाबदेही बालूघाट संचालनकर्त्ता की होगी तथा इसमें किसी भी तरह का कोई दावा अथवा क्षतिपूर्ति मान्य नहीं होगा।
7. खनन योजना मे वर्णित सभी तकनीकि तथा अन्य बिन्दुओं से संबंधित ऑकड़ों की सत्यता / वैधता की जिम्मेवारी RQP की होगी तथा भविष्य में उपर्युक्त के संबंध में किसी प्रकार की भिन्नता / अनियमितता की पूरी जबावदेही RQP की होगी।
8. खनन् कार्य के दौरान घाट संचालनकर्त्ता द्वारा पर्यावरण संबंधी मानकों का नियमित रूप से अनुश्रवण करने की व्यवस्था करनी होगी।खनन् कार्य के दौरान नदियों के प्राकृतिक बहाव आदि में किसी भी तरह का व्यवधान / रूकावट / बदलाव करना पूर्ण रूप से प्रतिबंधित होगा।

9. बालूघाट में Secondary Loading की व्यवस्था इस प्रकार सुनिश्चित की जाएगी ताकि गीला बालू का परिवहन नहीं हों।

10. यद्यपि खनन योजना में Semi-mechanised mining को प्राथमिकता दी गयी है तथापि Manual Mining पर कोई प्रतिबंध नहीं रखा जाएगा एवं स्थानीय व्यक्तियों को नियोजन देने के दृष्टिकोण से Manual Mining को उचित अवसर प्रदान करना होगा।

11. घाट संचालनकर्त्ता द्वारा खान एवं खनिज (विकास एवं विनियमन) अधिनियम, 1957, बिहार खनिज (समानुदान अवैध खनन, परिवहन एवं भंडारण निवारण) नियमावली, 2019 तथा बिहार बालू खनन नीति, 2019 के प्रावधानों का अनिवार्य रूप से पालन किया जायेगा।

12. घाट संचालनकर्त्ता को पर्यावरण सुरक्षा हेतु सभी उपाय करने होगें तथा नियमित रूप से जल/वायु की गुणवत्ता की जाँच/अनुश्रवण की व्यवस्था सुनिश्चित करनी होगी।

13. घाट संचालनकर्त्ता को उत्पादन/प्रेषण का आँकड़ा एवं पंजी संधारित करना अनिवार्य होगा जिसे नियमित रूप से अद्यतन किया जाएगा।

14. संचालन करने वाले घाटों की सीमांकन कराना एवं उसे खनन के क्रम में संधारित कराना घाट संचालनकर्त्ता की जवाबदेही होगी, जिसे RQP/अंचलाधिकारी की उपस्थिति में प्रमाणित करवाकर खनन कार्य करना होगा।

15. खनन योजना में वर्णित सभी तकनीकि तथा अन्य बिन्दुओं से संबंधित ऑकड़ों की सत्यता/वैधता की सम्पूर्ण जिम्मेवारी घाट संचालनकर्त्ता की होगी तथा भविष्य में उपर्युक्त के संबंध में किसी प्रकार की भिन्नता/अनियमितता की पूरी जबावदेही घाट संचालनकर्त्ता की होगी।

16. माननीय NGT में दायर O.A. No. 53/2019 चैम्पियन ग्रुफ ऑफ कम्पनी बनाम भारत संघ एवं अन्य, तथा अन्य समरूप वादों में दिनांक–21.10.2019 को पारित अंतरिम आदेश से यह खनन योजना आच्छादित रहेगी।

17. बिहार खनिज (समानुदान अवैध खनन, परिवहन एवं भंडारण निवारण) नियमावली, 2019 में वर्णित प्रतिबंधित क्षेत्रों में किसी प्रकार का खनन् कार्य वर्जित होगा।

18. बालूघाटों से बालू का निष्कासन एवं प्रेषण आबादी से सटे ग्रामीण सड़क को छोड़कर अलग मार्ग से करना होगा।

19. खनन योजना की एक–एक प्रति, जो संबंधित RQP द्वारा प्रत्येक पृष्ठ पर हस्ताक्षरित होगी, निदेशक, खान एवं भूतत्व विभाग के कार्यालय के अतिरिक्त समाहर्त्ता, जमुई के गोपनीय कोषांग, उपनिदेशक, मुंगेर अंचल, मुंगेर के कार्यालय में उपलब्ध कराना सुनिश्चित किया जायेगा, ताकि किसी भी समय इसकी जाँच की जा सके।

प्राधिकृत समिति की अनुशंसा के आलोक में उपरोक्त शर्त्तों के साथ **जमुई किउल** –15 बालूघाटों से संबंधित समर्पित खनन योजना के अन्तर्गत ही बालू उत्खनन् कार्य सुनिश्चित कराया जाय।

विश्वासभाजन
ह०/–
(सुशील कुमार)
सरकार के अवर सचिव

ज्ञापांक–4142 /एम0, पटना, दिनांक–20/11/19

प्रतिलिपिः– RQP श्री प्रवीण कुमार सिन्हा को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।

20/11/19
सरकार के अवर सचिव।

बिहार सरकार,
खान एवं भूतत्व विभाग।

पत्रांक–2 / एम.एम.(बा0)– 50 / 19–..... / एम0, पटना, दिनांक–

प्रेषक,

सुशील कुमार
सरकार के अवर सचिव।

सेवा में,

फैक्स / ई0 मेल

खनिज विकास पदाधिकारी,
जिला खनन कार्यालय, जमुई।

विषयः– **जमुई जिला के जमुई किउल–16 बालूघाट के खनन योजना के अनुमोदन के संबंध में।**

महाशय,

उपर्युक्त विषयक मामले में निदेशानुसार कहना है कि बिहार बालू नीति–2019 एवं बिहार खनिज (समानुदान अवैध खनन, परिवहन एवं भंडारण निवारण) नियमावली, 2019 के नियम–17 में वर्णित प्रावधानों के तहत् **जमुई जिला के जमुई किउल–16 बालूघाट** से संबंधित समर्पित खनन योजना के अनुमोदन पर प्राधिकृत समिति द्वारा समीक्षा की गई। समीक्षोपरांत निम्न शर्त्तों एवं बंधेजों के तहत् खनन योजना अनुमोदित की जाती है –

1. उक्त खनन योजना केन्द्र सरकार/राज्य सरकार द्वारा विनियमित अन्य सभी अधिनियम/ नियमावली में वर्णित प्रावधानों को तथा किसी न्यायालय/अन्य न्यायिक संस्था द्वारा पारित किये गये न्यायादेश को बिना प्रभावित किये अनुमोदित किया जा सकता है।
2. उक्त खनन योजना का अनुमोदन खान एवं खनिज (विकास एवं विनियमन) अधिनियम, 1957 (यथा संशोधित), बिहार खनिज (समानुदान अवैध खनन, परिवहन एवं भंडारण निवारण) नियमावली, 2019 के नियम–17, वन संरक्षण अधिनियम, 1980, पर्यावरण सुरक्षा अधिनियम, 1986, श्रम संबंधी नियम तथा अन्य सभी सुसंगत अधिनियम/ नियमावली तथा उनमें वर्णित प्रावधानों के प्रतिकूल नही होगा
3. खनन योजना में निहित शर्त्तों का पालन करते हुए ही बालू खनिज का खनन् तथा प्रेषण किया जायेगा।
4. संबंधित सक्षम प्राधिकार से यथा वांछित प्रमाण–पत्र प्राप्त कर विभाग को अवगत कराना अनिवार्य होगा।
5. यदि किसी भी समय खनन योजना में वर्णित शर्त्तों के अनुपालन में अनियमितता पायी जाती है, तो खनन पदाधिकारी को नियमानुसार आवश्यक कार्रवाई करने का अधिकार होगा।
6. संबंधित बालूघाट में खनिज की उपलब्धता, पहुँच पथ का निर्माण तथा अन्य खनन् कार्यों से संबंधित सम्पूर्ण जबाबदेही बालूघाट संचालनकर्त्ता की होगी तथा इसमें किसी भी तरह का कोई दावा अथवा क्षतिपूर्ति मान्य नहीं होगा।
7. खनन योजना मे वर्णित सभी तकनीकि तथा अन्य बिन्दुओं से संबंधित ऑकड़ों की सत्यता / वैधता की जिम्मेवारी RQP की होगी तथा भविष्य में उपर्युक्त के संबंध में किसी प्रकार की भिन्नता/अनियमितता की पूरी जबावदेही RQP की होगी।
8. खनन् कार्य के दौरान घाट संचालनकर्त्ता द्वारा पर्यावरण संबंधी मानकों का नियमित रूप से अनुश्रवण करने की व्यवस्था करनी होगी।खनन् कार्य के दौरान नदियों के प्राकृतिक बहाव आदि में किसी भी तरह का व्यवधान/रूकावट/बदलाव करना पूर्ण रूप से प्रतिबंधित होगा।

9. बालूघाट में Secondary Loading की व्यवस्था इस प्रकार सुनिश्चित की जाएगी ताकि गीला बालू का परिवहन नहीं हों।

10. यद्यपि खनन योजना में Semi-mechanised mining को प्राथमिकता दी गयी है तथापि Manual Mining पर कोई प्रतिबंध नहीं रखा जाएगा एवं स्थानीय व्यक्तियों को नियोजन देने के दृष्टिकोण से Manual Mining को उचित अवसर प्रदान करना होगा।

11. घाट संचालनकर्त्ता द्वारा खान एवं खनिज (विकास एवं विनियमन) अधिनियम, 1957, बिहार खनिज (समानुदान अवैध खनन, परिवहन एवं भंडारण निवारण) नियमावली, 2019 तथा बिहार बालू खनन नीति, 2019 के प्रावधानों का अनिवार्य रूप से पालन किया जायेगा।

12. घाट संचालनकर्त्ता को पर्यावरण सुरक्षा हेतु सभी उपाय करने होगें तथा नियमित रूप से जल/वायु की गुणवत्ता की जाँच/अनुश्रवण की व्यवस्था सुनिश्चित करनी होगी।

13. घाट संचालनकर्त्ता को उत्पादन/प्रेषण का आँकड़ा एवं पंजी संधारित करना अनिवार्य होगा जिसे नियमित रूप से अद्यतन किया जाएगा।

14. संचालन करने वाले घाटों की सीमांकन कराना एवं उसे खनन के क्रम में संधारित कराना घाट संचालनकर्त्ता की जवाबदेही होगी, जिसे RQP/अंचलाधिकारी की उपस्थिति में प्रमाणित करवाकर खनन कार्य करना होगा।

15. खनन योजना में वर्णित सभी तकनीकि तथा अन्य बिन्दुओं से संबंधित ऑकड़ों की सत्यता/वैधता की सम्पूर्ण जिम्मेवारी घाट संचालनकर्त्ता की होगी तथा भविष्य में उपर्युक्त के संबंध में किसी प्रकार की भिन्नता/अनियमितता की पूरी जबावदेही घाट संचालनकर्त्ता की होगी।

16. माननीय NGT में दायर O.A. No. 53/2019 चैम्पियन ग्रुफ ऑफ कम्पनी बनाम भारत संघ एवं अन्य, तथा अन्य समरूप वादों में दिनांक–21.10.2019 को पारित अंतरिम आदेश से यह खनन योजना आच्छादित रहेगी।

17. बिहार खनिज (समानुदान अवैध खनन, परिवहन एवं भंडारण निवारण) नियमावली, 2019 में वर्णित प्रतिबंधित क्षेत्रों में किसी प्रकार का खनन् कार्य वर्जित होगा।

18. बालूघाटों से बालू का निष्कासन एवं प्रेषण आबादी से सटे ग्रामीण सड़क को छोड़कर अलग मार्ग से करना होगा।

19. खनन योजना की एक–एक प्रति, जो संबंधित RQP द्वारा प्रत्येक पृष्ठ पर हस्ताक्षरित होगी, निदेशक, खान एवं भूतत्व विभाग के कार्यालय के अतिरिक्त समाहर्त्ता, जमुई के गोपनीय कोषांग, उपनिदेशक, मुंगेर अंचल, मुंगेर के कार्यालय में उपलब्ध कराना सुनिश्चित किया जायेगा, ताकि किसी भी समय इसकी जाँच की जा सके।

प्राधिकृत समिति की अनुशंसा के आलोक में उपरोक्त शर्त्तों के साथ जमुई किउल–16 बालूघाटों से संबंधित समर्पित खनन योजना के अन्तर्गत ही बालू उत्खनन् कार्य सुनिश्चित कराया जाय।

विश्वासभाजन
ह०/–
(सुशील कुमार)
सरकार के अवर सचिव

ज्ञापांक–4155 /एम0, पटना, दिनांक–20/11/19

प्रतिलिपिः– RQP श्री प्रवीण कुमार सिन्हा को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।

20/11/19
सरकार के अवर सचिव।