EXECUTIVE SUMMARY

FOR

MINING OF MINOR MINERAL (SAND, BAJRI AND BOULDERS) FROM SONG-2 RIVER BED, DEHRADUN FOREST DIVISION DISTRICT DEHRADUN, UTTARAKHAND (M.L. AREA OF 136.85 HA, PRODUCTION CAPACITY -4064445.00 TPA) PRODUCTION (AS PER REPLENISHMENT STUDY REPORT 2019-20)-441904.41 TPA SCHEDULE: 1 (a), CATEGORY: A

(AS LEASE AREA IS MORE THAN 100 HECTARES)

PROJECT PROPONENT



UTTARAKHAND FOREST DEVELOPMENT CORPORATION, DEHRADUN, UTTARAKHAND



DOC. No: MCPL/EMD/MIN/2019-21/09/02 (DEIA) JULY, 2021





MANTEC CONSULTANTS PVT. LTD.

(QCI Accredited EIA Consultant at S.No. 162 as per List of Accredited Consultant Organizations/Rev. 15, OCTOBER 11, 2021

(NABET Accredited EIA consultant, MoEF&CC and NABL approved Laboratory)

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1. INTRODUCTION

M/s Uttarakhand Forest Development Corporation (UKFDC) is a statutory body constituted by the State Government of Uttarakhand. The Corporation was formed for the better preservation, supervision and development of forest, also for better exploitation of forest produce within the State and for matters connected therewith.

The Corporation has been progressing forward not only in its financial aspect but also has taken a big leap in the direction of diversification of its activities.

M/s Uttarakhand Forest Development Corporation (UKFDC) has proposed for mining of Sand, Bajri and Boulder minor mineral in 136.85 ha. of Song-2 Riverbed which falls in the Reserve Forest of Dehradun Forest Division near Village Kaluwala, Tehsil & District Dehradun, Uttarakhand for collection of 4064445.00 TPA. The capacity of mineral extraction is proposed according to the **Uttarakhand Upkhanij (Parihar) Sanshodhan Niyamwali, 2020,** but according to the replenishment study conducted by Central Soil and Water Conservation Institute, Dehradun, the volume of minable mineral is 441904.41 TPA & the production as per replenishment study report 2019-2020 is 441904.41 TPA.

2. PROJECT PROPOSAL

It has proposed for mining of Sand, Bajri and Boulders (minor minerals) in their mining lease area of 136.85 hectares in 136.85 hectare in Village Kaluwala, Tehsil & District Dehradun, Uttarakhand for collection of 4064445.00 TPA of minor minerals. The applicant is seeking prior Environmental Clearance for the project as per EIA notification' 2006 and its subsequent amendments, so it has allotted the job for EIA/EMP Study of their proposed project to *Mantec Consultant Pvt. Ltd., Noida*. Since, the applied mine lease area is located at a distance of 5.0 kms from Rajaji Tiger Reserve, it falls under "Category A"&the Schedule Clause number 1(a) of EIA notification 2006 and its subsequent amendments. The Letter of Intent (LoI) has been issued by the Director of Mines & Geology department, Uttarakhand vide No 1038 / DDD / DDD DDD / DDDDDDDD/ DDDDDD/2018-19 dated 05.11.2018 in favour of M/s Uttarakhand Forest Development Corporation, for mining of Sand, Bajri and Boulder and Forest Clearance has been granted by MoEF&CC of Government of India vide its Letter no File no-8-62/1999 FC(VOL) Dated 20.10.2021.

S. No.	Particulars	Details		
А.	Nature and Size of the Project	Mining of Minor Minerals (Sand, Bajri and Boulders) from the riverbed of River Song-2 by		
		M/s Uttarakhand Forest Development Corporation, located in Dehradun Forest Division, District Dehradun, Uttarakhand over an area of 136.85 ha with Production Capacity of 4064445.00 TPA & the production as per replenishment study report 2019-2020 is 441904.41 TPA.		
В.	Location			
Geographical Coordinates	Latitude and Longitude of	Pillar No.	Latitudes	Longitudes
		S. No	Latitude	Longitude

of the	Project
•	of the

		A	30°14'30.36" N	78°08'36.73"E
		В	30°14'21.67" N	78°08'40.88" E
		С	30°14'09.92" N	78°08'46.26" E
		D	30°14'02.64" N	78°08'50.63" E
		Е	30°13'37.42" N	78°08'57.73" E
		F	30°13'18.80" N	78°08'51.43" E
		G	30°13'03.84" N	78°08'42.24" E
		Н	30°12'32.37" N	78°08'23.88" E
		Ι	30°12'18.77" N	78°08'14.59" E
		I	30°12'18.77" N	78°08'14.59" E
		K	30°12'05.75" N	78°08'05.09" E
		L	30°12'10.88" N	78°07'55.64" E
		М	30°12'26.48" N	78°08'01.30" E
		N	30°12'36.05" N	78°08'14.36" E
		0	30°13'05.76" N	78°08'33.34" E
		Р	30°13'22.09" N	78°08'35.99" E
		0	30°13'37.76" N	78°08'47.57" E
		R	30°13'48.51" N	78°08'44.05" E
		S	30°13'58.96" N	78°08'42.01" E
		Т	30°14'03.65" N	78°08'36.53" E
		U	30°14'17.39" N	78°08'29.32" E
		V	30°14'25.57" N	78°08'21.63" E
		W	30°14'30.36" N	78°08'36.73" E
	Toposheet (OSM) No.	53]/4		
С.	Lease Area Details	71		
	Lease Area	136.85 ha	a	
	Topography	Undulate	d (Riverbed)	
	Site Elevation Range	497.53 m	amsl to 547.31 m an	nsl
D	Cost Dataile	Source: Mining Plan		
D.	Cost of the project			
		Rs. 9.878767 Crore		
	Cost for EMP	Rs. 65.48	Lakhs/Yr (Capital Co	st)
	0118.0	Rs. 20.65	5Lakhs/Yr (Recurring	g Cost)
		Rs 5 00 I	akii/ II (Capital Cosi akhs/Yr (Recurring C	ust)
E.	Environmental Settings of	the area		
	Ecological Sensitive	Rajaji Tig	er Reserve~5 Km, W	
	Areas (National Park,	ck, RF/PF: ry, Rishikesh Range Reserve Forest ~ 2.9 km E		
	Wild Life Sanctuary,			
	Biosphere Reserve,	e, Barkot Kange Reserve Forest ~ 6.8 km SSE		
	Forest etc.) within 10 Km	n 111a110 Kesel ve Follest ~ 0.5 Kill W		
	radius			

Inter-state boundary within 5 Km radius	None			
Nearest Town/ Major City	Dehradun~12.75 Km, NW			
Nearest Railway Station	Doiwala Railway Station~3.27 km, SSW			
Nearest State Highway/ National Highway	NH-7 Haridwar Dehradun Road~1.8 km, E			
Nearest Airport	Jolly Grant Airport~4.87 km, ESE (aerial distance)			
Nearest Post Office	Post Office near Doiwala~2.36 Km, SSW			
Nearest Police Station	Jolly Grant Police Station~1.18 kms in NNW			
Medical Facilities	Doon Public Hospital~6.57 Km, NW			
Education Facilities	Hope way Public School~ 2.78 Km, ESE Swami Rama Himalayan University (SRHU)~2.99Km, ESE			
Seismic Zone	Zone-IV (As per 1893:2002)			
Water Body	Song River ~ 0.1 km ESE Jakhan River ~ 8.1 km E			

3. PROJECT DESCRIPTION

The proposed project is for mining of Sand, Bajri and Boulder (Minor Mineral) by open manual method in riverbed over an area of 136.85 Ha. with proposed production capacity of 4064445 TPA & the production as per replenishment study report 2019-2020 is 441904.41 TPA.

The total geological reserve is 8127676.26 TPA and total mineable reserve 4516050 TPA. Ultimate depth of a bench will be 3.0 m. Riverbed block will be further replenished during rainy season. Minerals will be transported by trucks. 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 project is 25.3 KLD. Total man power requirement for the project is 345 numbers.

The site facilities like canteen, rest-shelter, first aid facility, water and electricity supply etc. will be provided as per requirement.

There is no litigation pending against this project. It is coming under the Zone IV of Seismic Zone(As per 1893:2002)

4. DESCRIPTION OF THE ENVIRONMENT

Environmental data has been collected in relation to proposed mining for Air, Noise, Water, Soil, Ecology and Biodiversity. The generation of primary data as well as collection of secondary data and information from the site and surroundings was carried out during winter season i.e. **December 2019 to February 2020.**

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.

Attribute **Baseline Status** 1. Ambient Air Quality Ambient Air quality Monitoring was carried out in total 8 locations and the maximum value for PM_{10} is observed as 64 $\mu g/m^3$ and **Selection of Sampling** minimum value of 41 μ g/m³ is observed. Station Ambient Air Quality Monitoring was carried out in total 8 locations The baseline status of the and the maximum value for $PM_{2.5}$ is observed as 38 $\mu g/m^3$ and ambient air quality has been minimum value of 22 $\mu g/m^3$ is observed. assessed through scientifically designed Ambient Air Quality Ambient Air Quality Monitoring was carried out in total 8 locations Network. The design of and the maximum value for SO_2 is observed as 15 $\mu g/m^3$ and monitoring network in the air minimum value 5 μ g/m³ is observed. quality surveillance program Ambient Air Quality Monitoring was carried out in total 8 locations has been based on the and the maximum value for NO₂ is observed as 28 μ g/m³ and the following considerations: minimum value of 15 μ g/m³ is observed. a) Representation of Mine leases area. b) Representation of the down wind direction and crosssectional distribution. Representation c) 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. 2. Noise Levels Noise Monitoring was carried out in total 8 locations and the noise **Sampling Stations** levels recorded during the day time were from 44.6 Leq dB to 58.3 Leq dB respectively and level of noise during night time were from 1. NQ1-Bhopal Pani 2. NQ2-Nakraunda 37.2 Leg dB to 48.5 Leg dB respectively. 3. NO3- Balawala 4. NO4-Doiwala 5. NQ5-Ranipokhari 6. NQ6-Bhaniwala 7. NQ7-Bullawala 8. NQ8-Rishikesh 3. Water Quality Analyses of Ground water and Surface water was taken in the Post Monsoon Season December 2019 to February 2020. **Ground Water Stations :-**

Table 1-2: Baseline Status

 GW 01 Dehradun GW 02 Manav Vihar GW 03 Bhopalpani Grant GW 04 Doiwala GW 05 Barasi Grant GW 06 Bhaniwala GW 07 Mothrowala GW 08 Hirikhesh Surface Water Stations :- SW 01 Mine Site SW 02 Nala Near Nakraunda SW 03 Water Body near Barasi Grant SW 04 Song River U/S 	 Ground Water-Ground water monitoring was carried out in total 8 locations. The value of pH varies from to 7.11 to 7.56 Total Hardness varies from 167 to 282 mg/L. Total Dissolved Solids varies from 261 to 375 mg/L. Fluoride varies from 0.56 to 0.72 mg/L Chloride varies from 58.0 to 96.0 mg/L Surface Water - Surface Monitoring was carried out in 2 locations. pH varies from to 7.33 to 7.48 Total Dissolved Solids varies from 102 to 118 mg/L. Total Dissolved Solids varies from 192.0 to 212.0 mg/L. Fluoride varies from 0.31 to 0.63 mg/L Chloride varies from 18.0 to 54 mg/L BOD varies from <4.0 to 8 mg/L
 Soil Quality Selection of Sampling Stations SQ1-Bhopal Pani SQ2-Nakraunda SQ3- Balawala SQ4-Doiwala SQ5-Ranipokhari SQ6-Bhaniwala SQ7-Bullawala SQ8-Rishikesh 	 Soil Monitoring was carried out in total 8 locations. The value of pH ranges from 7.14-7.63. Chidderwala village shows maximum conductivity of 384 µmhos/cm, Thano village shows minimum conductivity of 315 µmhos/cm. Magnesium values ranges from 2.48 meq/100g as lowest at Anthoorwala and Narendra Nagar and 3.41 meq/100g as highest at Mine Site. The average concentration of Nitrogen, Phosphorus and Potassium in the soil samples varies from 9.4 to 11.3 mg/100gm, 0.41 to 0.72 mg/100gm and 4.2 to 5.2 mg/100gm

b) Socio Economic Environment

Socio-Economic Impact Assessment (SEIA) refers to systematic analysis of various social and economic characteristics of human being living in a given geographical area (study area/impact area). The prime objective of SEIA is to identify and evaluate potential socio-economic and cultural impacts of a proposed development project on the lives & conditions of people, their families and communities.

1.1.1 Study Area

The study area defines 10 km circle radius around the mining site at Kaluwala village in sub district Rishikesh, district Dehradun of Uttarakhand state. The study area habitations are spread over the sub districts Dehradun and Rishikesh of Dehradun district and sub districts Dhanaulti and Narendranagar of Tehri Garhwal district of Uttarakhand state. The nearest railway station and airport to the project site is Doiwala Railway Station 3.27 km in south south west (SSW) direction and Jolly Grant Airport, 4.87 km east south east (ESE) of the mining site respectively.

The study area comprises of a total of 115 identified habitations out of which there are 112 villages and 3 are urban areas. There is 1 uninhabited village in the study area habitations. The habitations have been shown in the map and the table below:

Sl. No.	Village	Sl. No.	Village
1	Bharwa Katal	47	Nahi Kalan
2	Mahendra Pur	48	Jakar
3	Dubri	49	Farti
4	Dubara	50	Sangaon
5	Kokliyal Gaon	51	Sindhwal Gaon
6	Daur Mai Kanda	52	Kotala
7	Kol	53	Nahikhurd
8	Chiphalti Lagga Gawali Danda	54	Baderha Kalan
9	Jaintwari	55	Baderna Khurd
10	Jhoti Urph Koti Lagga Jaintwar	56	Tamoli Garh
11	Toliya Katal	57	Talai
12	Saudan Lagga Gawali Dand	58	Dharkot
13	Ghursal Gaon	59	Simiyanah
14	Sunderwala	60	Baderana Majhala
15	Dwara	61	Kuthar
16	Akhandwali Bhilang	62	Katkot Khurd
17	Sodasaroli	63	Katkot Kalan
18	Kalimati	64	Siron
19	Barasi Grant	65	Ghandol
20	Bhopalpani Grant	66	Chauki
21	Paw Wala Soda	67	Kaknawamaychak Talai
22	Motharo Wala	68	Kotimay Chak
23	Badripur	69	Ramnagar Danda

Habitations in the study area

24	TT .	=0	
24	Haripur	70	Kandogal
25	Nawada	71	Kudhal
26	Chaktonwala Grant	72	Gadool
27	Balawala	73	Pali
28	Miyanwala	74	Khaldhar
29	Mohkam Pur Kala	75	Bagi
30	Mohkam Pur Khurd	76	Bangai
31	Majari Mafi	77	Naurtuwala
32	Harrawala	78	Rakhwal Gaon
33	Nakraunda	79	Govind Wala
34	Kuwan Wala	80	Bishan Garh
35	Nagal Jwalapur	81	Bairagada
36	Simlas Grant	82	Sarangdharwala
37	Lachhi Wala	83	Bhogpur
38	Missar Wala Kala	84	Chakbarkot
39	Missar Wala Khurd	85	Barkot Mafi
40	Markham Grant	86	Rani Pokhari Grant
41	Ghissar Pari	87	Mauja Rani Pokhari
42	Doiwala	88	Listrabad
43	Hansuwala	89	Kaluwala
44	Lachhiwala Range	90	Sangatiya Walakala
45	Landwakot	91	Bhaglana
46	Haldwari	92	Badowala
Sl. No.	Village	Sl. No.	Village
93	Baruwala Grant	105	Ashkrodi Range

94	Jauligrant	106	Kaudasi
95	Sangatiya Walakhurd	107	Fagsi
96	Baksar Wala	108	Badogal
97	Kanhar Wala	109	Falsuwa
98	Athhoorwala	110	Rainapur Grant
99	Bhaniya Wala	111	Mazri Grant
10 0	Jeevan Wala	112	Kasron Range
10 1	Fatehpur Danda		Urban Area
10 2	Sahab Nagar	113	Dehradun
10 3	Barkot Range	114	Natthuwa Wala (CT)
10 4	Thano Range	115	Natthan Pur (CT)

The demographic profile of the study area is given below:-

S. No.	Description	Number	Percentage to Respective Total
1	Total Population	205061	100
	Male	106255	51.8
1	Female	98806	48.2
	Sex Ratio		929
	Population (0-6) Age Group	24094	100
2	Male	12802	53.1
2	Female	11292	46.9
	Sex Ratio		882
	Population- Scheduled Caste	23844	100
2	Male	12524	52.5
3	Female	11320	47.5
	Sex Ratio		903
4	Population- Scheduled Tribe	1349	100
	Male	731	54.2
	Female	618	45.8
	Sex Ratio		845
5	Total Literates	155473	100

	Male	85934	55.3
	Female	69539	44.7
	Gender Gap in Literates		10.6
	Overall Literacy Rate	85.9	
	Male	91.9	
6	Female	79.5	
	Gender Gap in Literacy Rate	12.4	
	Total Workers	71487	100
7	Male	53634	75.0
/	Female	17853	25.0
	Gender Gap in Work Participation		50.0
	Main Workers	55442	100
0	Male	44121	79.6
8	Female	11321	20.4
	Gender Gap in Work Participation		59.2
	Marginal Workers	16045	100
0	Male	9513	59.3
9	Female	6532	40.7
	Gender Gap in Work Participation		18.6
	Household Industrial Workers	2218	100
10	Male	1572	70.9
	Female	646	29.1
	Total Agricultural Workers	10904	100
11	Male	7878	72.2
	Female	3026	27.8
	Cultivators	7871	100
12	Male	5328	67.7
	Female	2543	32.3
	Agricultural Labour	3033	100
13	Male	2550	84.1
	Female	483	15.9
	Other Workers	42320	100
14		24674	01.0
14	Male	346/1	81.9

(Source: Primary Census Abstract, 2011)

Total Population Details



Literates Population Distribution









Distribution of Working Population

Distribution of main workers



Scope of Employment Generation :-

By running of this project, local people will be engaged in mining and transportation of minerals along with plantation work for coming 10 years. It is merely estimated that minimum possibility of direct employment generation through above mentioned works.

Besides above employment generation, there will be a development of District Mineral Foundation Trust Fund of Rs. 77,33,327.00 Per Annum.

By following the environmental guidelines related to the project, this project would be beneficial for the people by generating employment opportunities. This project would lead to employment

generation and improve the socio-economic status of the household in the study area habitations. The Corporate Environment Responsibility will prove beneficial for the study area habitants and will lead to improvement in their health and living conditions.

(c) Biological Environment

The study area falls in the Forest land. The list of total number of different plant species (trees, shrubs, herbs and climbers) has been prepared based on the site observations and along with consultation with local peoples. The most common floral species are *Bombax ceiba, Lannea coromandelica, Mallotus philippensis, Dalbergia sissoo, Aegle marmelos, Melia azadirachta, Tectona grandis, Shorea robusta, Trewia nudiflora, Adhatoda vasica, Boehmeria macrophylla, Callicarpa macrophylla, Carissa carandas, Cassia occidentalis, Commelina benghalensis, Jasminum pubescens, Lantana camara, Solanum torvum, Urtica dioica etc. Whereas common herbs are Achyranthes aspera, Ageratum conyzoides, Artemisia nilagirica, Chenopodium album, Euphorbia hirta, Justicia procumbens, Oxalis corniculata, Rauvolfia sp. Sida cordifolia, and Xanthium strumarium etc.*

There are no Rare or Critically Endangered and Threatened plant species in the study area as per IUCN category. The floral species found in the study area are common and wide spread occurrence.

Various kinds of birds are found flying across the project area. There are no species- specific major nesting sites near the project site. The site is also not known for any migratory bird halt. Snakes such as **Cobra** (*Naja naja*) and Common **green whip snakes** (*Hierophis viridiflavus*) have been spotted in the study area.

Amphibians such as **Cascades frog** (*Rana cascadae*), **Common Asian Toad** (*Duttaphrynus melanostictus*) are more frequent along the river during the peak season. Small fish species are found in the river.

Around 102 faunal species are reported from this area (24 mammals, 51 birds, 9 reptilians, 8 amphibians and 10 butterflies species). The major animals reported from surrounding forest areas include Elephant (*Elephas maximus*), **Leopard** (*Panthera pardus*), **Leopard Cat** (*Prionailurus bengalensis*), Bengal Tiger (*Panthera tigris tigris*), **Indian Pangolin** (*Manis crassicaudata*) and **Indian Peafowl** (*Pavo critatus*) all are endangered and accorded protection under the Wildlife Protection Act, 1972. All the listed species were compared with IUCN Red Data Book and Indian Wildlife Protection Act, 1972.

5. ANTICIPATED ENVIRONMENT IMPACT AND MITIGATION MEASURES

(a) AIR ENVIRONMENT

The air quality in the mining area depends upon the nature and concentration of emissions and meteorological conditions.

Anticipated Impact

- Mining Operation carried out by opencast manual & semi mechanized method, will generate dust particles due to various activities like Loading & Unloading of sand, and Transportation.
- The impact on ambient air quality in the area surrounding the mining area depends upon the pollutant emission rate and prevailing meteorological conditions. As it is an open cast semi mechanized mine, particulate Matter (Dust) of various sizes is the only pollutant of any significance.

Mitigation Measures

- The speed of trucks on haul road will be controlled as increased speed increases dust emissions. Overloading of transport vehicles will be avoided.
- Transportation of minerals will be done by covered vehicles.
- Proper mitigation measures like water sprinkling will be adopted to control dust emissions.
- Masks will be provided to workers.
- To control the emissions regular preventive maintenance of equipment will be carried out on contractual basis.
- Green belt of adequate width will be developed along the approach road of project site.

(b) NOISE ENVIRONMENT

The area generally represents calm surroundings. There is no heavy traffic, industry or noisy habitation in the area. As the project is proposed for open cast manual mining method, there will be no blasting or drilling activities.

Anticipated Impact

• The source of Noise pollution will be the vehicular movements.

• Noise generated by manual extraction of river bed material, using shovels, crowbars etc., will be negligible.

Mitigation Measures

- Proper maintenance of all transportation vehicles will be carried out which help in reducing noise during operations. No other equipment except the transportation vehicles will be allowed.
- Noise generated by hand equipment will be negligible and will not cause detectable adverse impact.
- Awareness will be imparted to the workers about the permissible noise levels and maximum exposure to those levels.

(c) WATER ENVIRONMENT

The impact of mining project on groundwater hydrology and surface water regime are site specific and depends upon the characteristics of the mineral, hydrogeology and requirement of groundwater for other uses.

Anticipated Impacts

• The Mining in the riverbed area may cause the groundwater contamination due to the intersection of the water table.

• Waste water disposed from the mining activity may contaminate the surface water.

• River recharges the ground water; excessive mining may reduce the thickness of natural filter materials (Sediments), through which the ground water is recharged.

Mitigation Measures

• The maximum depth of mineral extraction will not exceed 3.0 metre depth.

• Mining will be done above the water table as well as river bed water level, therefore much impact on water regime is not accepted.

- Proper analysis/Monitoring will be done to check the ground water.
- Need of water for drinking and sprinkling purpose will be met by tanker supply.
- Ground Water extraction is not envisaged in entire process of mining.

(d) LAND ENVIRONMENT

Impact assessment study on land environment can be done by considering land use pattern/land cover, topography, drainage pattern and geological features of the mine site as well as the study area.

Anticipated Impact

- Mining activity will impact river bed topography by formation of excavation voids.
- River bed mining may bring some change in topography at the nearby area of the mine lease.

• Stacks of solid waste generated from mining activity may hinder the flow of water in monsoon season.

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
- Mining work will be executed only by manual open cast method and the depth of pits will be restricted up to 3.00 meter or the river water level whichever is less.
- There will be no generation of solid waste in mining activities, hence dumping of solid waste is not anticipated. Little bit volume of **mineral remaining** may be generated, which will be used in back filling of voids created in mining work.
- Mineral will be mined after leaving the 25% width as a safety zone on both sides of the riverbed.

(e) SOCIO ECONOMIC

Anticipated Impact

- Impact on the Demographic Composition
- Impact on Employment Opportunities

(f) SOLID WASTE

Anticipated Impact

- As there is practically no soil cover observed in the river bed, this RBM project does not involve any waste generation. Thus, no waste dump sites are needed for the project. However, there will be 345 workers on site.
- No municipal waste other than domestic sewage shall be generated.

Mitigation Measures

- Only clayey soil generated during mining process which will be used for the plantation.
- Domestic sewage will be disposed off into septic tanks followed by soak pits

(g) TRAFFIC ENVIRONMENT

Anticipated Impact

- The increase in traffic density will lead to the air pollution and it cause the effect on human health like damage to lung tissue, cancer, asthma etc.
- The movement of vehicles cause the noise pollution

Mitigation Measures

- Vehicles with PUC certificate will be hired. Regular maintenance of vehicles will be compelled to ensure smooth running of vehicles.
- Regular health checkups camps will be organised for the safety purpose of the workers.
- Unnecessary blowing of horn will be avoided.
- Transportation of minerals will be done by covered vehicles.
- Adequate water sprinkling will be carried out during mining and transportation of minerals to suppress the dust.
- Plantation of fast growing and broad leaved species will be done along the approach road, which will absorb the dust particles.

Analysis of alternatives

No alternative site had been considered since proposed Capacity Enhancement is in existing sand, bajri and boulder mine and hence it is site specific.

6. ENVIRONMENT MONITORING PROGRAMME

UKFDC has formulated well laid-out Environmental Policy, wherein preservation of environment has been accorded a most strategic and prime position. The various protocol procedures in connection with communication channels upwards and downwards, for dealing with violations or departures in environmental standards involvement of Board of Directors as well as shareholders about such incidences, etc, have been described in detail in chapter VI.

Regular monitoring of environmental parameters of immense importance to assess the status of environment during project operation. With the knowledge of baseline conditions, the monitoring programme will serve as an indicator for any deterioration in environmental conditions due to operations of the project, which will enable to take suitable mitigation steps in time to safeguard the environment

7. ADDITIONAL STUDIES

The possible risks in the case of river bed mining project are bank erosions, floods, accidents due to uncontrolled mining work. At present the mining is proposed in a mild sloping forest land in river beds. Pits will be created of limited depth 3.0 m. Hence, the chance of failure of pit slope not seems to be appeared.

8. PROJECT BENEFIT

The proposed project brings overall improvement in the locality, neighbourhood and the state by bringing employment generation at local level and revenue to state government. Hence it will be helpful for the economic growth and support to enhance quality of life through employment

9. ENVIRONMENTAL COST BENEFIT ANALYSIS

It is considered desirable that the mining project may be implemented. Project cost for the proposed Mining project having area of 136.85 Ha. falling in the Reserve Forest of Dehradun Forest Division near Village-Kaluwala, Tehsil & District-Dehradun, Uttarakhand is Rs. 9.878767 Crore.

10. ENVIRONMENTAL MANAGEMENT PLAN

As per above discussion, there is no major 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 along the approach roads, around Govt. buildings etc. It will prove an effective pollution mitigation technique and help to avoid soil erosion during monsoon season. Immense employment opportunities will be generated for the locals through mining and transportation work of minerals and plantation work, which will improve the living standard of local communities. A budget of Rs. 1.00 Lakhs (Capital Cost) & Rs. 5.00 Lakhs (Recurring Cost) for Occupational Health and Safety and budget of Rs. 65.48 Lakhs (Capital Cost) & Rs. 20.655 Lakh (Recurring Cost) under EMP head will be incurred by Project Proponent.

11. CONCLUSION

The proposed project will provide the employment to local people in different activities such as mining, transportation and plantation activities. The project activity will not have any major adverse impact on the environment. Due to mining work river flow will be channelized in the centre portion of river bed, which will prevent the bank erosions and damage to public properties like agriculture lands and habitation area during monsoon flood. At post mining stage of proposed project, the existing land use will remain same i.e. riverbed, and it will get replenished yearly during monsoon season. Also the extracted sand, Bajri and Boulder will be used in construction activities like building, infrastructure facilities.The Corporate Social Responsibility initiatives will have a positive impact on socio economic environment of the region.