EXECUTIVE SUMMARY

(English & Hindi)

OF

MAROR SAND MINING PROJECT

Village: Maror,

Tehsil: Dhanoulty, District: Tehri Garhwal, State: Uttarakhand

Area: 7.773 Ha, Proposed Capacity: 1, 62,888 TPA

APPLICANT

GARHWAL MANDAL VIKAS NIGAM LTD.

74/1 RAJPUR ROAD, DEHRADUN

Prepared By

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GRC INDIA TRAINING & ANALYTICAL LABORATORY
(Accredited by NABL &Recognized by MoEF, GoI)
A unit of GRC India
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➢ INTRODUCTION

As per MoEF, New Delhi Gazette dated 14th September 2006 and amended thereof, the proposed mining project is categorized as **category 'A'** project as Doon Valley lies within the 10 km radius of the lease area.

The project is being proposed by Garhwal Mandal Vikas Nigam (GMVN) Limited. The proponent has applied for mining lease in the name of Maror Sand, *Bajri* & Boulder Mining Project from the bed of Yamuna River over an area of 7.773 ha.

It has been proposed to mine around 1, 62,888 tonnes per annum of minerals. The estimated project cost for the proposed project is Rs. 13, 70,000.

➢ LOCATION

The lease area is located near Village: Maror, Tehsil Dhanoulty, District: Tehri Garhwal, Uttarakhand.

The mine lease co-ordinates are listed below:

Latitude	30°35'43.74"N to 30°35'24.55"N
Longitude	78° 0'49.00"E to 78° 0'33.29"E

➢ MINING

This is an open-cast mining project. The operation will be entirely manual with use of hand tools like shovel, pan, sieves, pick axes, etc.

Mining will be done in layers, leaving a safety distance from the banks i.e. 15% of the width of the river will be left for bank stability from both the banks.

The deposit will be worked from the surface of the bed up to 1.5 m bgl or above ground water level, whichever comes first. Hence, at no point of time mining will intersect with ground water table.

Mining will be done only during the day time and completely stopped during the monsoon season.

➢ RESERVE (AVAILABLE QUANTUM) AND PRODUCTION (EXTRACTABLE QUANTUM)

The sediment proposed to be extracted is sand, *bajri* & boulder which is generally found in the river bed in the lease area. The sediments sand with silt & clay are brought into the bed through transport from the catchment area, are referred as "Wash Load". And the sediments which are in continuous contact with bed, carried forward by rolling/ sliding are referred to as "Bed Load".

Reserve (Available Quantum):

The already existing quantity at the river bed in the lease area due to fresh depositions has been considered to be the quantum of mineral available (Reserve) which may be mined out. In order to calculate this quantity, the lease area has been considered with an ultimate depth of 1.5 meter from the surface (excluding the boulder available on the surface). For the reserve tonnage estimation, the reserve quantity is multiplied with the bulk density of 2 tonnes per cum (for mixed sand and *bajri*).

The reserve for the site has been estimated to 1, 80, 986 tonnes

Production (Extractable Quantum):

However considering the factors such as geological disturbances, volume that cannot be mined due to flow of water and also considering the safety factor, approximately 1, 62,888 tonnes has been considered to as production or the extractable quantity from the mineable area for grant of Environmental Clearance. The amount of sand & *bajri* in the total extractable quantum is assumed to be around 90%, which is likely to be replenished due to sediment inflow, gradually during the monsoon seasons.

➢ SITE FACILITIES AND UTILITIES

Water Supply

Water will be provided to workers for drinking & domestic purpose. Water will also be required for dust suppression. A total of 2.18 KLD water will be required for the proposed project.

Temporary Rest Shelter:

A temporary rest shelter will be provided for the workers near to the site for rest. In addition, First aid box along with anti-venoms to counteract poison produced by certain species of small insects, if any and Sanitation facility i.e. septic tank or community toilet facility will be provided for the workers.

- **BASE LINE DATA**

Environmental data has been collected in relation to proposed mining for Air, Noise, Water, Soil, Ecology and Biodiversity.

Table 9.1 Baseline Environmental Status

Attribute	Baseline status
Ambient Air Quality	Ambient Air Quality Monitoring reveals that the minimum & maximum concentrations of PM_{10} amongst all the 5 AQ monitoring stations were found to be $47.1/m^3$ at AQ4 and $76.7 \mu g/m^3$ at AQ1, respectively. As far as the gaseous pollutants SO_2 and NO_2 are concerned, the prescribed CPCB limit of $80 \mu g/m^3$ for residential and rural areas has never surpassed at any station. The minimum concentration of SO_2 was found to be below detectable limit at all monitoring stations however maximum concentration of SO_2 was found to be $5.6 \mu g/m^3$ at AQ3 & AQ4. The minimum & maximum concentrations of NO_2 were found to be $6.2 \mu g/m^3$ at AQ3 and $14 \mu g/m^3$ at AQ4 respectively.
Noise Levels	The results of the monitoring program indicated that both the daytime and night time levels of noise were well within the prescribed limits of NAAQS, at all the four locations monitored.
Water Quality	The ground water from all sources remains suitable for drinking purposes as all the constituents are within the limits prescribed by drinking water standards promulgated by IS: 10500.

	From surface water analysis results it is evident that most of the parameters of the samples comply with 'Category B' standards of CPCB, indicating suitable for outdoor bathing.
Soil Quality	Samples collected from identified locations indicate the soil is Loamy sand type which has low water retention potential. The pH value ranging from 7.57 to 7.96, which shows that the soil is almost neutral in nature. The water holding capacity is found in between 25.9% to 28.3%.
Ecology and Biodiversity	There is no Wild life protected area/ National Park is present within 10 km of study area. Doon Valley is comes under the 10 km of study area.

- ➤ **ENVIRONMENTAL MANAGEMENT PLAN (EMP) & ITS IMPLEMENTATION**
  - Extraction will be done from the river 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.
  - Check on traffic load due to transportation & maintenance of evacuation route.
  - 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.

➢ **BUDGET ALLOCATION FOR EMP IMPLEMENTATION**

Table 9.2 for Cost of EMP

SI. No	Description	Measures	Capital Cost (Rs. In lakhs)	Recurring Cost(in lakhs/annum)
1	Pollution control & monitoring	Air, Water, Soil & Noise monitoring in vicinity of the mine site	2.0	**2.5**
2	Health Facilities	Medical Camps and Awareness program	0.5	1.0
3	Mineral transportation and Handling	• Repairing and maintenance of Roads • Water Sprinkling	1.0 0.3	1.5 0.5
4	Restoration and Reclamation	• Plantation • Maintenance of flood embankments • Restoration of banks	0.2 - -	0.1 0.2 0.2
Total			**4.0**	**6.0**

➢ **BENEFITS OF MINING**

- **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:**

  a. Controlling river channel
  b. Protecting of river banks
  c. Reducing submergence of adjoining agricultural lands due to flooding.
  d. Reducing aggradation of river level.
  e. Protection of crops being cultivated along the river bank.
  f. A check on illegal mining activity.

- **CORPORATE SOCIAL RESPONSIBILITY**

  A percentage of the project cost will be allotted for the Corporate Social Responsibility for activities related to education, social causes, healthcare & environmental.

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p- Hkkstu ds tBu] ikfMfLFkhu dsdMisdsifr oU;thokea vkd"kZk gks ldrk g§ bl fy,

iPVk {ks= ea,lsiukFkZ Qdusdh vuçfr ughagksxhA

N- ;fn oU;tho {ks= l sxqtjrsns[ks tk,a rks mUgafdlh Hkh rjg l scèkkkk ughaigpkbZ

tk,xhA

t- Jfedkadksou;thokadsifr tkx:d fd;k tk,xk vk§ Jfedkarfkk vU; vku&tkus

okys ykxkadkslpr djusdsfy, lsnu'khy {ks=kaij ldr yxk, tk,xkA

>-- igp ekxZrVorhZ {ks=kadk vfrØe.k ughadjsxsvk§ [kuu dk;Z dsfy, ;fn dkbZ

ouLifr dkVh tkrh gSrks[kuu dk;Zijk gkstkusij iqu%o{kkjksi.k fd;k tk,xkA

➢ **i;kZoj.k izcaku ;kstuk ¼bo,eih½,oamld dk dk;kZo;u**

• lkxg rV vk§ èkkjk ls ljif{kr {ks= NksMsrsgq, unh ry lsfd;k tk,xkA

• dk;Z dh vfèkdre xgjkbZ {ks= dsHkwty Lrj dsÅij jgxhA

• LokLF; ij iMusokysiHkkoka dkscde djusdsfy, iHkko {ks= ea Jfedka vk§

vkl ikl dsykxkadksLokLF; lfoèkk,aegS§k djkbZ tk,xhA

• oU;tho laj{k.k lqfuf'pr dh tk,xh vk§ bldsfy, tkx: drk vfHk;ku pyk,

tk,xkA

• ,slh xfrfofèk;kadme dh tk,xh ftudsQyLo:i i lwe ryNV unh ea igp ldaA

• <ykbZ vk§ fudkl ekxZdsj[kj[kko dspyrsifjogu ij iMusokysHkkj ij

fu;a=.k j[kk tk,xkA

• ifjogu vk§ [kfut inkFkksadsj[kj[kko dsdksku mRiUu gkusokyh xM¨Mh dks

de djusdsfy, U;ubdj.k dsiHkko'kkyh mik; viuk, tk,xs%

- LFkkuh;@eny ,oa rsth lsc<usokys thokadsfy, lqkkj dk;Øe dk lpkyuA

- ekuln __rqdsvkusdsl e; [kuu dscmh dsnk§ku uohuhdj.k ;kstuk dk fØ;kUo;uA

- lHkkfor vkink dslscpusdsfy, le; ij ,gfr;krh mik; viukusgrq iHkko'kkyh vkink izaku ;kstuk dk fØ;kUo;uA

- i;kbj.k izaku izkd`B }kjk iHkko'kkyh fuxjkuh dk;Øe dk fØ;kUo;uA

bZ,e-ih dsfy, ctV vko¡Vu

Øe la	fooj.k	mik;	lkdhxr Ykkxr eV; : - yk[kka es	vkofh eV; #- Ykk[kka es@lkyuk
1	lk;kbj.kh; xqkoRrk dh fuxjkuh	[kuu {ks= d Vkl ikl ok;] "kkj] ty vk§ ekd dh xqkoÙkk	2.0	2.5
2	LokLF; lqjo/kk	efMdy dÇi vk§ tkx#drk ikxke	0.5	1.0
3	[kfut dk j[k[kko vk§ lpkyu	& lMdka dh ejEer vk§ j[kj[kko	1.0	1.5
		& ty fNMdko	0.3	0.5
4	iqkbLFkk dh ikflr	& o{kkjksi.k	0.2	0.1
		& ck/kka dh ckf/kr nhokj dk j[k j[kko	-	0.2
		& fdukjka dsejEer dk;Z	-	0.2

dy	4.0	6.0

➢ **[kuu dsYkkk**

i Hkk&rd ykkk

iLRkkffor ifj;kstuk dsiikjHk gkusl svkI ikI dsfuEufyf[kr {ks=kaeaHkkfôrd cfju;knh <kps dksc<kok feyxkA

d- lMkd ifjogu ;k lMaka l i idZeaof)

[k- [kfut l svPNscktkjh vol j feyxkA

Xk- gfj;kyh /o{kkjki.k dksc<kok

?k- lempkf;d ifjl aifÙk;kadk l`tu ¼cfju;knh <kps½

 Lkkekftd ykkk%

d½ jkstxkj esaof)

[k½ jktdksk eav'aknku ¼[kfut fd fcØh lsjktLo ikr gkxk½

]Xk½ LokLF; l cf/k xfrfof/k;k;k dksc<kok

?k½ "kß{kd xfrfof/k;kacukus vkÕj mudksc<kok nusdh ;kstukA

M-½ rRdkyhu lempk; dk lm`<kdj.k lkempkf;d fodk; dk;Øe dsel/;e lslfio/kk dk;ØeA

i;kôj.kh; ykkk%

d½ ufn;kadh /kkjkvkaij fu;a=.kA

[k½ ufn;kadsfdukjkadh lj{kkA

Xk½ ck< dsdkj.k vkI &ikl ds{ks=kadsdf'k Hkfie dksde lsde tyeXu gkusl scpkukA

?k½ unhsLrj dsmPp;u dksde djukA

M½ unh dsfdukjkadsvkI ikl ij mxh QI ykadh lj{kkA

p½ vof'k [kuu jkdusdsmik;A

➢ fuxfer (dkikjsV) lkekftd nkf;Ro

fuxfer (dkikjsV) lkekftd nkf;Ro xfrfof/k;ka dsfy, ifj;kstuk ykxr dk vÃk vkofVr fd;k tk,xk] TkS sf"k{kk] lkekkftd dkj.k] L0kkLF; ,oai;kbj.k ns[kHkkkyA

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