

# EXECUTIVE SUMMARY - ENGLISH

## SOAPSTONE EXTRACTION AT VILLAGE – NARGARA, TEHSIL- KAPKOT, DISTRICT BAGESHWAR, UTTARAKHAND



PREPARED BY:



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## Executive Summary

The project is being proposed by Mr. Thakur Singh Garia S/o Shri Madan Singh Garia, R/o- Village-Kiroli, Post-Kafali, Tehsil-Kapkot, District: Bageshwar (Uttarakhand).

The proposed project is to mine Soapstone from the lease area and the estimated project cost is Rs. 19 Lakhs. The Lease has been granted in favour of Mr. Thakur Singh Garia vide **G.O. No. 378/VII-1-14/262-KHA/2002, dated 15-02-2014** for 20 Years which will be effective from the date of the lease deed. Proposed Mine is an individual firm, having registered Office at Village: Kiroli, Post: Pharsali, Tehsil & District – Bageshwar, Uttarakhand. The anticipated life of the mine is 6 years with average production of 35,135TPA

As per the MoEF, New Delhi Gazette dated 14th September 2006 and subsequent amendments, the proposed mining project is categorized as category ‘B’ project.

### LOCATION

The mining area is located in Village: Nargara, Tehsil: Kapkot, District: Bageshwar, Uttarakhand. The applied area is about 46km from Bageshwar on BageshwarReema PWD road. The area is accessible 6km foot track from village Reema. The mining lease / proposed project area falls in Survey of India Toposheet No. 53 O/13. The co-ordinates of the mine lease area are:

Latitude	29° 55'29.78" to 29° 55'35.62" N
Longitude	79° 56'35.98" to 79° 56'59.78" E

### LEASEHOLD AREA DETAILS

The entire Mining Lease area of 14.494 is a non forest land & comprises of uneven agricultural land only. Lease has obtained no objection certificate from the individual land owners for the exploitation of mineral Soapstone. The Copy of N.O.C. from respective land owner is enclosed. However, as per the lease document an area of 0.134 ha is for public utility purpose and shall be restricted from any mining activity. Hence mining shall be carried out in an area of 14.360 ha only.

### INFRASTRUCTURE FACILITIES & BASIC AMENITIES WITHIN THE STUDY AREA

**Road:** The applied area is located in village Nargara which is about 46km from Bageshwar on Bageshwar Reema PWD road. The area is accessible 6km foot track from village Reema.

**Water:** Government has provided water supply scheme to most of the household in the nearby villages and there is also provision of sources like springs & river water.

**Electricity:** Most of the houses in the villages are electrified.

**Education:** Primary school exists near the lease area. For higher education students have to go to Bageshwar which is 45 Km away from the site area.

**Medical facilities:** Major medical facilities are available at Bageshwar.

**Post & Telegraph facilities:** Post & telegraph facilities are available at Phersali about 2 km from the mine site.

**Railway station:** Nearest railhead is available at kathgodam at a road distance of 222 Km.

**Airport:** Nearest airport is Pantnagar at a distance of 250 Km by road.

## MINERAL RESERVES

Category wise updated reserves with grade are as follows:

Type of Resource/Reserve	UNFC Code	Quantity (tonnes)	Grade
<b>A. Total Mineral Reserve</b>			
Proved Mineral Reserve	111	Nil	Nil
Probable mineral Reserve	122	256282	Cosmetic paper
<b>B. Total Remaining Resources</b>			
Feasibility mineral Resource	211	Nil	Nil
Prefeasibility mineral resource	222	14488	Cosmetic Paper
Measured mineral resource	331	Nil	Nil
Indicated mineral resource	332	Nil	Nil
Inferred mineral resource	333	167176	Cosmetic paper
Reconnaissance mineral resource	334	Nil	Nil
<b>Total Reserves + Resources</b>		<b>437946</b>	

## MINING

The mining will be carried out by open cast semi-mechanized method. The top soil & interburden shall be removed by means of an excavator & filled into the tipper & dump into dump yard separately. The soapstone shall be extracted manually with the help of crow bar, chisels, pickaxe, hammers, spade and different grade of soapstone will be stacked separately

near the mining faces. Soapstone is soft mineral; therefore no drilling & blasting shall be required. The soapstone shall be dressed manually & stacked separately. No further beneficiation shall be undertaken during first five years. The different grade of soapstone will be filled into 50 kg plastic bags & transported the road side by mules. From road side the soapstone bags will be loaded into trucks through manually and transported to Haldwani.

### **GREEN BELT DEVELOPMENT**

During first five years plantation shall be undertaken towards southern west flank of the area over Van Panchayat land and it is outside the mine lease area. The Sarpanch has given their Consent for plantation in the respective land. About 3.0 ha area shall be covered under plantation by end of the lease period.

#### **Plantation Programme**

<b>Block of Five Years</b>	<b>Area (ha)</b>	<b>No. of Saplings</b>
First Five Years	0.50	500
Second Five Years	0.80	800
Third Five Years	0.84	850
Fourth Five Years	0.86	850
<b>Total</b>	<b>3.0</b>	<b>3000</b>

### **WATER SUPPLY**

The water required is mainly for dust suppression, green belt development, drinking and other domestic purpose during mining operations. The total water requirement will be 5 m<sup>3</sup>/day; which will be met from natural spring resource as per availability & suitability for the purpose.

#### **Water Demand**

<b>S.No.</b>	<b>Purpose</b>	<b>Water Requirement (KLD)</b>
1	Domestic	2.0
2	Dust Suppression	1.5
3	Green Belt Development	1.5
<b>TOTAL</b>		<b>5.0</b>

## BASE LINE DATA

The data collected has been used to understand the existing environment scenario around the proposed mining project against which the potential impacts of the project can be assessed.

Environmental data has been collected in relation to proposed mining for:-

- (a) Air
- (b) Noise
- (c) Water
- (d) Soil
- (e) Ecology and Biodiversity
- (f) Socio-economy

### Baseline Environment Status

Attribute	Baseline status
Land Environment	Landuse surrounding 1 Km from the project site comprises mainly of private agricultural land and some waste land. A detailed study was carried out to assess Landuse pattern surrounding the 10 km radius of the site. The land use pattern study reveals that the 10 km environment is predominantly Forest followed by agriculture with some open waste land, water bodies and very few settlements.
Ambient Air Quality	Ambient Air Quality Monitoring reveals that the minimum & maximum concentrations of PM10 for all the 5 AQ monitoring stations were found to be 24.84 µg/m <sup>3</sup> at AQ-3 and 45.84 µg/m <sup>3</sup> at AQ-1, respectively while the minimum & maximum concentrations of PM2.5 was found to be 14.35 µg/m <sup>3</sup> at AQ-4 and 25.98 µg/m <sup>3</sup> at AQ-1, respectively.  As far as the gaseous pollutants SO <sub>2</sub> and NO <sub>x</sub> are concerned, the prescribed CPCB limit of 80 µg/m <sup>3</sup> for residential and rural areas has never surpassed at any station.
Noise Levels	Noise monitoring was carried out at four locations. 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	3 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 promulgated by Indian Standards IS: 10500.
Soil Quality	Samples collected from identified locations indicate the soil is sandy clay type and the pH value ranging from 7.04 to 7.36, which shows that the soil is neutral to slightly alkaline in nature. Potassium is found to be from 42.9 mg/kg to 72.4 mg/kg. The Moisture retention Capacity is found in between 38.6% to 42%.
Ecology and Biodiversity	There are no Ecologically Sensitive Areas present in the study area, but many reserved forests regions surround the project area
Socio-economy	The implementation of soapstone mining project at village Nargara, tehsil - Kapkot, Bageshwar will throw opportunities to local people for both direct and indirect employment. The study area is still lacking in education, health, housing, etc. It is expected that same will improve to a great extent due to proposed mining project and associated industrial and business activities.

## LAND USE PATTERN

Proposed project is a new mine lease with some exploratory pits and already existing foot tracks. Land use pattern of the lease hold area for pre-operational, operational & Post-operational stage is as follows:

Activities	As on date (ha)	At the end of mining plan period (ha)	At the end of conceptual period (ha)
i) Pits & Quarries	0.20	1.72	7.11
ii) Waste dumps	0	0.961	0
iii) Foot track/ PWD road	0.140	0.038	0
iv) Reclamation/rehabilitation	0.16	1.08	7.10

v) Store Room/ office etc.	0	0.005	0
vi)Undisturbed area	13.994	10.69	0.284
<b>TOTAL</b>	<b>14.494</b>	<b>14.494</b>	<b>14.494</b>

**WASTE MANAGEMENT**

As on date	The interburden & soil generated during prospecting have been partially backfilled, therefore at present there is no external dump.
At the end of mining plan period	Soil & interburden during next two years in pit-I & first two years in pit II & pit III shall be dumped towards south slope & north slope of working pit in single terrace & slope of dump shall be kept 37°. Dumping shall be carried out in single terrace & local fast growing local species shall be planted at the slope of dump. 335m long toe wall having width & height 1.0m shall be erected at the base of dump for its stabilization.
At the end of conceptual plan	By the end of conceptual period all quantities of interburden & soil to be generated shall be used in reclamation/rehabilitation. Apart from this, the existing dumps shall also be used in reclamation/rehabilitation, therefore there shall be no dumps at the end of conceptual period.

**AIR ENVIRONMENT**

**ANTICIPATED IMPACTS AND EVALUATION**

Mining shall be carried out using opencast semi-mechanized method which does not involve drilling and blasting. Hence, there is no source of air pollution from the excavation activity. Loading of mineral will also be done manually and transport till the roadside shall be carried out via mules. Therefore, emission of dust or any other particulate matter is not anticipated. There is no boiler, DG Set or any other machinery which can be a source of pollution. Only source of air pollution is re-suspension dust from the movement of mules from mining site to roadside and removal of interburden using excavator. This will not be a major issue as the dust emission will be regulated by sprinkling of water on the trackpath for suppressing the dust.

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### MITIGATION MEASURES

The dust suppression measures like water spraying will be done on the roads. This will decrease the dust emission by 75%. 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.

### WATER ENVIRONMENT

In this project, it is not proposed to divert or truncate any stream. No proposal is envisaged for pumping of water from the river. There will not be any adverse impact on surface hydrology and ground water regime due to this project. Project proponent will adhere to all guidelines and rules for proper and scientific method of mining during the period of extracting the soapstone. Thus, the project activities shall not have any adverse affect on the physical components of the environment and therefore may not have any effect on the recharge of ground waters or affect the water quality.

The impact on water quality will be confined to increased suspended solids during rain. The dumps to be generated will be temporary in nature & used for the purpose of backfilling by the end of third year onwards in pit I & third year onwards in pit II& pit III & from fourth year onwards from pit IV. The dumps will be secured with toe walls and rainy water will not carry significant suspended material. However water sprinkling on the foot track shall be carried out during summer month to suppress the dust.

Mining of soapstone does not have any significant impact on the water quality and parameters as the mining does not intercept with the ground water level.

### NOISE ENVIRONMENT

#### ANTICIPATED IMPACTS AND EVALUATION

As the project is proposed for open cast semi-mechanized mining method with involvement of only excavator for interburden removal and no other major machinery and also no blasting or drilling activities, the impact of noise levels will be minimal.

#### MITIGATION MEASURES

##### *On-site*

As mining will be done by semi-mechanized method, no machineries other than excavator will be used. So, hearing protection shall be given to the miners during use of excavators. Other than



this, no other activity generates so much noise that requires special arrangements for protection.

### ***Off-site***

The off-site receptors are not significantly affected as they are located far away from the mine site. Plantation will be done along the roadsides, civic amenities, etc. which will more or less dampen the off-site noise level.

## **BIOLOGICAL ENVIRONMENT**

It was found that the 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. Proper mitigative measure will be taken by the contractor, in consultation with local NGOs working in the study area.

## **TRAFFIC ANALYSIS**

From the analysis it can be seen that there will be a mere addition of 4 PCU/hr from the proposed mining activity. So the additional load on the carrying capacity will not be affected to a significant level.

## **ANALYSIS OF ALTERNATIVES**

Soapstone mining is a site specific project depending upon the geological set up and mineable area. The land being uneven and non-suitability of land for any other purpose makes it suitable for mining as the land will become suitable for agriculture purpose at the end of mine life. This will also generate employment to the nearby villagers. Hence, there is not much scope for site alternative.

As per mine plan; most efficient and least polluting technologies have been prescribed. Hence, no alternative technology has been adopted. Thus it will have more acceptability and help in socio economic upliftment of the area.

## **ENVIRONMENT MONITORING PROGRAMME**

<b>S.No.</b>	<b>Description of Parameters</b>	<b>Schedule and Duration of Monitoring</b>
1	<b>Air Quality</b> a) In the vicinity of the mine	24 hourly samples twice a week for one month in each season except monsoon.

	b) In the vicinity of the transportation network	
2	<b>Water Quality</b> Water quality of surface and groundwater around the site Drinking water must conform to drinking water standards	Once in a season for 4 seasons in a year
3	Ambient Noise Level	Once in each of the 4 seasons in a year
4	Soil Quality	Once in two years on project monitoring area
5	Inventory of Flora(tree plantation, survival etc)	Once in two years on project monitoring area
6	Socio-economic condition of local, population, physical survey	Once in 2 years

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

There will be no resettlement or rehabilitation involved in the project as the site area does not involve any settlement or housing. An area of 0.134 ha is under the category of public utility which will remain as such and no mining activity will be done in this area.

The implementation of the soapstone mining project in village – Nargara, Tehsil- Kapkot, district Bageshwar will throw opportunities to local people for both direct and indirect employment. As the project proponent is the rightful lessee of the mine lease area, hence the soapstone mining operation will be legalized and it will fetch income to the state exchequer. The project will also provide impetus to industrialization of the area. It is likely the intending entrepreneurs will venture to set up micro and small scale units in the near future making the area a mixed society, dependent on industry, trade and business. At present agriculture is the main occupation of the people as 78 percent of the population depends on it. With the implementation of the proposed mining project the occupational pattern of the people in the area will change making more people engaged in industrial and business activities rather in agriculture. Thus there will be a gradual shifting of population from agriculture to mining and industry. Further, the mining and

industrial activities in the area may lead to rapid increase in population and thereby urbanization. Due to urbanization of the area, employment opportunities will further increase.

The study area is still lacking in education, health, housing, etc. It is expected that same will improve to a great extent due to proposed mining project and associated industrial and business activities.

### **BENEFITS OF MINING**

The opening of the proposed project will enhance the socio-economic activities in the adjoining areas. This will result in following benefits:-

- ✓ Improvements in physical infrastructure.
- ✓ Improvements in Social Infrastructure.
- ✓ Increase in Employment Potential
- ✓ Contribution to the Exchequer.
- ✓ Prevention of illegal mining.
- ✓ During and Post-mining enhancement of green cover.

### **ENVIRONMENTAL MANAGEMENT PLAN (EMP)**

Proper environmental management plan are proposed for “Soapstone” mining project to mitigate the impact during the mining operation.

- ✓ Care will be taken that no cooking, or burning of woods will be allowed in the adjoining area.
- ✓ Prior to mining, short awareness program will be conducted for labours to make them aware to way of working.
- ✓ If some causality or injury to animal occurs, it should be informed to forest department and proper treatment should be given.
- ✓ No tree cutting, chopping, lumbering, uprooting of shrubs and herbs should be allowed.
- ✓ Corridor movement of wild mammals (If exists) should be avoided
- ✓ Care should be taken that noise produced during vehicles movement is within the permissible noise level.

### **ENVIRONMENTAL MANAGEMENT PLAN IMPLEMENTATION**

Keeping the utility of monitoring results in the implementation of the environmental management program in view, a team will be prepared for proper implementation of EMP.

The said team will be responsible for:

- ✓ Collecting water and air samples from surrounding area and work zone monitoring for pollutants.
- ✓ Analyzing the water and air samples.
- ✓ 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, etc.
- ✓ A suitably equipped laboratory for sampling/testing for various environmental pollutants.

#### BUDGET ALLOCATION FOR EMP IMPLEMENTATION

S.No.	Description	Cost (in lacs/annum)
1	Air Quality a) Monitoring in the vicinity of the mine b) Monitoring in the vicinity of the transportation network c) Cost of dust suppression	0.18
2	Water Quality a) Water quality of surface and groundwater around the site b) Drinking water must conform to drinking water standards	0.14
3	Ambient Noise Level	0.04
4	Soil Quality	0.07
5	Socio-economic condition of local, population, physical survey	0.02
6	Man power cost for environmental cell	0.10
	<b>TOTAL</b>	<b>0.55</b>

## **CONCLUSION**

All possible environment aspects have been adequately assessed and necessary control measures have been formulated to meet statutory requirements. Thus implementing this project will have positive impacts.