EXECUTIVE SUMMARY

FOR

SIMTOLI (MAUDHAR) SOAPSTONE MINE PROJECT

AT
VILLAGE: SIMTOLI (MAUDHAR),
TEHSIL & DISTRICT: BAGESHWAR,
UTTARAKHAND

AREA: 11.251 HA,
PROPOSED CAPACITY: 22,755 TPA (MAXIMUM)

PROJECT PROPONENT

Shri. Bhupendra Joshi S/o Shri Harish Chandra Joshi
Village – Bagnath Ward, Tehsil – Bageshwar
DIST- Bageshwar (UTTARAKHAND)

PREPARED BY

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EXECUTIVE SUMMARY

1.0 INTRODUCTION

1.1 Purpose of the Report

Shri. Bhupendra Joshi S/o Shri Harish Chandra Joshi proposes the Soapstone Mine extending over an area of 11.251 ha [22, 755 TPA (maximum) of Soapstone] in Village Simtoli (Maudhar), Tehsil & District: Bageshwar, Uttarakhand. The SEAC in its meeting dated 3rd February, 2021 examined the proposal. After through discussion and deliberation, it has been conveyed by SEAC that draft EIA/EMP report shall be prepared as per approved ToR and after public consultation through Uttarakhand Environment Protection and Pollution Control Board the final EIA/EMP report shall be submitted after incorporating Public Hearing details to SEIAA, Uttarakhand for Environmental Clearance.

The draft Environmental Impact Assessment report has been prepared to comply with the standard Terms of Reference (ToR), under EIA notification of the MoEF&CC dated 14th September, 2006 and amended thereof.

1.2 Identification of Project & Project Proponent

1.2.1 Identification of Project

The project is proposed Simtoli (Maudhar) Soapstone Mine Project (Area: 11.251 ha.) at Village Simtoli (Maudhar), Tehsil & District: Bageshwar, Uttarakhand by Shri. Bhupendra Joshi. The address of the proponent is given below:

Shri. Bhupendra Joshi S/o Shri Harish Chandra Joshi
Village – Bagnath Ward, Tehsil – Bageshwar
District- Bageshwar (Uttarakhand)

The proponent has applied for environmental clearance for mining lease in the name of Simtoli (Maudhar) Soapstone Mine Project over an area of 11.251 ha at Village Simtoli (Maudhar), Tehsil & District: Bageshwar, Uttarakhand.

1.2.2 Project Proponent

Proposed mine is a private company. The proposed Soapstone Mine extends over an area of 11.251 ha [22, 755 TPA (maximum) of Soapstone] in Village Simtoli (Maudhar), Tehsil & District: Bageshwar, Uttarakhand. The LOI of proposed Soapstone Mine was granted in favour of Shri. Bhupendra Joshi S/o Shri Harish Chandra Joshi for period of 50 years by the Govt. of Uttarakhand. The proposed rate of production is 22755 TPA (maximum) of soapstone. The estimated project cost is Rs 30.0 lakhs. The expected life of mine is 50 years.

Address of the applicant
Shri. Bhupendra Joshi S/o Shri Harish Chandra Joshi
Village – Bagnath Ward, Tehsil – Bageshwar
District- Bageshwar (Uttarakhand)

2.0 BRIEF DESCRIPTION OF PROJECT

2.1 Nature of the Project

The proposed soapstone Mine, project will adopt opencast manual cum semi mechanized method. The mine is executed over a lease area of about 11.251 ha, for the production of 22,755 TPA of soapstone.

Therefore as per the EIA Notification dated 15th January, 2016 and 1st July, 2016, the project comes under "B1" Category since the area is greater than 5 ha.

2.2 Size of the Project

The proposed Soapstone mining project extends over an area of 11.251 ha with the target maximum production capacity of mine is about 22,755 TPA (maximum) of Soapstone.

2.3 Anticipated Life of Project and Cost of the Project

The projected life of the mine is 50 years. The cost of the project is about Rs. 30.0 lakhs.

2.4 Location of the Project

The proposed Soapstone Mine lease comes under Village Simtoli (Maudhar), Tehsil & District: Bageshwar, Uttarakhand. Geo-graphically the ML area extends from Latitude 29°48'14.08"N to 29°48'27.39"N and longitude 79°50'18.88"E to 79°50'29.80"E. The area falls in Survey of India topo sheet No. 53 O/13.

2.5 PROJECT DESCRIPTION

2.5.1 Salient Features of Mine Lease

The salient features of mine lease are given in **Table 1** below:

Table 1: Salient Features of mine lease area

Sr. No.	Particular	Details
A.	**Nature of the Project**	Proposed Simtoli (Maudhar) Soapstone Mine Project (Area: 11.251 ha.) at Village Simtoli (Maudhar), Tehsil & District: Bageshwar, Uttarakhand by Shri. Bhupendra Joshi
B.	Size of the Project	
1.	ML Area	11.251 Hectare (Private Agricultural Land).
2.	Proposed Production Capacity	Total Recoverable Quantity of Soapstone:
		22, 755 Tonnes/Annum (maximum) (As per approved mining plan)
3.	Lease Period of Mine	Lease was granted for a period of 50 Years.
C.	Method of Mining	
1.	Method	Open-Cast semi mechanized Mining

2.	Blasting / Drilling	Not proposed
D.	Project Location	
1.	Village	Simtoli (Maudhar)
2.	Tehsil	Bageshwar
3.	District	Bageshwar
4.	State	Uttarakhand
5.	Toposheet No.	53 O/13
6.	Lease Area Coordinates	Latitude : 29°48'14.08"N to 29°48'27.39"N
		Longitude: 79°50'18.88"E to 79°50'29.80"E
E.	Cost Details	
1.	Project Cost	Rs. 30 Lakhs
F.	Water Demand	
1.	Requirement	10 KLD
2.	Source of water	Nearby Natural Springs (nalah)
G.	Man Power Requirement	46
H.	Environmental Setting	
1.	Nearest Village	Simtoli
2.	Nearest Town	Bageshwar, 8.0 Km.
3.	Nearest National / State Highway	Bageshwar-Dafaut Road, 0.200 km
4.	Nearest Railway Station	Kathgodam, 66 Km
5.	Nearest Airport	Pithoragarh, 44 Km
6.	Ecological Sensitive Areas (National Park, Wild Life Sanctuaries, Biosphere Reserve etc.) within 10 km radius	None
7.	Reserved / Protected Forest within 10 km radius	Khuldoari Baldoari Reserve Forest,
8.	Proposed tree plantation in next 5 years	11300
9.	Water bodies within 10 km radius of the mine site.	Saryu River, 4 km (Aerial)
10.	Archaeological Important Place	None
11.	Seismic Zone	V

2.5.2 Mine Development and Production

The mine is proposed to be worked by opencast semi-mechanized method using JCB excavator on contract (all statutory permissions will be required from DGMS and others). The overburden & interburden shall be removed by means of excavator. The soapstone shall be extracted with the help of excavator as well as manually with the help of hand tools like crow bar, chisels, pickaxe, hammers, and spade. Year wise Production details are given in **Table 2** below:

Table 2: Year wise Production of Soapstone Mine

YEAR	PIT-I (TONNES)	PIT-II (TONNES)	TOTAL PRODUCTIONSOAPSTONE (TONNES)
FIRST	6994	3120	10,114
SECOND	10106	3318	13,424
THIRD	11594	3580	15,174
FOURTH	13752	5088	18,840
FIFTH	18293	4462	22,755
TOTAL	**60739**	**19568**	**80,307**

The quantity of soil, Overburden from pit to be generated during next five years is given in **Table 3** below:

Table 3: Quantity of Top Soil and Overburden of Soapstone Mine

PIT-I

YEAR	TOP SOIL (CUM)	INTERBURDEN (CUM)
FIRST	1252	4248
SECOND	978	6138
THIRD	934	7040
FOURTH	1938	8352
FIFTH	1053	11109
TOTAL	**6155**	**36887**

PIT-II

YEAR	TOP SOIL (CUM)	INTERBURDEN (CUM)
FIRST	591	1895
SECOND	281	2015
THIRD	584	2174
FOURTH	449	3090
FIFTH	454	2710
TOTAL	**2359**	**11884**

2.5.3 Method of Mining

The mine is proposed to be worked by opencast semi-mechanized method using JCB excavator on contract (all statutory permissions will be required from DGMS and others). The overburden &

interburden shall be removed by means of excavator. The soapstone shall be extracted with the help of excavator as well as manually with the help of hand tools like crow bar, chisels, pickaxe, hammers, and spade.

Mineral will be packed in bags and will be transported on manual/mule (khachar) to aerial ropeway point (Inlet point) and from where it will be further transported by aerial ropeway to the road head/near road head, then from road head the mineral is transported by trucks to main market Haldwani. Drilling & blasting shall not be required/proposed during the mining operations. The soapstone shall be dressed manually & stacked separately. No further beneficiation shall be undertaken during first five years. Mining shall be carried out in two pits. Face slope of benches shall be 70° with 45° overall pit slope.

2.5.4 Impact on Land Use, Reclamation of Mined Out Areas and Afforestation Programme

Impact on land use & reclamation of mined out areas

Opencast mining activities may alter the landscape of the lease area and also cause some disturbance to the surface features of the surrounding areas. Mining will be done after leaving 7.5 m safety barrier.

Plantation will be developed in consultation with district administration/ local authority, wherever feasible.

The Existing land use pattern is agricultural land. The impact on land form or physiography will be land use on the hilly terrain will undergo radical changes due to the open cast mining. During the next five years mining, 1.367 ha land will be degraded due to mining & allied activities.

Proposal for reclamation of land affected by mining activities:

The mining will commence from the higher levels and will advance towards lower levels. Intermittent backfilling will commence from the higher levels and subsequently advance towards the lower elevation so that terraced agriculture fields would undertake in such a manner that original land use will be restored i.e. before the onset of monsoon will be handed over to cultivators for cultivation. The final backfilling will be started once the ultimate benches are formed and pit reaches the optimum economic depth. All recovery of the mineral will be of the saleable grade.

Plantation will be raised in 7.5m barrier zone along the boundaries of the mining lease area by planting the native species around ML area, backfilled and reclaimed area, around water body, roads, van panchayat land etc. in consultation with the local DFO/Agriculture department. The details of the year wise plantation have been shown in **Table 4**.

Table 4: Year wise Afforestation scheduled

Year	Area (ha)	No of saplings
First year	0.2058	60
Second year	0.2058	60
Third year	0.2058	60
Fourth year	0.2058	60
Fifth year	0.2058	60
Total	**1.029**	**300***

*****Besides the year wise plantation, 11000 sapling will be done in five years in Van Panchayat and forest land after taking due permission from concerning authority.

2.6 LAND USE PATTERN

Presently (pre-mining), the land covered under the mine lease area is non-forest agricultural land.

2.7 BASELINE ENVIRONMENTAL STATUS

2.7.1 Soil Quality

Five soil samples were collected in and around the mine lease area to assess the present soil quality of the region. In the study area, variations in the pH of the soil were found to be slightly basic 77.43 to 7.71. Electrical conductivity (EC) is a measure of the soluble salts and ionic activity in the soil. In the collected soil samples the conductivity ranged from 260 – 435 µmhos/cm. Based on the results, it is evident that the soils are not contaminated by any polluting sources.

2.7.2 Meteorology

Meteorological data at the site was monitored during December 2020 to February 2021 representing winter season.

2.7.3 Ambient Air Quality

Ambient Air Quality Monitoring (AAQM) has been carried out at five locations during winter season from Dec 2020 to Feb 2021.

The minimum and maximum level of PM10 recorded within the study area was in the range of 41.7 µg/m3 to 63.5 µg/m3. The minimum and maximum level of PM2.5 recorded within the study area was in the range of 16.2 µg/m3 to 28.2 µg/m3. The minimum and maximum concentration of SO2 recorded within the study area was 5.4 to 8.4 µg/m3. The minimum and maximum level of NO2 recorded within the study area was in the range of was 7.6 µg/m3 to 17.3 µg/m3.

The results thus obtained indicate that the concentrations of PM_{10}, $PM_{2.5}$, SO_2 and NO_2 in the Ambient Air are well within the National Ambient Air Quality (NAAQ) standards for Industrial, Residential, Rural and other areas.

2.7.4 Water Quality

To assess the physical and chemical properties of water in the region, ground water samples from 5 locations and surface water samples from 3 locations were collected from various water sources around the mine lease area.

- The pH limit fixed for drinking water samples as per IS-10500:2012 standards is 6.5 to 8.5 beyond this range the water will affect the mucus membrane or water supply system. During the study period, the pH was varying for ground water from 7.38 to 7.64 and the surface water are 7.55 to 7.82. The pH values for all the samples collected in the study area during study period were found to be within the limits.
- The desirable limit for total dissolved solids as per IS-10500 Standards is 500 mg/l whereas the permissible limits in absence of alternate source is 2000 mg/l, beyond this palatability decreases and may cause gastro intestinal irritation. In ground water samples collected from

the study area, the total dissolved solids in ground water are varying from 242 mg/l to 270 mg/l whereas in surface water varying from 260 mg/l to 265 mg/l. The TDS of the samples were within the desirable limit and within the permissible limit of 2000 mg/l.

- The desirable limit for chlorides is 250 mg/l as per IS-10500 Standards whereas, permissible limit of the same is 1000 mg/l beyond this limit taste, corrosion and palatability are affected. The chloride level in the ground water samples collected in the study area were ranging from 16.0 mg/l to a maximum of 20 mg/l, in surface water samples 15.0 mg/l to 19.0 mg/l. The chloride samples are within the desirable limits.
- The desirable limit as per IS-10500:2012 standards for hardness is 200 mg/l whereas the permissible limit for the same is 600 mg/l beyond this limit encrustation in water supply structure and adverse effects on domestic use will be observed. In the ground water samples collected from the study area, the hardness were varying from 174 mg/l to 190 mg/l, while in surface water samples 166 mg/l to 172 mg/l.

The results indicate groundwater is generally in conformity with the drinking water standards (IS: 10500) and surface water is in conformity with IS-2296 standards.

2.7.5 Noise Levels

Ambient noise levels were measured at Five locations around the proposed mine site. Assessment of average logarithm night time Leq (Ln) varies from 37.6 to 46.2 dB (A) and the average logarithm daytime Leq (Ld) varies from 47.6 to 51.3 dB (A) within the study area.

2.7.6 Ecological Environment

Based on the field studies and review of published literature, it is observed that there are two Schedule-I species present in the study area of the mine lease area i.e. Indian Leopard and Asiatic Black Bear. There are no wildlife sanctuaries and National Parks within the study area of 10-km radius.

2.7.7 Social Environment

According to the 2011 census of India, Bageshwar has a population of 2,59,898. The total SC population in Bageshwar district is 72,061 which is 27.72% of the total population, while ST population is 1982, which is 0.76% of the total population. The literate population in Bageshwar district is 1,79,483, out of which male & female are 97,546 and 81,937 respectively. The male literates represent 54.35% while female represent 45.65% of the total population.

3.0 ANTICIPATED ENVIRONMENTAL IMPACTS

3.1 Impact on Air Quality

Soapstone mine where PM_{10} and $PM_{2.5}$ will be the main pollutants generated in mining activities. The emissions of Sulphur dioxide (SO_2), Nitrogen Oxide (NO_2) contributed by diesel operated equipment and vehicles movement were considered marginal as branded make and vehicles with PUC certificate will be operated only. Fugitive dust and particulates are major pollutants occurred in the mining activities. Fugitive emissions will be settled by 70- 80% by use of multiple water sprinklers. Prediction of impacts on air environment will be made with proposed production and net increase in PM_{10} and $PM_{2.5}$ emissions at the proposed site and at the 10 km radius of study area due to mining activities.

Air pollution sources in the operating mine was classified into two categories

i. Loading and unloading of mineral and OB, IB

ii. Transportation on the haul road

3.2 Impact on Water Resources

Surface Water Resources

The topography of the area will not be largely changed in view of the proposed concurrent reclamation. During the mining activity period, there is a possibility of mixing of freshly disturbed material with the rain water. To take care of such happenings, retaining walls have been provided along the backfilled pits and along the soil and interburden dumps.

Groundwater Resources

The water table in hills is usually very deep and does not have any relevance with mining activities. However, concurrent restoration to original topography will not be disturbing the percolating water.

3.3 Impact on Water Quality

The impact on water quality will be confined to increased suspended solids during rain. The dumps will be secured with toe walls and rainy water will not carry significant suspended material.

3.4 Impact on Noise Levels and Ground Vibrations

With the mining operations, due to the deployment of machinery, operation for mine development, excavation and transportation of soapstone and men, it is imperative that noise levels would increase. Assessment of average logarithm night time Leq (Ln) varies from 37.6 to 46.2 dB (A) and the average logarithm daytime Leq (Ld) varies from 47.6 to 51.3 dB (A) within the study area. It is also observed that these incremental noise levels will not significantly affect the existing ambient noise levels.

3.5 Impact on Soil

The environmental impacts of the mining activities on topsoil are based on the quantity of removal of topsoil and its dumping. In the present project as it is proposed to temporarily store the topsoil and use it for plantation schemes, no impact of dozing of topsoil is envisaged.

The soil erosion from overburden and interburden dumps is not envisaged in the present project, as sufficient measures as detailed in the EMP would be undertaken.

3.6 Impact on Flora and Fauna

There is no forest area in the core zone area of the lease. As the mining activity is restricted to core zone, no significant impact on the flora of the buffer zone due to the proposed mining of Soapstone is anticipated.

It is proposed to include *Alternanthera paronychioides, Cassia tora* and *Holoptelea integrifolia* in the plantation program as they serve as sinks for gaseous emissions. Extensive plantation

comprising of pollutant resistant trees will be undertaken, which will serve not only as pollution sink but also as a noise barrier.

The incremental dust generations due to the mining operations, at the boundary of the mine lease are insignificant and it is also expected that with the adoption of mitigatory measures as suggested in EMP, the impact due to operation of the mine will be minimal on the terrestrial ecosystem and also on the adjacent forest area.

The impact on the fauna of the buffer zone due to the mining activity will be marginal. The proposed progressive plantation over a period of time will reduce the impact, if any, on the fauna.

3.7 Impact on Land Use Pattern

The proposed opencast mine will result in change the land use pattern of the ML area. The land degradation is expected during mining activities like excavation, overburden dumping, soil extraction etc. Land requirement for the project has been assessed considering functional needs.

3.8 Impact on Socio - Economic Aspects

The mine area does not cover any habitation. Hence the mining activity does not involve any displacement of human settlement. No public buildings, places, monuments etc exist within the lease area or in the vicinity. The mining operation will not disturb/ relocate any village or need resettlement. Thus no adverse impact is anticipated.

The impact of mining activity in the area is positive on the socio-economic environment of the region. The proposed Soapstone Mine will be providing employment to local population and it will be give preference to the local people whenever there is requirement of man power.

4.0 ENVIRONMENTAL MANAGEMENT PLAN

The summary of environmental mitigation measures are given in **Table 5**.

Table 5: Proposed Environmental Mitigation Measures

Impact Predicted	Suggestive measure
Disturbance of free movement / living of wild fauna	• Awareness camps will be conducted for labours to make them aware about sensitivity/importance of forest life. • No tract or new road for movement of labours or vehicles be laid in reserve forest area, this will prevent forest fragmentation, encroachment and human – animal encounter. • Care will be taken that noise produced during vehicles movement for carrying ore materials are within the permissible noise level. Higher noise level in the forest area will lead to restless and failure in detection of calls of mates and young ones.

	• Care will be taken that no hunting of animals carried out by labours. • If wild animals are noticed crossing the core zone, it will not be disturbed at all. • Labours will not be allowed to discards food, plastic etc., which can attract animals near the core site. • Only low polluting vehicle will be allowed for carrying ore materials. All vehicles allowed in the project site area will have to provide pollution under control certificate at the end of three months. • No honk will be allowed in the forest area, noise level will be within permissible limit (silent zone-50dB during day time) as per noise pollution (regulation and control), rules, 2000, CPCB norms.
Harvesting of forest flora	• No tree cutting, chopping, lumbering, uprooting of shrubs and herbs should be allowed. • No pilling of ore material should in the reserve forest area. • Collections of economically important plants will be fully restricted.

5.0 ANALYSIS OF ALTERNATIVES

The Soapstone has been identified based on the result of geological investigations and exploration carried out by the Geological Survey of India (GSI). The mining projects are site specific as such alternate sites were not considered.

The mine is operated by opencast cum semi-mechanized method of mining. No other alternative technologies can be used because of the hard nature of the ore. Proposed mine is using eco-friendly measures to minimize the impact of mining on the surrounding environment.

6.0 COST ESTIMATES

The details of the cost to for the Environmental Management plan for 5 years, the budget for Corporate Environmental Responsibility (CER) (per year) and year wise allocation of funds for the various activities proposed to be taken up under CSR programme has been given in **Table-6, Table 7 and Table 8** respectively**.**

Table 6: Budget for Environmental Management Plan

S. No.	Measures	Cost (In Rs.)
1.	Water Sprinkling for dust suppression	1,00,000
2.	Environmental Monitoring :	50,000

	(i) Ambient Air Quality Monitoring (ii) Ambient Noise Monitoring (iii) Water Quality Sampling & Analysis (iv) Soil Quality Sampling & Analysis	
3.	Plantation of 11300 trees along with their maintenance for green belt	11,30,000
4.	Cost for Retaining wall/Toe wall	63,000
Total		**13,43,000**

Table 7: Budget for Corporate Environmental Responsibility (CER) (per year)

S. No.	Measures	Cost (In Rs.) (per year)
1.	Sanitation facilities	50,000
2.	Skill Development for villagers	70,000
3.	Awareness to local farmers to increase yield of crop and fodder	1,00,000
4.	Plantation in the community areas/schools and on van panchayat land of nearby villages	80,000
Total		**3,00,000**

Table 8: Year wise allocation of funds for the various activities proposed to be taken up under CSR programme

S. No.	Activities	Allocation of Fund (Rs.)
1	Health Camps	70,000
2	Drinking Water Facilities	50,000
3	Maintenance of foot track	70,000
4	Provision of solar light	40,000
5	Donation for cultural activities in the surrounding areas	70,000
Total		**3,00,000**

7.0 ADDITIONAL STUDIES

7.1 Risk Assessment and Disaster Management Plan

The complete mining operation will be carried out under the management control and direction of a qualified mine manager holding Mines Manager's Certificate of Competency. Moreover, mining staff will be sent to refresher courses from time to time to keep them updated.

7.2 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.

8.0 PUBLIC CONSULTATION

8.1 Public Hearing

In consonance with the EIA notification dated 14th September 2006, vide section 1 (a) related to Public Hearing, the draft EIA/EMP report shall be submitted to the Uttarakhand Environment Protection & Pollution Control Board (UEPPCB) for public hearing

9.0 PROJECT BENEFITS

The impact on the civic amenities will be substantial after the commencement of mining activities. Medical facilities will be provided in the form of first-aid facility at the mine. These medical facilities will also be available to local people in the surrounding in case of emergencies.

- Generation of employment and improved standard of living;
- Increased revenue to the State by way of royalty, taxes and duties; and
- Superior communication and transport facilities etc.
  The employment of local people in primary and secondary sectors of project will upgrade the prosperity of the region.

10.0 CONCLUSIONS

- The mining operations will meet the compliance requirements of MoEF&CC;
- Community impacts will be beneficial, as the project will generate significant economic benefits for the region;
- Adoption of Best Available Technology and Best Management Practices with more environmental friendly process; and
- With the effective implementation of the Environment Management Plan (EMP) during the mining activities, the proposed project can proceed without any significant negative impact on environment.