

PRE-FEASIBILITY REPORT

*(Prepared As per MOEF & Climate Change OM No. J-11013/41/2006-IA. II (I)
dated: 30/12/2010.)*

“SOAPSTONE MINING ”

AT

**VILLAGE- BAJETA, TEHSIL-MUNSYARI,
DISTRICT- PITHORAGARH,
STATE- UTTARAKHAD
(AREA- 17.967 Ha)**

Submitted by

**M/S J.D. MINERALS
SHRI RAJENDRA SINGH DAFOTI
R/O-B-54 JUDGE FARM, CHOTI MUKHANI,
HALDWANI DISTRICT-NAINITAL (U.K.)**

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Certificate No. NABET/EIA/1922/RA0151, Valid Till: Fab3,2022

1. Executive Summary

The proposed production of Soapstone Mining located at Village: Bajeta, Tehsil- Munsyari, District- Pithoragarh, State- Uttarakhand. The Soapstone mine lease area is 17.967 Ha. Proposed production is 9435 TPA (1st Year) upto 18,250 TPA (end of 5th Year). Brief Description of the project is described below.

Table 1.1 Salient Feature of the project

S. No.	Parameters	Description		
1.	Name of the Project	Bajeta Soapstone Mine		
2.	Location of the Project	Village: Bajeta, Tehsil- Munsyari, District-Pithoragarh, State- Uttarakhand		
3.	Project Proponent	Shri Rajendra Singh Dafoti		
4.	Lease period validity	50 Years & date of expiry will be considered from date of lease deed.		
5.	Lease Details	This is fresh grant case of mining lease & State Govt. has given its consent to grant mining lease vide G.O. no. 2248/VII-1/2018/1(13)/18 dated 12.10.2018 for a period of 50 years.		
6.	Location of the Project			
	Village	Bajeta		
	Tehsil	Munsyari		
	District	Pithoragarh		
	State	Uttarakhand		
7.	Total Lease Area	17.967Ha		
8.	Category of the Project	“B1”		
9.	Capacity of the Project	9435 TPA upto 18,250 TPA (1st to 5th Year) Maximum Production: 18,250 TPA (end of 5 th Year)		
10.	Topography	Agricultural land		
11.	Lease Area Coordinate	Pillar No	N	E
		1	29°56'44.53"N	80°13'52.85"E
		2	29°56'45.58"N	80°13'51.75"E
		3	29°56'46.82"N	80°13'52.61"E
		4	29°56'46.84"N	80°13'55.03"E
		5	29°56'47.65"N	80°13'54.76"E
		6	29°56'48.00"N	80°13'57.50"E
		7	29°56'49.47"N	80°13'57.54"E
		8	29°56'49.36"N	80°13'55.82"E
		9	29°56'50.45"N	80°13'56.95"E
		10	29°56'51.93"N	80°13'57.15"E
		11	29°56'52.40"N	80°13'58.44"E
		12	29°56'52.66"N	80°13'57.42"E
		13	29°56'58.94"N	80°14'0.20"E
14	29°56'59.87"N	80°13'52.43"E		

		15	29°57'4.55"N	80°13'54.69"E
		16	29°57'10.09"N	80°14'1.17"E
		17	29°57'13.58"N	80°14'2.91"E
		18	29°57'12.84"N	80°14'8.04"E
		19	29°57'10.82"N	80°14'8.73"E
		20	29°57'10.39"N	80°14'6.24"E
		21	29°57'8.96"N	80°14'4.75"E
		22	29°57'8.86"N	80°14'3.38"E
		23	29°57'5.10"N	80°14'3.31"E
		24	29°57'0.71"N	80°14'7.53"E
		25	29°57'0.47"N	80°14'7.09"E
		26	29°57'0.26"N	80°14'7.95"E
		27	29°56'59.34"N	80°14'8.96"E
		28	29°56'52.40"N	80°14'4.53"E
		29	29°56'51.90"N	80°14'4.88"E
		30	29°56'49.83"N	80°14'4.60"E
		31	29°56'49.14"N	80°14'5.50"E
		32	29°56'49.06"N	80°14'4.67"E
		33	29°56'49.88"N	80°14'3.53"E
		34	29°56'49.53"N	80°14'3.06"E
		35	29°56'47.40"N	80°14'5.57"E
		36	29°56'46.69"N	80°14'3.42"E
		37	29°56'49.09"N	80°14'1.59"E
12.	Land Type	Individual land ownership		
13.	Method of Mining	Opencast, Mechanized Method		
14.	Operational days/ Year	240 Days		
15.	Total Water Requirement	5.41 KLD of water will be used for the project site (Drinking use, Sprinkling & Plantation)		
16.	Source of Water	Potable tankers		
17.	Man power requirement	34 persons		
18.	Nearest railway Station/ Airport along with distance in Kms	Kathgodam, 100.60 Km, SW Airport: Naini Saini Airport, Pithoragarh, 39.66 km, South		
19.	Nearest Town, City, District Head Quarters along with distance in Kms	Nearest Town Munsyari, 13.13 km, North District Headquarter; Pithoragarh, 40.97 Km, South		
20.	Ecological sensitive areas (Wild life Sanctuaries, National Parks, Biosphere Reserves, etc.)	Not Available		
21.	Historical Places	None		
22.	Financial & Social benefit	This Project will provide employment to local people directly and indirectly, which will improve their socio-economic status.		
23.	Proposed Project Cost	Rs. 67.34 Lakhs		
24.	Proposed CER Cost	Rs. 3.367 Lakhs		

25.	EMP Expenditure	Rs. 10.52 Lakhs
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2.0 INTRODUCTION OF THE PROJECT/ PROJECT BACKGROUND

2.1 INTRODUCTION OF THE PROJECT

- Name of project** : Bajeta Soapstone Mine
- Location of Project** : Area- 17.967Ha
Village-Bajeta,
Tehsil- Munsyari, District- Pithoragarh,
State-Uttarakhand
- Production** : 9435 TPA upto 18,250 TPA (1st to 5th Year)
Maximum Production: 18250 TPA end of 5th Year.
- Total ML area** : Area: 17.967Ha

Name and address of the project proponent:

M/s J.D. Minerals
Prop. Shri Rajendra Singh Dafoti
R/O-B-54 Judge Farm, Choti Mukhani, Haldwani
District-Nainital (U.K.)

2.2 Brief description of the nature of project

The proposed production of Soapstone area falls in at Village: Bajeta, Tehsil- Munsyari, District- Pithoragarh, State- Uttarakhand. The Soapstone mine lease area is 17.967Ha . Proposed production is 9435 TPA upto 18250 TPA (1st to 5th Year). The proposed method of mining will be opencast-mechanized method (category B1).This is fresh grant case of mining lease & State Govt. has given its consent to grant mining lease for a period of 50 years.

2.3 Need of the project and its importance to the country and or region:

Uttarakhand is a rich state in mineral. The state is endowed with major and minor mineral resources. The region, where the project is situated, people are mostly dependent on agriculture and mineral resources. The developments of mining in the area provide direct and indirect employment opportunities, infrastructure development, communication and development socio-economic infrastructure. The important benefits accruing from the project can thus be stated as - boost to local and regional economy, direct contribution to the state exchequer.

2.4 Demand supply Gap:

Considering the increasing development of industries in the State of Uttarakhand as well as other nearby States, there is huge demand of soapstone as a raw material in various types of industries including cosmetic, detergent & paper industries. Therefore, partial demand of material used in such industries can be accomplished from this mine.

2.5 Export Possibility:

Export possibility is neither conceivable nor there is any such demand. Import does not apply in the present case as Soapstone is indigenously available at a number of mines under operation in Uttarakhand & other States of India.

2.6 Domestic/ Export Markets

Domestic Market

The proposed mining activity is for obtaining soapstone for indigenous consumption and also for sale to nearby industries like Refractory, Cosmetic, detergent, Paper and Talc Powder.

2.7 Employment Generation (Direct and indirect) Due to project:

The total Manpower is 34 required for the mining site. There will be 34 persons employed from nearby villages. Unskilled operators and labors required for the mines will be recruited from neighboring village while some technically Qualified personnel will be hired from outside.

S. No.	Particulars	Nos. Required
1.	Mine Manager (Full Time)	1
2.	Geologist (Full Time)	1
3.	Skilled workers	2
4.	Unskilled workers	30
Total		34

The maximum production envisaged is 18250 tonnes which shall be achieved by the end of fifth year which implies that 76 tonnes of production per day considering 240 working days in a calendar year. Due to past mining experience with in applied area, the OMS varies from 2.0 tonnes to 3.0 tonnes. Considering average OMS 2.5 tonnes, which employ 30 workers shall be employed to achieve the required production.

3. Project description:

The proposed production of Soapstone area falls in at Village: Bajeta, Tehsil- Munsyari, District- Pithoragarh, State- Uttarakhand. The Soapstone mine lease area is 17.967Ha . Proposed production is 9435 TPA upto 18250 TPA (1st to 5th Year).

3.1 Type of project including interlinked and interdependent projects, if any:

The project involves mining of Soapstone Mine; it is not interlinked with any existing project.

3.2 Location of Project:

The area lies in Village: Bajeta, Tehsil- Munsyari, District- Pithoragarh, State- Uttarakhand. The Soapstone mine lease area is 17.967Ha . & it lies 1.15 Km East of village Bajeta. The site is nearly 40.97km away from Pithoragarh District. The mining site is 6.61 Km away from the Jauljibi-madkote Road. The location plan is shown below:

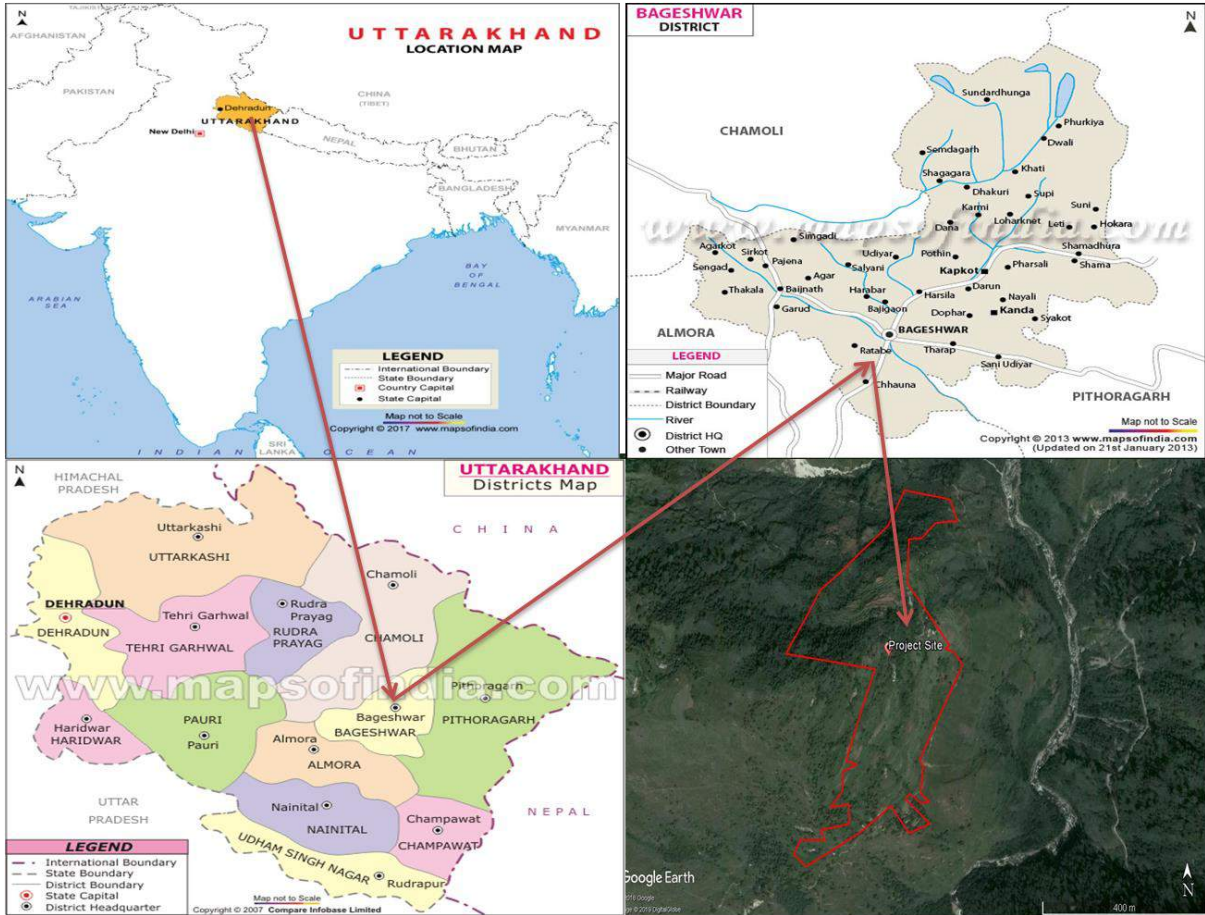


Figure 1: Location Plan



Figure 2: Google Earth showing Zoom View of the Project Site



Figure: 3 Google Map Showing 1 km Radius of the Project

3.3 Details of alternate sites considered and the basis of selecting the proposed site, particularly the environment considerations gone into should be highlighted.

It is naturally occurring rocks which is site specific due to its geological origin. This lease is granted by the state govt. No alternative sites are proposed.

3.4 Size or Magnitude of operation:

The proved (111) & probable (122) geological reserves have been considered as mineable reserves. Total mineable reserves of the tune of 250614 tonnes & with the maximum rate of production of mineral 18250 tonnes at the end of the fifth year, the life of mine comes about 14 years. Due to exploration in subsequent year, the reserves shall be increased & accordingly life of mine shall be enhanced.

3.5 Method of mining:

(A) OPEN CAST MINING:

i) Existing Method of Mining:

It is fresh grant case of mining lease & mining operations yet to be commenced.

(ii) Proposed method of Mining:

It will be open cast mechanized mine. Excavator shall be deployed for the removal of overburden & inter-burden. The overburden/inter-burden will be dumped separately into the dump yard secured with toe walls & later on all quantities shall be used in backfilling in the mined out pits. Mining shall be carried out in two pits viz. pit I & II. Pit I will be opened from first year while pit II shall be opened from second year. The width of benches shall be kept 8m, height of benches shall be kept 6m with face slope 70°. The soapstone will be extracted manually with the help of crow bar, chiesels, pickaxe, hammers, spade etc as well as with deployment of excavator. Soapstone is soft mineral therefore no drilling & blasting shall be required. No further beneficiation will be required except breaking & sorting. The different grade of soapstone will be filled into 40 kg plastic bags & transported up to road side yard manually. From road side the soapstone bags will be loaded into trucks through manually and transported to Haldwani.

The salient points of proposed method of mining are given below:-

It will be open cast mechanized mine. Due to the scarcity of workers it is not possible to carry out mining operation systematically & scientifically through the formation of benches. Therefore applicant has lapse no option but to deploy an excavator for systematic & scientific mining, conservation of mineral & protection of environment. Average thickness of soil has been considered as 0.20m & it shall be used for purpose of plantation, therefore no proposal for its separate stacking has been envisaged.

Soapstone shall be exploited excavator as well as manually through spade, pickaxe, chiesel, crowbar & hammers.

The proposal of mining during first five years shall be undertaken in two pits viz pit I, pit II & pit III. The applicant has obtained NOC from respective land owners for the exploitation of soapstone in their respective lands. The proposal of mining during next five years to be carried out in respective land is as below:

Pit No.	Khasra Nos.	NOC from land owner
I	9610 to 9625, 9598 to 9606	NOC from each land owners is enclosed With Mining Plan & certificate from respective patwari is also enclosed With Mining Plan .
II	6860 to 6898, 6902 to 6931, 6932 to 7044	

Mining shall be carried out from lower level & subsequently advance to upper levels. As soon as mining pits reach its maximum economical depth backfilling shall be commenced from third year to restore the maximum original topography of the area. This is common practice of soapstone mining in Kumaon Himalayas. The average depression will be 2.0m with respect to its original topography.

Retaining wall shall also be erected at the base of backfilled pit and at the base & sides of dump. Seasonal drainage exists southern flanks of applied area & flows from north west to south east direction. Check dams having dimension 8mx2mx1.5m shall be erected across the drainage to control the siltation on to drainage during rainy season periodically cleaning & maintenance of check dams shall be undertaken.

The year wise completion of activities of check dams & retaining walls during plan period is as below:

Activities	Year				
	I	II	III	IV	V
i) Retaining wall at the edge of backfilled pit (I & II)	-	-	100m	100m	100m
ii) Retaining wall at the base & side of dump	80m	90m	maintain	maintain	maintain
iii) Check dam(8mx2mx1.5m)	2nos	2nos	1nos	maintain	maintain

Geotechnical Studies: Geotechnical studies like slope failure, slip failure, rock failure etc. shall be carried out yearly. The retaining wall having proper shape & size shall be erected considering all technical parameters.

The width of benches shall kept 8m height of benches shall be kept 6.0m & slope of faces shall be kept 70°. Approach road having width 8.0m gradient 1:16 shall be provided to connect each mining faces. In Pit I, Pit II & Pit III mining faces shall advance towards south & south west direction & orientation of faces by & large north west to south east direction. During first two years interburden to be generated shall be dumped separately towards slope of working pits & from third year onwards all quantities shall be used for backfilling. Initially interburden will be filled in the mined out pit & lateral on soil shall be spate over it, levelled it & restore to its maximum original topography. After backfilling the area shall be used for agriculture purpose.

Mining is carried out in two pits. In pit I mining pit will cover an area of 0.56ha & it will be in between the local coordinates N 1690 to N 1760 & E 1320 to E 1406, in pit II mining pit will cover an area of 0.48ha & it will be in between the local coordinates N 2040 to N 2110 & E 1400 to E 1480.

During first five years 1.04ha area shall be broken due to mining pits & out of this 42436 cum waste quantities shall be backfilled/reclaimed, leveled it & put it use for agriculture purpose.

(iii) Last five Year production Target & achievement:

It is fresh grant case of mining lease & mining operations yet to be commenced.

(iv) Proposed five year production target:

The year wise quantities of soapstone, soil interburden to be generated from different pits is as below-

Years	Soil (Cum)		Exploitation of soapstone (Tonnes)		Total exploitation of soapstone (Tonnes)	Interburden (Cum)	
	Pit-I	Pit-II	Pit-I	Pit-II		Pit-I	Pit-II
1 st year	98	38	6908	2527	9435	6199	2268
2 nd year	56	42	8142	3369	11511	7308	3024
3 rd year	64	48	8237	5167	13404	7392	4637
4 th year	42	42	9790	5841	15631	8786	5241
5 th year	78	56	12822	5428	18250	11508	4872
Total	338	226	45899	22332	68231	41193	20042

The year wise production schedule, quantities of soapstone, soil & interburden to be generated from different benches in each pit is given below-

1st Year: Pit-I:

Bench level (mRL)	Face Length (m)	Face Advancement (m)	Height (m)	Volume (cum)	ROM of soapstone (Tonnes)	Interburden (cum)	Soil (cum)
1558-1564	60	24	3	4320	3370	3024	98
1552-1558	54	14	6	4536	3538	3175	0
Total					6908	6199	98

Pit II

Bench level (mRL)	Face Length (m)	Face Advancement (m)	Height (m)	Volume (cum)	ROM of soapstone (Tonnes)	Interburden (cum)	Soil (cum)
1362-1368	25	12	6	1800	1404	1260	38
1356-1362	30	8	6	1440	1123	1008	0
Total					2527	2268	38

2nd Year: Pit I

Bench level (mRL)	Face Length (m)	Face Advancement (m)	Height (m)	Volume (cum)	ROM of soapstone (Tonnes)	Interburden (cum)	Soil (cum)
1558-1564	90	14	6	7560	5897	5292	56
1552-1558	60	8	6	2880	2246	2016	0
Total					8143	7308	56

Pit II

Bench level (mRL)	Face Length (m)	Face Advancement (m)	Height (m)	Volume (cum)	ROM of soapstone (Tonnes)	Interburden (cum)	Soil (cum)
1362-1368	60	8	6	2880	2246	2016	42
1356-1362	30	8	6	1440	1123	1008	0
Total					3369	3024	42

3rd Year (Pit I)

Bench level (mRL)	Face Length (m)	Face Advancement (m)	Height (m)	Volume (cum)	ROM of soapstone (Tonnes)	Interburden (cum)	Soil (cum)
1558-1564	68	10	6	4080	3182	2856	64
1552-1558	62	10	6	3720	2902	2604	0
1546-1552	46	10	6	2760	2153	1932	0
Total					8237	7392	64

Pit II

Bench level (mRL)	Face Length (m)	Face Advancement (m)	Height (m)	Volume (cum)	ROM of soapstone (Tonnes)	Interburden (cum)	Soil (cum)
1368-1374	80	8	6	3840	2995	2688	48
1362-1368	58	8	6	2784	2172	1949	0
Total					5167	4637	48

4th Year: Pit I

Bench level (mRL)	Face Length (m)	Face Advancement (m)	Height (m)	Volume (cum)	ROM of soapstone (Tonnes)	Interburden (cum)	Soil (cum)
1558-1564	76	12	6	5472	4268	3830	42
1552-1558	64	10	6	3840	2995	2688	0
1546-1552	54	10	6	3240	2527	2268	0
Total					9790	8786	42

Pit II

Bench level (mRL)	Face Length (m)	Face Advancement (m)	Height (m)	Volume (cum)	ROM of soapstone (Tonnes)	Interburden (cum)	Soil (cum)
1368-1374	84	8	6	4032	3145	2822	42
1362-1368	72	8	6	3456	2696	2419	0
Total					5841	5241	42

5th Year: Pit I

Bench level (mRL)	Face Length (m)	Face Advancement (m)	Height (m)	Volume (cum)	ROM of soapstone (Tonnes)	Interburden (cum)	Soil (cum)
1564-1570	78	16	6	7488	5840	5242	78
1558-1564	62	14	6	5208	4062	3645	0
1552-1558	52	12	6	3744	2920	2621	0
Total					12822	11508	78

Pit II

Bench level (mRL)	Face Length (m)	Face Advancement (m)	Height (m)	Volume (cum)	ROM of soapstone (Tonnes)	Interburden (cum)	Soil (cum)
1374-1380	68	10	6	4080	3182	2856	56
1368-1374	60	8	6	2880	2246	2016	0

Total					5428	4872	56
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Extent of Mechanization: Excavator shall be deployed for the removal of overburden.

The make/model of an excavator is as below:

Type	Make	Capacity	No. of Units
Excavator	Tata Hitachi	0.9cum	2

End of Plan Period: Two pits will be developed by the end of plan period. Dimension of pit-I shall be 74m x 75m x 18m & depth of pit will be confirming 1558mRL. The dimension of pit-II will be 80m x 60m x 18m & depth of pit will be confirming 1374mRL. The height & width of benches shall be kept 6.0m & 8.0m with face slope 70°. Mining faces shall advance from west to east direction & orientation of faces by & large west direction.

Backfilling in pit I shall be commenced from third year onwards while backfilling in pit II shall be commenced from fourth year onwards to restore the maximum original topography of the area.

Conceptual plan: Keeping the 50m barrier zone has been left from habitation/dwellings. The size of area will be 13.50ha & ultimate depth will be kept 18m. By the end of conceptual period mined out area shall be backfilled/leveled it & put it use for agriculture purpose.

		Dimension L x W x H	Shape	Area (ha)
As on date	Nil			
End of plan period	Pit I Pit II	74m x 75m x 18m 80m x 60m x 18m	Rectangle	1.04
At the end of conceptual period	900m x 150x 18m		Rectangle	13.50

Drilling & Blasting:

Soapstone is soft minerals, its hardness has been considered as 1 on moh's hardness scale which can be mined easily therefore, there is no need of drilling and blasting for soapstone mining.

MINE DRAINAGE

Minimum and maximum depth of water table based on observations from nearby well sand water Bodies

One perennial spring exists outside the applied area which is about 300m away towards north east direction of proposed mining area and level of perennial spring is 1530mRL. Practically there is no fluctuation in water table throughout the year.

b) Indicate maximum and minimum depth of Workings.

The proposed bottom level of working pit is expected in pit I up to 1558mRL, in pit II 1374mRL (End of 5th year) & water table will not be intersected by mining operations as spring about 500m away from the proposed working area. No seasonal or perennial drainage exists within the proposed side of mine working, therefore chances to encounter the water within the working pit shall be nil during plan period. Before the commencement of rainy season, all the quantities of waste shall be filled back in the mined out pit so chances of accumulation of rainy water in the mining pit shall be nil during next five years.

c) Quantity and quality of water likely to be encountered, the pumping arrangements and places where the mine water is finally proposed to be discharged:

Mine working in pit I will not go beyond up to 1558mRL, in pit II 1374mRL & depth of pit during next five years shall be 18m, thus there is no chance to encounter the water table.

Ultimate shape & size of pit:

The ultimate shape of area is by & large rectangle & size of area shall be 13.50ha having length 900m & average width 150m.

Disposal of Waste:

The top soil having average thickness 0.10m lies all over the applied area. The top soil & interburden shall be removed by means of an excavator & dump separately. All quantities of soil to be generated shall be used for the purpose of plantation therefore no proposal has been envisaged for its separate stacking. The interburden to be generated from pit I & pit II shall be dumped during first two years towards slope of pits secure with toe walls. Backfilling in pit I & pit II shall be commenced from third year onwards. Therefore no proposal of waste dumping from pit I & pit II has been envisaged from third year onwards.

The quantities of soil and interburden material to be generated Pit I & II during first five years is given below:

Year	Pit I		Pit II	
	Top Soil	Interburden	Top Soil	Interburden

Project: Soapstone Mine
Proponent: Shri Rajendra Singh Dafoti
Area: 17.967 Ha
Village: Bajeta, **Tehsil:** Munsyari,
District: Pithoragarh, **State:** Uttarakhand

Pre- Feasibility Report

	(cum)	(cum)	(cum)	(cum)
1 st year	98	6199	38	2268
2 nd year	56	7308	42	3024
3 rd year	64	7392	48	4637
4 th year	42	8786	42	5241
5 th year	78	11508	56	4872
Total	338	41193	226	20042

3.6 Resource Optimization/ Recycling and Reuse

Water will be accumulated in the excavated mine out pit area during rains and pits serve as a natural ground water recharging structure. As a result of extraction of mineral, the rate of charging of ground water is likely to be increased considerably. Water collected in the sump will be used in various purposes at mine viz. plantation, dust suppression etc.

3.7 Availability of Water Its Source, Energy/ Power Requirement and Source:

3.7.1 Availability of water, its source

Total water requirement in the mine will be about 33.91 KLD for drinking & domestic use, dust suppression and plantation. Drinking water and water for dust suppression and plantation will be collected from nearby villages. Besides above, rain water will be collected in the working pit which will be used for dust suppression and plantation purpose. A small water tank is also proposed to be constructed in the office premises. This can be used for supply of water for mining work, spraying, watering the plants and drinking purpose.

Water requirement

The total water required, diesel and explosive is approximately 33.91 KLD the break up with its uses is given below:

Source	Purpose	Detail	Avg. Demand/Day
Portable Tanker	Drinking @ 15lpcd/worker	34 workers x 15 lpcd =510 lpcd	0.51 KLD
	Mine operation/others	-	1.0 KLD
	Land reclamation / plantation @ 1 Lit/Tree	6000Trees x 5 lpcd = 30000 lpcd	30 KLD
	Dust suppression @ 2 Lit/Sq.m (Twice in a day)	Haul Road Area = (200 m Length x 6m Width = 1200 m ²) x 2lpcd/Sq.m = 2400 lpcd	2.4 KLD
Total			33.91 KLD

3.7.2 POWER

The operation will be done during day light; hence there is no power requirement for the project at site.

3.8 Quantity of waste to be generated (liquid or solid) and scheme for their management / disposal.

No solid waste generation is expected from the mining procedure. 34 persons including the works man and the administrative staff are supposed to produce negligible waste like gutka pouches, smoking litter, and newspapers etc. belonging to biodegradable category waste.

3.8.1 Solid Waste Generation & its Disposal

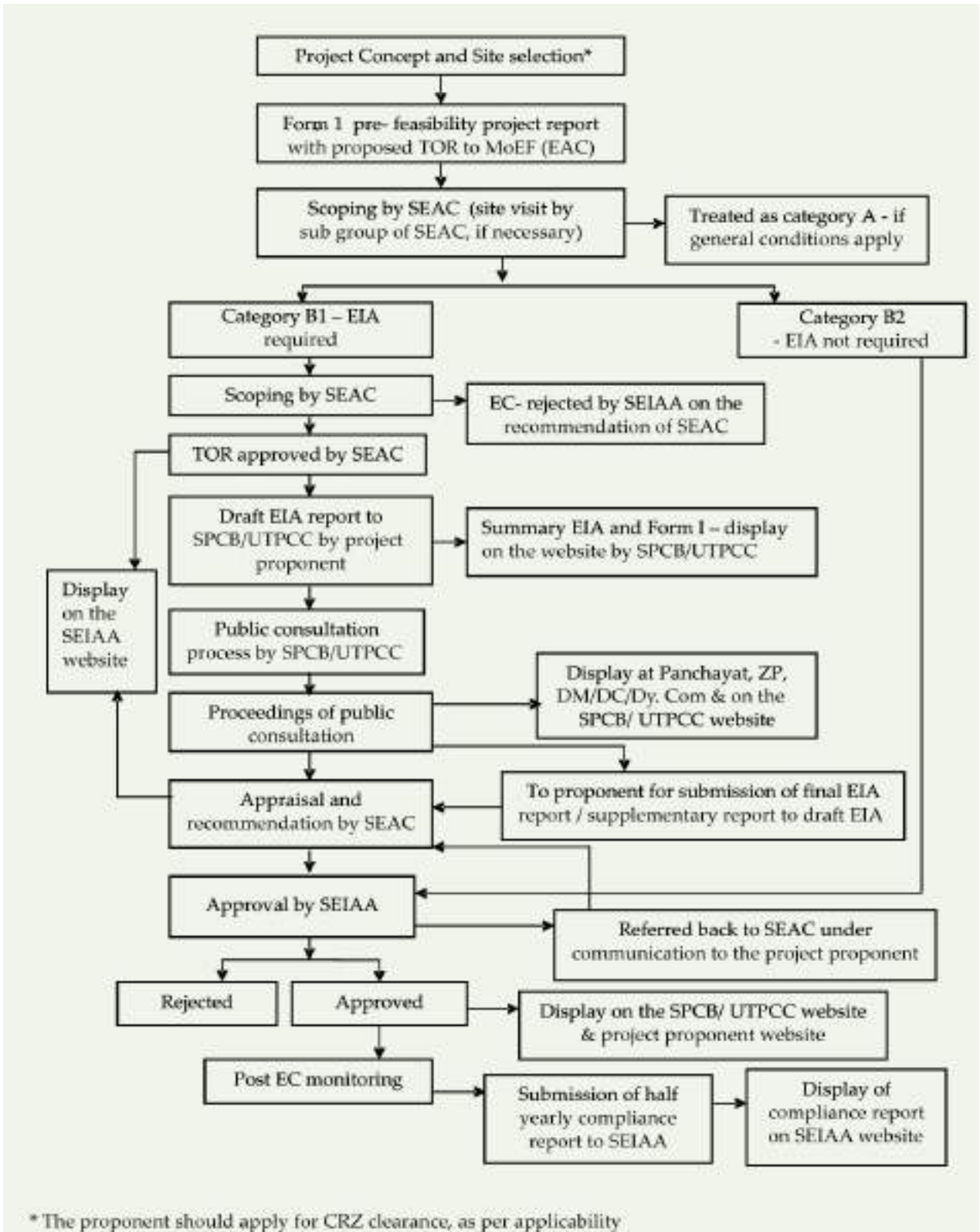
Waste generated will be collected on regular basis and will be disposed as per the Municipal Solid Waste Management (Management & Handling) Rule 2000 and its subsequent amendments.

3.8.2 Generation of Liquid Effluent

There is no waste water generation during the process.

3.9 Schematic representations of the feasibility drawing which give information of EIA purpose:

As per the Environment Impact Assessment (EIA) notification dated 14th Sept. 2006 and subsequent amendments, the proposal falls under Category “B”. Form-1, PFR & EMP report shall be required to get the environmental Clearance for this project from the SEIAA. The EC process is shown in- Fig



4.0 Site Analysis:

4.1 Connectivity:

The lease area lies in village-Bajeta, Tehsil- Munsyari, District- Pithoragarh, State- Uttarakhand and it lies 1.15km East of village-Bajeta. The site is nearly 40.97 km away from Pithoragarh District. The mining site is 6.61 km, East away from the Jauljibi-Madkote Road. The Nearest State Highway SH-11 is 9.95 km , West away from the site.



Figure 4: Connectivity Details from Project Site

4.2 Land form, land use and land ownership

Mining is proposed agricultural land of individual land owners & they have given their consent for the exploitation of soapstone in their respective land.

Mining is proposed in agricultural land & compensation is being paid to land owners for mining & dumping in their respective land. The compensation is much higher than agricultural field. This is fresh grant case of mining.

4.3 Topography Along With Maps:

The applied area represents a rough and rugged topography having a general slope towards north-east directions. One seasonal nalla exists within the area towards south flank which flows north-west to south-east direction. The highest level of the area is 1619.30 mRL towards north-east direction while the lowest level of the area is 1335.20 mRL towards south-east direction.

Source: Approved Mining Plan

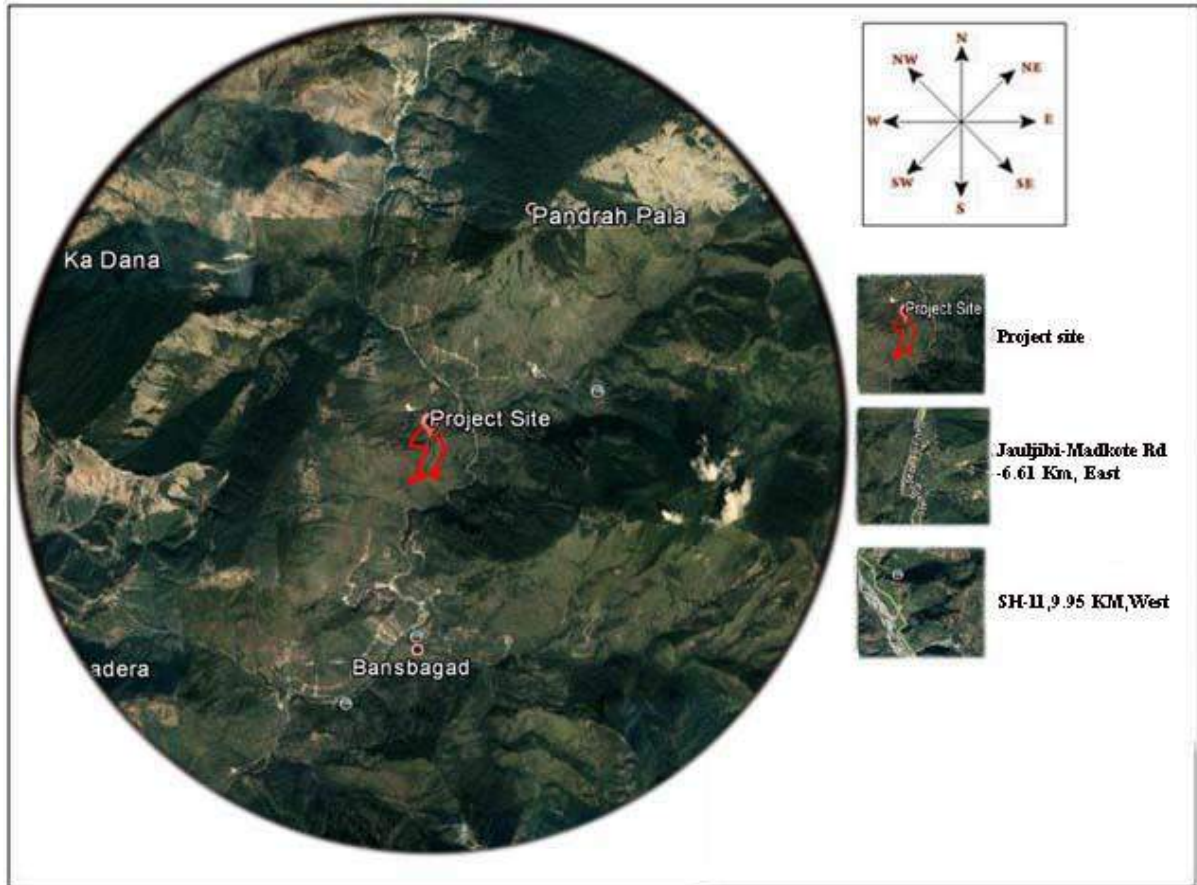


Figure 5: Google Map showing 5.0 km radius of Buffer Zone

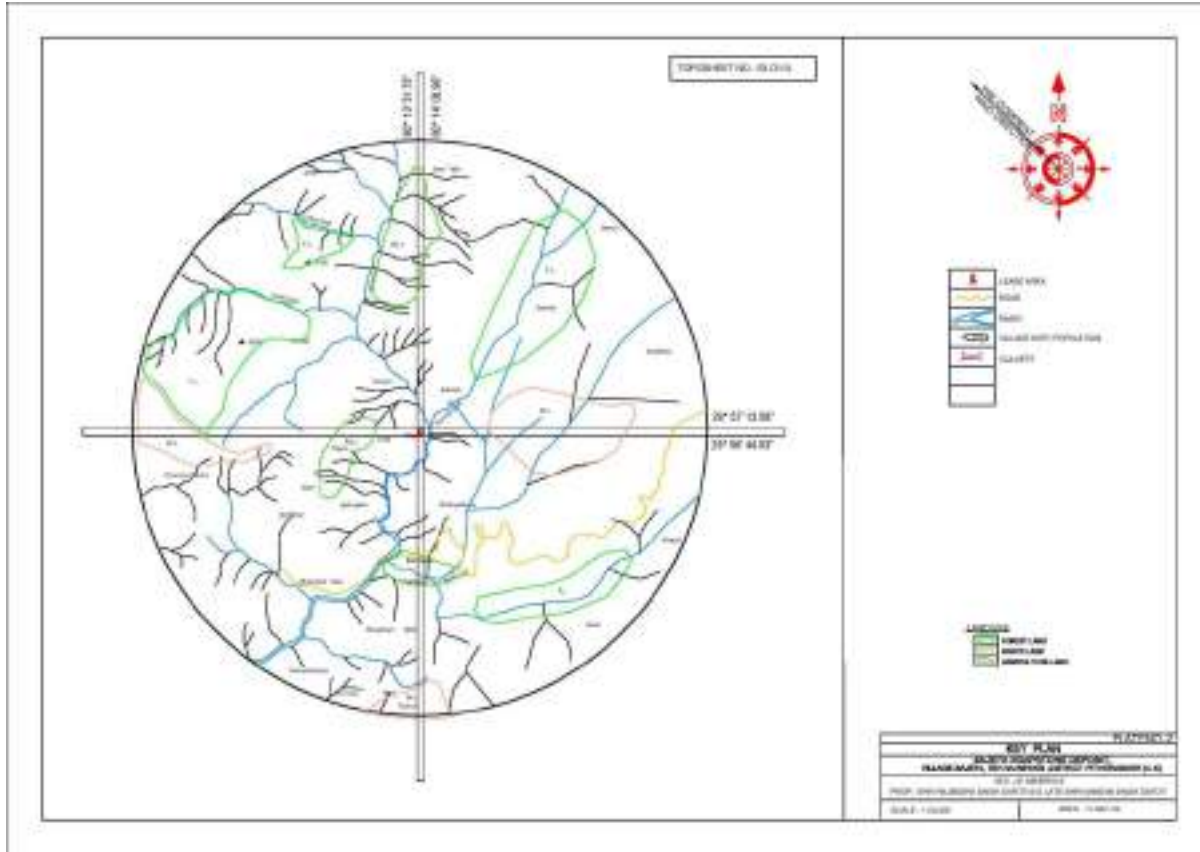


Figure 6: Topographical Map 5.0 km radius of Buffer Zone

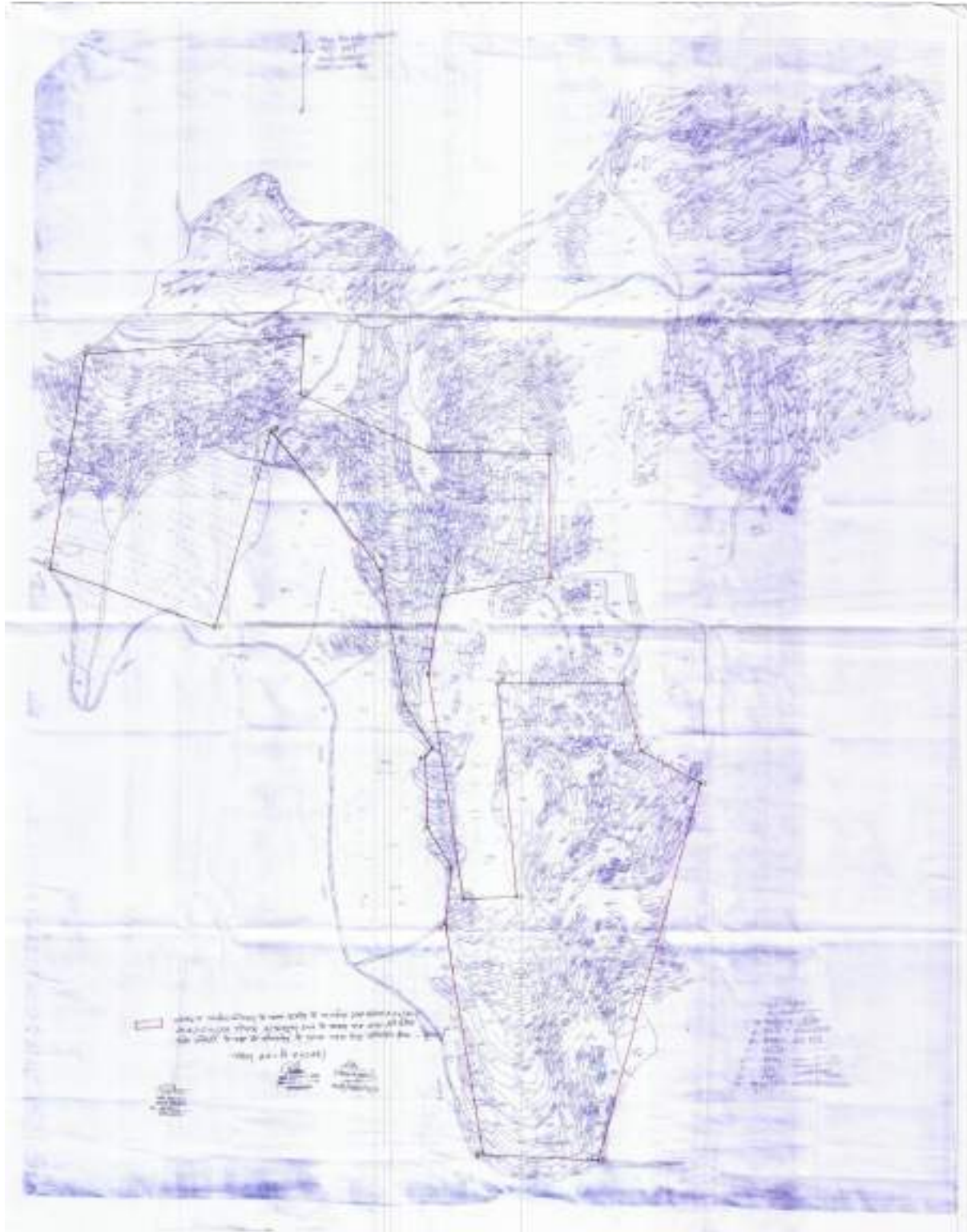


Figure 7: Khasra Map (Site Plan)



Figure 8: Google Map Showing 500 m Radius of the Project

4.4 Existing Land Use Pattern {Agriculture, Non-Agriculture, Forest, Water Bodies (Including Area Under CRZ)}, Shortest Distances From The Periphery Of The Project To Periphery Of The Forests, National Park, Wild Life Sanctuary, Eco Sensitive Areas, Water Bodies (Distance From The HFL Of The River), CRZ. In Case Of Notified Industrial Area, A Copy Of The Gazette Notification.

Table: Environmental Settings:

S.N.	Particulars	Details	
		Village	Distance & Direction
1.	Nearest Villages	Bajeta	1.15 km, East
		selmali	2.12 km, NE
		Dungari	1.56 km, North
		Bansbagad	2.17 km, South
2.	Nearest city/ town	Nearest Town/District: Pithoragarh, 40.97 km, South	
3.	Nearest Railway Station	Kathgodam Railway Station , 100.60 Km, SW	
4.	Nearest Metalled Road	Jauljibi-Madkote Road, 6.61 km, East	
5.	Nearest State Highway/National Highway	State Highway (SH-11), 9.95 km, West	
6.	Nearest Airport	Pithoragarh Airport, 39.66 km, South	
7.	Archaeological Important Place	None, within 10 km radius area of mine site.	
8.	Ecological Sensitive Areas (National Park, Wildlife Sanctuary, Biosphere Reserve etc.)	No Eco sensitive areas within 10 km buffer zone.	
9.	Reserved/Protected Forest/Notified Areas	None, within 10 km radius area of mine site.	

	within 10 km radius	
10.	Nearest River / water body	None
11.	Seismic Zone	V th (Very Severe Intensity Zone) Source: http://asc-india.org/seismi/seis-uttarakhand.htm

4.5 Existing infrastructure:

4.5.1 Roads:

The lease area lies in village-Bajeta, Tehsil- Munsyari, District- Pithoragarh, State- Uttarakhand and it lies 1.15 km East of village-Bajeta. The site is nearly 40.97 km away from Pithoragarh District. The mining site is 6.61 km, East away from the Jauljibi-Madkote Road. The Nearest State Highway SH-11 is 9.95 km , West away from the site.

4.5.2 Water Supply:

They use the well water both for agriculture and household purpose. The water table in hills is usually very deep and does not have any relevance with mining activities. However, concurrent restoration to original topography & it will not be disturbing the ground water. The mining staff/workers use water from bore well to be dug near the leasehold.

4.5.3 Electrification:

The Village Bajeta has electricity connection while lease area is not connected with electricity. Surrounding 5 km village are electrified from the lease area.

4.5.4 Educational – Facilities:

The Village Bajeta has a primary school. However, secondary, Higher Secondary College educations are in Munsyari.

4.5.5 Health Service:

The Primary Health Centre is at Munsyari & Pithoragarh, Govt. Hospital.

4.5.6 Postal – Facilities:

The post office is on Tejam & it is about 9.96 km in NW direction away from lease area.

4.5.7 Transport:

The applied area is approachable to Joshigaon-Agar Road & State Highway (SH-37).

4.6 Soil Classification:

A thin layer of brownish colour of soil exists in the whole area. The thickness of soil varies from 0.10m to 0.20m having an average thickness of 0.15m..

Source: *Approved Mine Plan*

4.7 Climatic data from secondary sources:

The hilly parts of Uttarakhand experience cold climate and high rainfall. Significantly large part of the state remains under snow cover throughout the year. The intermontane valleys and the plain area in the southern part of the state experience a sub-tropical climate with three seasons – summer, monsoon and winter. The normal annual rainfall varies from 1256 mm in Haridwar district to 2426 mm in Pithoragarh district. The average annual rainfall varies from 927.7 mm at Joshimath (Chamoli district) to 2599.4 mm at Munsyari (Pithoragarh district). Most of the rainfall occurs as monsoon rainfall during the months of July and August. The Isohyetal Map of Uttarakhand prepared using mean normal rainfall is given in Fig. 2. The map reveals that intensity of rainfall increases from SW to NW

in a broadly linear pattern with high rainfall prevailing in both the eastern and the western parts of the state.

Source:<http://cgwb.gov.in/Regions/GW-year-Books/GWYB-2014-15/GWYB%202014-15-0UR,%20Dehradun.pdf>

Humidity:

The relative humidity shows rise from June to February with highest values in the month of January and decreases it reaches lowest during April and May.

On the basis of past experience reveals that the maximum average humidity in the month of January is about 96.33% while the minimum average humidity is about 31.43% during month of April.

Source:<http://cgwb.gov.in/Regions/GW-year-Books/GWYB-2014-15/GWYB%202014-15-0UR,%20Dehradun.pdf>

Rainfall:

The area receives 70% on an average rainfall in between June end to mid September. Average rainfall from June to September comes about 151.00mm. The maximum rainfall was received 302.7mm. during the month of July & August while the minimum rainfall was recorded will during the months of January & February & it varies 8mm to 15mm.

Source: Approved Mine Plan

5.0: Social Infrastructure

- Health & educational facilities (in the form of primary and secondary schools) are available in the nearest villages.
- Medical facilities, Primary Health Centre are there in the area.
- Village people are availing drinking water facilities generally from the hand pump, open well and tube well. The water supply is also supplied through tanker in few villages.
- Communication services like post office and telephones are available in the nearby village. Some of the villagers are having mobile phones.

5.0 Planning Brief:

5.1 Planning Concept:

Land area indicating the area likely to be degraded due to quarrying, dumping, roads, workshop, processing plant, tailing pond/dam, township etc.

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, 2.262ha land will be degraded due to mining & allied activities. The breakup of the land to be affected during next five years and end of conceptual period of due to mining operation is given below:

Activities	End of 5 years	Area occupied (Ha)
	(Ha.)	End of conceptual period
Mining Pits	1.04	Nil
Interburden dumps	0.289	Nil
Soil stack	Nil	Nil
PWD road	Nil	Nil
Drainage	0.028	0.028
Habitation/Dwelling	0.018	0.018
Workshop	Nil	Nil
Retaining wall		
(Backfilled Pit+Slope of Dump+Check Dams)	0.045	1.20
Balance undisturbed agricultural land	16.547	3.221
Total	17.967	17.967

5.2 Population Projection:

The project will employ most of the workers from nearby villages. Only supervisory staff will be hired from outside. There will not be any increase in population due to the project. However, few people from other areas may migrate in this area for business opportunities.

5.3 Land use planning (breakup along with green belt etc.)

Impact Assessment:

Land area indicating the area likely to be degraded due to quarrying, dumping, roads, workshop, processing plant, tailing pond/dam, township etc.

The impact on land form or physiography will be landuse on the hilly terrain will undergo radical changes due to the open cast mining.

Conceptual Reclamation/Rehabilitation:

The mined out area & reclamation/rehabilitation as on date, at the end of plan period & end of period is as below:

	Area broken (ha)	Area reclamation/ rehabilitation (ha)	Quantities of waste to be used in backfilling (cum)
As on date	Nil	Nil	Nil
End of plan period	1.04	0.506	38791
End of conceptual period	13.50	13.50	1512000

5.5 Assessment of Infrastructure Demand (Physical & Social)

Temporary office and stores will be provided in the mining area. Specified first-aid box with all necessary facilities will be maintained at the site office. Communication services like post office and telephones are available in the nearby village. Some of the villagers are having mobile phones.

5.6 Amenities/Facilities:

Additional facilities will be made as per the requirement. Arrangements for safe and healthy working conditions. Provision of Drinking water from nearby villages or through tankers in dry period.

5.7 Transport of Men and Material:

Workers from nearby villages will be engaged for mining and transportation purposes. They will come for work on foot. The material from the mine will be transported by trucks / dumpers.

6.0 Proposed Infrastructure

6.1 Industrial Area (Processing Area)

No infrastructure is proposed.

6.2 Residential Area (Non Processing Area)

As local workers from nearby areas will be engaged for the mining activity, no residential area/ housing are proposed.

6.3 Green Belt/Afforestation:

During next five years, the local hard species shall be planted during monsoon period by consultation with forest department.

Trees: Peach (Khumani), Pears (Nashpati), Apricot (Aaru), Faliyat, Surai etc.

Shrubs: Ghingarua with a few Jhitalu, Kilmora and Hisalu etc. occurs in the depressions.

The year wise plantation is given below:

Year	Plantation outside the area		Total no. of sapling
	Area (ha.)	No. of saplings	
1 st	0.06	2000	2000
2 nd	0.06	2000	2000
3 rd	0.06	2000	2000
4 th	0.06	maintained	maintained
5 th	0.06	maintained	maintained
Total	0.3	6000	6000

6.4 Social Infrastructure:

Physical & Social Infrastructure is provided, and if necessary other facilities will also be provided by mine's proponent.

This Project is providing employment to local people directly and indirectly. Indirect employers are shopkeepers, mechanic, drivers, transporters etc. The lessee will be responsible for providing better social infrastructure benefits such as drinking water, health care measures, educational facilities, in surrounding areas.

The education level of the area is very low and most of the people are illiterate. As in the soapstone mining, skilled and unskilled labors are required in good number for manual breaking and sorting work. Therefore, Soapstone mines give ample opportunity for employment of local people; thereby their earning will improve due to continuous employment in the mine with better wage rate. Their increase of earning will definitely help in improving the education, health and living standard of the villagers.

6.5 Connectivity:

The lease area lies in village-Bajeta, Tehsil- Munsyari, District- Pithoragarh, State- Uttarakhand and it lies 1.15 km East of village-Bajeta. The site is nearly 40.97 km away from Pithoragarh District. The

mining site is 6.61 km, East away from the Jauljibi-Madkote Road. The Nearest State Highway SH-11 is 9.95 km , West away from the site.

6.6 Drinking Water Management (Source & Supply of Water):

The main drinking water requirement will be for mine workers. The strength of workers will be 34. It can be seen that drinking water requirement will be 0.51 KLD. The drinking water is provided through Hand-pump and bore well.

6.7 Sewerage System: Mobile Toilets will be provided for mine workers.

6.8 Industrial Waste Management: Not Applicable

6.9 Power Requirement & Supply/ Source:

The operation will be done only during the day light; hence there is no power requirement for the project at site.

7.0 Rehabilitation and resettlement (R &R) Plan

The mining lease which is agricultural land. There will be no rehabilitation and resettlement involved with the project.

8. Project Schedule & Cost Estimates:

Likely date of start of construction and likely date of completion:

Proposed project will be started after getting Environment Clearance and progressive closure plan will be submitted in due course of time.

Project Cost along with analysis in terms of Economic Viability of the Project:

The project cost is about Rs. 81.97 Lakhs as all the equipments will be required for Mining & hence, will be taken on rent. There is built in profit margin, therefore, proposed project will be economically viable.

S. No.	Description	Unit	Total (Rs.)
A. Project Operation Cost			
1.	Manpower Cost:	(Total Man power 49) Assuming	36,24,000
	Mine Engineer (Full time) - 01	240days	
	Geologist (Full time) -01	Rs. 25,000/ month= 3,00,000	
	Skilled: -02	Rs. 35,000/ month= 4,20,000	

	Un skilled: Laborers charge -30	Rs. 500/ day= 1,20,000 x 2=2,40,000 Rs.370 / day= 88,800x30=26,64,000	
2.	Expenditure on Occupational Health: PPE & First Aid Facility Medical checkup and Medicine (Once in a month)	3000/worker (3000 x 34)= 1,02,000 <i>Doctor's visit:</i> 10,000/ month (8 working months) =80,000 <i>Medicines</i> (Assuming 500/worker) 500 x 34 = 17,000 (Mine operation Month: 8) = 1,36,000	3,18,000
3.	Equipment's/Tools/Machineries	240 days Assuming Rs.5000/day	12,00,000
4.	Drinking and Sanitary Facilities	➤ Rs. 2000/day for drinking/domestic (240 days) ➤ Rs. 30,000/ Bio-toilets x 2	5,40,000
	Total Project Operation Cost (A)		Rs. 56,82,000 (56.82 Lakhs)
B. Break-up of Expenditure on Environment Protection & Environment Management			
5.	Haulage Road Repair & Maintenance • Filling, Leveling and widening of the road up to width of 6m and length of 200 m. • Setting & Fixing of Cut Stone on the leveled road.	Annual 200 m (L) x 6 m (W)	2,00,000
6.	Water Sprinkling on Haulage Road for Dust Suppression	Assuming Rs.1000/day for 240 days of working Tanker Cost: Rs. 1000/Tanker Tanker Capacity: 5000 liter, No. of Tankers required: 1	2,40,000
7.	Plantation along the road side & post plantation care	Plantation@300/sapling (6000sapling in 1 st & 2 nd Year) (in next 3 yr post plantation care will be done) <i>Note: Annual cost will increase with increase in no. of sapling.</i> <i>Note: Annual cost will increase with increase in no. of sapling.</i>	18,00,000

8.	Environmental Monitoring & Compliances.	<ul style="list-style-type: none"> ➤ Half Yearly Monitoring of Environmental Parameters viz. Air, water, Noise & Soil. ➤ Half Yearly Submission of Compliances. 	4,00,000
	Total Environment Protection & Management Cost (B)		Rs. 26,40,000 (26.40 Lakhs)
	Total Project Cost (A+B)		Rs. 56.82 + 26.40 (83.22 Lakhs)

Corporate Environment Responsibility:

CER (Corporate Environment Responsibility) details for the Project

CER plan is given below:

- Total Cost of the Project = Rs.83.22 Lakhs
- Yearly CER cost for the project, i.e. 5% of the total project cost
Rs. 83.22 Lakhs x 0.05 = Rs. (4.161 Lakhs)

This is the Proposed CER Plan, Activities will be Finalized as per the Actual need of the area (ON THE BASIS OF NEED BASE ASSESSMENT SURVEY)		
S.N.	Particulars	Activity
1.	Drinking water supply	Provide drinking water facility in surrounding villages and schools by hand pump installation.
2.	Health	Free distribution of medicines, health check-up camps nearby village
3.	Electrification including solar power	Solar lamp distribution & Solar street light installation
4.	Sanitation	Constructed the Toilets facilities for women nearby village
5.	Education	Distribution of school bags & Books in nearby Primary Schools

9.0 Analysis of proposal (Final Recommendations)

- There will be direct and indirect employment at the first instance. The employment will be given to locals.
- Further, the share of indirect employment like increased purchasing power, dhabas and retail shops etc. is largely shared by local residents.
- The most important aspect of the project is the land under mining is almost agricultural land and not providing any income to the owner, implying that there will be no significant impact on the livelihood of residents.
- Finally, all aggregate will be used in construction of road, which otherwise is a contribution towards building nation.

9.1 Financial and social benefits with special emphasis on the benefit to the local people including tribal population, If any, In the area

No tribal population is residing in the study area. There will be social benefits from the mining operations.

10.0 CONCLUSION

It is predicted that socio-economic impact due to this project will positively increase the chance of more employment opportunities for local inhabitants. There are no Resettlement and Rehabilitation issues involved in this project. The project infrastructures will be of use to people of the area. The revenue of the State Govt. will be definitely increasing due to the proposed activity. The entire project area is devoid of any endangered flora and fauna. **It is proposed to reclaim the land and develop green cover for eco-restoration with native species to a maximum possible extent.** Thus the proposed project is not likely to affect the environment or adjacent ecosystem adversely.