

EXECUTIVE SUMMARY OF DRAFT EIA REPORT

FOR

ENVIRONMENTAL CLEARANCE FOR PROPOSED DOLOMITE MINING PROJECT (Minor mineral)

Proposed applied mines area is 8.805 ha

Total cluster area 485.784 ha

At

**Village :- Chhitapandariya, Tehsil - Jaijaipur, District - Sakti,
State - Chhattisgarh**

APPLICANT

Shivay Minerals Pvt. Ltd. Director - Pavan Prasanna Yergolkar

**CITY/POST- FIRST FLOOR, SHYAM KRIPA, MARWADI LINE, KHAPARGANJ,
JUNI LINE, DISTRICT— BILASPUR(C.G) ,
PIN CODE – 495001**

ENVIRONMENTAL CONSULTANT



Environmental Consultancy & Laboratory
(Lab. Gazetted by MoEF-Govt. of India)

**M/s. ULTRA-TECH
ENVIRONMENTAL LABORATORY AND CONSULTANCY**

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	3
1.0 INTRODUCTION.....	3
2.0 PROJECT DESCRIPTION.....	7
3.0 DESCRIPTION OF ENVIRONMENT	10
4.0 ANTICIPATED ENVIRONMENT IMPACTS AND ENVIRONMENT MANAGEMENT PLAN.....	13
5.0 ENVIRONMENTAL MONITORING PROGRAM.....	15
6.0 RISK ASSESSMENT	15
7.0 EMERGENCY RESPONSE AND DISASTER MANAGEMENT PLAN.....	16
8.0 PROJECT BENEFITS	16
9.0 BUDGET FOR SOCIAL DEVELOPMENT.....	16
10.0 ENVIRONMENT MANAGEMENT PLAN (EMP)	16
11.0 CONCLUSIONS.....	17

LIST OF TABLES

Table E.1: Environmental Setting of proposed dolomite mining project	6
Table E.2: Salient Features of Proposed mining Project	7
Table E.3.1: Water Requirement Details	9
Table E.4.1 Manpower Details	9
Table E.5.1: Summary of the Meteorological.....	Error! Bookmark not defined.
Table E.6.1 Expenditure Proposed for Environmental Protection Activities:	Error! Bookmark not defined.

LIST OF FIGURE

Figure E-1: Toposheet map of the Project Site	4
Figure E-1: Location map of the Project Site	5
Figure E-3: LULC Classification (10 km radius of the Proposed Project Area)	12

EXECUTIVE SUMMARY

1.0 Introduction

The proposed project is a cluster project of Mining of Dolomite Mine (Total lease area in cluster including applied mine – 485.784 Ha of Mineral Dolomite) at Village – Chhitapandriya Tehsil –Jaijaipur, District: Sakti, State: Chattishgarh. Details of the entire lease are discussed in the further chapters. The lease holder in the cluster is Shivay Minerals Private Limited director Pavan Prasanna Yergolkar, having lease area of 8.805 Ha. TOR issued in favour of project proponent whose details is as follow-

M/s Shivay Mineral Pvt. Ltd (8.805 hect) – TOR identification no.- TO24B0108CG5515093N, Dated 16/12/2024, File No. - OL/TOR/MIN/JANJGIR CHAMPA/3304

This mining project comes under Category B1" (Cluster situation) Project or activity 1(a) as per EIA Notifications 2006, and its subsequent amendments and will be appraised at SEAC, Chattisgarh. The lease is falling in the cluster as per 15th January 2016 EIA Notification of MoEF&CC and NGT order dated 13th September 2018.

Project Location

The mining lease area of Shivay Minerals Pvt. Ltd. (Chhittapandariya dolomite quarry) covers an area of 8.805 Ha under khasra no. 5/21, 5/22 and 5/3 of Shivay Minerals Pvt. Ltd. Director Pavan Prasanna Yergolkar featured located in the Survey of Indian Toposheet No. 64 K/3, 64J/16.

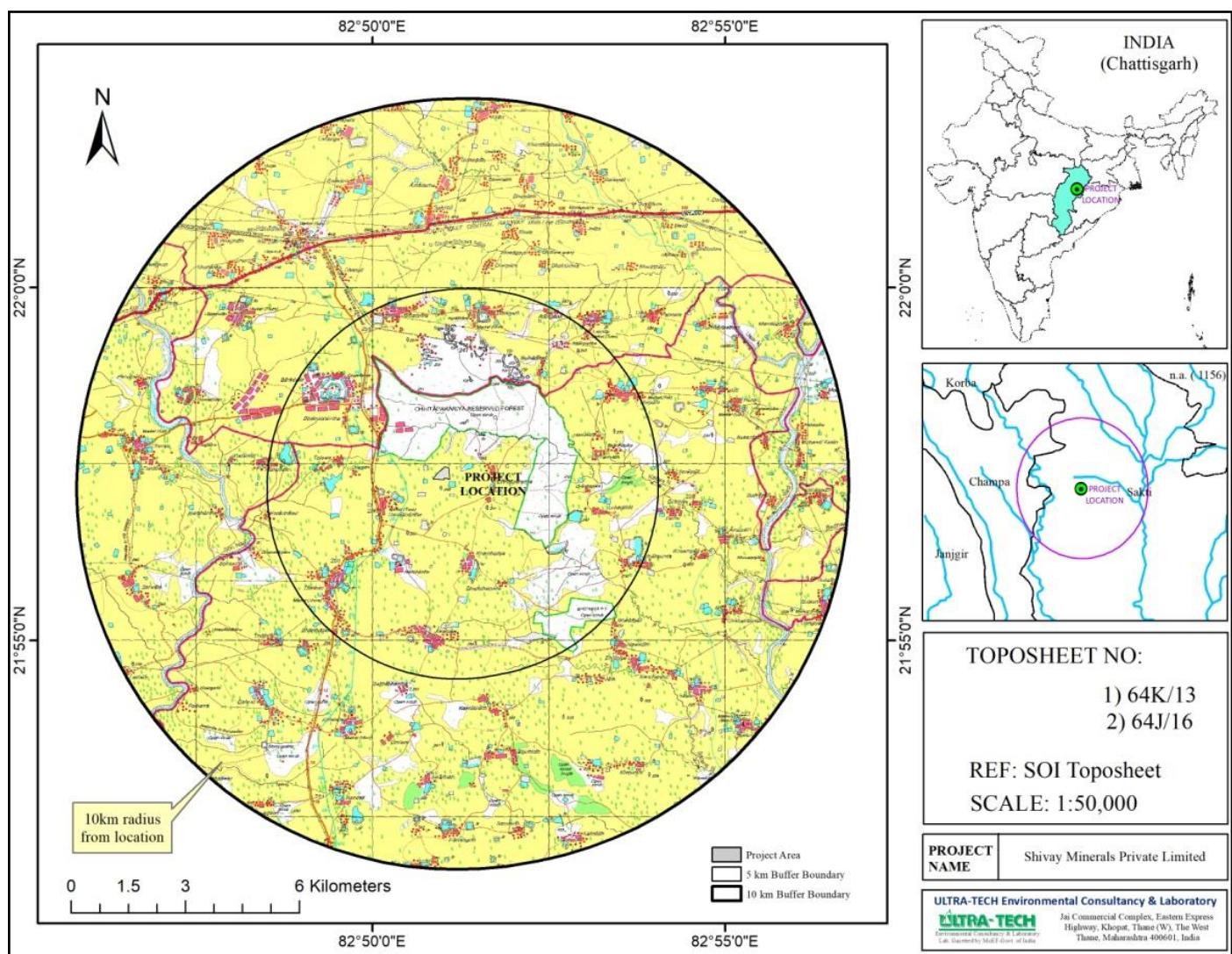


Figure E-1: Toposheet Map of Proposed Project Site

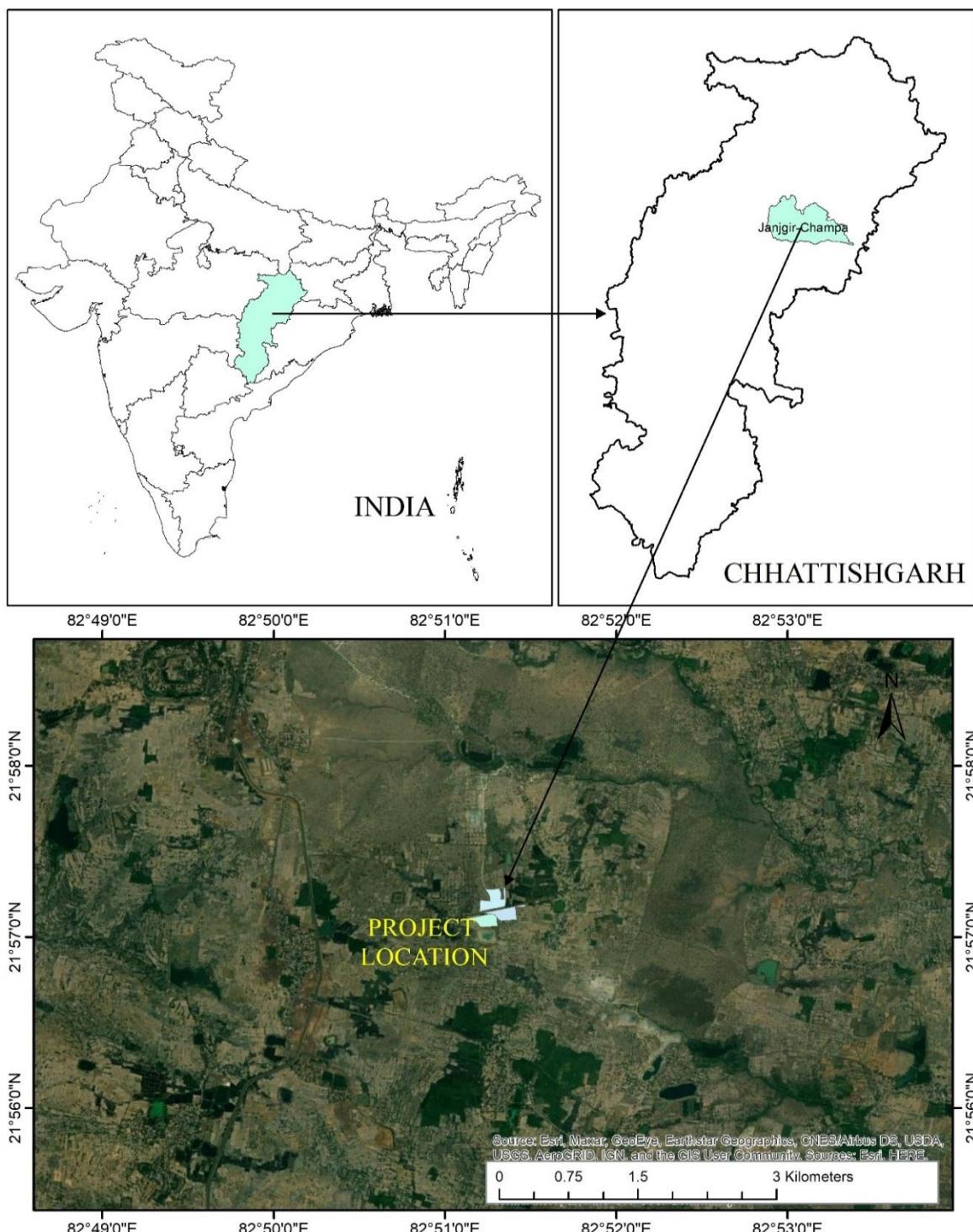


Figure E-2: Location Map of Proposed Project Site

Table E.1: Environmental Setting of Proposed Dolomite Mining Projects

Particulars	Details		
Name of the Project	Shivay Minerals Pvt. Ltd. (Chhitapandriya Dolomite Quarry)		
Location of the Project	Village Chhitapandriya, tehsil Jajapur, district Sakti State Chhattisgarh.		
Geographical Coordinates:	BP	Latitude (N)	Longitude (E)
	BL-01	21°57'45.85"N	82°50'56.81"E
	BL-02	21°57'45.37"N	82°51'00.54"E
	BL-03	21°57'40.34"N	82°51'00.94"E
	BL-04	21°57'35.26"N	82°51'01.39"E
	BL-05	21°57'35.39"N	82°50'59.74"E
	BL-06	21°57'35.69"N	82°50'59.76"E
	BL-07	21°57'36.10"N	82°50'56.79"E
	BL-08	21°57'34.72"N	82°50'56.74"E
	BL-09	21°57'35.41"N	82°50'46.88"E
	BL-10	21°57'39.99"N	82°50'50.38"E
	BL-11	21°57'42.59"N	82°50'53.51"E
Size of the Project	8.805 ha.		
Nearest Highway	NH - 49 at 5.60 km towards North (Raigarh-Bilaspur road)		
Nearest railway station	At Naya Baradwar Railway Station – 6.60 km towards north- west.		
Nearest Airport	Bilasa Devi Kevat Airport, Bilaspur – 76.00 km towards west.		
Nearest town/City	Baradawar Basti – 2.20 km towards north- west.		
Nearest water body	River	-	Son nadi At 4.75 km towards south-west.
	Seasonal Nalla	-	At 1.40 km towards north-east.
	Nalla	-	Nalla 590 m towards south-west.
	Tank /Pond	-	Village pond at 860 m towards south-east.
	Irrigation Canal	-	60 m. towards South
Major water bodies within 10 km radius	Son nadi at 4.75 km towards south- west.		
Densely populated or built-up area	Sakti – 12.20 km north – east.		
Archaeologically important places	None within 10 km radius		
Protected areas as per Wildlife Protection Act (Tiger reserve, Elephant reserve, Biospheres, National parks, Wildlife sanctuaries, community reserves and conservation reserves)	None within 10 km radius		
Reserved / Protected Forests	1. Bhothiya P.F. – 4.00 Km		
Defense Installations	None within 10 km radius		

Particulars	Details
Seismicity	Since project site comes under Seismic zone II, which is least active zone for earthquakes as per IS: 1893 (Part 1: 2002).
Wildlife Sanctuary	None within 10 km radius
National Park	None within 10 km radius
Biosphere reserves	None within 10 km radius
Important migration routes of birds	None within 10 km radius
Ramsar sites (Wetlands of International Importance)	None within 10 km radius
Unique or threatened ecosystems	None within 10 km radius
Important topographical features, including ridges, river valleys, shorelines, and riparian areas	None within 10 km radius
Mangrooves	None within 10 km radius
Physical Sensitive Receptors	None within 10 km radius
Notified Ground Water Zone by CGWA	None within 10 km radius
Critically Environmental polluted Area	None within 10 km radius
Pollution Sources	None within 10 km radius

2.0 Project Description

The proposed project of Shivay minerals Pvt. Ltd. (Chhitapandriya Dolomite Quarry) of 8.805 Ha is situated at Village - Chhitapandriya, Tehsil - Jaijaipur, District Sakti and State: Chattishgarh. The life span of proposed mine block is 50 years. The proposed method of mining is open cast mechanized mining.

Table E.2: Salient Features of Proposed Mining Project

INFORMATION	DETAILS
Name of the project	Shivay Mineral Pvt. Ltd (Chhitapandriya dolomite quarry mine)
Village	Chhitapandariya
Tehsil	Jaijaipur
District	Sakti
State	Chhattisgarh

Toposheet No.	64 K/13, 64J/16		
Name of Leaseholders	Shivay Minerals Pvt. Ltd. Director - Pavan Prasanna Yergolkar		
Address and Contact details of Lease Holders	Director - Pavan Prasanna Yergolkar Reg. Address: First Floor Sri Shyam Kripa Marwadi Line Khaparganj, Junilane, Tehsil & District: Bilaspur (C.G).		
Name of the Minerals to be mined	Dolomite		
Type of land	Private Land		
Status of Operation (New Project or Existing Project operating since)	New Project		
Mine Area	8.805 ha.		
Ultimate depth of mining from surface level	30 m.		
Minable Reserve	45,33,938.08 MT		
Production Capacity	4,00,000.00 TPY		
Life of Mine	As per Lease period - 50 years		
Quantity of topsoil and Overburden estimated to be removed	Top soil Thickness	Top soil (cum)	
	0.25 m.	18,861.00	
Depth of Ground Water Table	More than 55 meter of below from the normal surface level.		
Method of Mining	Opencast Mechanized method		
No.of working days	300 Days		
Seismic Zone	Seismic Zone II		

2.1 Mining methodology

The proposed method of mechanized Open Pit mining methodology shall be the proposed method of mining which includes drilling in exposed ore by series of large diameter holes of 114 mm diameter and 6.0 meter depth (max) after seeking mechanized open pit permission from director general of mines safety under regulation 106 (2) (b) of metalliferous Mines Regulation 1961. The initial opening of deposit is made by box cut. The hole is then charged and blasted with large diameter cartridge explosive (83mm) primed with NONEL. The blasted muck will then be sized by rock breaker , if needed and loaded by excavator into the tipper. The sized material is then crushed in the crushing and screening plan of lease in other surface lease of the lesses. It is also proposed to be located the mobile crushing and screening plant in future within lease.

2.2 Water Requirement

The total water requirement shall be 9.50 KLD for Shivay Mineral Pvt. Ltd. (Chhitapandariya dolomite quarry) respectively for domestic, green belt and sprinkling purpose, which will be source from Water Tanker from nearby village. Detail of water requirements is given below :

Table E. 3.1 Water Requirement Details

S. N.	Usage	Water Requirement	
1.	Greenbelt Development @ 2.5 L/tree	1917 Trees X 2.5 Lit/day = 4792 Lit/day or say 5,000 Lit/day.	5.00 KLD
2.	Dust Suppression @ 0.5 L/Sqm (twice a day)	Haul road Area = (1000 m Length x 4 m width = 4000 sqm.) x 0.5 li/sqm = 2000 lit /day x 2 time = 4,000 lit/day.	4.00 KLD
3.	Domestic Purpose @25 lpd/worker	18 workers x 25 lit per day = 450 Lit/Day or say 500 Lit/day.	0.50 KLD
Total ::			9.50 KLD

2.3 Power Requirement

No power is required for mining purpose only for labour, admin building. State electricity board will supply the electricity. Electric power is available in the lease area.

2.4 Manpower Requirement

The mining project will generate direct & indirect employment. About 18 per day people will get direct employment, and some persons will also be affected indirectly and employed with allied and related industries, such as transportation, maintenance, etc. Following staff & workers are proposed to be employed :-

Table E.4.1 Manpower Details

S. No.	Particulars	No. of Workers
1	Mine Manager	1
2	Mine Foreman	2
3	Blaster	3
4	Workers	12
Total		18 Nos.

3.0 Description of Environment

The area around the proposed mining site has been surveyed for physical features and existing environmental scenario. The field survey and baseline monitoring has been done from the period of **5th March 2024 to 5th June 2024** (Pre Monsoon Season).

The observations for Pre Monsoon season-(5th March 2024-5th June 2024) are summarized below:

Table E 5.1: Summary of the Meteorological

Period	Wind Speed (m/s)			Temp (°C)			Relative Humidity (%)			Rainfall (mm)			Solar Radiation		
	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg
Mar-Apr 24	7.19	0.16	2.41	39.64	13.51	26.14	97.56	15.75	46.82	5.58	0	0.04	948.98	0	244.8
Apr-May 24	8.09	0.1	3.02	44.37	21.42	33.2	66.62	10.62	28.9	0.81	0	0.005	891.06	0	204.4
May-Jun 24	9.39	0.09	3.13	47.95	24.04	36.47	72.38	6.44	26.56	0.5	0	0.003	0	0	0

3.1 Air Environment

Particulate Matter (PM₁₀):

A maximum value of PM10 is 59 $\mu\text{g}/\text{m}^3$ was observed at the AAQM- 1 & 8 and minimum value of 40 $\mu\text{g}/\text{m}^3$ was observed at AAQM-7.

Respirable Particulate Matter (PM_{2.5}):

A maximum value of PM2.5 is 30 $\mu\text{g}/\text{m}^3$ was observed at AAQM-9 and minimum value of 12 $\mu\text{g}/\text{m}^3$ was observed at AAQM 1,3,4,5 & 7.

Sulphur Dioxide (SO₂):

Maximum concentration of SO₂ is observed to be 10 $\mu\text{g}/\text{m}^3$ at AAQM-1,6,8,9&10 and minimum value of 5 $\mu\text{g}/\text{m}^3$ observed at 1,2,3,5,6,7,8,9,&10.

Oxides of Nitrogen (NO_x):

Maximum concentration of NO_x is observed to be 17 $\mu\text{g}/\text{m}^3$ at AAQM-5 and minimum value of 9 $\mu\text{g}/\text{m}^3$ observed at AAQM – 10.

Carbon Monoxide (CO):

Maximum concentrations in the region are observed to be 0.9 mg/m³ at AAQM – 2, 6 & 7 locations and minimum value of 0.1mg/m³ observed at AAQM - 8 & 9.

The overall air quality around the proposed mine lease is within the limits of NAAQ standards.

Silica

Silica in the ambient air of the 10 Km radius of the study area of the project site has been analysed from the PM10 filter paper of the Ambient Air quality monitoring stations. The result indicates that silica concentration in the surrounding of project site was found to be in the range of 0.02 μ g/m³ to 0.07 μ g/m³.

The results are compared with the standards prescribed by Central Pollution Control Board (CPCB). The overall ambient air quality around the proposed mine lease is within the limits of ambient air quality standards prescribed by CPCB.

3.2 Noise Environment

Noise levels were monitored in ten locations including project within the study area. The noise levels ranged between 52.3 to 59.9 dB (A) during day time and noise levels ranged between 42.2 to 51.7 dB (A) during night time.

3.3 Water Environment

In order to establish the baseline water quality, 6 ground water and 5 surface water samples were collected and analyzed in the study area. As per CPCB water quality criteria the class of water comes under Class A for SW1, SW3 & SW4 and Class B for SW2, SW5 & SW6 of the stations.

3.4 Soil Quality

A total of 10 samples in and around the project site are collected and analysed. It has been observed that the pH of the soil quality ranged from 7.1 (S5) to 8.1 (S4) indicating that the soil is slightly alkaline in nature.

3.5 Land Use/Land Cover of the Study Area

The project site is at Chhitapandariya village, which is in the Malkharoda tehsil of the Janjgir Champa district of Chhattisgarh, India. It is 12 kilometers from the sub-district headquarters in Malkharoda (tehsildar office) and 48 kilometers from the district headquarters in Janjgir. According to 2009 census data, Aadil is the gram panchayat of Chhitapandariya village. The village's entire geographical area is 256.15 hectares, with the project location occupying 327.98 square kilometers. Chhitapandariya has a total population of 937 people, 496 of whom

are male and 441 of whom are female. Chhitapandariya village has a literacy rate of 65.64%, with 72.98% of men and 57.37% of females being literate. Chhitapandariya village has roughly 250 homes. Chhitapandariya village's zip code is 493222.

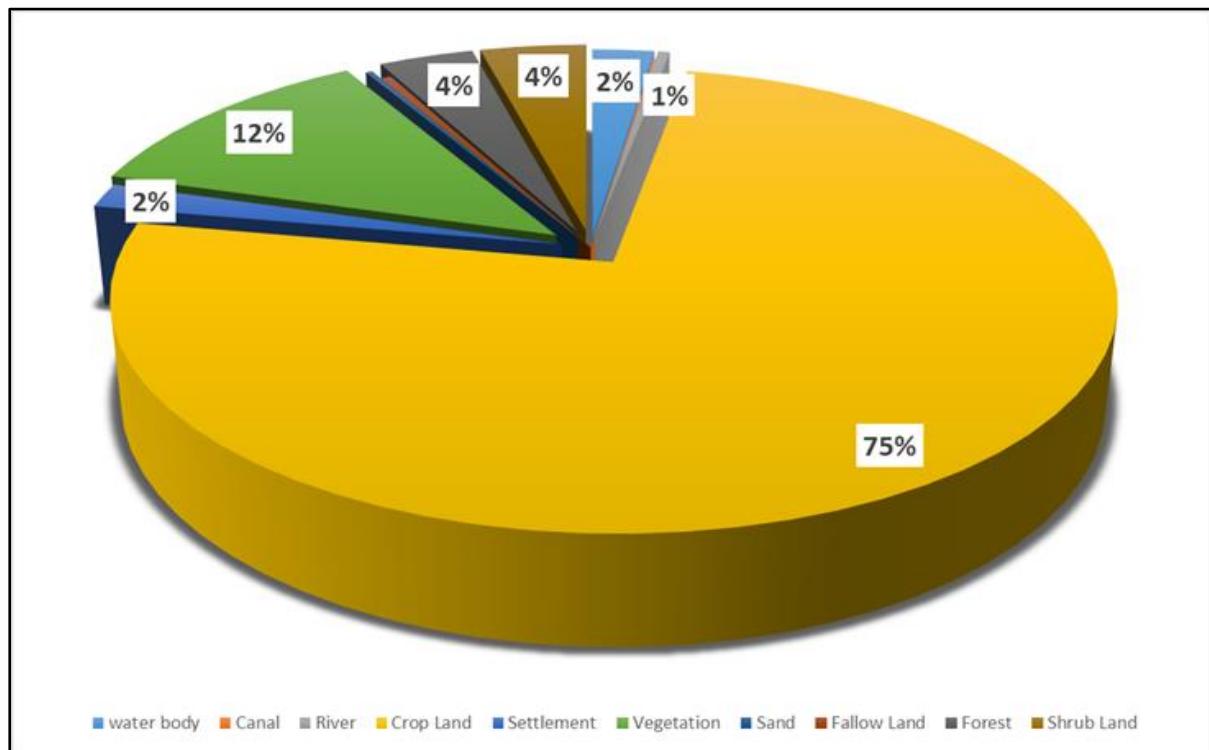


Figure E-3: LULC Classification (10 km radius of the Proposed Project Area)

3.6 Biological Environment

Based on the land use map and topographic sheet, there are patches of Chhitapandariya Reserved Forest located 1 km to the west and Bhotiya Protected Forest situated 4 km to the south east, both within 10 km of the study area. Chhitapandariya Reserved Forest (RF) in Chhattisgarh is home to a diverse range of flora typical of the region's tropical dry deciduous forests. Some of the common plant species found in this forest include Teak (*Tectona grandis*), Sal (*Shorea robusta*), Mahua (*Madhuca indica*), Tendu (*Diospyros melanoxylon*), Neem (*Azadirachta indica*), Palash (*Butea monosperma*), Saja (*Terminalia tomentosa*), Arjun (*Terminalia Arjuna*) etc.

3.7 Socio-economic Environment

The project is of mining activity of Dolomite Stone with the name of 'Shivay Minerals Pvt. Ltd. (Chhitapandariya Dolomite Quarry mine)'. This project is situated at Khasra no. 5/21, 5/22 and 5/3 at village Chhitapandariya, tehsil Jaijaipur and district Sakti (C.G.). This site is 12.20 km away from district office Sakti. According to recent censes (2011) Population of study area is (10 Km radius from project site) 160811 in 35378 households. Mail population is 80266 and female population is 80545. Highest population in study area is Naya Baradwar (NP) (8793). Within study area total working population is 53.9% and non-working population is 46.1% out of working population almost 47.7% peoples are in main working population category. And 52.3% population is in marginal population category. Dolomite Stone is basic raw material for industries.

4.0 Anticipated Environment Impacts and Environment Management Plan

Land/Soil Environment Impact Mitigation

- Before the mining activity the top soil will be scrapped and stored in the lease area and will be utilized for plantation purpose.
- The dolomite excavated from the lease area will be completely sellable resulting no dump within the lease area
- At the end of conceptual period the excavated quarry will converted into water reservoir to supply water for local use like irrigation and pisciculture.
- The propose project falls under the seismic zone –II (Low Hazard Risk Zone). Since this project will not have physical infrastructure to be constructed, no impact of seismicity is envisaged in this project. Further, this project will not change/alter the seismic behavior of the area.

Air & Noise Impact Mitigation

- Water sprinkling for suppression of dust on road and loading and unloading points
- Adequately maintained vehicles with PUC should be used for transportation, if required trucks should be covered with tarpaulin.
- Provision of PPEs such as ear plugs and muffs for the workers
- Green belt plantation and other tree plantation will help in reducing the air quality, noise, traffic related pollution and heat island effects.
- No noise polluting work shall be carried out in the night hours.
- Provision of PPE's for the workers.

- Vehicles to be serviced regularly and maintained properly to avoid any unwanted generation of air pollution, noise or vibration from vehicles.
- Proper lubrication, muffling and modernization of equipment shall be used to reduce the noise during operation phase.
- Regular monitoring of the air quality and noise levels as per the monitoring plan detailed in this EIA report shall be adopted during the operation phase, to ensure that, the noise levels are within the limits prescribed by CPCB.

Water Impact Mitigation

- Provision of temporary toilets for laborers
- Domestic waste water will be treated into septic tank followed by soak pit outside of the proposed cluster project with a safe distance and no wastewater will be allowed to be get discharged into the water body
- All stacking and loading areas should be provided with proper garland drains
- Check dams should be provided to prevent solids from wash off.
- Construction of garland drains around freshly excavated and dumped areas so that flow of water with loose material is prevented.
- The mine water should be passed through specially constructed catch pits to arrest any loose material being carried away with water.
- Any areas with loose debris within the leasehold should be planted.
- Garland drains should be constructed surrounding the waste dumps and should be connected to the surface water reservoir to avoid the run-off mixing directly to natural water channels before settling.
- Ground water table will not be intersected during the mining activity

Biological Impact Mitigation

- Green belt will be developed along the core zone boundary which will act as a pollution barrier for the biological environment.
- There is the proposal for plantation along the core zone. The drilling and transportation will be carried out during the day time only minimizing the impact on the wild fauna movement.
- Fencing around the entire mine lease area is recommended in order to restrict the entry of stray animals into the mining area.

Socio-Economic Environment Impact Mitigation

In order to mitigate the adverse impacts likely to arise in the surrounding area due to proposed project activity, it is necessary to formulate an effective mitigation plan. The suggestions are as follows:

Before Commencing and During Initial Phase:

- Communication with the local community should be institutionalized and done on a regular basis. The forum could provide opportunities to discuss local critical issues and prepare programmers of mutual benefits.
- Information regarding the proposed dragging plan should be communicated to the local community in the form of display Poster, booklets and audio-visuals.

Mining Phase:

- Project proponent should take appropriate steps to keep environment clean and healthy during construction phase.
- Provision of adequate drinking water, toilet and bathing facilities should be made available on project site also in labour camp site.
- Water shall be sprinkle/spread over the truck and road to suppress dust during transportation of mining material to control air pollution and thereby avoid adverse health impact.
- A barrier located in the direction of the wind; with a height of approximately three times the height of the storage pile for reduce PM10 emissions.
- While transportation of dragging material, truck, tractors should be covered.

5.0 Environmental Monitoring Program

Environmental monitoring shall be carried out at the locations to assess the environmental health in the post period. A post study monitoring programme is important as it provides useful information on the following aspects.

- It helps to verify the predictions on environmental impacts presented in this study.
- It helps to indicate warnings of the development of any alarming environmental situations, and thus, provides opportunities for adopting appropriate control measures in advance.

Detailed EMP plan during the operation phase is given chapter 6 of EIA report.

6.0 Risk Assessment

The hazards and its risk assessed during the operation phase of the proposed dolomite mining project are low, medium & high. The project proponents are proposed to implement all the mitigation measures to prevent the impact or consequences of the risk expected to be happened in both the project sites. The level of impact after implementing the mitigation measures will be low/medium in all the hazards identified.

7.0 Emergency Response and Disaster Management Plan

Impact of disaster can be significantly reduced through attempts at preparedness, mitigation, and post-event rehabilitation work. Based on hazard identification in the proposed project, an emergency plan has been prepared and the same plan will be implemented by the project implementing agency with the coordination of District Authorities to minimize the damage. The risk assessment and disaster management plan is detailed in Chapter 7 of the EIA report.

8.0 Project Benefits

Mining is back bone of infra-structure development of country. Proposed project has following benefits as given below:

- Employment for local people
- Revenue for the State Government in form of excise duties, GST, taxes, levies etc.
- Generate business opportunity for the people
- Need based funds will be used for welfare of people in villages
- EMP funds will improve environmental quality.
- The operation of the dolomite mining would help to improve socio-economic condition of people in villages through separate fund allocated for Need Based Activity.

9.0 Budget for Social Development

The total estimated cost of the project is 155.81 lacs. Rs. 3.12 lacs will be allocated for CER work for Need based activity for causes of village for drinking water, sanitation, education, health.

10.0 Environment Management Plan (EMP)

The detailed Environment Management Plan has been prepared based on the mining activities and the impacts imparting on land/soil, air, noise, water by the activities. The EMP and the cost for the environment protection measures are detailed in Chapter 10 of EIA report.

Table E 6.1: Expenditure Proposed for Environmental Protection Activities:

S.No.	Particulars	Capital Cost in Rs	Recurring Cost in Rs
1	Air Pollution Control	-	90,000
2	Green Belt Development	6,06,700	2,92,945
3	Maintenance of Road	-	40,000
4	Facilities for Mine workers	50,000	1,53,000
	Total ::	6,56,700	5,75,945
	Total Capital Cost in Rs:		6,56,700
	Total Recurring Cost in Rs:		5,75,945
	Total Cost of EMP in Rs:		12,32,645

11.0 Conclusions

As discussed, it is safe to say that the collection of minor minerals from the proposed lease area is not likely to cause any significant impact on the ecology of the area as the mineral is and waste generated is non-toxic and does not harm the surrounding environment.

Adequate measures will be taken to control the fugitive emissions to be generating during mining operation. Socio-economic condition of the surrounding villages will improve in long run due to involvement of local population and improvement of infrastructure facilities. Green belt development in the statutory boundary, approach roads, schools are proposed with the participation of local people. This proposed plantation in the area will improve the aesthetic look along with betterment of ecology and environment of the locality.