



**KALYANI CHARITABLE TRUST'S**  
**LATE G. N. SAPKAL COLLEGE OF ENGINEERING**

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Date: 4<sup>th</sup> November 2023

**A**  
**SITE VISIT REPORT**  
**ON**  
**ENGINEERING GEOLOGY**  
**(SE-Civil)**



**Department of Civil Engineering**  
**Late G. N. Sapkal College of Engineering, Nashik.**

**Engineering Geology site visit at Gargoti – The Mineral Museum, Sinnar**

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**Venue:** Gargoti –The Mineral Museum-422113

**Date:** 04th November 2023, Saturday at 12:15 PM.

**Class:** SE

**Faculty coordinator:** Prof. Rajeshri. R.Kuwar

**Number of Students:** 15

**No. of Teachers:** 02

**Mode of Transportation:** Bus

**Travelling Distance:** 48 km (One Side)

**Guided by:** Mr. K. C. Pandey  
Mr. Shaha Sir



**Figure 1: Gargoti – The Mineral Museum**

## **Introduction**

The Department of Civil Engineering of Late G. N. Sapkal College of Engineering, Nashik organized one day visit to Gargoti-The Mineral Museum, Sinnar on 04th Nov. 2023 for the second year student of Civil Engineering..

The visit was organized with the prior permission and guidance of Respected Principal Prof. Dr. S. B. Bagal and HOD of Civil Department Prof. Dr. R. T. Pardeshi. Along with the staff member Prof. Rajeshri.R.Kuwar have taken hard efforts and initiative for the visit.

Gargoti, The Mineral Museum (Nashik), founded by Mr. K. C. Pandey is India first & only Gem & Mineral Museum.

Gargoti's inauguration by the hand of Hon. shri. Balasaheb Thackerayji in 2001 marked the beginning of a golden era in the human – nature relationship. This museum displays Natural Minerals, Gems, Metals & Fossils, along with exclusive Crystal Carvings, Collected from India & around the world. The Natural Minerals & Gems on display are starling 65+ million years old.

## **Objectives**

1. To understand natural process of formation of mineral and rocks.
2. To understand the stratigraphy of Maharashtra- “The Deccan Traps” this is one of the largest continental flood basalt provinces on earth.
3. To visit the Gargoti Mineral Museum was to identify and know characteristics of various minerals.
4. To identify main rock forming minerals of the earth crust.

## **Summary**

### **Stratigraphy of the area**

The end of the Mesozoic era was marked by the unique outpouring of enormous lava flows which covered extensive area in the peninsula. These lava flows occurred mainly through long and narrow fissures. Therefore, they are called “fissure eruption “. At a few places like Girnar hills and Ranpur, however, the eruption was of the “central type”. Based on the fact that these lava flows occur in Deccan (i.e South India) and produce step like appearances of their outcrops, they are called “Deccan traps”. Similarly, as these are basaltic in composition and have produced flat topped plateau – like features, these are also called as “plateau basalts”.

### **• Occurrence or Distribution**

The present area occupied by Deccan traps is over 5,00,000 sq.km. They are found in Gujarat (Kutch), Madhya Pradesh, Maharashtra, Karnataka and Andhra Pradesh, they occur more or less as a single huge patch. They extend up to Belgaum (in Karnataka) in the south, Rajahmundry (in Andhra Pradesh) in the south east.

Amarkantak in the east, and Kutch in the North West

• **Lithology**

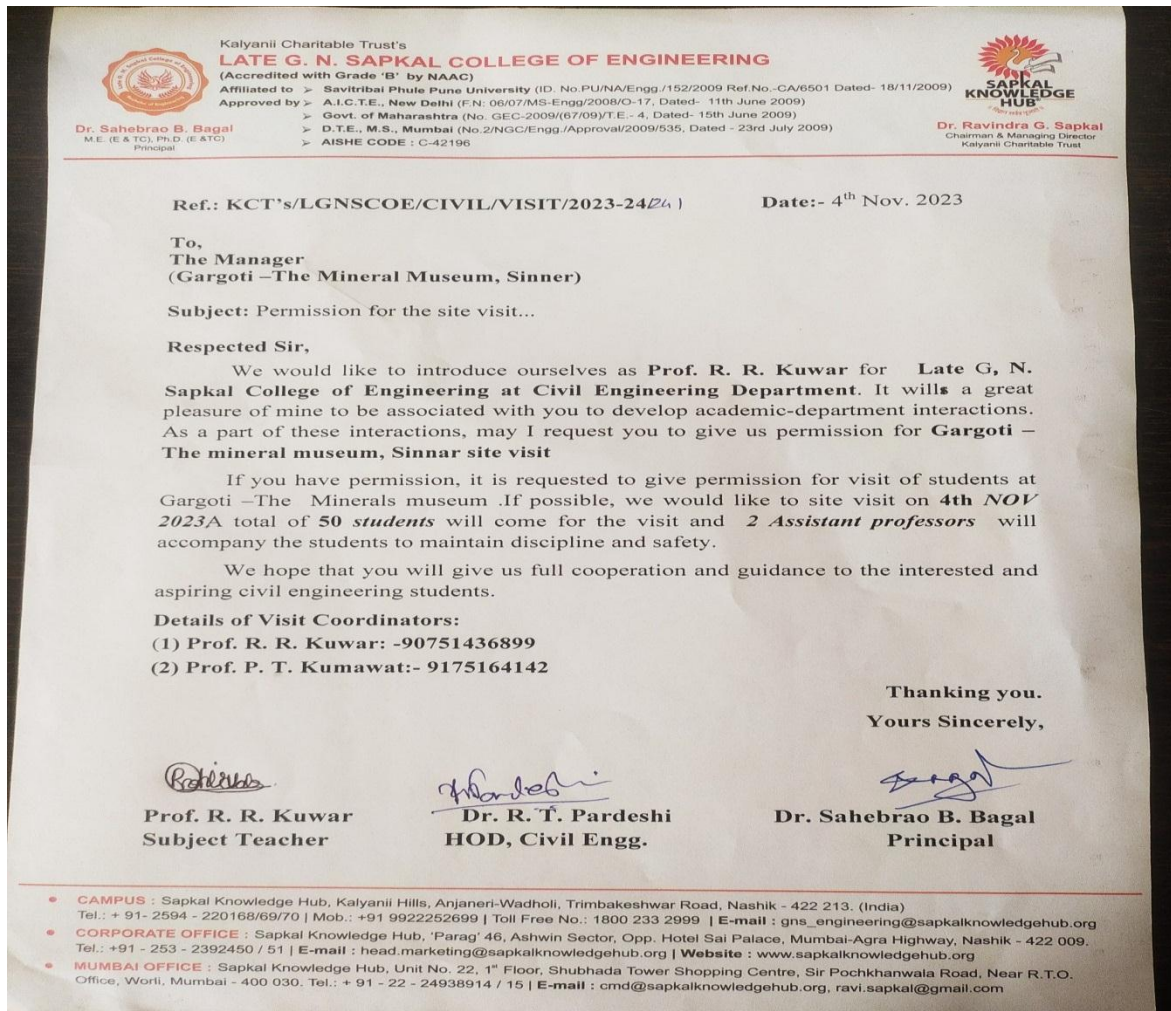
The Deccan traps are essentially basalts. They are either vesicular or amygdaloidal. Sometimes, they occur intercalated with Inter Trappeans and ash beds. The Inter Trappeans are fluviatile or lacustrine sedimentary formation and have a rich fossil content. They have been formed during the intervals of successive eruption.

• **Fossil Content**

Many animal and plant fossil have been found in Inter Trappeans which occur in between the Deccan traps. The remains of algae, palm and dicotyledonous trees occur as important plant fossils. The animal fossil includes those of gastropods, frogs, tortoise and crustacean.

**Permission for the Visit**

The college wrote a permission letter to The Gargoti – The Mineral Museum, Manager, to obtained permission.



**Figure 2: Site visit permission letter**



## **Economic Importance**

### **1. Building material**

Being dense, hard and durable. Deccan trap make good building stones. But as their colour is black, they are used limitedly. The “Gateway of India” in Bombay is built of these rocks. As road metal, the trap is excellent for macadam or tarred roads. They are hard, tough, wear resistant and have a good building property. They are also very good for use as aggregate in cement concrete.

### **2. Gemstones**

Many semi-precious stones like agate, onyx, carnelian, and amethyst occur as geodes in trap.

### **3. Bauxite**

Weathering of the Deccan traps has produced very high grade bauxite deposits at many places. Bauxite deposits of Gujarat, Kolhapur, Katni, Jabalpur, Mandla, Sarguja, etc, have been formed this way.

### **4. Laterite**

Iron – rich laterites are used in some places as building (dimension) stones.

### **5. Black cotton soil**

The black soil formed out of Deccan traps know as a regur, is highly suitable for growing cotton.

### **6. Ground water**

The vesicular structure and associated interconnected joints or fissures help these traps to possess reasonable ground water potential.

## **Gargoti – The Minerals Museum, Sinnar Site Visit Photos**



**Figure 3 : British Minerals**



*Figure 4: Apophyllite with Stilbite (Jalgaon)*



*Figure 5: Apophyllite ,stilbite ( Nashik),Apophyllite (Jalgaon), Quartz Coated calcite (Jalgaon),Finaropophyllite on stilbite ( Ahmednagar)*



*Figure 6*



*Figure 7*





*Figure 8: Apophyllite with stilbite ( Jalgaon)*



*Figure9: Apophyllite stilbite (Aurangabad)*





**Figure 10**



**Figure 11**



**Figure 12 : A Tribute to Mother Earth & Nature  
Highlights of the Museum's**

- Houses the biggest & the finest collection of Indian Zeolite Minerals in the world.
- Display rocks form Moon & Mars
- Showcases Fossils of Mammoth & Dinosaur
- Exhibits the finest collection of crystal Carvings in the world
- Souvenir shop with exclusive stone collection on sale

## **Conclusion**

Engineering Geology site visit to the Gargoti – The Mineral, Museum, Sinnar was a valuable experience for the students. The museum authorities are very helpful and give all the information to enhance the knowledge of students about the rock formation, types of rocks, quality of rocks & how they could be used. The museum also has good collection of precious & semi-precious stones and one gets information regarding their formation and method of abstracting them and also the places where they are found.

The students are grateful to the Museum manager and his staff for their hospitality and for sharing their knowledge with them. The students are also grateful to their faculty members, Mrs. Rajeshri .R. Kuwar and Mr. Pradeep Kumawat Sir for organizing the visit.

## **Outcome**

- To understand the stratigraphy of Maharashtra as we could witness the world's largest flood basalt province. It enhanced our knowledge on the economic importance of Deccan Trap rocks.
- To see rare collection of geodes and other precious and semiprecious minerals of Deccan Traps along with impotent fossil of Dianosorous and other creatures.
- To understand various physical properties of the minerals and their identification on hand samples.
- To understand main identifying properties of Geodes, especially minerals of Maharashtra state.
- To understand physical processes like erosion and weathering that are responsible for reshaping earth crust.



**Figure 13: Group photo of sit visit at Gargoti-The Mineral Museum, Sinnar**