

**Residential Training
Program on Engineering
Geological Mapping**

11-16 September 2022
Banikhet, Himachal Pradesh



Program Limited to Thirty Participants

In association with:

Yog Manav Vikas Trust (YMVT)

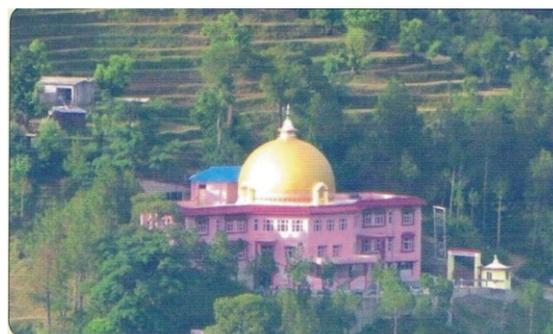
Introduction

Every infrastructure project presents a unique set of ground conditions related to regional and site-specific geological setting. A project site, therefore, demands the understanding of the subsurface geological model addressed through detailed **Engineering Geological Mapping (EGM)** as the first major step in a series of surface and subsurface investigations. Going a step further, the detailed engineering geological mapping is considered the backbone of techno-economic investigation and exploration programs, layout optimization, and basis for all subsequent desktop projections of geological conditions for various civil components. The results of subsurface explorations and field and laboratory tests compliment such engineering geological inputs and help define the engineering properties of rock mass in detailed designs.

The Program

A systematic approach alone helps in developing a dependable engineering geological map defining subsurface geological model with lithological details and collection of structural data in understanding the engineering properties of the rock mass. The proposed five-day field training program by Dr Dhawan Academy of Geologists encompasses complete engineering geological mapping of a selected area in the vicinity of Chamera-1 Hydroelectric Project of NHPC. The participants would be introduced to all possible components and plotting of EGM (Engineering Geological Map) through field and desk work. The program is built to share the nuances of the associated field and desk top activities in delivering a world class dependable engineering geological map. The program content lays emphasis on general overview of principles and genetic concepts of geological mapping and allows the participants in successfully observing, measuring & recording geotechnically significant information in field, followed by plotting, processing and analysis of data in the preparation of the Engineering Geological Map.

The field training program is beautifully complimented by a unique opportunity for the participants to practice **Inner Engineering** through yoga & meditation by the yog gurus of the Yog Manav Vikas Trust, Banikhet..



Yog Manav Vikas Trust, Banikhet, Himachal Pradesh

Key Elements

- Field techniques for conducting EGM
- Recording of structural features
- Preparation of Engineering Geological Map and Sections
- Data inputs for characterization of rock mass
- Data Processing using Software
- Introduction to Engineering Geological Model

Benefits

A professional Engineering Geologist capable of dependable engineering geological mapping and rock mass characterization through collection and analysis of structural data always forms an integral part of the team entrusted with the investigation, design and execution of an infrastructure project. The proposed program on engineering geological mapping is customized to provide an insight to the participant into the field and desk top techniques leading to the preparation of the engineering geological map. The program is sure to help the participant in developing the required acumen as a professional Engineering Geologist.

Program Facilitators

Dr Dhawan Academy of Geologists (DDAG Private Limited)

["http://www.dhawanacademy.com"](http://www.dhawanacademy.com)

Founded by Dr Gopal Dhawan, formerly Chairman-cum-Managing Director, Mineral Exploration Corporation Ltd., and formerly Executive Director, National Hydroelectric Power Corporation, the Dr Dhawan Academy of Geologists is a virtual institute and consulting firm providing education, training and consultancy in the field of Engineering Geology, Geotechnical Engineering, Rock Mechanics and Mineral Exploration. The team at the helm of the affairs of the Academy includes some of the eminent professionals in the field of infrastructure development and academics in India. Our experts have been captains of infrastructure industry and possess wide experience of working in reputed government, public sector and private organisations in the country.

Yog Manav Vikas Trust

["http://ymvt.org"](http://ymvt.org)

Yog Manav Vikas Trust (YMVT) is a voluntary philanthropic Non-Government Organization (NGO). Under leadership of Smt Kiran Dodeja, Chairperson, the trust is making sustained efforts in improvements of educational, social and economic well being of the rural and underprivileged sections of the society. YMVT was established in Sept. 2001 by a small group of motivated individuals having an ardent zeal to serve humanity. Since then several likeminded people and organizations have joined the expedition in one way or the other and helped the Trust in pursuit of its objectives.

The Program Schedule

Reporting: Sunday the 11 September 2022 at 16:00 hrs; Antarnirman Complex YMVT, Sukrain Bai, Banikhet (3kms from Banikhet on CHAMBA road), Himachal Pradesh

Day-wise Program

Schedule

(Sunday the 11 September 2022)

| | |
|-------|--|
| 16:00 | Reporting |
| 17:00 | High Tea followed by Group Introduction |
| 17:30 | Outline of the program by Shri Yogendra Deva |
| 18:00 | Group Discussion |
| 20:00 | Dinner |

Field Day Routine at a Glance

(Monday 12 – Friday 16 September 2022)

| | |
|---------------|--------------------------------|
| 07:45 - 08:00 | Briefing for the day |
| 08:00 - 08:30 | Breakfast |
| 08:30 - 14:00 | Field Work (including transit) |
| 14:00 - 14:30 | Lunch |
| 15:00 - 17:00 | Desk Work and Discussions |
| 19:00 - 19:30 | Meditation Session by YMVT |
| 20:00 | Dinner |

| Day/Date | Field Work | Desk Work/ Discussions |
|---------------------|---|---|
| Day-1 12.09.2022 | Visit to Chamera Stage 1 Dam site & adjoining area | Presentation on Geological Aspects of Dam Breathing for good health and mind control |
| Day-2 13.09.2022 | Components of EGM Identification of outcrop, survey control points, overburden classification, lithological details, rock sampling, recording structural orientations | Plotting of field data on EGM (sketch outcrop boundary, data location, lithology, structural data, etc.) |
| Day-3 14.09.2022 | Systematic Discontinuity Survey Introduction and selection of scan line, structural data collection (orientations, engineering properties, photographs) | Plotting of field data on EGM (data location, structural data, plotting & analysis of discontinuity data) |
| Day-4 15.09.2022 | Traverse Geological Mapping Dalhousie – Khajjar – Chamba litho-structural data collection, field photographs, etc. | Data plotting & value addition to regional geological map |
| Day-5 16.09.2022 | Geology of Head Race Tunnel Area Data collection for rock mass classification in field | Tutorial on rock mass classification, Q&A and Valediction |

Program Faculty



Dr. GOPAL DHAWAN
Founder & Chairman, DDAG
Consulting Engineering Geologist
Formerly Chairman-Cum-Managing
Director, MECL
Formerly Executive Director (Geo-tech &
Project Investigations), NHPC

and Rock Mechanics has prompted him to lay foundation of Dr. Dhawan Academy of Geologists (DDAG Pvt. Ltd.)



DEVA, Yogendra
Director & Advisor (Geology & Strategy), DDAG
Consulting Engineering Geologist
Head Geology, ICCS Ltd
Senior Consultant, SMEC India Ltd.
Formerly Vice President for Asia, IAEG
Formerly Director (Vol. Retd.), Geological
Survey of India

irrigation and communication projects in India (entire Himalayan belt, Northeast and Peninsular area), Nepal, Bhutan, Myanmar, DR Congo, Burundi, Indonesia, Rwanda, Tanzania and Papua New Guinea. Although not very fond of travelling, his work has taken him also to countries like Portugal, New Zealand, Italy, South Africa, France, United Kingdom, Malaysia, China, Japan, Vietnam, USA and Singapore. Yogendra also serves as a visiting faculty and can be seen as invited speaker both at home and overseas.



MATHUR, Naresh
Advisor (Technical & Coordination), DDAG
Consulting Engineering Geologist
Formerly General Manager, NHPC

Geologist with Aimil Ltd and DMR Hydroengineering & Infrastructure Limited. He is actively associated with Indian Society for Rock Mechanics & Tunneling Technology, New Delhi, Indian Society of Engineering Geology, International Hydropower Association, and International Association of Engineering Geology.



DODEJA, S K
Founder of Yog Manav Vikas Trust, Banikhet
Formerly Director (Projects), NHPC Ltd.

Dr. Gopal Dhawan is a versatile Engineering Geologist who had been actively associated with investigation, planning, design and construction of several Hydro Power and Infrastructure projects in Indian Subcontinent in a carrier spanning over 40 years. After completing his M. Tech in Applied Geology from University of Roorkee in 1979, he joined NHPC as an Executive Trainee and rose to the level of Executive Director (Geo-Tech and Project Investigations). He superannuated as CMD, MECL. The ISM Dhanbad (Now IIT) awarded him PHD on his research on "Correlation of Rock Quality Parameters and Support System in Himalayan Tunnels".

His passion and commitment to Vocational Education in Geology, Exploration

"Absorbing intricacies of geology at project sites makes me feel at home".

That's Yogendra Deva, a consulting Engineering Geologist for over 42 years and currently Head-Geology at ICCS Ltd. and Senior Consultant at SMEC India. A 1974 Post-graduate in Applied Geology from University of Delhi, and voluntary retired formerly Director, Geological Survey of India, Yogendra has served the International Association for Engineering Geology and the Environment (IAEG) as Vice President for Asia, and Indian Society of Engineering Geology as Secretary and Editor for long durations.

Yogendra has carried out and supervised feasibility, DPR and construction stage engineering geological investigations of over hundred hydropower,

N K Mathur has completed his Master's in Geology from Jammu University. He started his professional carrier with Irrigation Department, Govt. of Gujarat and was associated with medium irrigation schemes and the prestigious 'Sardar Sarovar (Narmada) Project. He joined NHPC in 1985 as a Geologist and possesses wide experience of geotechnical investigations of various mega hydropower projects. He has extensively contributed in field during construction stage of projects like Chamera Stage I (540 MW), Teesta Stage V (520 MW) and Subhansiri Lower (2000 MW) in various capacities. As General Manager (Geotech), he looked after Geotechnical investigation of various hydroelectric projects in India, Bhutan, Myanmar and compiled Detailed Project Reports. At present he is working as a Consulting Engineering

Shri S. K.Dodeja by profession is a Mechanical Engineer, having vast experience. During the last 50 years he has made his name synonymous of "Progress by Practice". A well renowned name in hydro-engineering having rendered proficient advice on concept to commissioning of hydro projects, Shri Dodeja has now transformed his expertise & energy in the understanding of human engineering. He has authored a book on intricate complexities of human mechanism which helps to understand our internal system. Shri Dodeja has now become a "Institution" on "wellness" of human beings at his Yog Manav Vikas Trust (YMVT), situated in the picturesque Himalyan terrain near Banikhet in Himachal Pradesh.



MATHUR, Ashu
Consultant & Faculty (Mineral Exploration), DDAG
Formerly Head (Corporate Planning & Strategy),
MECL

Ashu Mathur is M.Sc in Geology from Rajasthan University, Udaipur and M.Sc in Applied Geology from the Maharaja Sayajirao University of Baroda, Vadodara.

He joined Rajasthan State Ground Water Deptt in the year 1985 and later in 1990 he joined Mineral Exploration Corporation Ltd.(MECL). During his profession, he has carried out exploration of Coal in different blocks of Chirimiri, Koiriagarh and Sohagpur coalfields as well as exploration of Lignite in the Lignite fields of Bhavnagar (Gujarat), Bikaner & Barmer Lignite fields of Rajasthan and prepared more than 20 Exploration Reports. Later, he was posted to Business Development & Planning division and carried out CBM

studies, MIS work as well as Liaising with Administrative ministry. He was also the Technical Secretary to CMD and simultaneously carried out the Public Relation work of the company. Being Head (Corporate Planning & Strategy), he was associated with long term Strategic Plan for MECL "Vision 2030" document before his superannuation.

He is a Life member of Indian Geological Congress as well as Indian Society of Engineering Geology, and successfully participated in a number of delegations in International forums at Canada, South Africa, Peru and Australia and also presented Paper in International Geological Conference in 2016 at Cape Town, South Africa.



