



SARATHY GEOTECH AND ENGINEERING SERVICES

NEWSLETTER

DECEMBER 2022 – JUNE 2023



FROM THE MD'S DESK

Dear Esteemed Colleagues and Friends!

It gives me immense pleasure to place on record, our successful completion of 15 years since inception in 2007. This feat of SGES wouldn't be possible without each and every one of your efforts, backed by our consultants, suppliers, and customers in the upstream and downstream supply chain. Over the last one and a half decade, we have faced an ample amount of challenges in business, projects, people, and processes. At SGES, we prioritize investing in people, processes, and technology to be a preferred choice for employees, customers, and suppliers. As an Indian-based MSME, we proudly serve customers in almost 20 countries. In my recent interactions, all customers across diverse regions have given amazing feedbacks.

Representing Pile Dynamics, USA, as technical partner is an honour for us and more of a responsibility in disseminating knowledge, providing tech support and conducting training programmes. We have trained more than 1000 engineers over the last 3 years in India and abroad on Deep Foundation Testing. Introducing high end multipurpose drilling rig from TMG Manufacturers, USA has made inroads in the India and Saudi markets of quality geotechnical investigation and got appreciation from High speed rail and several metro projects for the quality and speed of data acquisition.

During the pandemic, our dedicated team persevered, working on projects both in India and overseas, showcasing resilience and determination. I extend my gratitude to everyone for maintaining a safe work environment and contributing to SGES being incident-free since its inception. Let's sustain these safe practices.

After PT SGES in Jakarta, Indonesia a few years back, I am happy to announce our Abu Dhabi office and Lab was established this year to cater to the market in the region. We are in the advanced stage of incorporating an entity and establishing a laboratory in Saudi Arabia soon.

"At SGES we are in the process of scaling the business and continue to invest in Employee happiness, R&D, and digital geotechnics for a sustainable future."

I acknowledge the dedication and sacrifice of my parents and other family members together with all the esteemed colleagues, friends & well-wishers who have been instrumental and guiding force throughout these 15 years. A special & well deserved mention to Anupama and Shreyas, as I value their unconditional support, sacrifice and pushing me in the entire business and SGES journey.

Team SGES has set ambitious goals for the current year (H1) and future years (H2 and H3). Market outlook too is bullish in the current and coming years. With positive affirmation, I will do it, we can do it and we will do it, I wish all of you the very best with a safe, healthy and prosperous life in the years to come.

Namaste and Jai hind!

With the warmest regards,

Dr C R Parthasarathy
Founder & Managing Director, SGES

OVERVIEW OF GEOPHYSICAL METHODS OF INVESTIGATION THROUGH A CASE STUDY – MASW & ERT

Dr. Bhavesh Pandey, Sr. Geotechnical Engineer

Introduction:

Geophysical methods are popular way of identification of subsurface strata during reconnaissance survey before detailed geotechnical investigation. These methods are also useful to confirm if there are any major changes at the site where minimal borehole has been made for geotechnical investigation. This way the total investigation cost can be optimised to a great extent. Most common geophysical methods are Seismic Methods, Electrical Methods (Electrical Resistivity Test), Electro-Magnetic Method (Ground Penetrating Radars) etc. This article presents results from a recently completed study for a mining project where Seismic and Electrical methods are used in conjunction to understand the subsurface soil layering.

Results and Discussion:

The results of field measurements and resulting profile obtained from the analysis of the resistivity values are discussed along with MASW. The figures for ERT results are presented with a colour scale in terms of resistivity values. Also, the same pictures are marked in terms of physical features these resistivity values translate into for better understanding and engineering use.

i. Plot 1:

The profile (Figure 9a) obtained from the analysis of the records suggests a soft soil layer is present above the depth of 5 m with a VS of 200 – 300 m/s. Below 5 m depth, two distinctive features can be seen at both the ends of the profile, having VS in the range of 600 – 800 m/s. These features can be classified as dense soil or weathered rock or soft rock. These features seem to be up to 50 m from start and 100 m from start to end of profile. Between these two features (from 50 m to 100 m from start of line below the depth of 5 m) a softer layer of the soil has been found with the VS in the range of 400 – 600 m/s.

A profile obtained from ERT survey is also presented in Figure 9b. The section captures material interpreted as Iron rich clay and Alteration (due to weathering) as interpreted from the resistivity values. With detailed comparison of the results of MASW and ERT we can see that both of them agree with each other. While reading the two results it must be noted that ERT profile is starting from start of line and MASW profile starts at 23 m from start of line. Both the profiles show a softer section at the centre of line with rock or stiff soil type material at both the ends.

ii. Plot 2:

The profile (Figure 10a) obtained from the test suggest a geomorphological formation where depth of softer soil cover is increasing with distance from hilly Nala in the close proximity. The top layer which has varying thickness of 5 – 20 m suggest a landfill created by engineered fill has shear wave velocity of 200 – 400 m/s. At the start of the profile up to 45 m from start a stiff soil or soft to medium type rock formation can also be interpreted at the depth of 5m. The sloping layer has shear wave velocity of 600 – 800 m/s which can be interpreted as stiff soil formation mixed with pebbles (characteristic material dumped by hilly Nalas) or soft rock.

Figure 10b represents an inverse model of resistivity section for traverse line of 240m. ERT line was located 15 m away from the MASW profile but they can be used for correlation purpose and validation. The ERT section also suggest a sloping geomorphological profile (although not with similar slope as observed in MASW). Also, a softer layer is observed in MASW around 75 m from the start of line. The ERT results also suggest a similar formation.

Summary and conclusion:

Two geophysical methods had been employed for the survey namely Multi – Channel Analysis of Surface Waves (MASW) and Electrical Resistivity Tomography (ERT). The results of these two surveys are presented with interpretation and explanation. There is only one line where MASW and ERT has been performed over the same alignment i.e. Plot 1. For this line, the results of both the tests agree. Both the results show two rock or dense soil masses separated by stiff soil. Although other MASW line do not coincide with nearby ERT line (Plot 2) but still their results can be compared to some extent due to proximity.

This study shows the use of geophysical survey to identify detailed subsurface strata up to great length without borehole or trenching. If a geophysical survey is planned with care it can save lot of resources required for geotechnical investigations using boreholes. Geophysical survey provides an approximate information of the site but the information can be obtained for larger area. This information can further be used to identify the critical areas for detailed and accurate geotechnical investigation thus optimizing the required number of boreholes.

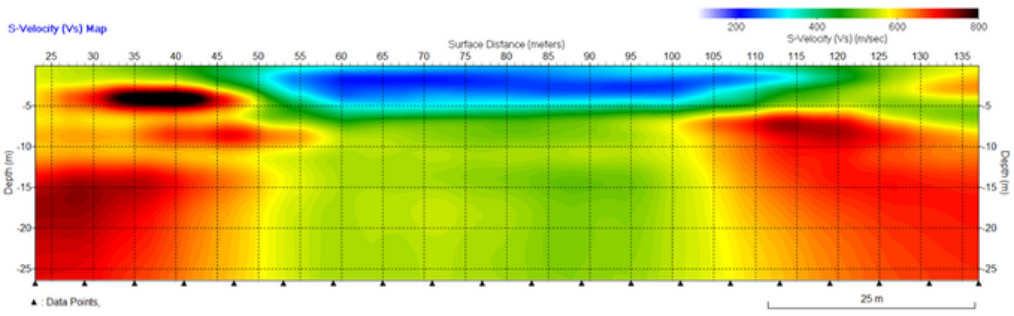


Figure 9a: 2-D shear wave velocity profile for Plot 1.

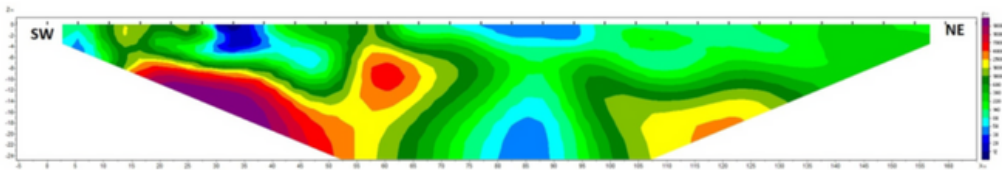


Figure 9b: Electrical Resistivity tomographic section of survey line for Plot 1

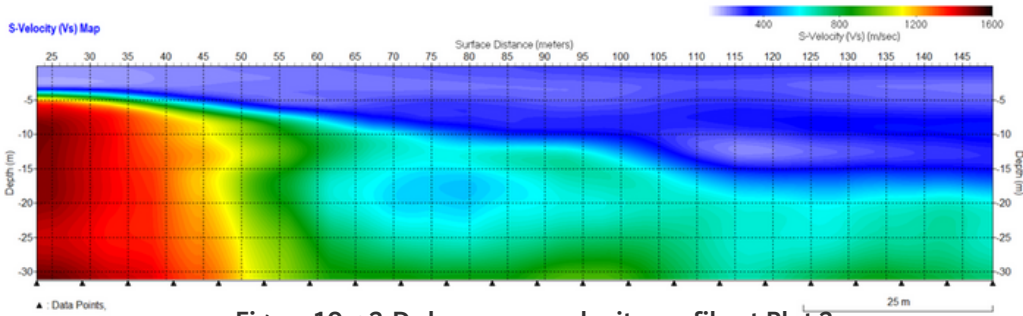


Figure 10a: 2-D shear wave velocity profile at Plot 2.

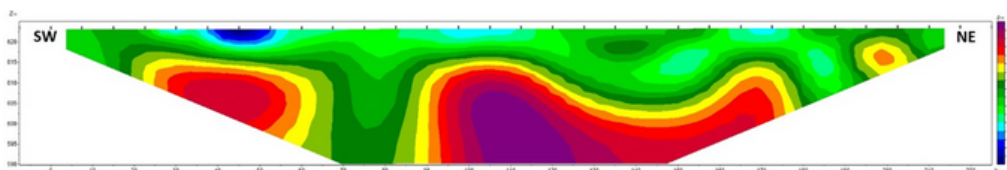


Figure 10b: Electrical Resistivity tomographic section of survey line at Plot 2



IS YOUR TOMORROW EXACTLY THE WAY AS YOU IMAGINED IT TODAY?

Many years back, I was engrossed in the American detective mystery series called “Monk”. I gained some valuable insight & thought of sharing it with you. The series revolves around the protagonist Mr. Adrian Monk, a detective for the San Francisco Police department [SFPD]. Following the unfortunate death of his wife Trudy, Monk experiences a nervous breakdown, leading to his discharge from the force and becomes a recluse. After extensive treatment, he manages to venture out of his house with the help of a nurse/assistant.

The breakthrough allows him to take on roles as a private detective and consultant for the homicide unit, despite the limitations rooted in his obsessive-compulsive disorder [OCD], which has heightened following Trudy's death.

These same personal struggles, particularly his battle with OCD, ironically become instrumental in solving cases due to his sharp memory, specific mindset, and attention to detail. As a result, Mr. Monk emerges as one of San Francisco's most successful & sought-after private detectives. Despite his success & laurels, his ultimate aspiration remains the reinstatement of his Detective Badge to rejoin the San Francisco Police department as an enlisted detective. To achieve this, he starts on a psychiatric treatment journey spanning five years in order to regain his badge at the SFPD. However, the transition back to the force turns out to be more challenging than he anticipated. The uneventful bureaucracy, incompetent peers, unfavorable work environment makes it extremely troublesome for him to continue his work.

He rushes to the therapist's office, clutching his badge tightly, expressing his distress, saying “This was my dream, but it's making me miserable!” He says, “I can't believe it. I used to be very happy before. Why didn't you warn me?”

The doctor labels it as “Aspirational Regret” which occurs when individuals achieve a goal only to find it doesn't meet their expectations. It took Mr. Monk five years to realize his dream, but merely five days to recognize he had been pursuing a nightmare all this while. Consequently, he immediately returns his badge and resumes as a private detective, providing consultation to the homicide unit.

While contemplating on this, I was completely awestruck when I saw this episode, imagining the kind of research the writers had done on this topic of “Aspirational Regret”.

What I personally learnt from the above story is:

Regret is unavoidable and it serves a purpose. It arises from our sense of guilt and embarrassment, driving us to undo any wrongful things and make more thoughtful decisions in the future. Every choice we make comes with opportunity costs, as selecting one path means forfeiting other choices and their potential benefits.

Hope you enjoyed reading this.

Aravind T M
Senior Executive- Admin

CSR ACTIVITY



BLOOD DONATION CAMP

SGES, in collaboration with the Rashtrottana Blood Centre, successfully organized a blood donation camp right here at our office premises. The event was a resounding success, thanks to the remarkable participation and dedication of our employees. Their enthusiasm and altruism shone brightly as they generously donated their blood to save lives in our community.



NEW POSH COMMITTEE



We are pleased to announce the formation of SGES's Prevention of Sexual Harassment (POSH) Committee, a crucial step in our ongoing commitment to maintaining a safe and respectful workplace. This committee will be instrumental in addressing and preventing instances of harassment, fostering a culture of trust, and ensuring that every member of our organization feels secure and valued.

The elected committee members are Anupama Parthasarathy, Priyadarshini H V, Vidya Tilak B, Arun Talkad, Manjula Nagaraj(external member)

AWARDS

Dr. C R Parthasarathy, Founder & MD ; Dr. Malavika Varma, Sr. Geotechnical Engineer and Ms Ashitha C, Geotechnical Engineer - Sarathy Geotech and Engineering Services Pvt Ltd receiving jury award in the category 'Engineering, Procurement and Construction' from Shri. Bhanu Pratap Singh Verma, Hon'ble Minister of State, Ministry of Micro, Small and Medium Enterprises, Govt. of India & Mrs. Juuhi Rajput – MD, Arrucus Media Pvt. Ltd.



National Achievers Recognition Forum awarded Dr CR Parthasarathy "Best Leadership of the Year 2022". Mr Sumanth H C and Ms. Sangeetha K M represented SGES in the award function at New Delhi

SGES PRESENCE AT EXHIBITIONS



ISOG 2022, CHENNAI



IGS 2022, KOCHI



IKTVA 2022, SAUDI ARABIA



ADIPEC 2022, ABU DHABI



IEW 2023, BANGALORE

WORKSHOPS AND PAPER PRESENTATIONS

- Mr Sumanth H C Presented paper on “Relative Comparison of Integrity Testing Methods for Pile Foundations” during International Conference on Transportation Geotechnics (GeoTRANS 2022) on June 2022.
- “Coastal Reservoir- Solution of water woes of Future Generation”, a session by Dr. C R Parthasarathy during an event organised by IGC 2022 in association with IGC Kochi and CUSAT on Dec 2022
- A talk on Overview of Deep Foundation testing was given by Dr. C.R Parthasarathy on Dec 2023 which was conducted in association with Bangalore Institute of Technology, IGS Bangalore chapter, Institute of concrete Institute, Bangalore and Instruct Engineering.
- 3- Day Training on QA/QC of Deep Foundation Testing by Dr CR Parthasarathy was Conducted along with PDCA Exam on Dec, 2022
- Mr Nandhagopal A R Presented paper on “Significance of Energy Transfer Ratio in Standard Penetration Test and its Influence on Foundation Design” during International Conference Indian Geotechnical Conference (IGC 2022) on Dec 2022.
- Ms Ashitha C Presented paper on “Geographical Risks on Foundation Assessment of Mobile Offshore Drilling Units” during International Symposium on Offshore Geotechnics (ISOG 2022)) on Dec 2022.
- A presentation on “Assessment of Pile capacity during refusal condition-Case study” by Dr. C R Parthasarathy was held at AMET University.
- Dr. Malavika Varma, Geotechnical Engineer, delivered a lecture on the topic "Tunneling construction: Past, Future and Scope" on the event Structura, Jan 2023.
- Mr Sumanth H C Presented paper on “Assessment of Pile Load Capacity by Static and Dynamic Approaches” during 9th Indian Young Geotechnical Engineers' Conference (9IYGEC 2023) on Feb 2023.
- Dr Parthasarathy Presented lecture on “Geotechnical Investigation - Past, Present and Future” during a workshop organised by IGS Bangalore on March 2023
- Dr Parthasarathy Presented lecture on “Geotechnical Investigation - Past, Present and Future” during a workshop organised by IGS Bangalore on March 2023
- Lecture on QA/QC of Deep Foundation at Manipal Institute of Technology was delivered by Dr. C R Parthasarathy on April 2023
- A presentation on “Essential Geotechnics for Tall Structure” by Dr. C R Parthasarathy at CESE Fiesta 1.0 organised by Civil Engineering student association festival held at IIT Ropar on April 2023.
- An online workshop on “ QnA - Deep Foundation Testing” by Dr CR Parthasarathy was organised in June 2023.
- 3- Day Training on QA/QC of Deep Foundation Testing by Dr CR Parthasarathy was Conducted on June 2023
- Mr Sumanth H C Presented paper on “Sustainable Implementation of Standard Geotechnical Practices to Optimize the Foundation Design of a Residential Building: A Case Study” during International Conference on Interdisciplinary Approaches in Civil Engineering for Sustainable Development (IACESD-2023) on Jul 2023.





**DEC 2022-
JUNE 2023 –
IN REVIEW**

25+

**MAJOR OFFSHORE
PROJECTS BOOKED**



SGES is proud to have supported major infrastructure projects in India such as the Mumbai-Ahmedabad High Speed Rail (MAHSR), Bangalore Suburban Rail Project (K-Ride) and the National Power Corporation of India Limited at Hisar, Haryana (NPCIL). In the global offshore environment, we have served global giants such as Saudi Arabian Oil Company (ARAMCO), and Abu Dhabi National Oil Company (ADNOC) through various EPC contractors such as L&T, NPCC, Sapura and Subsea 7.

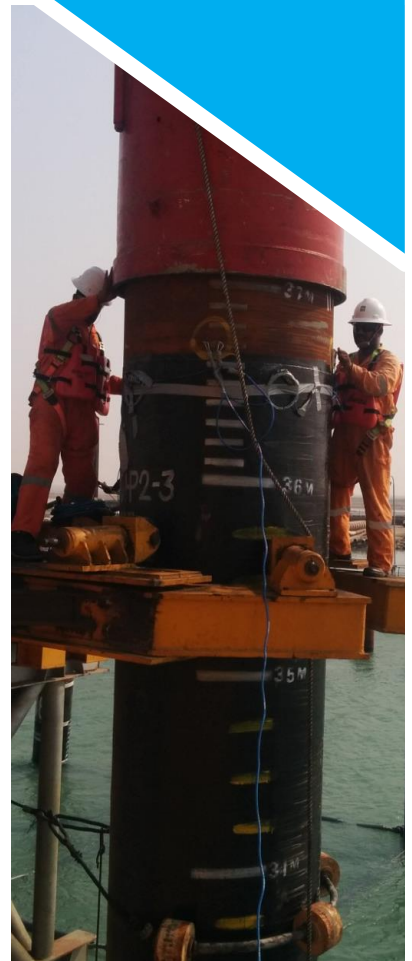


10+
**MAJOR ONLAND
PROJECTS BOOKED**



10+

**PROJECTS BOOKED BY
SGES INDONESIA**



TEAM INDONESIA



best moments

POSITIVE VIBES

SERVICE CAPABILITIES

Sarathy Geotech & Engineering Services Private Limited provides Geo-Technical, Geophysical and Engineering Services for various industries.

We offer a spectrum of services with an integrated approach for offshore, near-shore and onland projects.

1

DESKTOP ENGINEERING

Factual & engineering reports,
Pipeline-Soil Interaction (PSI,USI,CSI)
Site Specific Assessment of Jackup Rigs
Pile Drivability Analysis

2

OFFSHORE GEOTECH

Onboard Geotechnical Laboratory
Pile Monitoring Services
Jack-up Rig for Nearshore Investigations
Forensic Geotechnical Consultancy

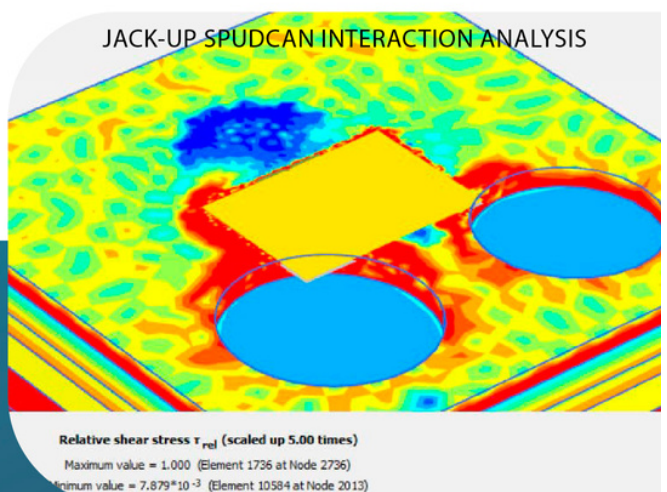
3

ONLAND GEOTECH

High-Quality Geotechnical Investigations
Geophysical Survey and Analysis
Design of Foundations
Slope Stability and Shoring Desings

Our services are not limited to the aforementioned points. With the fullest efforts of our super-talented roster of Doctorates, Masters, and well-experienced engineers, we offer the best of Geotechnical Engineering Services using state-of-art technology with regards to desktop engineering, on-site and laboratory activities.

LOOKING FORWARD TO MEETING YOU AT ANY OF THE MAJOR UPCOMING ONLAND AND OFFSHORE GEOTECHNICAL EVENTS!



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