



Case Study Two

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Innovating Borehole Surveying at Regen Resource Recovery

DGI Geoscience remains dedicated to pushing the boundaries of geoscience, providing clients with cutting-edge solutions tailored to their unique needs.

The Background on this Project

In 2022, Regen Resource Recovery partnered with DGI Geoscience to conduct a comprehensive survey of boreholes at their Welland, Ontario site. The primary goal was to enhance understanding of their synthetic graphite resource. While the boreholes were anticipated to be less than 50 meters deep, the site's composition of soils and unconsolidated rocks posed significant challenges. Maintaining open boreholes for instrumentation was critical to the project's success. Traditionally, in unstable ground conditions, DGI uses PVC casing to ensure stability. However, the client specifically requested the use of optical televiewers, which are incompatible with PVC due to its opacity.

Previous Work

Over an 18-month period leading to the end of 2023, DGI explored the deployment of clear acrylic tubing as an alternative to PVC. Collaborating with various local suppliers, DGI tested different materials and tube thicknesses under controlled conditions. The primary criteria included: Adequate thickness for threading multiple segments together. Ensuring optical, acoustic, and electrical properties did not interfere with instrumentation.

Once a suitable supplier was identified that met all above criteria. DGI then developed an in-house threading solution to join multiple segments effectively.

In January 2024, DGI conducted surveys on 20 boreholes at the Regen-Welland site using where they successfully acquired optical televiewer, natural gamma, density, and magnetic susceptibility instruments.

Conclusions

This project highlighted DGI Geoscience's commitment to innovation and problem-solving. By developing and testing new materials and techniques, DGI successfully adapted to the unique challenges of the Regen-Welland site. The lessons learned will enhance future borehole surveys, ensuring higher data quality and project efficiency.

Key Takeaways

Collaborative problem-solving and innovative thinking can overcome complex challenges. Adapting to site-specific conditions is crucial for project success. Continuous improvement and iteration lead to robust solutions and improved methodologies. DGI Geoscience remains dedicated to pushing the boundaries of geoscience, providing clients with cutting-edge solutions tailored to their unique needs.