

# Introduction

This collection of abstracts on underground cavity detection is a new type of CGPR report, presenting a review of literature on a geotechnical engineering area of interest.

Publications concerned with underground cavity detection were collected and reviewed in two phases: A preliminary set of references was collected using online databases available at Virginia Tech. About a third of the references contained in this collection were located through these databases. The remaining references were found by examining the lists of references from the first phase of the search.

The abstracts section of this report contains material taken verbatim from the references that were located. In cases where publications include sections called "Abstract," that section was included in the abstracts section of this report, together with information taken verbatim from other sections of the publications. In cases where publications did not include sections called "Abstract," information taken verbatim from introductions, conclusions, summaries, recommendations, and the text of the report were included verbatim. In each case the selected material is approximately one page in length. Copyright laws preclude inclusion of the full text of these references in this summary. The excerpts contained here respect the fair use limitations of copyright laws.

The objective of compiling this collection of abstracts is to make it possible for readers to gain an appreciation of various methods for underground cavity detection quickly and efficiently. The methods included are electrical resistivity, ground penetrating/probing radar, electro-magnetic radar techniques, micro-gravimetric and gravity gradient techniques, seismic methods, sonar/acoustic methods, infrared techniques, magnetic techniques and techniques based on temperature anomalies.