NEWS FROM BLACKHAWK
A DIVISION OF ZAPATA ENGINEERING

Void Detection Applications

● Abandoned Mines ● Lava Tubes ● Karst

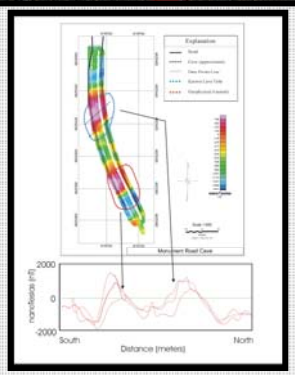
As part of geophysical void detection demonstrations performed for the Mine Safety and Health Administration and Federal Highway Administration combined with our extensive experience, we have developed practical geophysical tools to detect the presence of voids in a wide variety of conditions. We have used these tools to solve our clients' problems in the mining, transportation, and infrastructure sectors.

GPR and magnetic to locate lava tube voids beneath roadways.

Lava tubes.

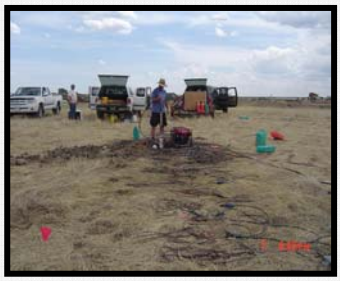
GPR survey.

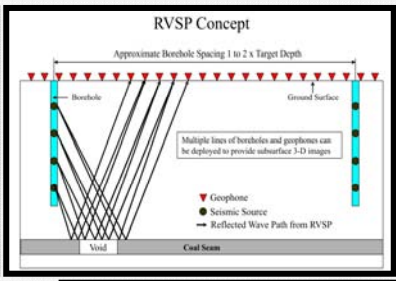
Magnetic survey.



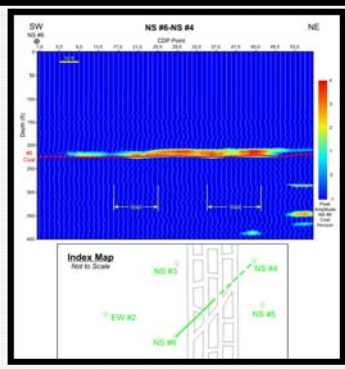
Magnetic data showing void locations.

Reverse vertical seismic profiling (RVSP) to detect voids and define the boundaries of old mine works with accuracy of 2-5 feet.





RVSP amplitudes showing location of mine voids (pillar-void-pillar).



Borehole sonar mapping to obtain high definition of mine void size and geometry.