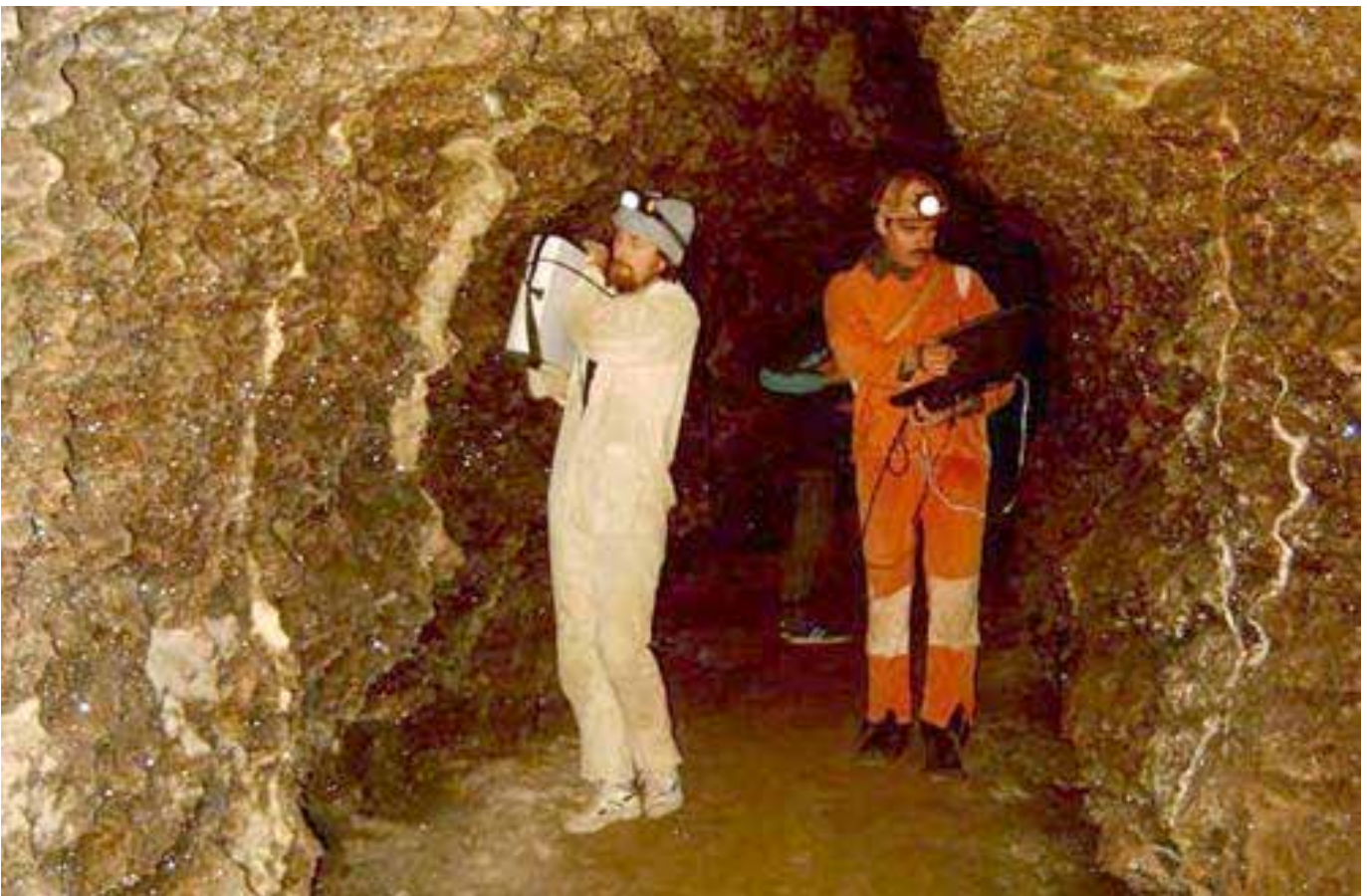


Speleological Explorations

Mlynky Cave

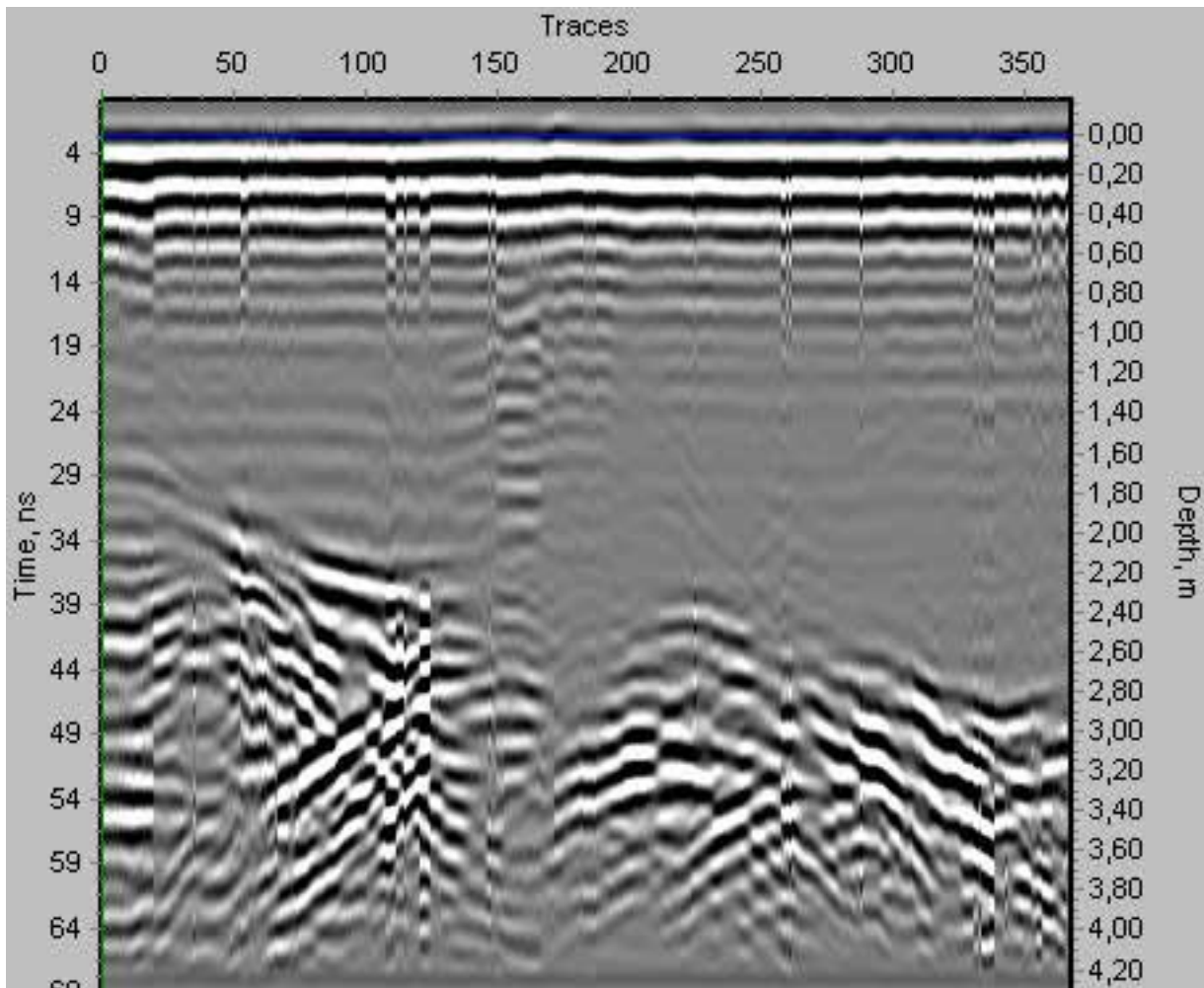
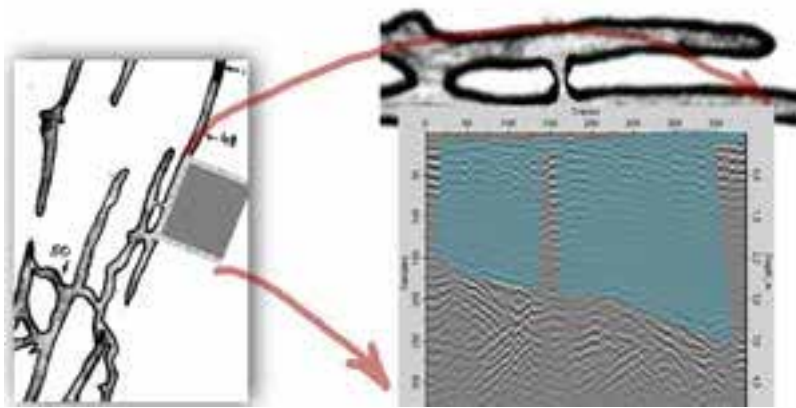
GPR can be used to survey the karst areas to detect underground voids and cracks.

Gypsum caves, buried under a thick layer of clay, difficult to reach from the surface, but can be examined from the inside, in order to detect unknown cavities.



VIY2-300 GPR was tested in Mlynky cave in January 2005. The aim was to verify abilities of the GPR application in mines and caves.

The cave wall was probing to locate neighboring gallery. To calibrate the wave speed the wall thickness was measured with a tape measure. The wave speed in gypsum was 130 meters per microsecond (or 5.3 permittivity value).

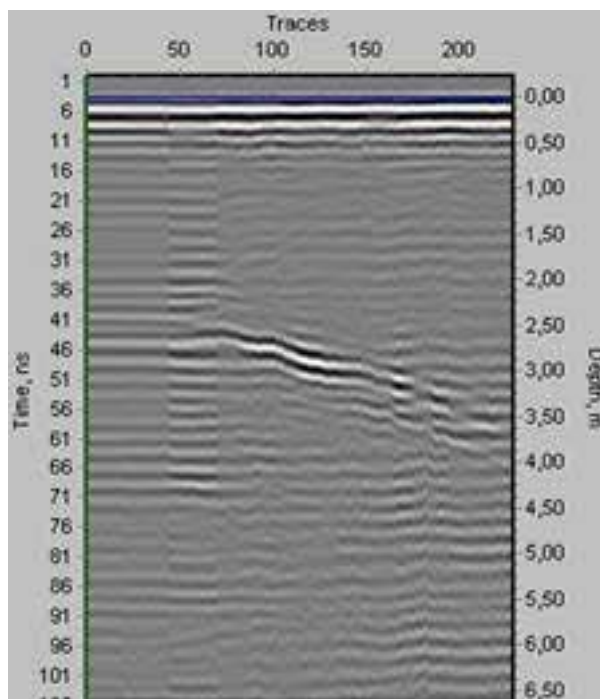


The profile was acquired by horizontal movement of the GPR at a height of 1.5 meters. Presence of ringing on the profile is caused by surface unevenness (up to 15 centimeters). The GPR crossed vertical fracture (traces on the profile from 122 to 173). The profile can be downloaded here: http://viy.ua/download/sample/Mlynky_01.zip

To determine the depth of gypsum sounding a gallery was chosen that is moving away from the studied wall. Distance between walls from 1.60 to 5.80 meters is clearly seen on the profile. The profile can be downloaded here: http://viy.ua/download/sample/Mlynky_02.zip

Ozernaya Cave

In 2005 the attempts was made to locate unknown galleries of Ozernaya cave with VIY2-300 GPR.



The profile clearly shows the reflection from an unknown object at a distance of 2.60 ... 2.90 of the probed surface.

The profile can be downloaded here: http://viy.ua/download/sample/Ozernaya_01.zip

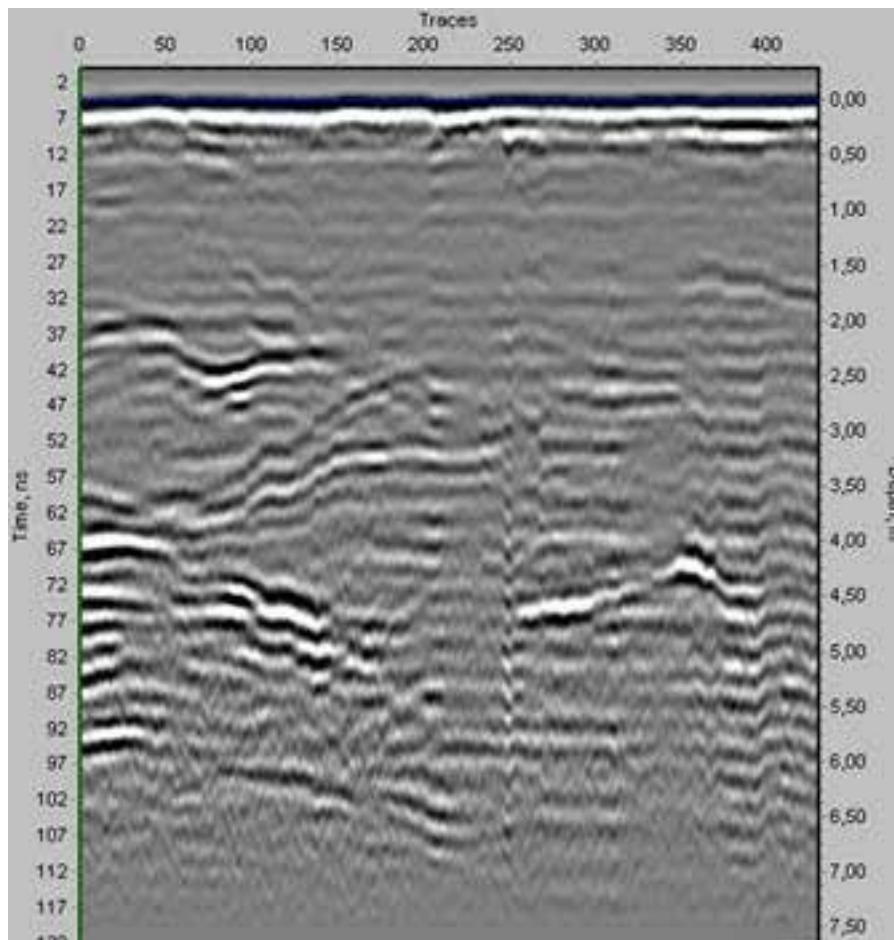


Further work in the specified location resulted in the discovery of gallery unknown previously.

Mushkarova Yama Cave

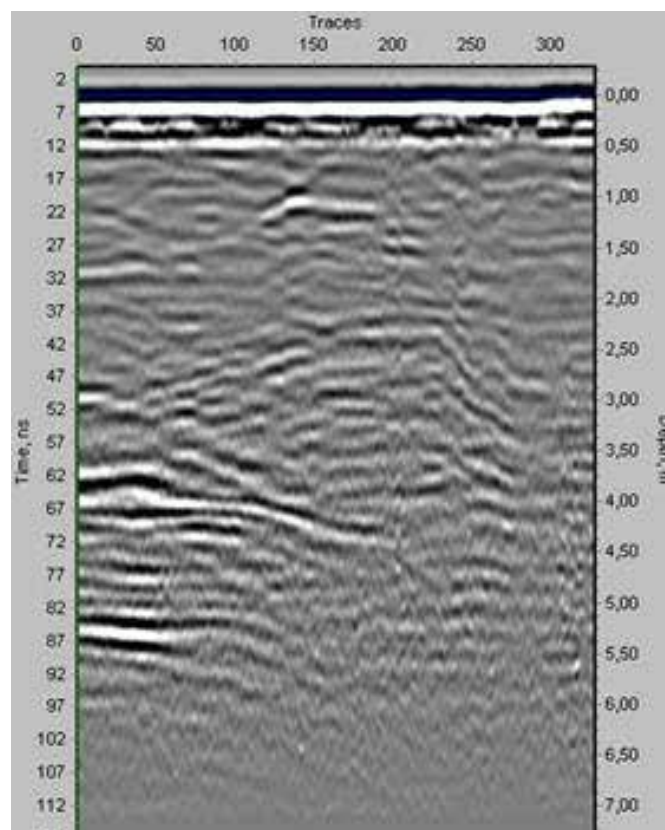
Further work in the specified location resulted in the discovery of gallery unknown previously.





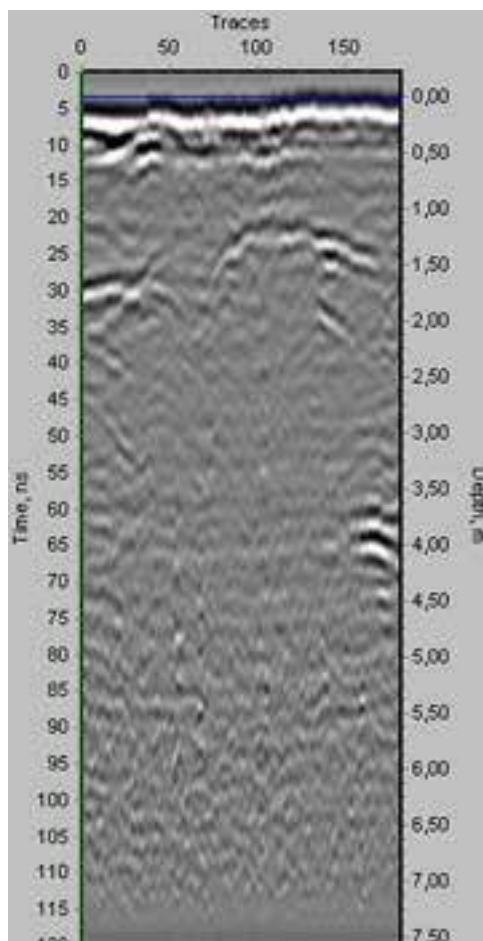
The profile of gallery sidewall sounding shows several objects at a distance from 1.70 to 3.40 meters.

The profile can be downloaded here: http://viy.ua/download/sample/Mushka_01.zip



This profile can be seen an extended object (possibly unknown gallery) at a distance of 4 meters from the probed surface (traces from 0 to 180).

The profile can be downloaded here: http://viy.ua/download/sample/Mlynky_02.zip



Probing the gallery ceiling has uncovered an object (possibly cavity) at a distance of 2.20 meters above the ceiling (traces between 106 and 124).

The profile can be downloaded here: http://viy.ua/download/sample/Mushka_03.zip