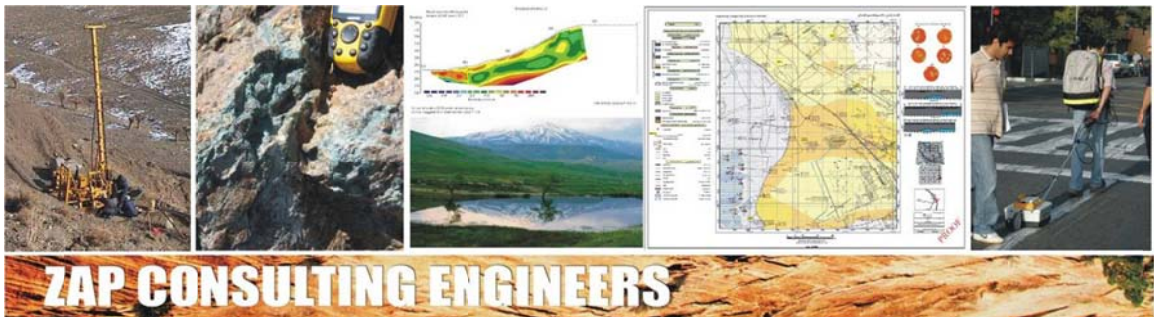




## ZAP Consulting Engineers (ZAPCE)

### Case studies

Updated on 2015/Aug./15



**ZAP CONSULTING ENGINEERS**

No. 43, Afshar Javan St., Sohrevardi Shomali Ave.

Tehran, Iran

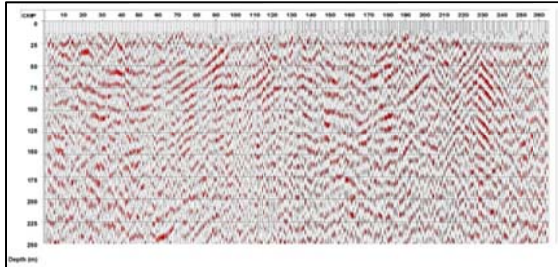
Tel & Fax: (+98 21) 88733705-88734309-88756113-88761595

Email: [info@zapce.net](mailto:info@zapce.net)

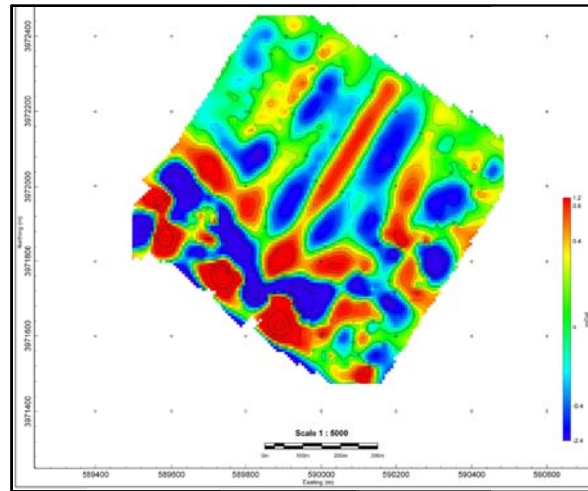
Website: [www.zapce.net](http://www.zapce.net)

# Geophysical investigations (case study)

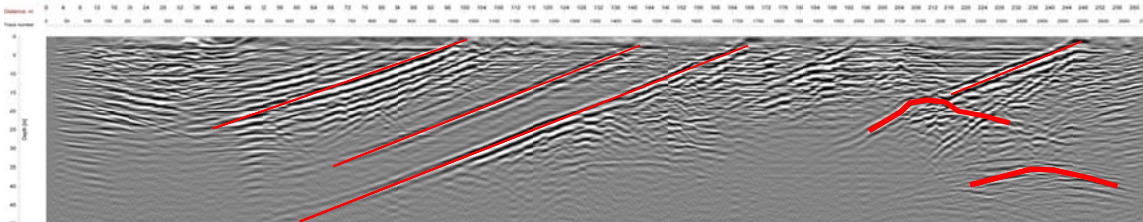
## Gravimetric method



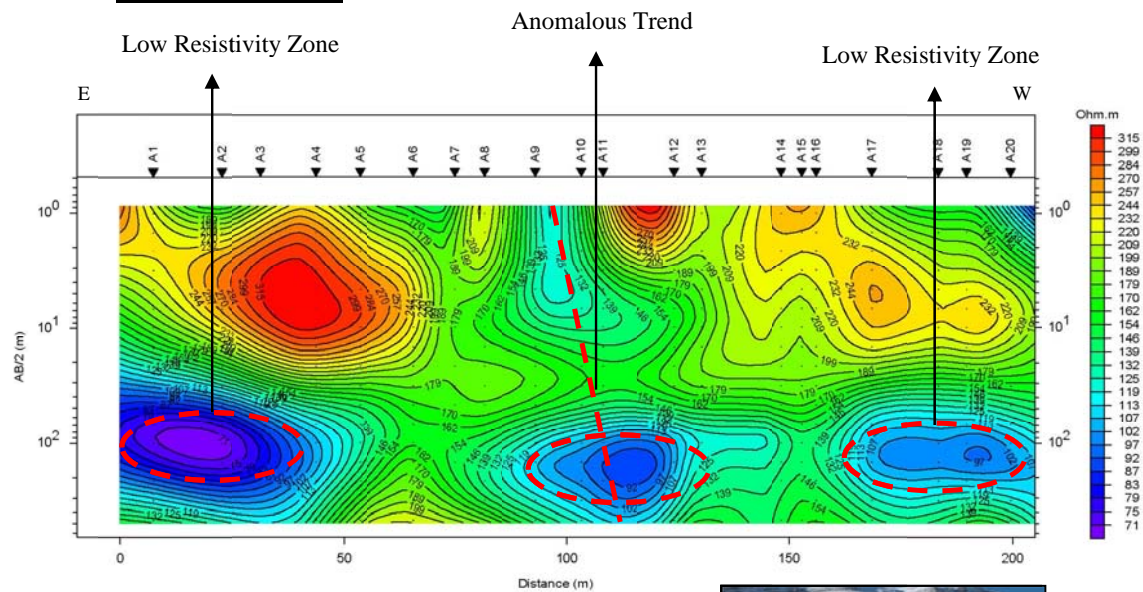
Reflection seismic technique



## Ground penetrating radar (GPR) method



## Goelectric method



Lar dam rehabilitation studies, Tehran, Iran (2008).

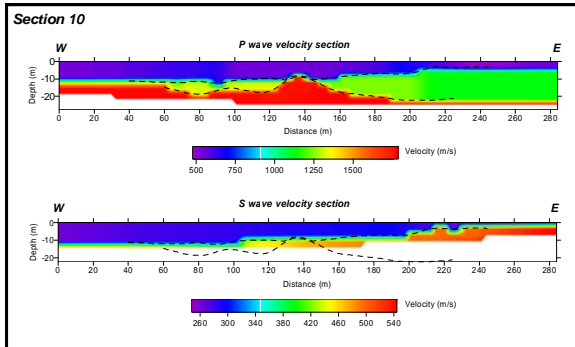


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# Geophysical investigations (case study)

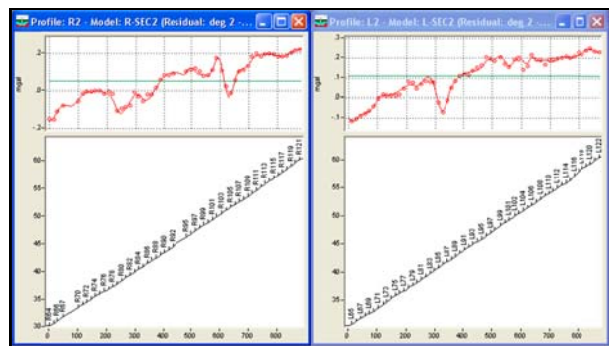
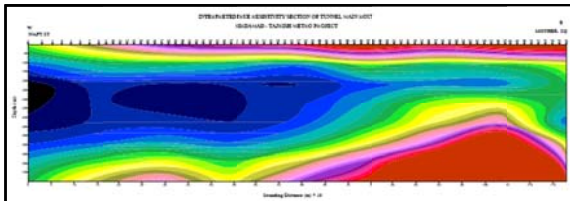
## Refraction seismic technique



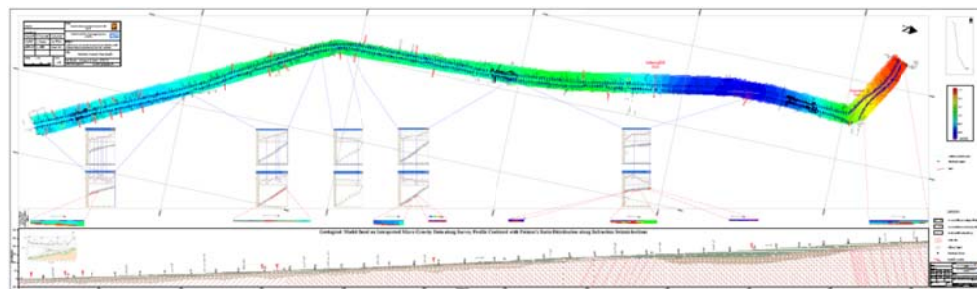
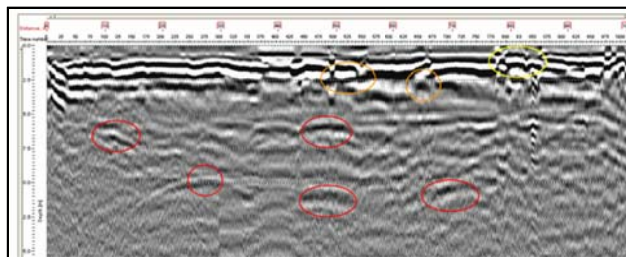
## Gravimetric method



## Goelectric method



## Ground penetrating radar (GPR) method



## Tehran metro, line 1 geophysical studies, Tehran, Iran (2006-2007).

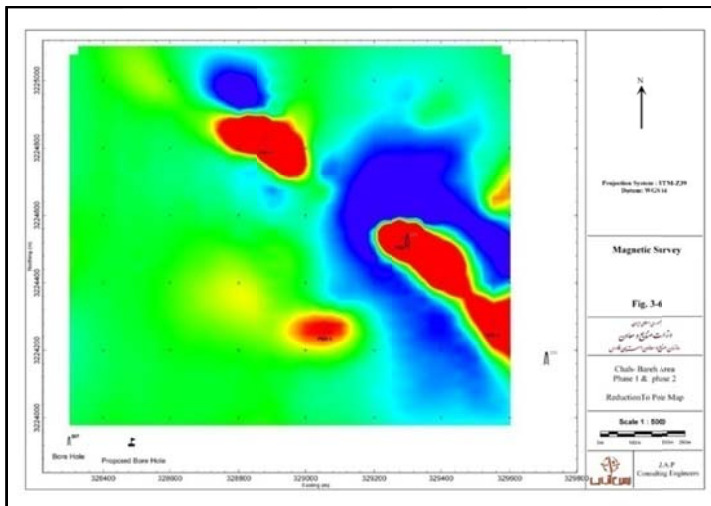
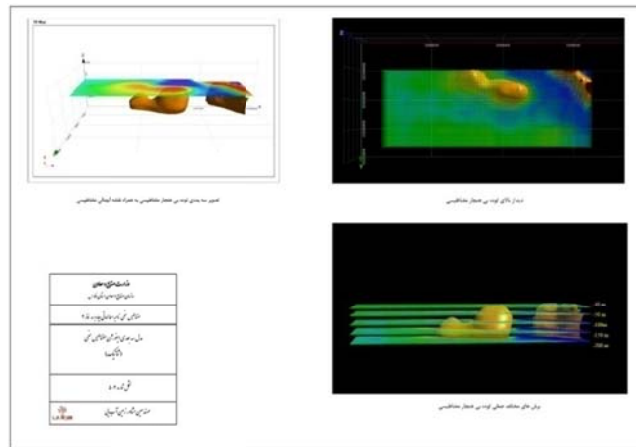
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## Iron ore exploration (case study)



**Drilling**



**3d Modeling of iron ore**

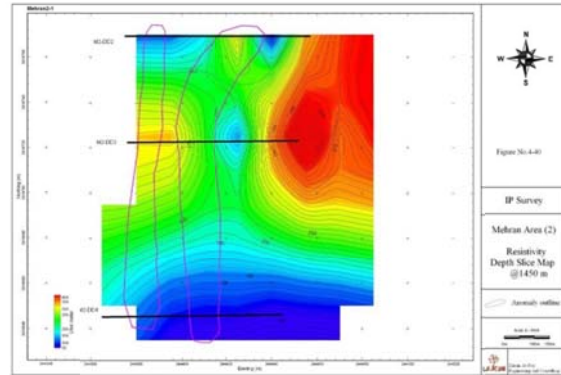


**Chah Bareh, Golgohar, Iran (2008).**

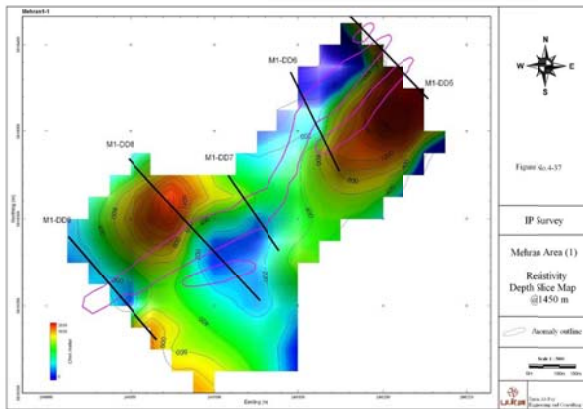
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 E-mail: [info@zapce.net](mailto:info@zapce.net)



## Copper deposit exploration (case study)



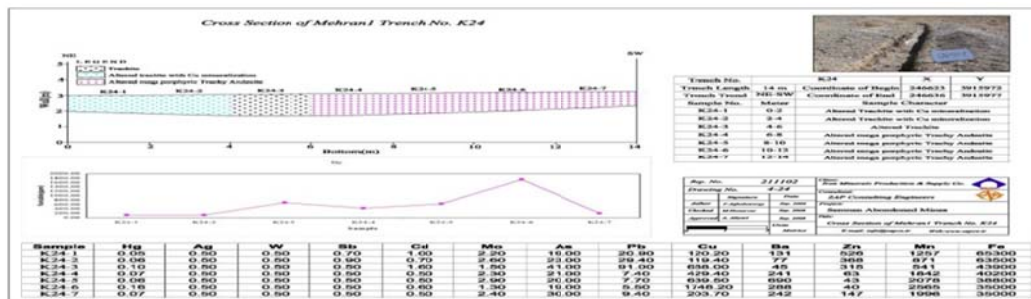
### Geophysical exploration operations (IP-RS method)



**Trenching**



**Drilling and core making**



**Kalat-e Mehran, Semnan, Iran (2007).**

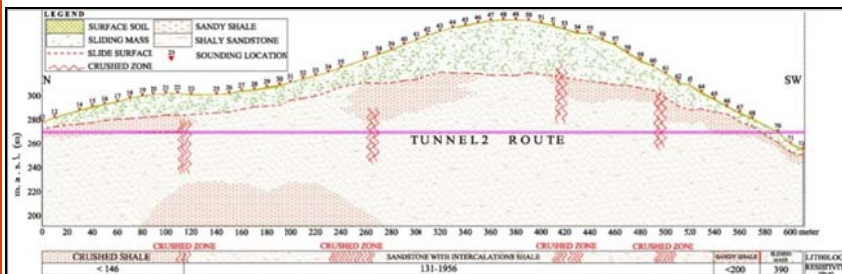
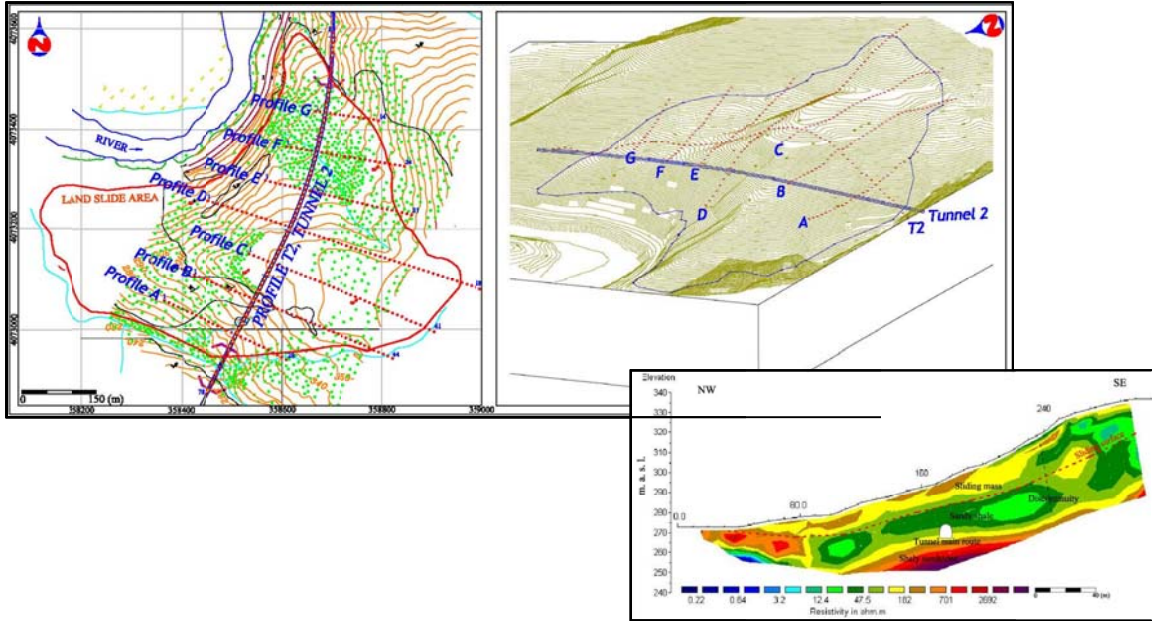
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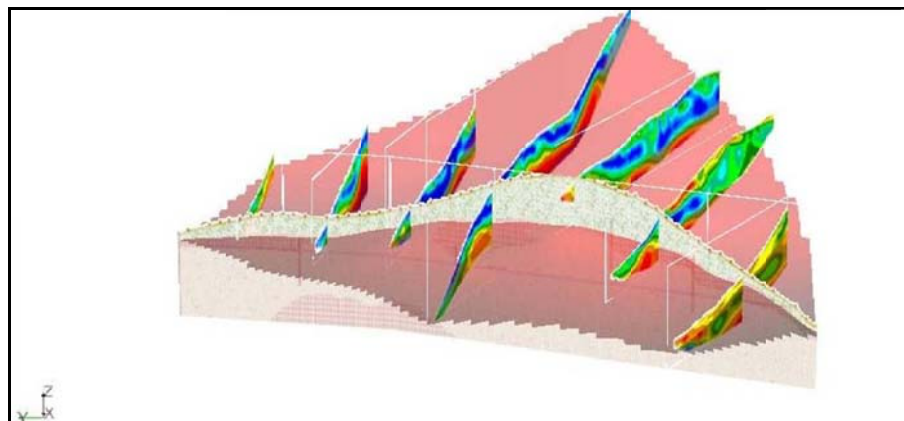
# Geophysical investigations Goelectric method



## Landslide hazard investigation (case study)



**Geological model**



**3d model of geoelectrical sections**

## Geophysical investigation along Qazvin-Rasht-Anzaly railroad, Iran (2005).

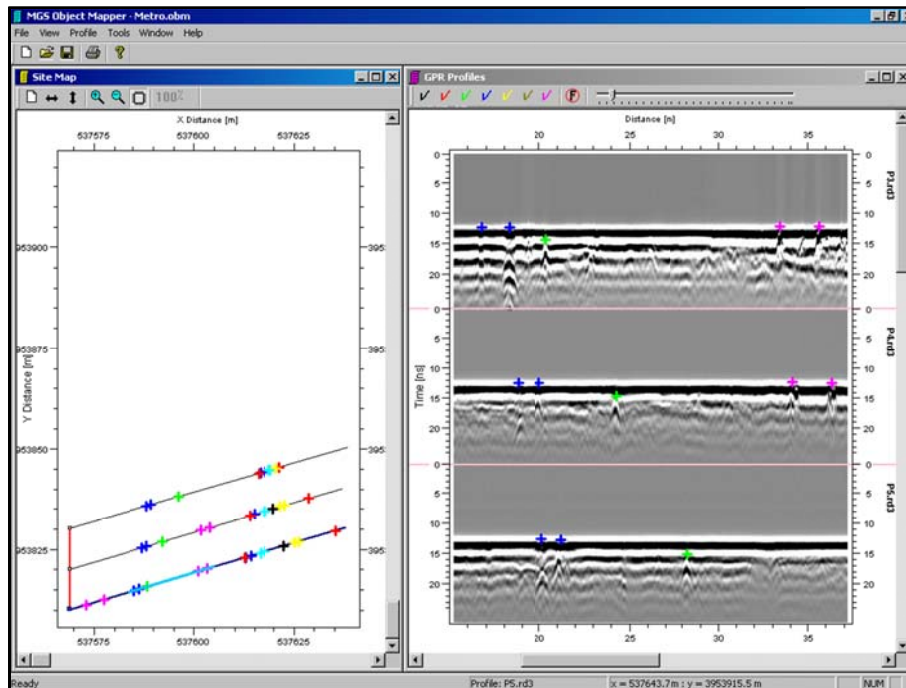
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# Geophysical investigations Ground penetrating radar (GPR) method



## Sub-surface utility detection (case study)



Shahid Beheshti Ave., Tehran, Iran (2007).

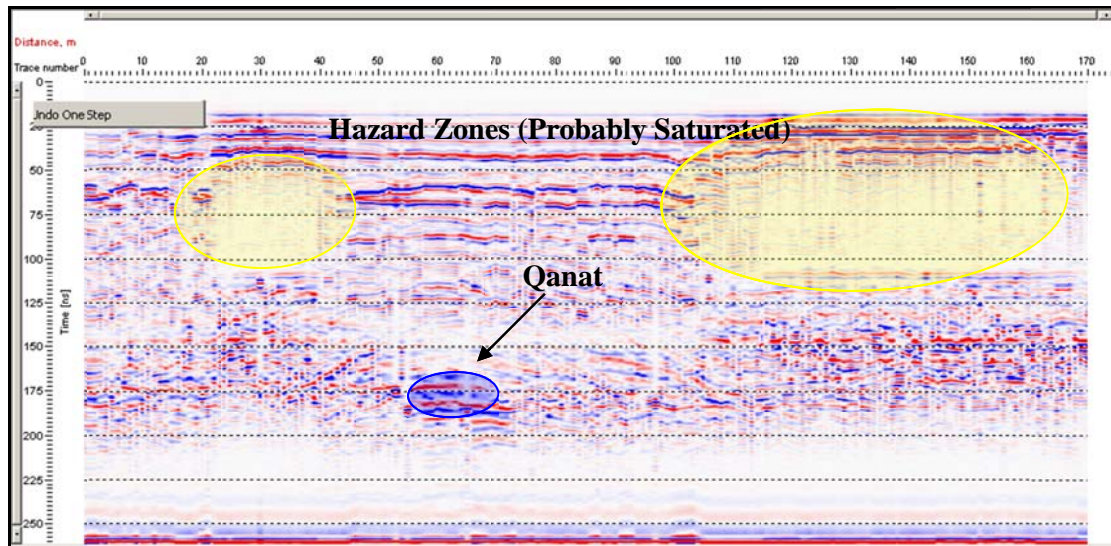
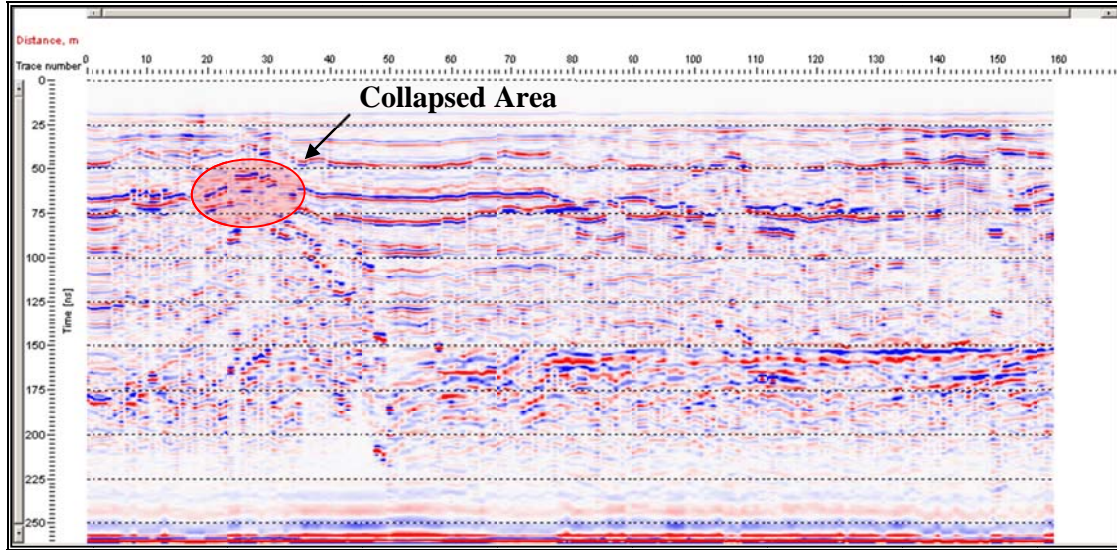
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# Geophysical investigations Ground penetrating radar (GPR) method



## Cavities, voids and qanats detection (case study)



Valiabad qanat, Varamin, Iran (2007).



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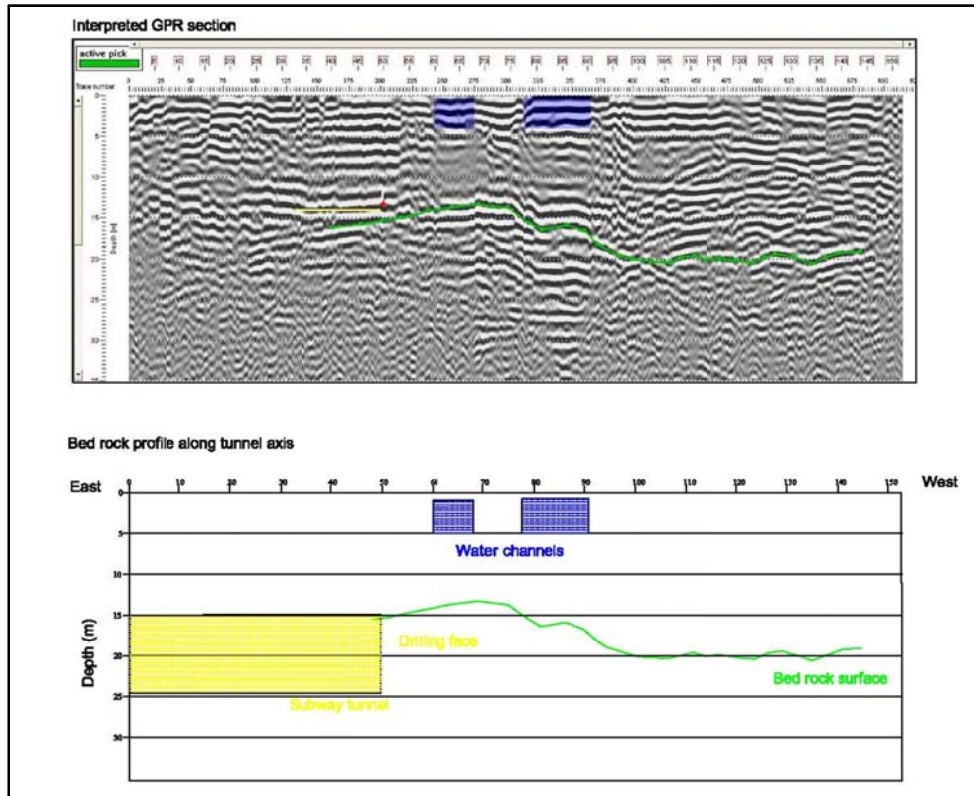




## Geophysical investigations Ground penetrating radar (GPR) method

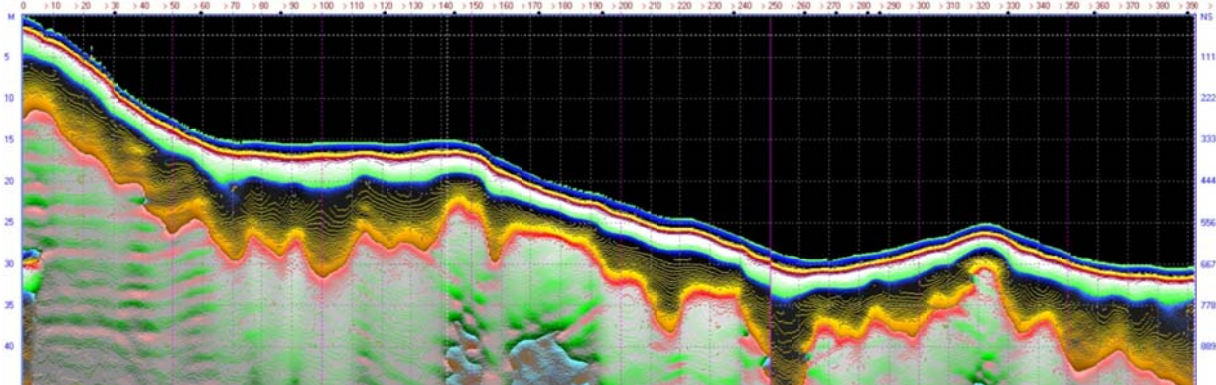


### Geological boundary mapping (case study)



Piroozi Ave., Tehran metro line 4, Tehran, Iran (2007)

### Landslide boundary detection (case study)

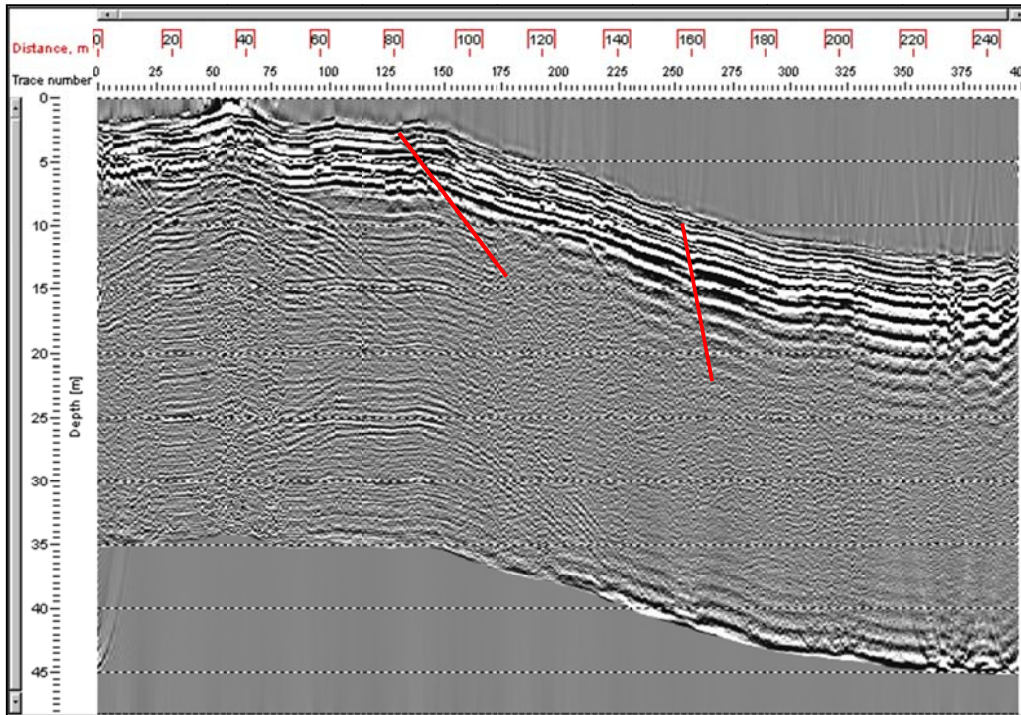


Qalehchay dam reservoir landslide, east Azerbaijan, Iran (2010).

## Geophysical investigations Ground penetrating radar (GPR) method



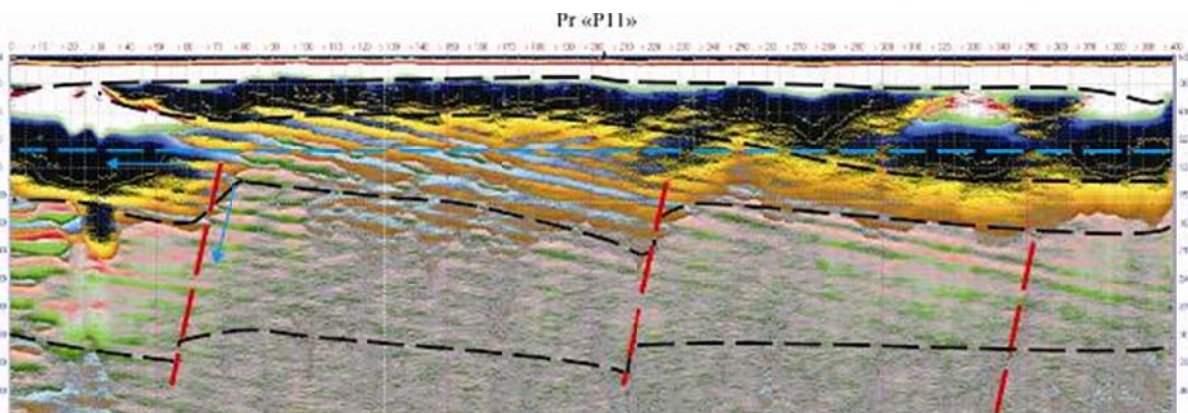
### Geological boundaries and faults detection (case study)



Active faulting along Kahrizak fault, Tehran, Iran (2007)



### Geological boundaries and faults detection Ground water exploration (case study)



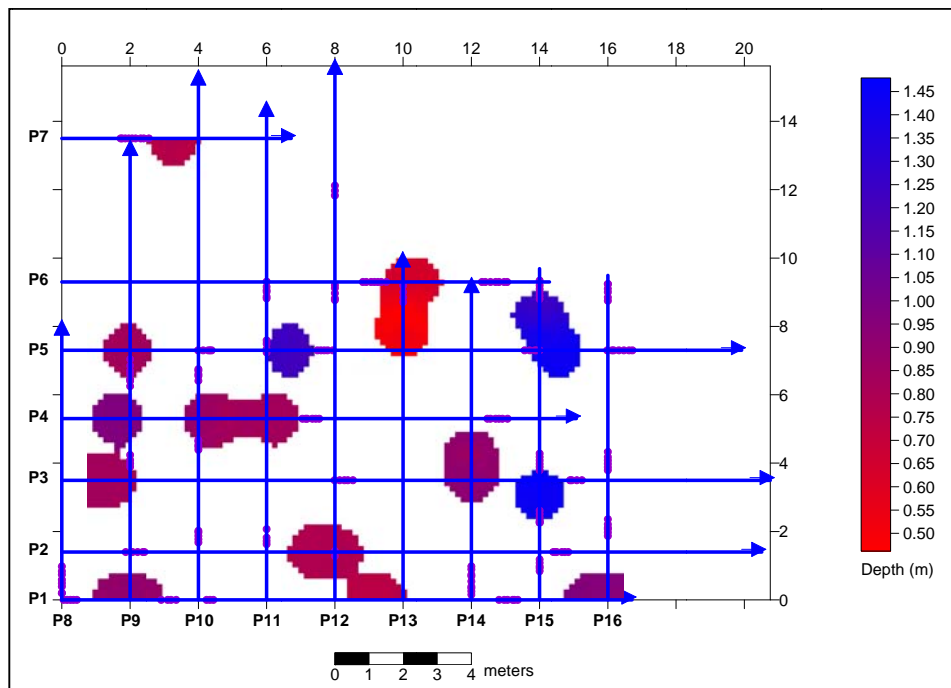
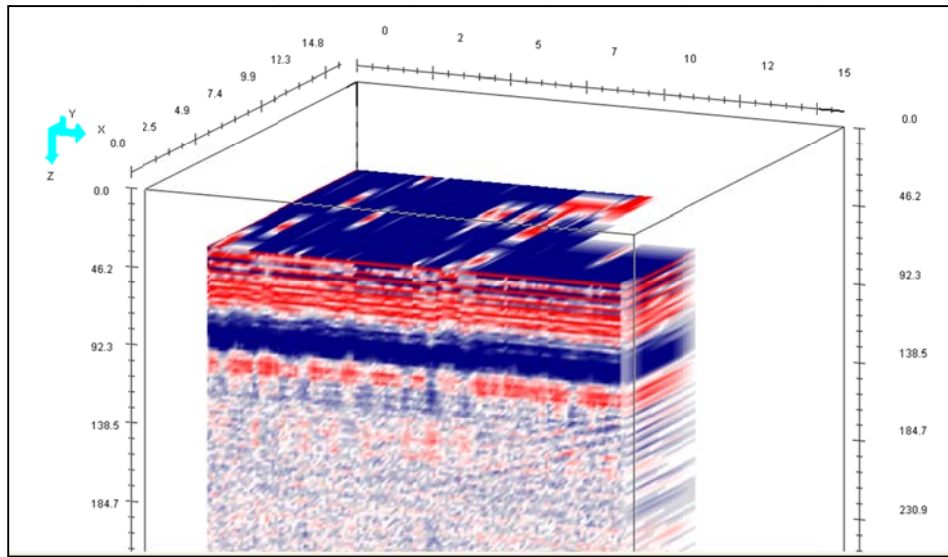
Golgohar iron mine, Sirjan, Iran (2011).

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## Geophysical investigations Ground penetrating radar (GPR) method

3D Sub-surface investigation  
Underground detection and mapping  
Archaeology (case study)

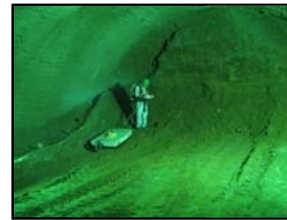


Chahardange cultural center, Tehran, Iran (2007).

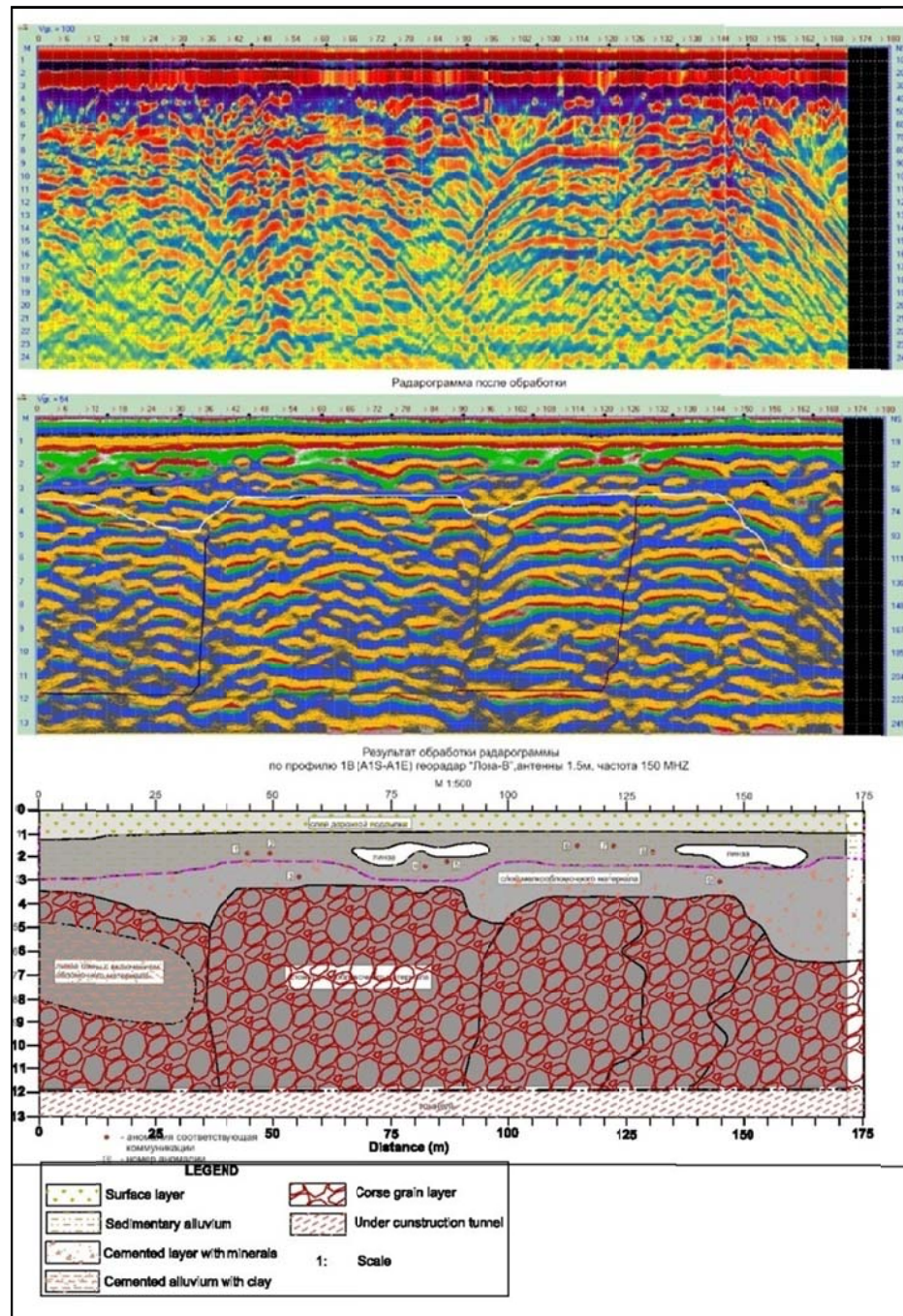
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# Geophysical investigations Ground penetrating radar (GPR) method



Engineering geology profiling  
Cavities, voids and underground investigation (case study)



Tohid tunnel, Tehran, Iran (2009).

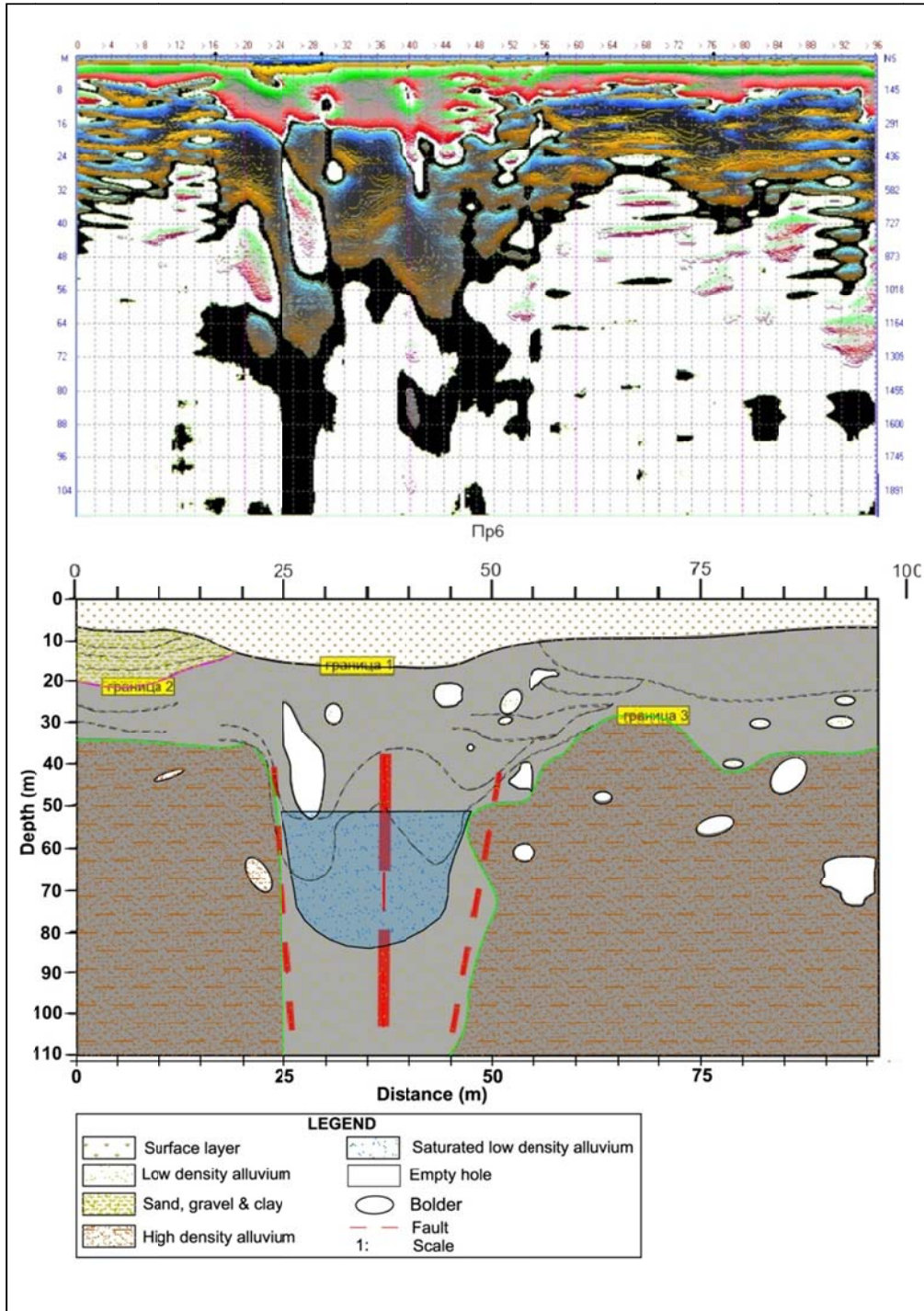
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## Geophysical investigations Ground penetrating radar (GPR) method



### Geology profiling, hydrogeology and soil stratigraphy (case study)

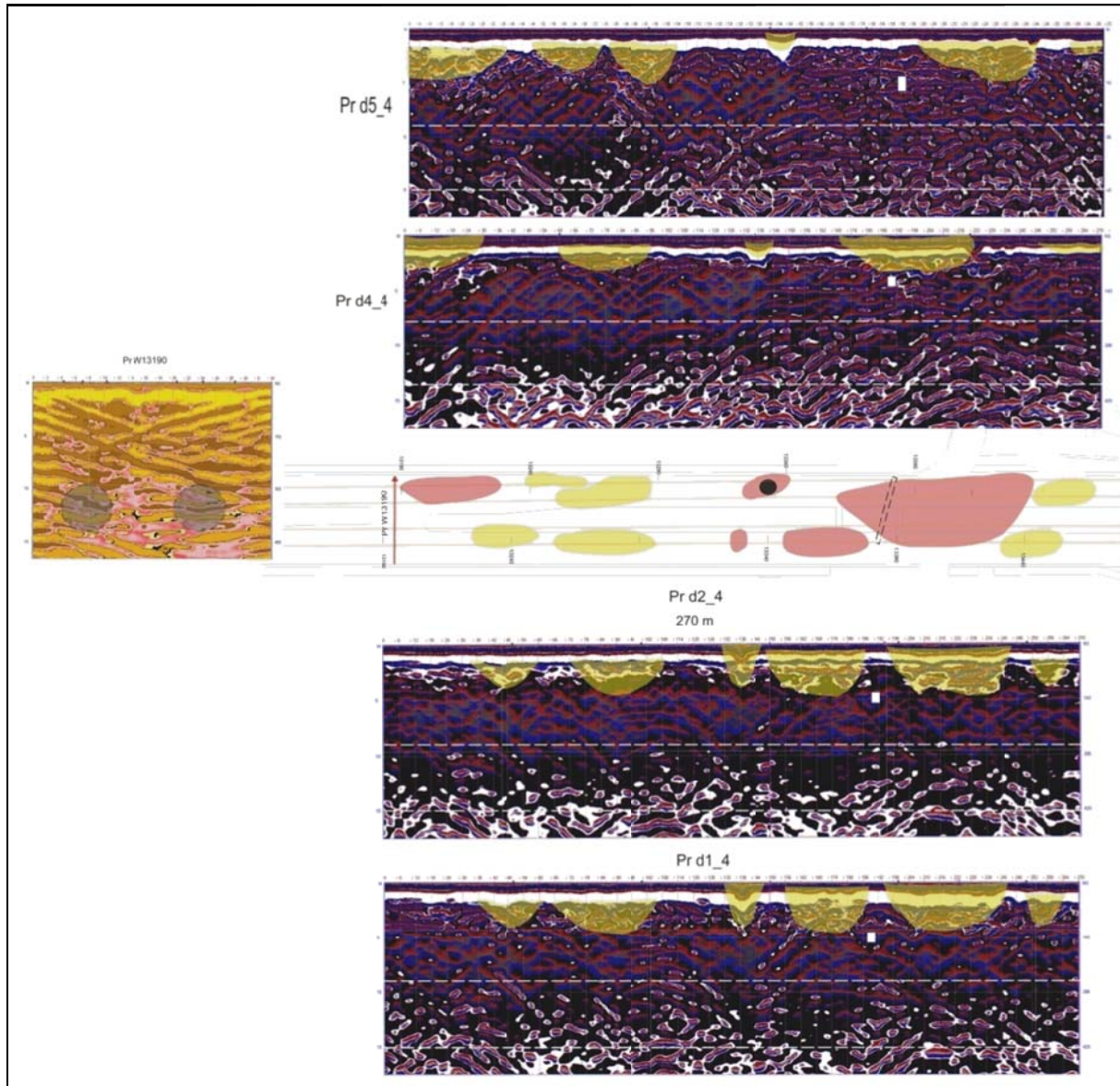


Niavaran fault detection, Tajrish square, Tehran, Iran (2009).

## Geophysical investigations Ground penetrating radar (GPR) method



Engineering geology profiling  
Cavities, voids and underground investigation (case study)



Shiraz metro, line 1 geophysical studies, Shiraz, Iran (2009).