

## ENGINEERING GEOPHYSICAL SURVEYS FOR OIL AND GAS FIELD



Constant improvement of methods of complex engineering geophysical surveys for oil and gas field makes it possible for GEOTECH company to guarantee the gaining of reliable and high-precious data.

The application of complex of electric survey, seismic survey and GPR survey methods with own manufactured equipment enables the experts to obtain quite interesting and substantial research results.

### APPLICATIONS:

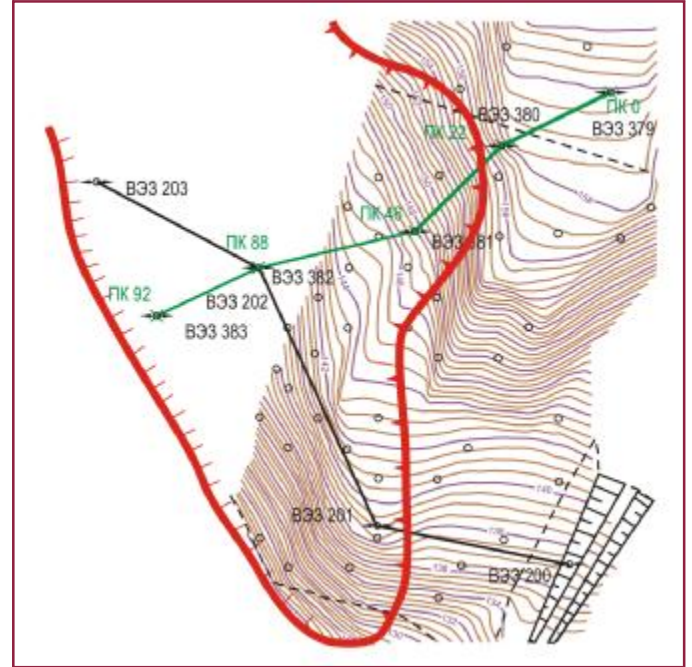
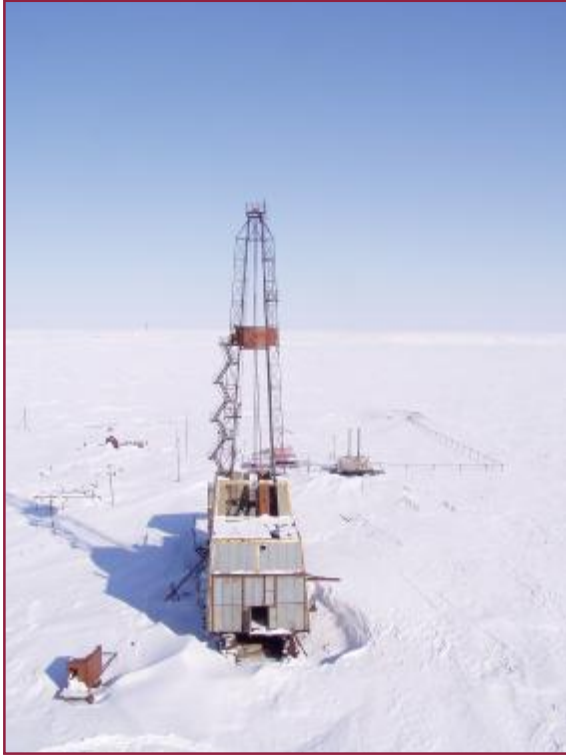
- Engineering geological surveys for oil and gas pipelines and areas of cluster wells location:
  - ◆ Detection of heavy icy rocks
  - ◆ Examination of taliks, cryopegs
  - ◆ Examination of dynamics in cryogenic phenomenon
  - ◆ Examination of geological bodies dangerous for drilling operations (carven-load, bedded ices)
  - ◆ Mapping of bedrock foundation top
  - ◆ Determination of groundwater occurrence level and presence of perched ground water
  - ◆ Location of specific soil (peats, silt, saline soils, etc.)
  - ◆ Detection of gas pockets in section upper part
  - ◆ Assessment of construction material reserves in open-cuts
  - ◆ Study of dangerous engineering geological processes (landslides, floating earth, karstic phenomena)
- Survey of engineering geological environment of zones adjacent to oil and gas facilities
- Study of speed capabilities of section upper part for 2-3D seismic survey
- Geo-ecological survey of oil industrial enterprises
- Reconnaissance seismic surveys of oil and gas fields



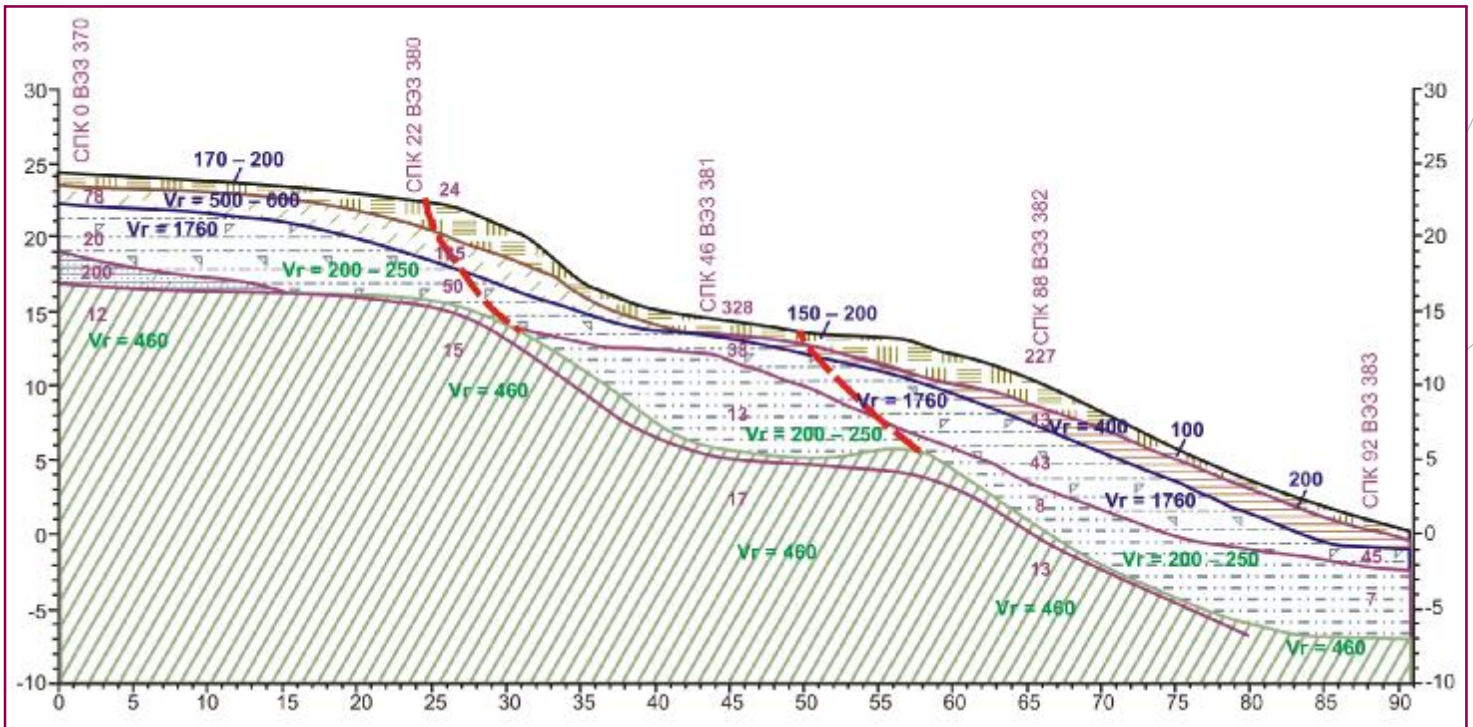
### THE FOLLOWING EQUIPMENT IS APPLIED:

- OKO-2 Ground Penetrating Radar
- Borehole GPR Complex
- IDS-1 Pile Testing Device
- DELTA-03 Seismic Signal Recorder
- LAKKOLIT-X-M3 Multichannel Seismic Station
- ERA-MAX Low Frequency Resistivity Instrument
- ERP-1 Electrical Instrument

## SURVEYING LANDSLIDES FOR CONSTRUCTION OF SAKHALIN-2 MAIN PIPELINES



— ПК 88 geophysical cross section  
— border of landslides  
- - - separation surface



|                  |                |                            |           |
|------------------|----------------|----------------------------|-----------|
| surface deposits | loamy soil     | sandstone                  | solid roc |
| clay             | loamy deposits | watered ventilated bedrock |           |