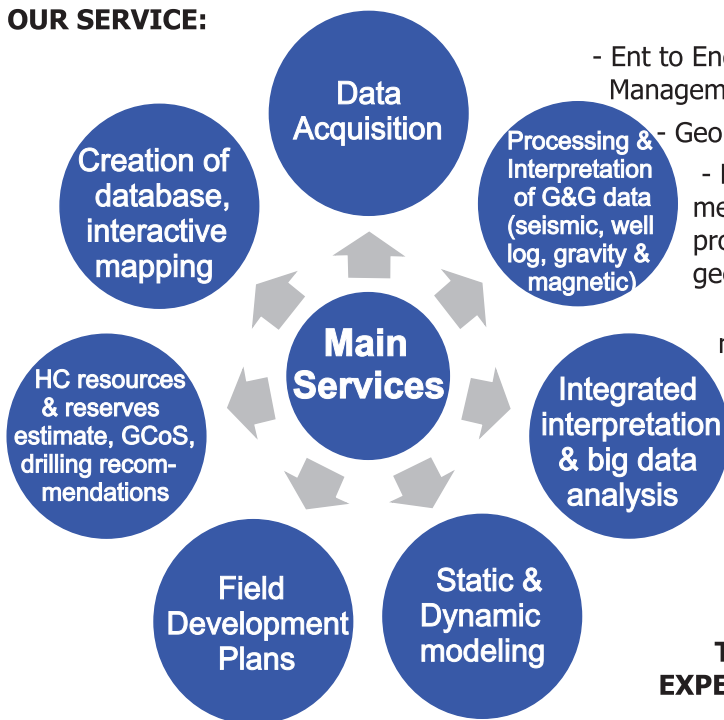




**TARGET HORIZON** is a company registered in Russia as G&G service company acting in Russia and abroad.

## OUR SERVICE:



## AREA OF BUSINESS:

- Ent to End G&G Project Management Solutions;
- Geophysical API services;
- Development and implementation of technologies for processing, interpretation and geological modeling;
- Geological & Reservoir modeling;
- Rock property estimation.

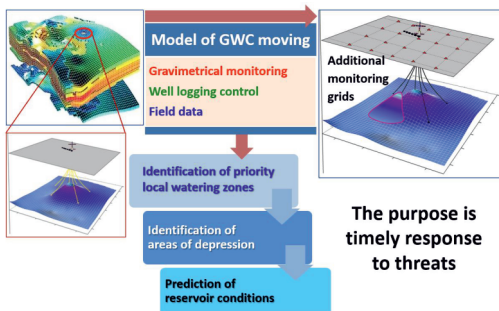
## THE WORLDWIDE EXPERIENCE OF OUR TEAM:



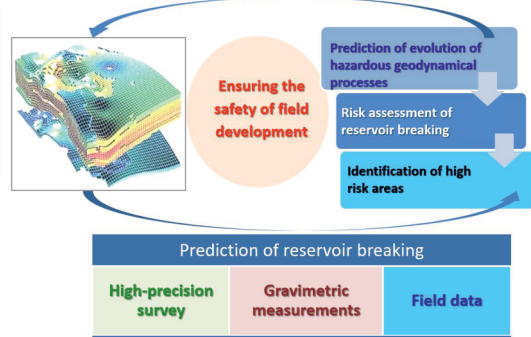
KAZAKHSTAN  
 AZERBAIJAN  
 TURKMENIA  
 COLOMBIA  
 GEORGIA  
 VIETNAM  
 RUSSIA  
 CHINA  
 CUBA  
 IRAQ  
 USA  
 IRAN  
 INDIA  
 EGYPT  
 JORDAN  
 POLAND  
 NAMIBIA

We provide a full range of services for implementation of gravimetric monitoring at the Customer's objects. **Gravimetric monitoring** is repeated measurements of gravity values at fixed points. It is a low-cost and environmentally friendly way to monitor GWC front advancement and gas taking. One of the main advantages is the information about the processes within the study area.

## Prediction of local water invasion



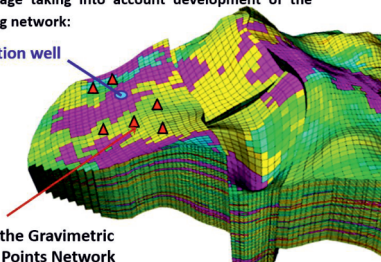
## Prediction of hazardous geodynamical processes



## Rational planning of observation wells location

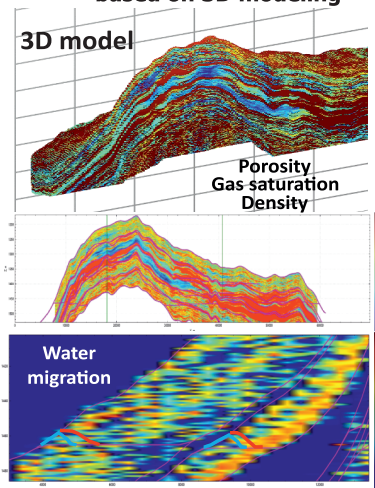
Optimization of the observation wells positions at the project stage taking into account development of the monitoring network:

Observation well



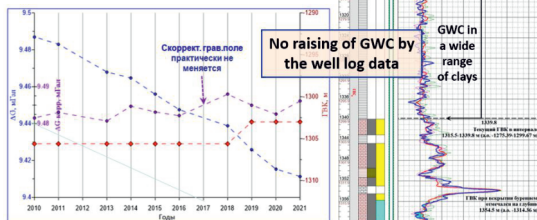
Planning of the Gravimetric Monitoring Points Network

## Prediction of water invasion based on 3D modeling

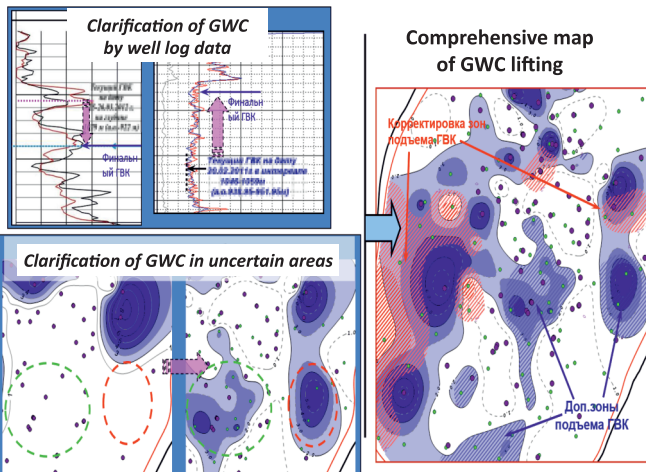


## Rational planning of GTA

The use of gravimetric monitoring data allows optimisation of GTA costs during the exploitation

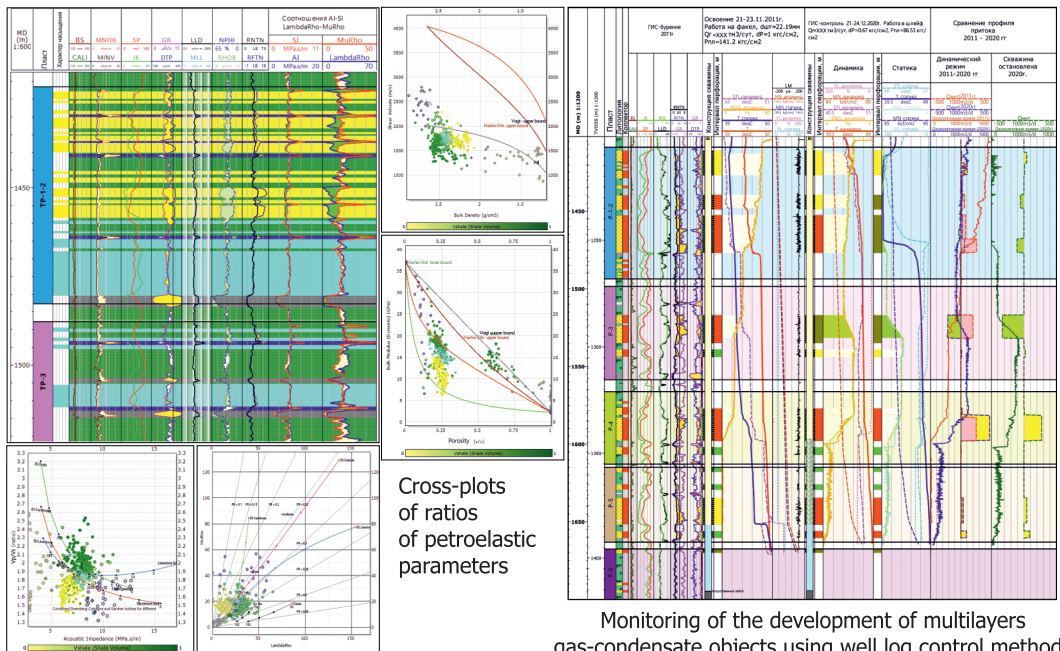
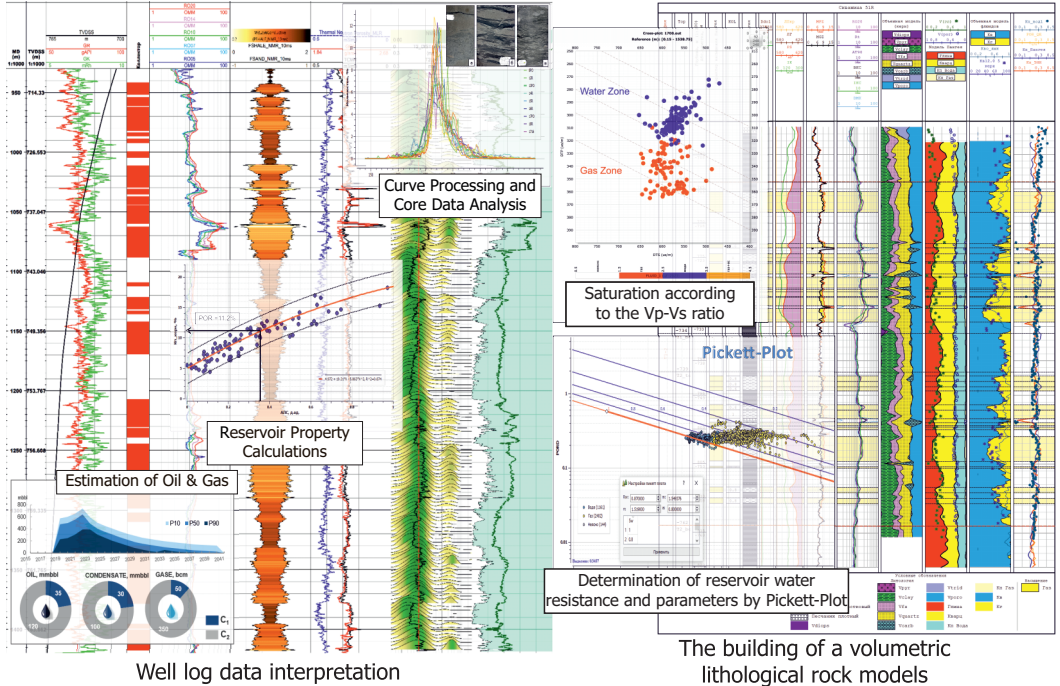


## Gravimetric monitoring results





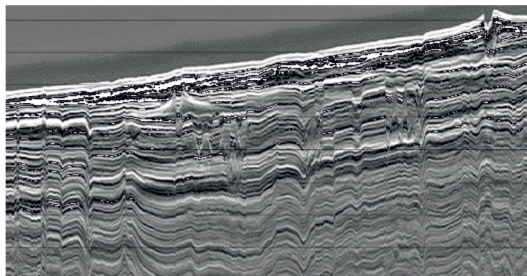
**Well log data analysis** - We provide a wide range of services for petroelastic modeling, interpretation of well log and drilling data (to solve a set of tasks for lithological stratification of a section, building a volumetric lithological model of rocks) and well log quality control (to solve a set of tasks in the process of well development).



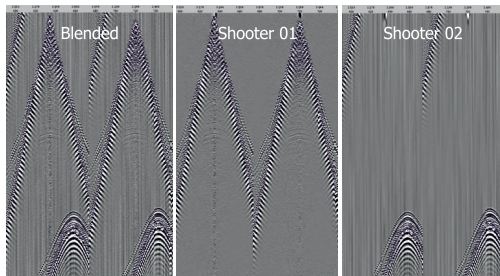
Monitoring of the development of multilayers gas-condensate objects using well log control methods



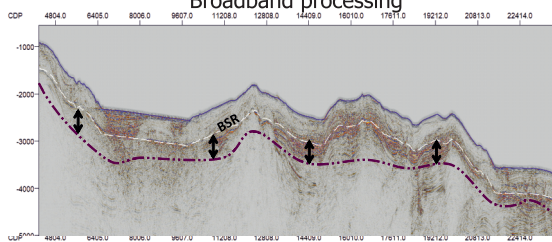
We have gained significant experience in **seismic processing** of 2D / 3D land and marine data in time and depth domains, in broadband high-resolution method, OBN data processing (including deblending) and using advanced PRO techniques.



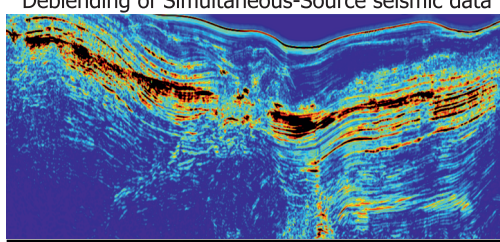
Broadband processing



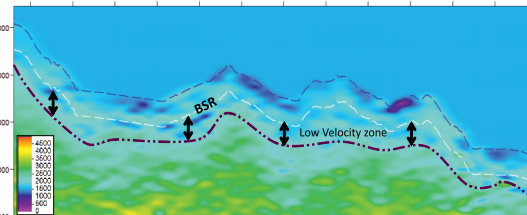
Deblending of Simultaneous-Source seismic data



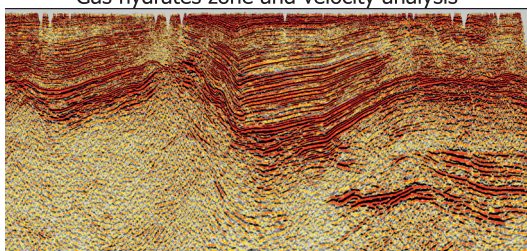
Gas hydrates zone and velocity analysis



Attribute analysis and AVO

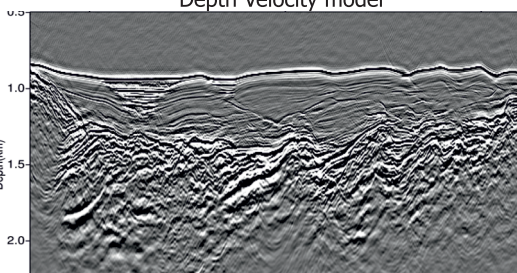
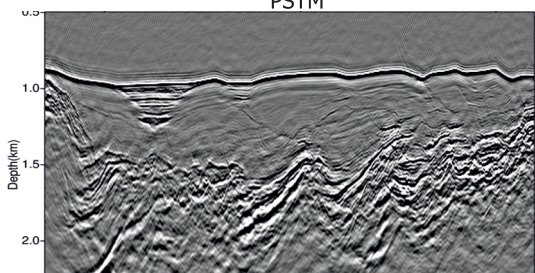


Depth Velocity model



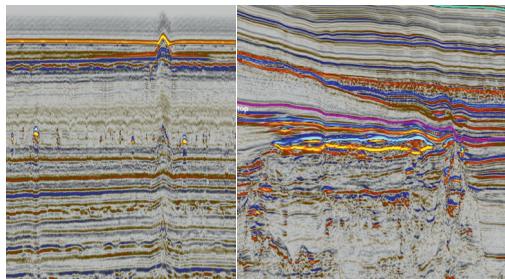
Kirchhoff PSDM and RTM PSDM

PSTM



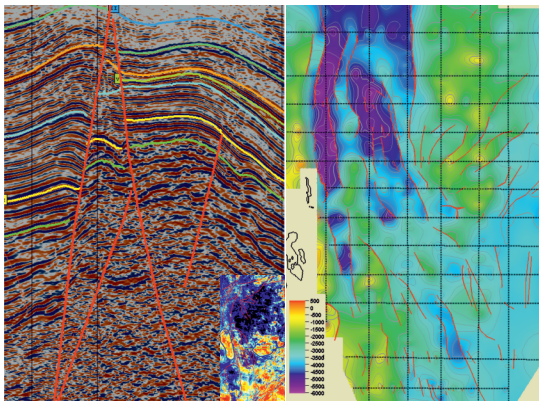
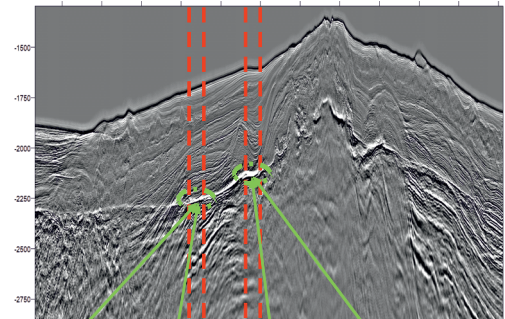


We provide the wide range of **interpretation services** of G&G data (including seismic, well log, geological data). We have experience in identifying bottom simulating reflector (BSR) and gas hydrate zones, which in turn allow us to detect the presence of large accumulations of free gas.



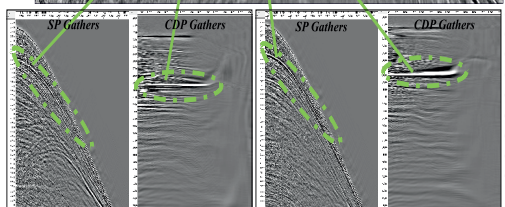
Interpretation gas seepages and bright spots

CDP 9607.0 10077.0 10407.0 10807.0 11208.0 11608.0 12008.0 12408.0 12808.0 13208.0 13608.0 14008.0

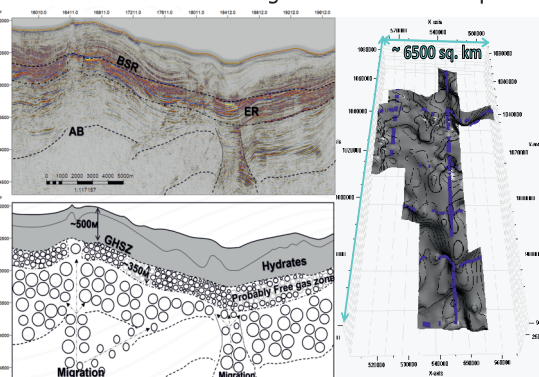


Horizons and faults tracking

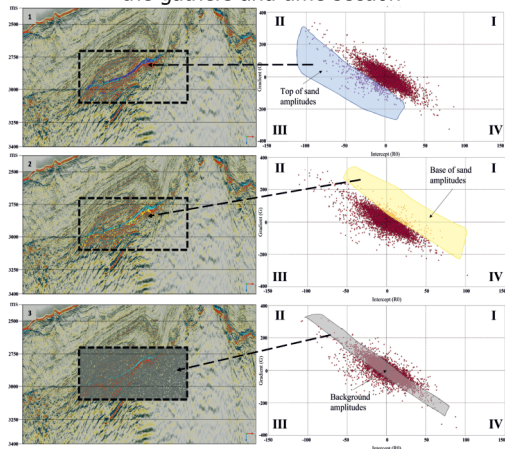
Isochrone map



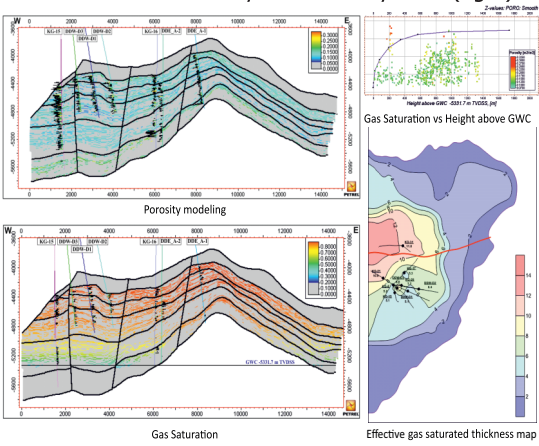
The results of BSR identification on the gathers and time section



Schematic model with gas hydrate zone, BSR layers, free gas zone and migration channels (left)  
And 3D model of Gas Hydrate Stability Zone (right)



AVO crossplot analysis



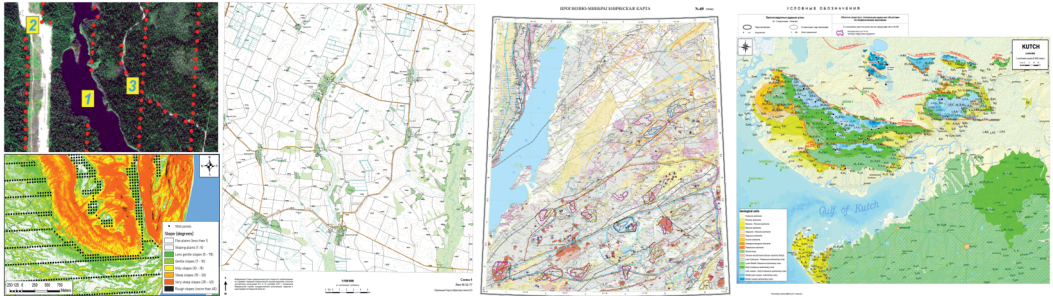
Static Reservoir Modeling



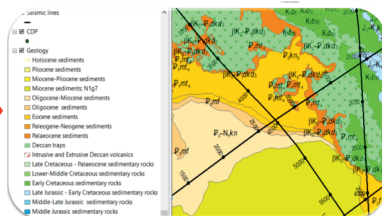
**Cartographic support** of the projects includes the creation of geo-databases, G&G electronic maps, development of own web-mapping services to access and analyze all data in a single geoinformation space during API G&G data.

Creation and updating of digital terrain models  
of oil and gas fields

Digitisation, compilation and design of  
geological, engineering and other maps



Raw geological data  
(scanned images)



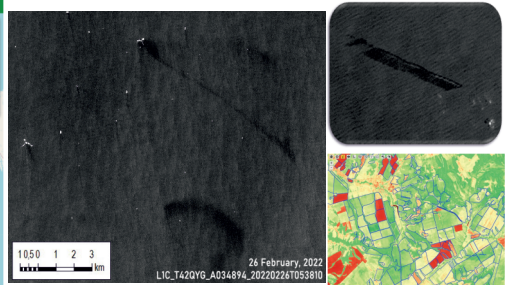
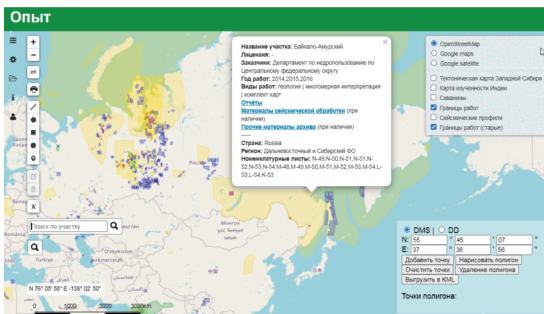
Georeferencing and digitizing  
of geological data in GIS



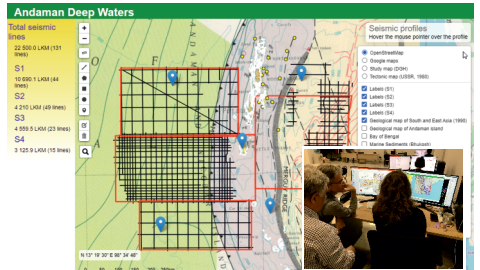
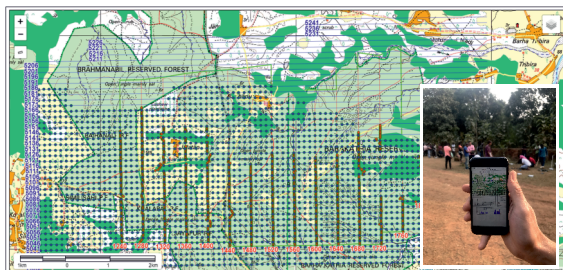
Geological geodatabase  
for creation of own maps

Development of databases and web services  
of the archive of the previous works

Interpretation of Earth remote sensing data for  
oil & gas and other sectors

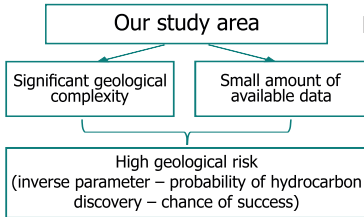


Creation of cartographic web-services to support geological exploration

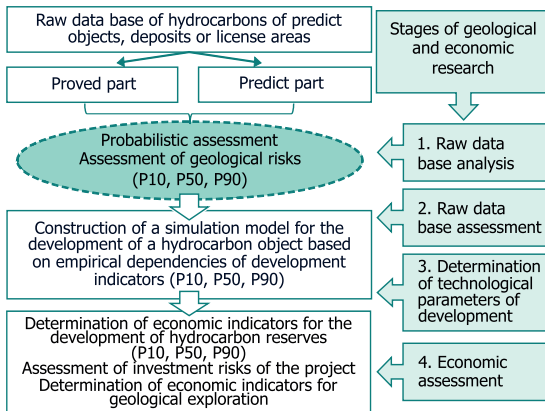


**PRMS (Petroleum Resource Management System).** We work according to international PRMS standards, which take into account both the probability of the presence of hydrocarbons and the economic feasibility of extracting reserves..

## The degree of geological risk of our study area



## The conceptual scheme of geological and economic research

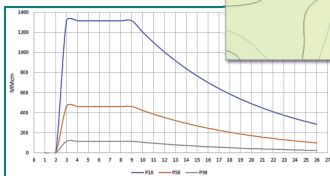


## The result of the technical and economic assessment

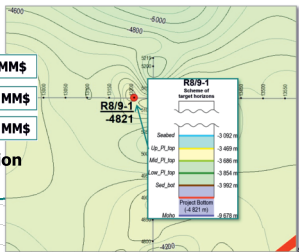
**Calculation of predicted gas resources (taking into account geological risks P10, P50, P90)**



**Prediction of gas production by year**



**Fragment of the structural map for the top of the expected productive horizon (Sedimentary cover)**



## Risk management process

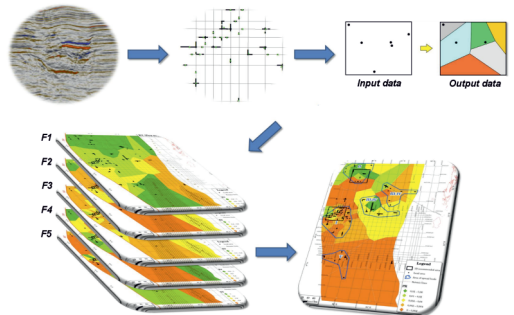
1) Standart

RESERVOIR	KEY RISK ELEMENTS				PROSPECT RISK
	Trap Presence	Reservoir Presence	Seal Presence	Charge Access	
	K1	K2	K3	K4	K1*K2*K3*K4

2) Selected according to available gata

RESERVOIR	KEY RISK ELEMENTS						PROSPECT RISK
	Sea Depth (m)	Lead Top Depth (m)	Lead Size		Reservoir Presence	Seal Presence (include BSR)	
			Long (m)	Thickness (m)			
	K1	K2	K3	K4	K5	K6	K1*K2*K3*K4*K5*K6

## Construction of probability maps taking into account geological risks



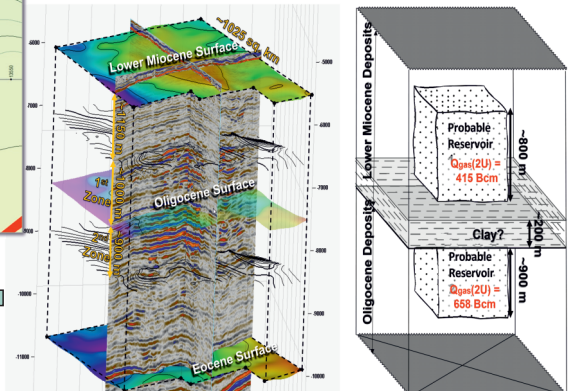
## Estimation of predicted resources taking into account geological risks

Parameters	Square	Thick-ness eff.	Top depth	T formation	Z super compressibility	Prospective resources	Total Prospective resources
Lead up	98,8 sq.km	300 m	5600 m	586,6 %K	0,8	415 Bcm	1073 Bcm
Lead down	142,3 sq.km	320 m	6600 m	669 %K	0,8	415 Bcm	

**To confirm predicted resources, minimum exploration program (P50) is proposed:**

- 3D seismic survey – \$10 million.
- Drilling of 1 exploration well to a depth of 5000 m – \$30 million.

**The minimum exploration program requires \$40 million.**



**Conceptual Model of the identified lead Structural factor and increased amplitudes allowed to identify two inherited reservoirs**



## COMPANY DETAILS:

**Office in Russia:** of. 405, un. 1, b. 2, 3rd Khoroshevskaya street, Moscow, Russia

**Office in India:** A-II/901, Ansal Corporate Park, Tower-2, Plot No. 7A/1Sector-142, Noida-201305, Uttar Pradesh, India

**Company Management:** Mr. Konstantin Tatarenko, General Director

**Area of business:** Geological & Geophysical services for oil & gas industry

**Clients:** ONGC Limited (India), Oil India Limited, DGH (India), MAGE (Russia), Mechel (Russia)

**Contact Details:** Mr. Konstantin Tatarenko / Ms. Natalia Kurmaz  
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e-mail [tatarenko@geohorizon.ru](mailto:tatarenko@geohorizon.ru) / [kurmaz@geohorizon.ru](mailto:kurmaz@geohorizon.ru) / [contact@geohorizon.ru](mailto:contact@geohorizon.ru)

More information about us is on our web-site [www.geohorizon.ru](http://www.geohorizon.ru)

