

Business Line «Chemical treatment of wells»

of Mirrico Group of Companies is an oil reservoir expert. It is one of the leaders in implementation of technological solutions based on chemical methods of oilfield and reservoir stimulation at stages 3-4 of development, according to the quantity and quality of tracer surveys among Russian companies.

KEY ADVANTAGES OF BUSINESS LINE «CHEMICAL TREATMENT OF WELLS»:

- 1** Wide range service portfolio for oil recovery improvement:
 - effective chemical agents for different geological conditions;
 - global technologies of straightening the injectability profile;
 - complex approach to problems of work with a reservoir.
- 2** Service portfolio for extraction stimulation in wells with high and low injectability.
- 3** Own unique solutions for cement squeeze and water shut-off.
- 4** A wide range of tracers for survey performance.

Mirrigo is a Russian group of production and service companies.

Basic types of activities: production and supply of chemical agents for different purposes, engineering support of customers relative to problems of application of chemical solutions, rendering of services.

FIELDS OF MIRRICO GROUP OF COMPANIES



OIL PROSPECTING
AND EXTRACTION



HYDROCARBON PIPELINE
TRANSFER



COAL PRODUCTION
AND IMPROVEMENT



FERROUS AND NONFERROUS
METALLURGY



CHEMICAL AND PETROCHEMICAL
INDUSTRY



OIL AND GAS PROCESSING



WATER AND SEWAGE
TREATMENT

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TRACER SURVEYS IN CASE OF MULTY-STAGE HYDRAULIC FRACTURING

60%

of resource base fall into
hard-to-recover reserves.

1%

of hard-to-recover reserves
are applied in development.

\$85–98

is a price of commercial
production of scavenger oil.



MIRRICO
GROUP OF COMPANIES

PROBLEM:

To estimate efficiency of multi-stage hydraulic fracturing operations.

SOLUTION OF MIRRICO GROUP OF COMPANIES:

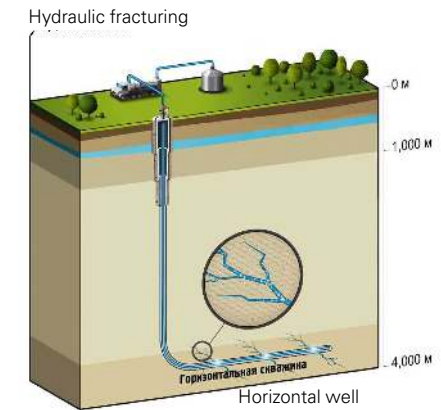
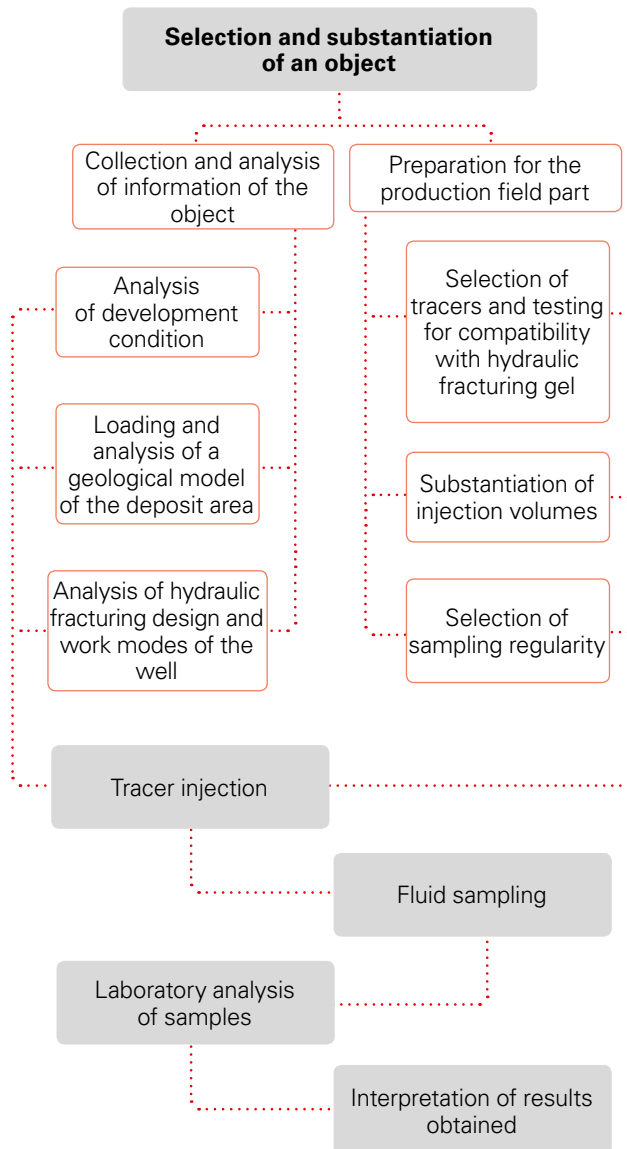
Tracer surveys in case of multi-stage hydraulic fracturing is a method of survey for estimation of reservoir porosity and permeability and definition of multi-stage hydraulic fracturing efficiency.

The survey represents injection of the tracer fluid to the well bore zone and fixing of change of concentration or location of the tracer.

They enable at each stage of search, survey and reservoir management:

- To refine a geological model of the deposit area due to definition of permeability values of interlayers in the vicinity of fractures resulted from multi-stage hydraulic fracturing in the horizontal well.
- To define the rate of yield of each frac port in total volume of produced fluid with separation of stages.
- To define water cut of each frac port.
- To solve an inverse problem for refinement of fracture distribution under reservoir conditions.

TECHNOLOGY OF SURVEY PERFORMANCE:



ADVANTAGES OF SERVICES OF MIRRICO GROUP OF COMPANIES:

- A wide range of water and oil soluble tracers enables to perform tracer survey in case of large amount of stages of multi-stage hydraulic fracturing and to use a unique pair for each frac.
- Water soluble tracers can be injected as a part of hydraulic fracturing fluid.
- All the tracers meet progressive requirements imposed on substances for performance of this type of work.
- Own specialized software for interpretation of the tracer survey data.
- Own certified laboratory for sample analysis.