

BEING IN AVANT-GARDE



MIRRICO

GROUP OF COMPANIES

ADVANCED TECHNOLOGIES



BEING IN AVANT-GARDE

We thought about the way to tell about our innovative solutions to our clients around the world and we decided to use art as our language — the language that opens all the doors.

We have drawn a parallel between our workings and the artworks of the Russian Avant-garde artists who were the pioneer ideologists and practitioners calling to the ultimate novelty of form and matter. They were creating their art at the beginning of the 20th century in Russia getting inspired by the global changes in the world structure and internal changes of the state. The power of transformation gave a strong momentum to the creative energy. The nature of this phenomenon is still under exploration. The courage to create something never seen before makes the collectors and museums all over the world to chase and buy the artworks of Kazimir Malevich, Wassily Kandinsky, Alexander Rodchenko.

Nowadays, nature and human are our sources of inspiration. The scientific discoveries and the level of technological progress enable us to develop and manufacture unique chemicals for production and transportation of oil. **Our guiding principles lie in high efficiency and lower consumption level based on new formulations and forms, versatile application and possibility of reuse based on the advanced purification and recycling technologies, safety for both nature and human.**

SUPREMATISM



The New Green

It feels like an eternal motion of a boundless object. Infinitely varicolored green literally goes **BEYOND THE FRAME, BEYOND THE LIMITS**, beyond the boundaries of time. This masterpiece of non-objectivity depicts a complete dissolution of meaning: is it a painting at all or just a part of it?

Mark Rothko was a follower of Olga Rozanova's art, and he is one of the most expensive artists in the world. The prices of his artworks reach as high as 200 mln. USD.



Green stipe, 1917.
O. Rozanova.
Rostov-Yaroslavl
museum
preserve (Russia,
Rostov).

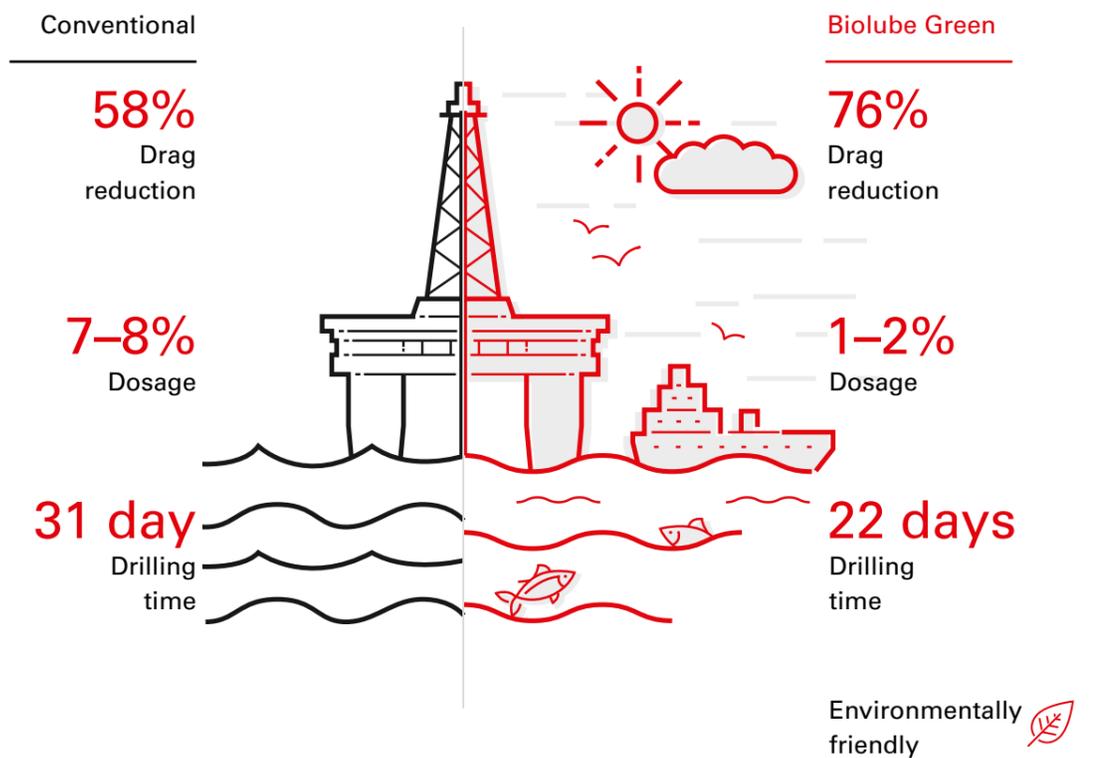


BIOLUBE GREEN

Drilling fluids additive. Environmentally friendly and effective drag reduction solution for well construction

The additive reduces the drag coefficient by more than 70% at minimum concentrations. It consists of biodegradable and safe raw material. The product is effective in a broad range of temperatures. Around 50 wells were drilled using Biolube Green in the last three years.

Advantages of Biolube Green in comparison with conventional lubricating additives:



SUPREMATISM



Catastrophic absorption of color

Why is the black square considered a masterpiece? This painting is a manifesto calling to explore the possibilities of color and composition. Square is the traditional shape of perfection. It is the Absolute, and therefore, it is a starting point for something new. The choice of black is extremely precise — all other colors vanish in it. The viewer becomes a witness of complete absorption for the sake of revival: **THE DARKNESS CLOAKED IN LIGHT, IT CAN EXPLODE ANY MOMENT TO BRING LIFE OUT OF NON-EXISTENCE** Ever ready to create, but ...never to repeat.

The "Suprematic composition" by Malevich is in Top-10 most expensive paintings of the 20th century.



Black Square, 1915.
K. Malevich. The State Tretyakov Gallery (Russia, Moscow).



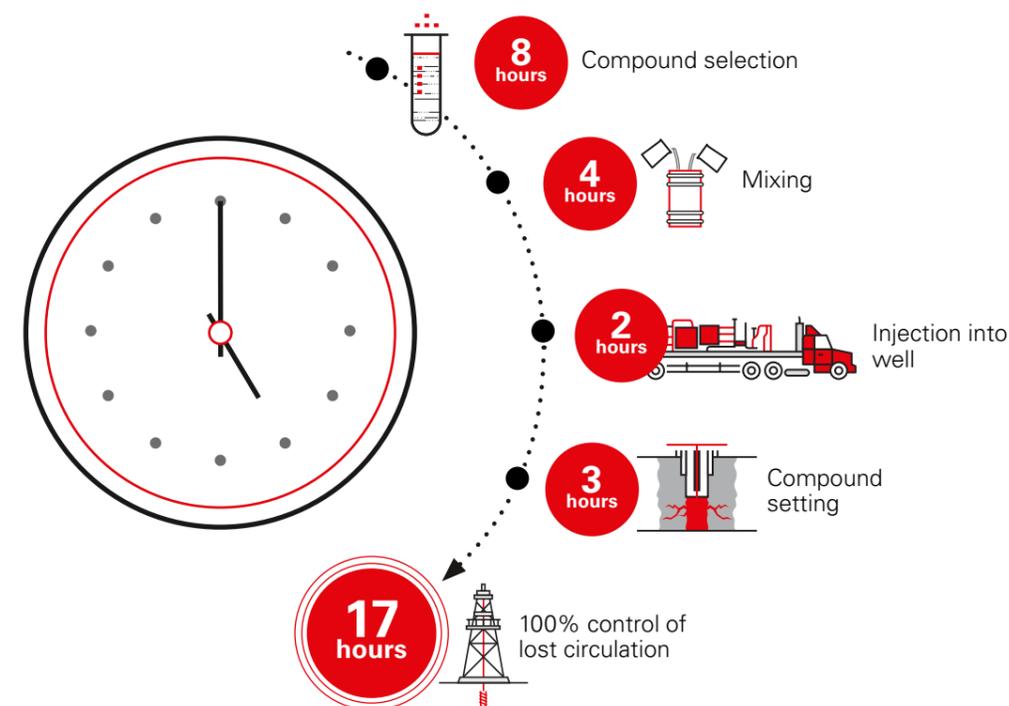
QuickStone™

Advanced technology for catastrophic circulation loss control in drilling

The QuickStone system is designed to work in situations when other solutions for controlling loss of drilling mud circulation are not effective.

The QuickStone unicity is the programmable setting: instant gain of strength in given conditions.

QuickStone — solution in a matter of hours



Company*	Standard solution	Advanced technology QuickStone
A major Russian oil and gas company	Stand-by: 2 weeks	Stand-by: 1 day 100% well control.
	Losses: \$172,401	Losses: \$43,482
A major oil and gas company of Kazakhstan	Stand-by: 41 day	Stand-by: 1 day 100% well control.
	Losses: \$422,208	Losses: \$36,525
A major oil company of Belorussia	Stand-by: 14 days	Stand-by: 1 day 100% well control.
	Losses: \$221,659	Losses: \$70,441
	Stand-by: 14 days	Stand-by: 1 day 100% well control.
	Losses: \$147,773	Losses: \$53,918

* The results achieved on one well of each company are presented.

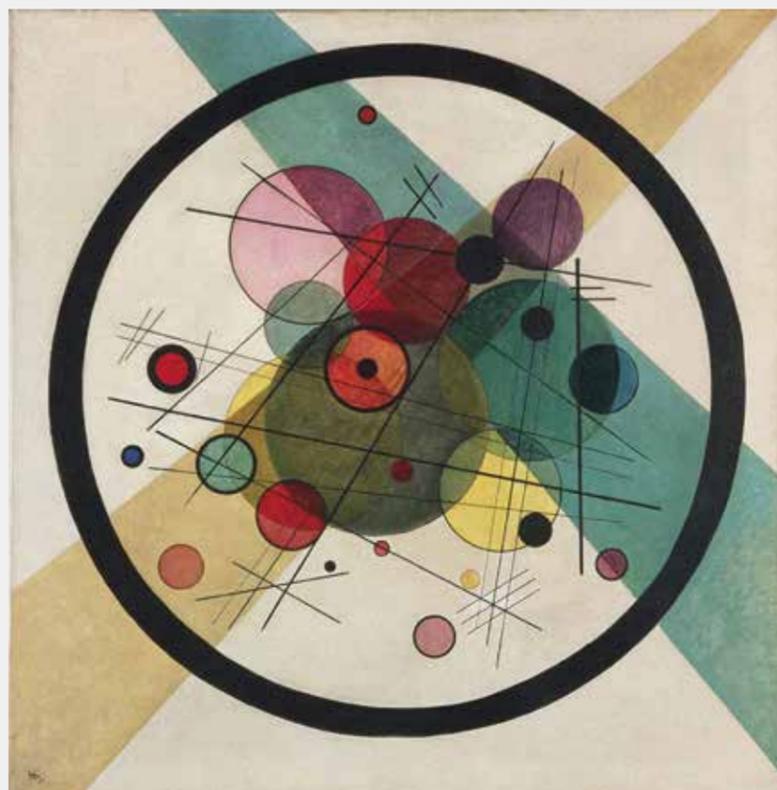
ABSTRACTIONISM



Integrity of Multitude

Crossroads of the worlds, planetary alignment, cells under the microscope, artist's palette — **A SET OF SIMPLE ELEMENTS CAN CREATE A COMPLETE PICTURE.** Color, size, direction of lines and strokes- everything has a meaning to interpret. It is rightfully considered, that with the help of abstraction all the logical concepts came into being.

One of the Kandinsky's watercolors has set the stage for abstractionism.



Circles in a Cycle, 1923. W. Kandinsky. The painting now is in the Philadelphia Museum of Art (USA, Philadelphia).

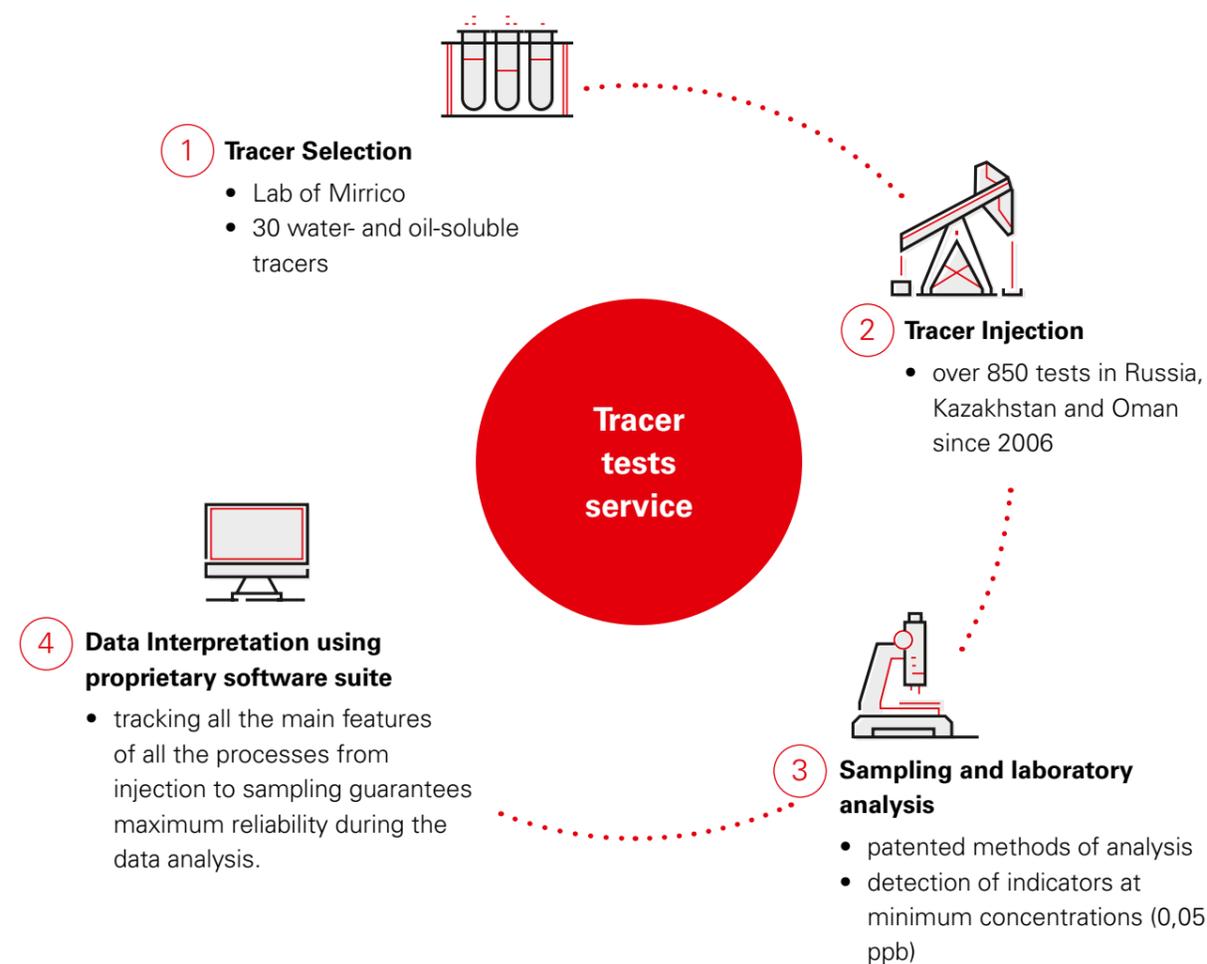


TRACER TESTS

Reservoir porosity and permeability assessment technology

Types of tracer tests:

- Interwell chemical tracer tests
- Multistage frack chemical tracer tests
- Single well chemical tracer tests



ABSTRACTIONISM



What is lurking inside the black

Abstractionism is a belief that the colors, shapes, and lines themselves are so self-sufficient in terms of their power of impression, that there is no need in copying the world around. The canvas depicts exactly what you see there: the black background and the contrasting shapes on it — geometric and whimsically “alive.” But what a deep meaning lies in it! Black is the silence, white is the new word. The dot is the connection point between the silence and the speech, the creatures are lively embryos. Their emotions are manifested by adjacent lines “wreathed” in a smile. **AND IF YOU LIKE – THERE WILL BE NOTHING INSIDE.** Kandinsky used to say: “... Ask yourself if this piece of art enables you to take a stroll in a new world, previously unknown to you? If so, then what more do you want?”

The paintings of Kandinsky are kept in 66 museums and private collections including the National Gallery of Art in Washington.



Variegated Black, 1935. W. Kandinsky.



SEURVEY ORM

Solution for increasing profitability of the well

The chemical reduces the viscosity of heavy oil by 16 times.

The compound is reusable. Simple regeneration technology: the product just needs to settle out in

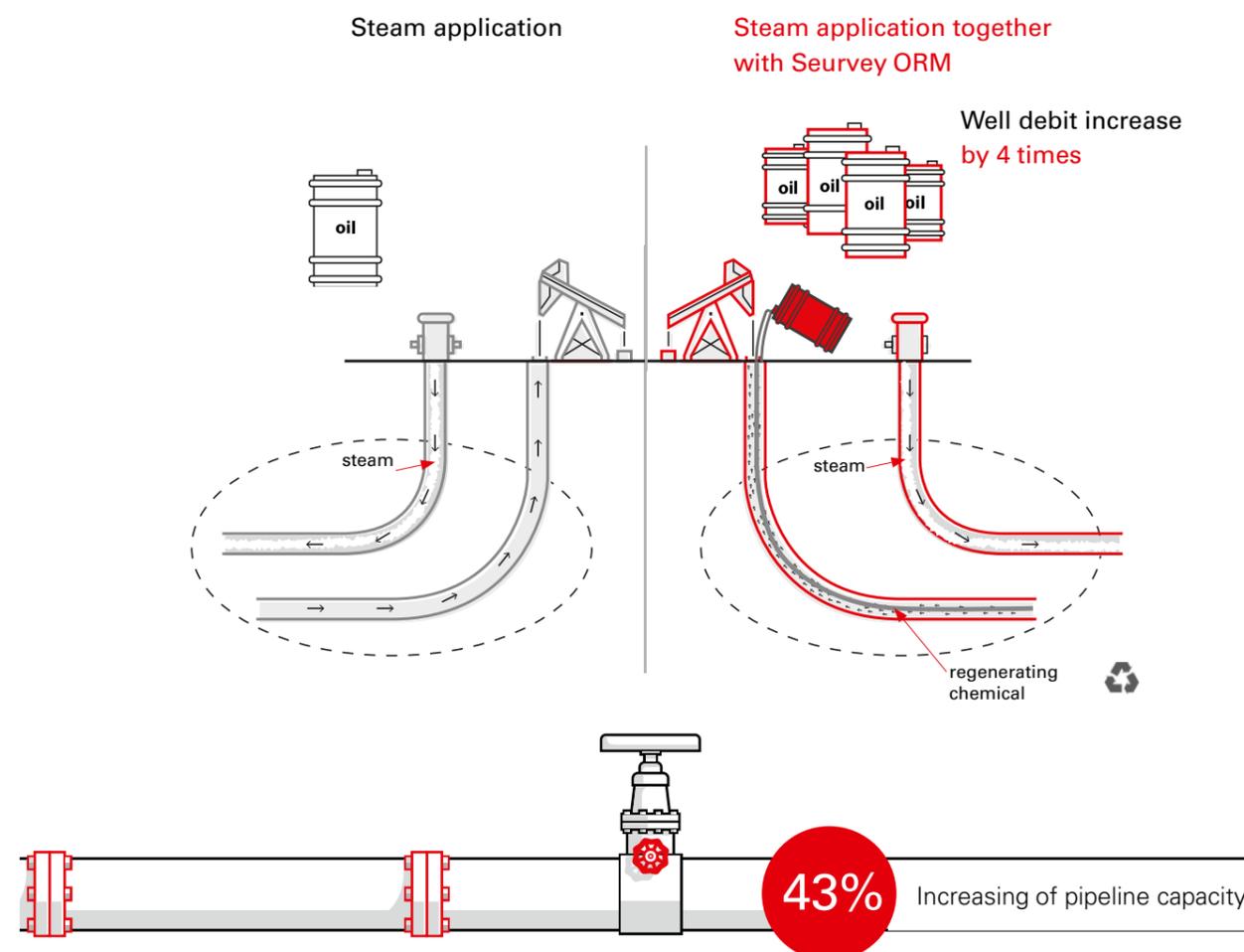
a tank for 24 hours.

There are two modifications of the chemical in the Mirrico Group's product line:

Seurvey ORM 1 — liquid form;

Seurvey ORM 2 — powder product form.

Versatile features of Seurvey ORM allow using the chemical for increasing the capacity of pipelines transporting viscous oil.



CONSTRUCTIVISM

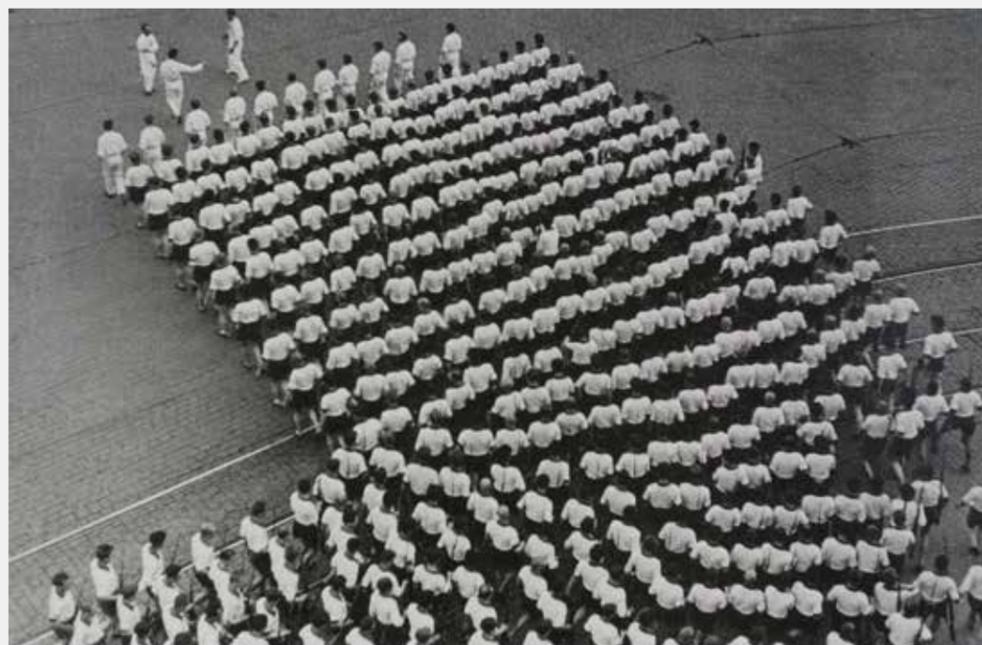


Familiar things from a new angle

Alexander Rodchenko being the pioneer of constructivism and the founder of design and advertising in USSR was skilled in staying himself while being in the flow. He was one of the first artists to reject the usual perspectives in favor of “top-down” and “bottom-up” views, which has become one of his artistic methods. Diagonal arrangement of compositions was his second method, which added the necessary momentum to his artworks. In our days the art of Rodchenko is widely recognized. Collectors from all over the world buy his artworks on the major auctions. **RESHAPING THE PRESENT WITH THE FUTURE IN MIND** — that is what the artist viewed as his mission.

The Rodchenko methods can be easily sensed in the works of photographers of the legendary Magnum Photos agency, which is one of the first stocks of copyrighted photography.

A column of the Dynamo sports society, 1935-1938. A. Rodchenko. The collection of the Moscow House of Photography (Russia, Moscow).



GRANULATED PRODUCTS

Solution for protection of oilfield equipment from corrosion and scale

The innovative shape of granules fundamentally changes the common chemicals.

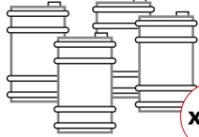
Solid form of the substance enables convenient handling during operations, and ensures higher efficiency and cost efficiency of application: one volume unit of the dry chemical equals to twenty volume units in the liquid form.

The product line of the Mirrico Group contains granulated inhibitors of corrosion, scale inhibitors, and complex effect inhibitors.

Granules production technology allows creating dual-purpose inhibitors. The technology is patented by Mirrico.

The product was tested on 17 wells drilled by branch companies of Rosneft and Lukoil. The average protective effect achieved during the pilot tests is 90% in 410 days.

Advantages:

Liquid chemicals	Granules
Frequency of well treatment	
 <p>4 times per month x12 per year</p>	 <p>1 time per year</p>
Transportation and storage	
 <ul style="list-style-type: none"> Need to transport and store substances of hazard category 3. 	 <ul style="list-style-type: none"> Need to transport and store small volumes of low hazard substances.
Injection of chemicals	
 <ul style="list-style-type: none"> Regular site visit by the contractors personnel 	 <ul style="list-style-type: none"> Remote control

Integrity of Multitude

Art should serve the industrial manufacturing purposes and the manufacturing should serve people. This innovative thought of the constructivism ideologists gets visualized as a prototype of a robot. All of the elements function — lines support the framework, circles enable the motion, the color conveys emotions. **THE PROPHECY THAT TECHNOLOGIES WILL COME TO REPLACE HUMANS IS BRIGHTENED UP BY A HOPE THAT ARTIFICIAL INTELLIGENCE WILL NOT BE DEPRIVED OF FEELINGS.**



Stepanova was the first to outline coveralls as a part of the material culture of the society and connected functionality of the work clothing to the ideas of labor protection.

Figure. 1921. V. Stepanova. Museum of Modern Art (Moscow).



MARTin™

Mobile autonomous robotic unit for cleaning tanks and oilfield equipment

The distinctive feature is using a scavenger-robot instead of manual work. Advantages of the robot:

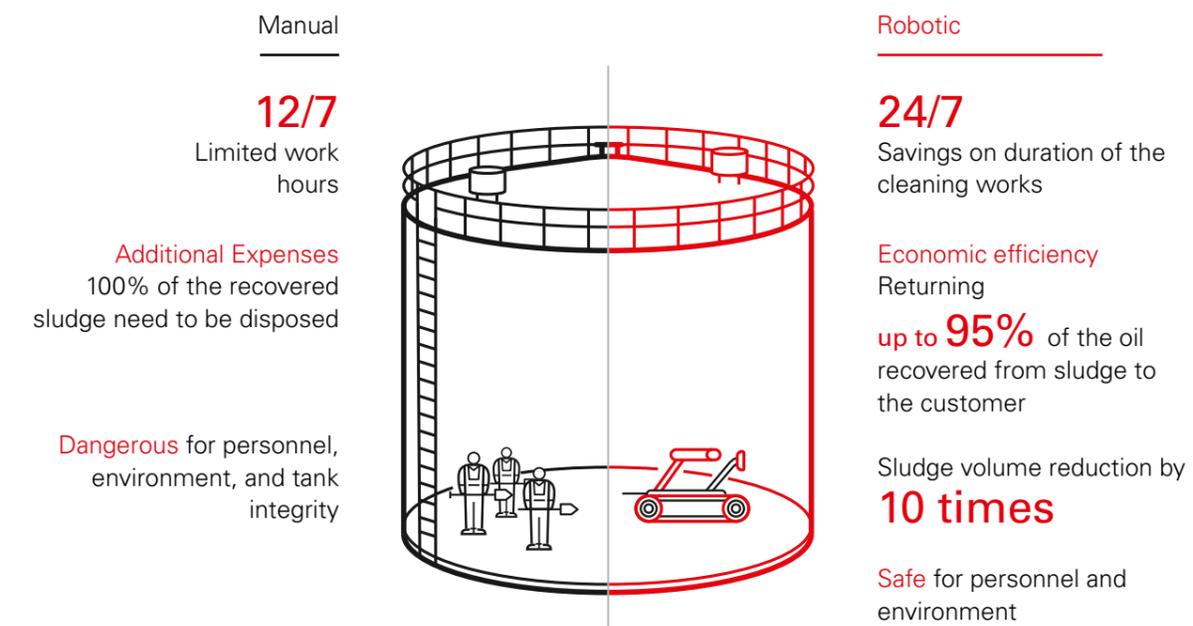
Safety:

- No man entry.
- Hydraulic drive ensures explosion safety.

Versatility:

- Cleaning various types of equipment and machinery: from tanks to rectifying towers. The scavenger-robot can be modified to meet specific requirements of the customer.
- Operability in a broad range of temperatures in 24/7 mode.

Comparison of manual and robotic cleaning methods:



Measure the economic efficiency of the MARTin unit using the [calculator](#)

Nature of continuous flow

Parallel lines cross the canvas and create an impression of a dash movement. What did the artist do to make the **IDEA OF CONTINUITY** clear? He left the starting and the finishing points of the stream “out of the canvas” and directed the lines upward, but most importantly—the color: he used energetic tones for the stripes, that add volume to the image by interacting with each other. Matyushin was one of the first ones to start staging shows dedicated to light and form. He thus turned not only into a brilliant artist but also became the founder of live art performances.

Matyushin is the author of “A Guide to Color” (1932). It can be viewed as a prototype of the Itten color wheel — one of the main tools of the colorists all over the world.

Movement in space, 1922.
M.Matyushin. The State Russian Museum (Russia, Moscow).



M-FLOWTREAT™

Drag reducing agent. Chemical for improvement of pipeline performance.

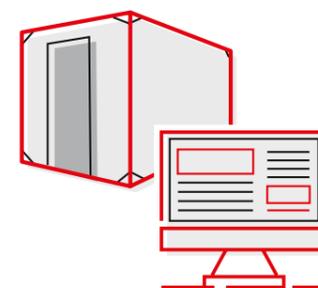
Effect of the agent: increased pipeline capacity, reduced inline pressure, reduced energy consumption during pumping.

Customized selection of formulations for various types of the pumped fluid including oil and commercial petroleum products.

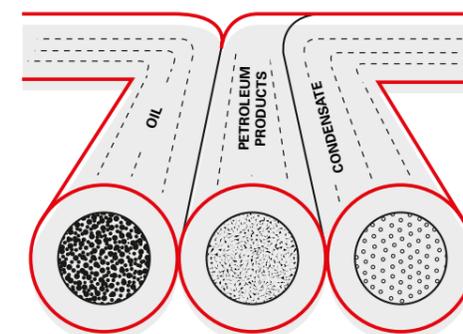
Advantages of M-Flowtreat:

- Preservation of physical and chemical properties of the pumped fluid.
- Can be used together with oilfield chemicals
- Effective at minimum doses

Application effect:



Remote control via an automated instrument technical room



Usable on all types of pipelines*:

- interfield and main pipelines
- main product pipelines
- condensate mains

83,7%

Average increase of pipeline capacity

55,8%

Average reduction of inline pressure

* The data is based on the works performed for Transneft, Lukoil, Rosneft, Novatek companies

SUPREMATISM

Being supreme

Suprematist artists preached for freedom of subject from meaning and taught not to see commonplace even in seemingly familiar things. **INSIDE** there is no more object describable by words —

EVERYTHING IS FILTERED OUT, ONLY THE POWER OF THE UNKNOWN REMAINS — lines and colorforms — able to construct any form of life just by the flow of thought.

Are other artistic languages capable of expressing something similar? It is only the supremus — the superstyle. The one superior to all the others.



The painting is in the world famous gallery of Peggy Guggenheim (Collezione Peggy Guggenheim) — one of the most valuable collection of paintings by the artists of 20th century. It includes the paintings of Mondrian, Picasso, Kandinsky, Lezhe, Magritte, Dali. The value of the collection is 350 million USD.

Untitled, 1920. E. Lissitzky, Collezione Peggy Guggenheim (Italy, Venice).



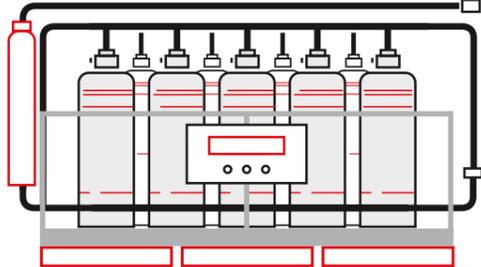
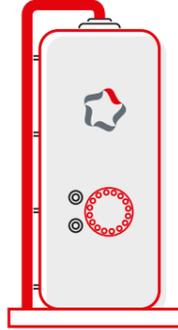
DYCLAR™



Dynamic water clarification technology

Water pre-treatment for all industries as well as housing and utilities sector. Purification of water from suspended solids and colloid impurities.

Advantages of DYCLAR technology compared to ultrafiltration technology:

Ultrafiltration technology	DYCLAR technology
	
	0,1 mg/l quality of purification from suspended solids
	SDI < 3 silt density index
4 years membranes service life	20 years service life of INERT filtering load unit
less than 10 mg/l* allowable level of contamination by suspended solids for the feed water	300 mg/l allowable level of contamination by suspended solids for the feed water
Periodic chemical flushing of filter by caustic soda, biocide, hydrochloric acid	No hazardous chemicals are used in the technological process
25% water consumption for internal needs	5% water consumption for internal needs
	1,7 times less CAPEX-costs
	2 times less OPEX-costs

* If feed water contamination level exceeds 10 mg/l the ultrafiltering technology requires preliminary purification using rapid sand filters.

CONSTRUCTIVISM



Elegant strength

It was Shukhov who first invented and erected hyperboloid edificios: the Moscow broadcasting tower was built of straight steel beams arranged into a geometrically precise lattice. The windload is the main hazard for high constructions but it is reduced to zero by the lattice design. **AN ENGINEERING MIND HAS CREATED A DURABLE STRUCTURE WITH MINIMAL CONSUMPTION OF MATERIALS.**

The idea of hyperboloids turned out to be so successful and demanded that more than 200 towers were created all over the world using the architect's patent.



The Sydney Tower, the Canton Tower, the Kobe Port Tower and the Aspire Tower in Qatar are among famous hyperboloids.

The Shabolovka Tower, 1920-1922, V. Shukhov (Moscow, Russia).



MC-ROCK

A technology for remedial cementing operations and reduction of water-cut in the produced oil

The MS-Rock composition cures lileakages in production strings, fights behind-the-casing flows, isolates water flooded formations from producing formations. Effective technologies for various pressure and temperature related downhole conditions:

- low temperature (-5-40 C°),
- average temperature (40-90 C°),
- high temperature (90-180 C°).

Traditional solution — cement		MC-Rock
<p>average permeability size 60 micron</p> <p>30 MPa compressive strength</p> <p>less than 5 MPa breaking strength features</p> <p>less than 0,5 MPa shows low adhesion to metal</p> <p>6-8 hours long setting time of the compound</p>		<p>12 times higher permeability size of granules is 5 micron</p> <p>30 MPa compressive strength</p> <p>10 MPa breaking strength features</p> <p>over 0,5 MPa shows high adhesion to metal</p> <p>5-10 minutes setting time of the compound</p>

Eco friendly
(The compound belongs to 4th class hazard level and causes minimum negative impact on the environment)

The following artists are presented in the booklet:

Olga Rozanova — a painter, a graphic artist, a book illustrator, a master of decorative and applied arts, an author of articles about arts, a poetess.

Kazimir Malevich — a Russian and Soviet avant-garde artist, a teacher, an art theorist, a philosopher, the founder of suprematism.

Wassily Kandinsky — a Russian artist and a visual art theorist, one of the founders of abstractionism.

Alexander Rodchenko — a Soviet Russian painter, a graphic artist, a poster designer, a sculptor, a photographer, a theater and cinema artist. One of the founders of constructivism, the forefather of design and advertising in USSR.

Varvara Stepanova — a Soviet avant-garde artist, a member of constructivism movement, a designer and a poetess.

Mikhail Matyushin — a Russian artist, a musician, an art theorist, one of the leaders of the Russian avant-garde of the first half of the 20th century.

EI Lissitzky — one of the major personalities of the Russian avant-garde: an architect, an artist, a book graphics artist, a designer, a stage designer, a skilled photoimposer, a designer of exhibitions.

Vladimir Shukhov — an engineer, an architect, an inventor. The author of construction design for the first Russian oil pipelines and an oil refinery equipped with the first cracking units of Russian manufacture.

**FOCUS ON THE RESULT,
WE DO THE CHEMISTRY!**

Comprehensive solutions for technological challenges.

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