



***The purpose of company activity:  
providing a wide range of services  
and advisory services of field gas-  
hydrodynamic and gas-condensate  
researches, development and mining.***

# Customers:

- JSC Gazpromneft-NNGGF
- JSC SEVERNEFTEGAZPROM
- LLC Kynsko-Chaselskoye neftegaz
- LLC Gazprom нефт-Yamal
- LLC Eriellneftegazservice
- LLC Gazprom Bureniye



# Range of services:

- *Complex welltest and gas-condensate researches of different types of formation fluid inflow with obtaining productivity on condensate (oil) and gas of separation.*
- *Preparation of welltest programs.*
- *Choice of the optimal operating mode of the well for conducting researches for gas-condensate content, and also for selection of deep (surface) tests.*
- *welltest and gas-condensate researches without gas discharging into the atmosphere, with separate measurement of gas, condensate and water. Researches of wells with the low maintenance of CGF, from 4 cm<sup>3</sup>/m<sup>3</sup>.*
- *Bottomhole and surface sampling.*
- *Measurement of gas-oil ratio.*

- *Interpretation of these field researches of objects of wells and laboratory researches of formation fluids, drawing up technical reports and issue of the recommendations necessary for calculation of stocks and protection them in the State Commission on Mining.*
- *Services in performing test operation of wells and preliminary development of fields.*
- *Welltest with use of the ejector.*
- *Wells interference research.*
- *Complex laboratory researches of all types of formation fluids (maintenance, control).*
- *Interpretation and reinterpretation of PLT.*
- *Services in carrying out test operation of wells and trial development of fields.*
- *Mapping of Arcgis.*
- *Reservoir simulation modeling*
- *Creation of sector models*

# Equipment:

- *high-precision quartz manometer-thermometers. All equipment is made in Russia and has international certificates.*
- *For PLT (production logging tool).*
- *Separators*
- *Vortex flowmeters*
- *Weight gauge*
- *Samplers (bottomhole and surface) with different modifications.*
- *The modular equipment for performance of researches without releasing of hydrocarbons into the atmosphere.*

# Description of MRC

MRC – A mobile Research Complex for research of gas-condensate wells without releasing of gas into the atmosphere (in a loop).

- I) Entrance manifold.
- II) Separation block.
- III) Control block

Name of an indicator	Value
Settlement pressure of the manifold, MPa	70,0
Settlement pressure of the separation block, MPa	16,0
Settlement volume of a separator, m <sup>3</sup>	4
Overall dimensions, mm, no more	
- length (taking into account a dyshl of the trailer)	9000 (11140)
- width	2550
- height	3775
Weight, kg, no more	20000

Working pressure, MPa	range of capacity	
	gas, nm <sup>3</sup> /d	liquid, m <sup>3</sup> /d
4,0 -16,0	30 000 - 765 000 (1 700 000)	3 - 400



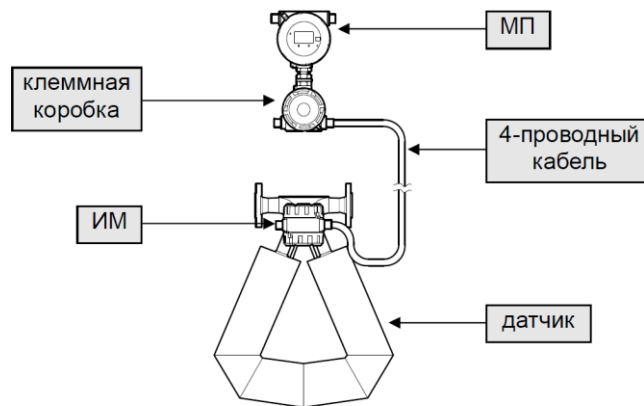
# Measurements block

The block consists of:

1. **THE GAS COUNTER VORTEX** - established on the line of gas discharge of separation.
2. **THE COUNTER FLOWMETER MASS ELMETRO-FLOMAK, established on the line of an exit of liquid from a separator.**

The flowmeter is intended for measurement of a mass and volume rate, amounts of liquids, gases, their temperatures and density and transfer received information for the technological purposes and registration and settlement operations

Sensor code	Diameter conditional pass, mm	Nominal rate, t/h	Basic value the main the allowed relative errors	Instability of zero, t/h	
				execution A	execution B
КИ-080	80	150	0,2% - 0,5%	0,013	0,02



### 3. Level gage VEGAFLEX 86

VEGAFLEX 86 is intended for measurement of level and the section of phases practically of any liquids with extreme pressure and temperatures. The level gage gives the exact and reliable measured values in case of sticking products, foaming or condensate. During application on saturated steam reliability of measurement is provided by means of the accounting of a signal from a special reference point on a probe.

Table 4. Specifications

<b>execution:</b>	coaxial probe ( $\varnothing$ 42 mm)
<b>measuring range:</b>	coaxial probe 6 m
<b>operating temperature:</b>	-196 ... +450 °C
<b>pressure:</b>	-1 ... +400 bar (-100 ... +40000 kPa)
<b>measurement accuracy:</b>	+/- 2 mm





# MRCLC

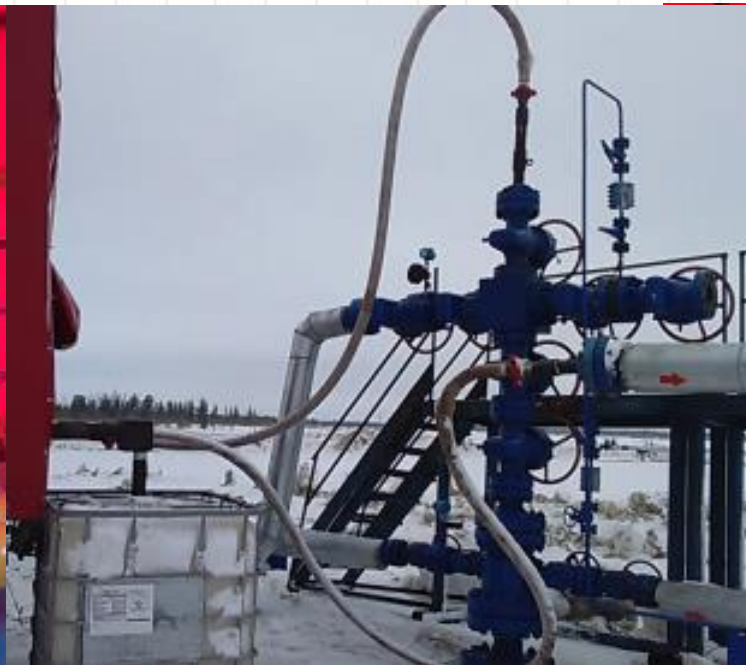
MRCLC – The mobile Research Complex for research of reservoir gas with the low content of  $C_{5+}$  consists from.

I) Entrance manifold. The block is intended for regulation of well work, for stream transferring to a loop or to a separator.

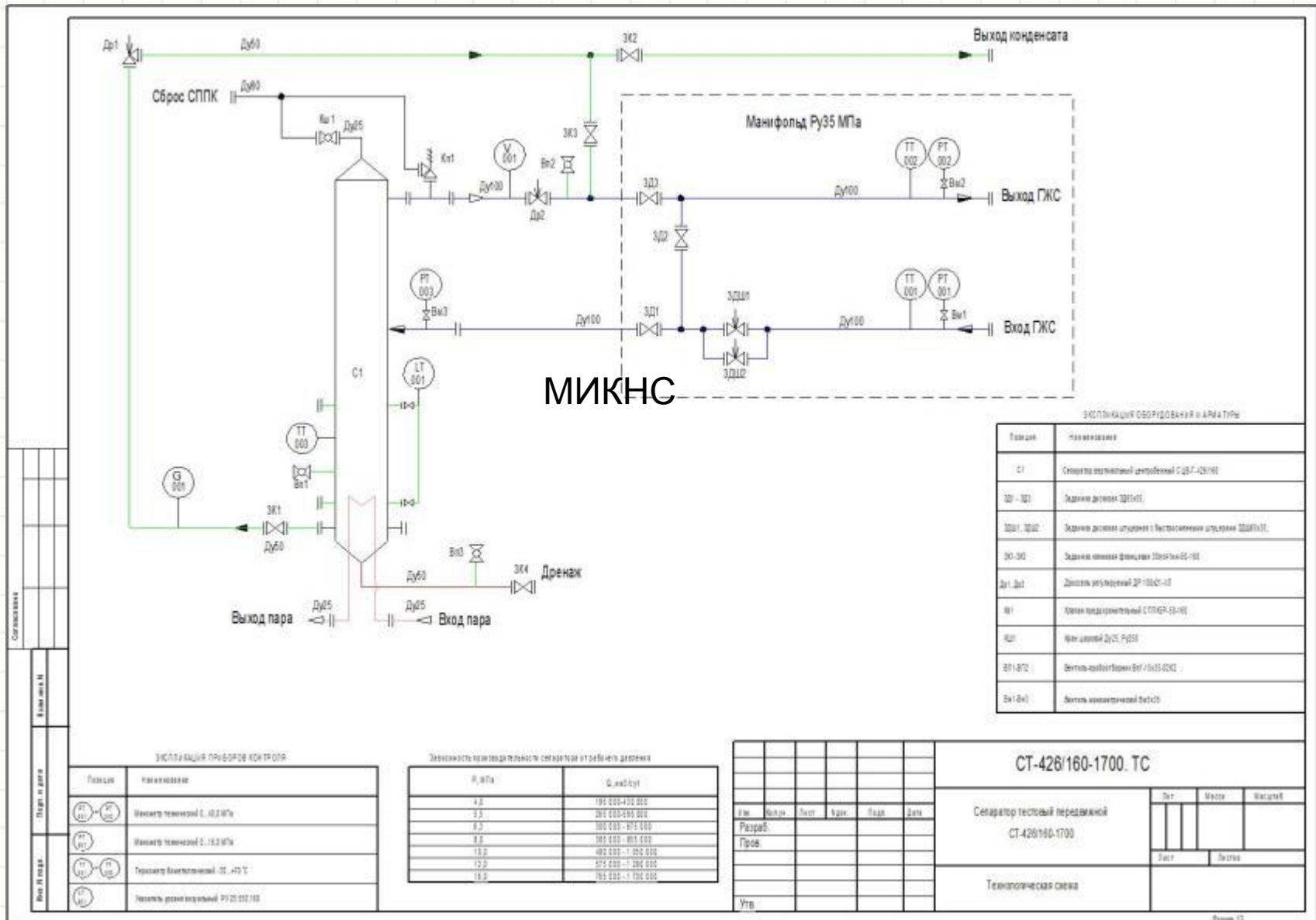
II) Separation block. The block consists of a centrifugal vertical separator, a pipe binding, shutoff and safety valves and PILES devices.

Name of an indicator	Value
Settlement pressure of the manifold, MPa	35,0
Settlement pressure of the separation block, MPa	16,0
Settlement volume of a separator, $m^3$	4,0-16,0
Pressure of test of the manifold, MPa	48,0
Pressure of test of the separation block, MPa	22,0
Overall dimensions, mm, no more - length (taking into account a dyshl of the trailer), - width, - height	6000 (8140)/2550/3775
Weight, kg, no more	5500
Productivity range, gas, $nm^3/d$	20 000 - 765 000 (1 700 000)
Productivity range, liquid, $m^3/d$	0,8 - 50





# Technological scheme MRC

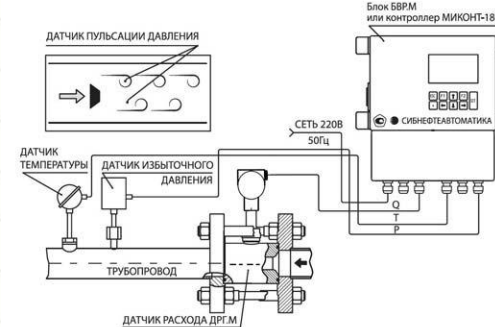




# Characteristics of metering devices of outputs of gas and ZhUV

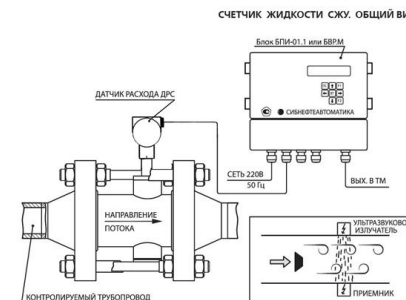
## 1. GAS LINE

GAS COUNTER VORTEX -, gage, working range 20 000 – 765 000 nm<sup>3</sup>/d (error of the device of  $\pm 2,5\%$ ); The entered parameters – composition of gas of separation. After carrying out the laboratory analysis, the output of gas is recalculated



## 2. LIQUID LINE

the Liquid consumption sensor - DRS-25A, a gage, working range is 0,8 - 25 m<sup>3</sup>/h (an error of the device of  $\pm 0,1\%$ )



# Equipment MRC-1

MRC-1 – a mobile Research Complex for research of oil wells. Consists of three technological blocks – the entrance manifold, horizontal and vertical separation blocks

I) Entrance manifold. It is intended for regulation of well work, for transferring stream to a loop or to a separator.

II) Horizontal separation block. The block consists of an oil horizontal separator of «СГГ-TC-900/63»

III) Vertical separation block. The block consists of a centrifugal vertical separator of «СЦВ-Г-426/160», a pipe binding, shutoff and safety valves and PILES devices.

# Equipment MRC-2

MRC-2 – a mobile Research Complex for research of oil wells. Consists of three technological blocks – the entrance manifold, the horizontal separation block and the block of control.

I) Entrance manifold. It is intended for regulation of well work, for transferring stream to a loop or to a separator.

II) Horizontal separation block. The block consists of an oil horizontal separator of «HFC 1200/63».

III) Measurement block



# Separation block

Table 2. Technical data НГС 6,3-1200

PARAMETER		CODE OF THE DEVICE
		НГС 6,3-1200
Internal diameter, mm		1200
Productivity range	oil ,m <sup>3</sup> /h	20-100
	gas, m <sup>3</sup> /h	25000
Pressure, MPa	working pressure	5,7
	Settlement pressure	6,3
	Trial at hydraulic test	7,3
Temperature, °C	working environment	от 0 до 100
	расчетная стенки $t_p$	100
	minimum admissible walls under pressure	Steele 09Г3С — от -30 до -60
characteristic of the environment		Oil, associated gas
Liquid ablation gas, g/m <sup>3</sup>		< 0,1
Ablation of free gas liquid, in %		< 1
Increase on corrosion, mm		2
nominal volume		6,3
Group of devices for control of welded connections		1
Service life, years		20

# Technological scheme MRC-2

