

**DEVELOPMENT OF DRILLING TECHNOLOGY WITH HYDRAULIC MOTORS IN SALT BLOOD CONDITIONS.**

*R.S. Shaymanova, M.K. Urazov, D.N. Yuldosheva*

*Termiz Institute of Engineering and Technology*

*NX Shaymanova teacher of the 15th general education school*

**Keywords:** Turbine drilling, subsalt (terrigenous and carbonate), subsaline, intersalt, lithological composition, stratigraphic complex, Pripyat pipe deposits.

**Abstract:** Improving the efficiency of deep wells and fairways in oilfields with salt rock deposits by developing and implementing drilling techniques and technologies through hydraulic drilling motors (HDM).

**Diamond bits** with turbine drilling technology work to exit dedicated . Field information analysis to do as a result known it is a diamond bit from turbo-drills use drilling speed increase provides and the well of construction technical and economic indicators improve for reserve is , har trip average penetration significant level increases . salt in mines . With that together , diamond bite entrance of the cone bit than almost three even high the fact that was determined .

Formerly RUE PO in Belorusneft diamond bits with wide applied of turbodrills main type inclined pressure to the line have consecutively three partial spindle ZA7Sh turbodrill was \_ At the stand his energetic characteristics study ZA7Sh turbodrill with diamonds bits with efficient drilling provide for enough in quantity to torque (2100 Nm ) and rotation speed (450-550 rpm) . that showed . However , in the turbodrill of pressure decline permission done from the borders increased because it goes Turbine efficiency is low - 45.2 % . Work mode of pressure decrease 9.6 \_ MPa the organize does and turbodrill empty to values when accelerating it is 11.5 MPa to rises . High in density drilling from liquids (1290 - 1500 kg / m <sup>3</sup>) when used , ZA7Sh turbodrills with drilling of the process efficiency sharp decreases . It's mud of the pump at the output high pressure values (17 .5 MPa from more than ) and rotation speed half empty from time less to values when it comes down of turbodrill unstable performance with depends on , that is . operational in the "left" zone of the characteristic performance during \_ From this except , A7Sh type in turbodrills stator blades of the used A7N4S turbine and rotors between very narrow and curve transition of channels stuck stay because of turbo drill from work exit danger increases .

Implemented \_ studies ZA7Sh series as a result turbocharger turbocharger standard turbine plots based on modernization make , they have A7N4S series the turbine common dimensions combined to the new TVM-195 turbine replacement offer done \_ ZA7Sh and ZTVM-195 turbodrills comparative technical parameters and power characteristics In the table shown . 1.

**Tab . 1. ZA7Sh and ZTVM-195 turbodrills comparative parameters .**

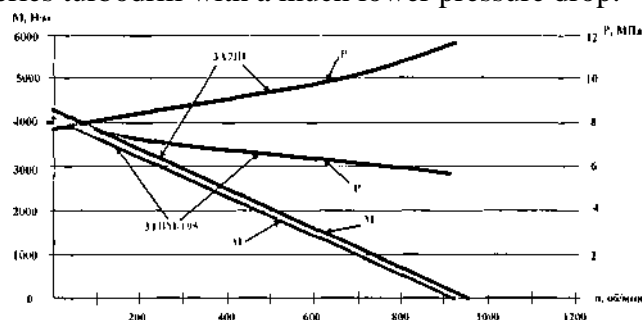
Characteristic parameters	Turbodrill type	
	ZA7SH	ZTVM-195
Turbine type	A7N4S	TVM-195
Turbine of the stator external diameter , mm	165	165

Turbine of the rotor internal diameter , mm	80	80
Stator knives number , pcs	31	16
Rotor knives number , pcs	31	23
Turbine stage axial height , mm	52	48
Turbine axial to play , mm	14	16
Turbine stages number , pcs	330	357
Washing for liquid spending , m <sup>3</sup> /s	0.024	<b>0.024</b>
Washing of liquid density , kg/m <sup>3</sup>	1400	1400
Brake torque , N m	4200	4100
Work torque in the mode , N m	2000-2100	2000-2050 years
Rotation frequency , rpm		
- empty	950	925
- work mode	450-550	450-550
Pressure decrease , MPa		
- braking mode	7.5	8.2
- empty	11.5	5.9
- work mode	9.6	7.4

In addition to providing the required energy parameters, the new turbine has a high efficiency coefficient (55.6%) and the following design advantages compared to the A7N4S series turbine:

- Axial height reduced by 4 mm allows installing 8% more turbine stages in the turbodrill;
- 2 mm increased axial clearance between the turbine stator and the rotor (backlash) ensures an increase in the period of overhaul of the turbodrill axial support installed on the shaft part;
- A smaller number of stator blades (16 vs. 31) and rotor blades (31 vs. 23) allows higher density solutions to be driven through the turbodrill, incl. contaminated without increasing the risk of turbocharger failure due to clogging of the turbine blade passages.

In the form. 2 presents the results of comparative bench studies of turbodrills. The analysis of the obtained results showed that the ZTVM-195 turbodrill provides almost the same torque and speed parameters as the ZA7Sh series turbodrill with a much lower pressure drop.



Rice . 2. ZA7Sh and ZTVM-195 turbodrills bench characteristics .

ZTVM-195 experimental of turbodrill the field tests Svetlogorsk UBR RUE PO in Belorusneft was conducted . Tests Pripyat of depth high salty and between salts mines 1735 - 3820 m depth 8 1/2 "Ti 3 105C type diamond bits and ISM 215.9 bits in 10 wells with conducted in drilling . Drilling rocks , mainly clay , marl \_ and limestone intermediate layers was salts , as well as dolomite and clay intermediate layers was limestones , less while shoes of the sexes intermediate layers with expressed .

In wells 46-Chkalovskaya, 34-Nekrasovskaya and 115-Zolotukhinskaya the field tests ROP in the process and of pressure to decrease dependence determination for mechanic cutting studies and experiences was conducted . (1310 - 1430 kg/ m<sup>3</sup> ) in density drilling from the liquid when using pilot (ZTVM-195) and of serial (ZA7Sh) turbodrills stable work zones .

Experiments as a result bit efficient axial load value It was found that it is a ZTVM-195 turbodrill stable performance in the zone high salty and between salts mines in drilling mechanic penetration of speed increased going values provides . abrasive-cutting kind of bits *with* and high in density drilling from clay when using . This value is 70-80 kN was \_

ROP (  $V_M$  ) of axial to the load (  $G_{oc}$  ) per bit experimental dependencies mathematician way again work the following drilling in between necessary dependence enough high reliability with descriptive equations get enable gave :

$$3977-4000 \text{ m} : V_M = - 0,030 G_{oc}^2 + 0,5848 G_{oc} - 0,5086; R^2 = 0,6784;$$

$$4000-4006 \text{ m} : V_M = - 0,213 G_{oc}^2 + 0,4116 G_{oc} + 0,5628; R^2 = 0,7848;$$

$$4006-4015 \text{ M} : V_M = -0,012 G_{oc}^2 + 0,2544 G_{oc} + 0,8682; R^2 = 0,7631;$$

$$4015-4022 \text{ M} : V_M = - 0,405 G_{oc}^2 + 6,2332 G_{oc} - 21,121; R^2 = 0,5852;$$

$$4022-4032 \text{ M} : V_M = -0,017 G_{oc}^2 + 0,4457 G_{oc} - 0,3345; R^2 = 0,8641;$$

$$4032-4044 \text{ M} : V_M = - 0,345 G_{oc}^2 + 0,5449 G_{oc} - 0,1489; R^2 = 0,5134;$$

$$4044-4050 \text{ M} : V_M = - 0,145 G_{oc}^2 + 2,1306 G_{oc} - 5,2865; R^2 = 0,6784.$$

The following drilling in between pressure of reduction (  $dP$  ) in bit axial to the load (  $G_{hungry}$  ) dependence enough high reliability with descriptive equations are also obtained :

$$3345-3419 \text{ m} : dP = 0,0113 G_{oc}^2 + 0,1588 G_{oc} + 3,556; R^2 = 0,6339;$$

$$3977-4044 \text{ m} : dP = 0,0113 G_{oc}^2 + 0,1588 G_{oc} + 3,556; R^2 = 0,8617.$$

High in density drilling from liquids of ZTVM-195 turbodrills in use positive test the results account received without , they are ZA7SH series turbo drilling Park step by step replacement and the wells of drilling turbo drill method wide apply for recommendation done \_

Field tests in the process spherical axial bearing and " deep " rubber rubber-metal axial bearing with equipped diameter is 195 mm turbodrill MTBF of spindles and endurance indicators as well diameter with a well engine miles \_ 127 mm , toroidal working surface spherical axial bearing with equipped . . As a result , turbodrill on spindles wide apply for " deep " rubber rubber-metal bearings and small in diameter PDM spindles toroidal the work to the surface have spherical bearings recommendation it was done while rotation the time to increase possibility gave \_ 1.5 - 2 times from spindles .

Produced by " Belorusneft " . release union RUE deep the wells drilling for use for approved Enterprise ISM type included in the standard (STP). with diamonds bits and bits with turbine drilling technology work released \_ This of technology technical parameters Pripyat pipe in the mines of the sexes salty mines with deep the wells to build projects work on the way out is used .

**Used books list**

1. R.S. Shaymanova, M.K. Urazov, D.N. Yuldosheva . Cellulose is a promising raw material for various consumer goods .
2. R.S. Shaymanova, M.K. Urazov, D.N. Yuldosheva Cellulose is a raw material for consumer goods .
3. R.S. Shaymanova, M.K. Urazov, D.N. Yuldosheva Properties of different types of cellulose fibers .
4. R.S. Shaymanova, M.K. Urazov, D.N. Yuldosheva is a pulp producer of Uzbekistan .
5. Murodov MM, Muxitdinov UD, Urozov MK, Xudoyorov XO. Comparative researches of the composition and properties cmc in different degrees of polymerization. //Scientific technical practical journal of composite materials 2018 No. 1 - p. 57-58 (02.00.00 No. 4)
6. Mukhitdinov U.D., Murodov M.M., Urozov M.Q. A technology for extracting high-quality cellulose from sunflower stalks and fiber waste from textile enterprises. //Composite materials scientific and technical practical magazine 2018 No. 1. -p. 65- 66 (02.00.00 No. 4)
7. Turdiboeva N.U., Murodov M.M., Urozov M.K. Development of the technology of obtaining cellulose from plants and the production of Na - carboxymethyl cellulose based on it . Scientific-technical and practical journal of composite materials. - Tashkent, 2018. - No. 3. p.36 (02.00.00 No. 4)
8. Urozov M.K., Turdiboeva N.U., Murodov M.M. Development of technology for the production of cellulose from saflora plants and the production of carboxymethyl cellulose based on it. //Scientific-technical and practical journal of composite materials. - Tashkent, 2018.-№3. p.58 (02.00.00 No. 4)
9. Murodov MM, Urozov M.K., Turdiboeva NU, Khalikov M. Synthesis of Technology Carboxymethyl Cellulose With Increased Con tent of The Main Substance. Journal of Textile Science &Engineering, ISSN; 2165-8064, /USA/, Textile Sci What 2018 , p 2 of 2. 18;9 DOI; 10.4172/2165 – 8064.1000374 (05.00.00 No 2 3)
10. Murodov M.M., Turdiboeva N.U., Urozov M.K. Development of the technology for Production of Cellulose From Plants of Saflora and Production of Carboxymethyl Cellulose on Its Basis. Journal of Textile Science&Engineering, ISSN; 2165-8064, / USA/, Textile Sci Eng 2018, 18;10 DOI; 10.4172/2165 – 8064.1000374 (05.00.00 № 23)