

Periodic Use of Gas Lift Wells in Small Mines

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Abstract

During the operation of piles, the formation pressure decreases. In order to maintain the flow of the well at a given level, the riser pipes are sunk deeper. In this case, the cost of the working agent will increase and the cost of extracted oil will also increase. In order to reduce the relative consumption of gas, it is advisable to periodically use low flow gas lift wells without a compressor.

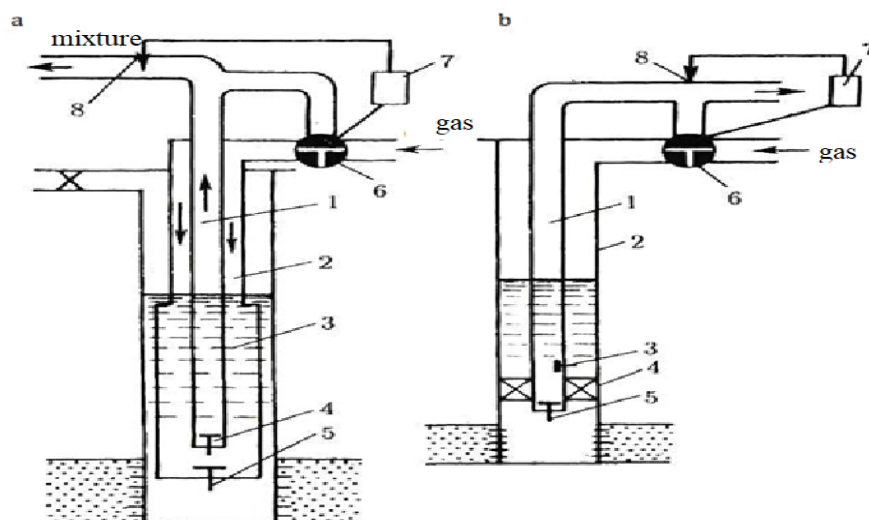
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Introduction

The scheme of use in the periodic gaslift method is as follows. After the fluid is compressed with the help of the working agent, the pumping of the working agent and the use of the well are stopped.

When the well is stopped, a certain amount of fluid accumulates in the well. After that, the working agent is pumped into the well through the annulus, the collected fluid is compressed together with the working agent into the riser pipe, and then it is directed to the injection system. This method has a drawback.

- when the liquid is suppressed with a working agent, in most cases, the pressure of the bottom of the well exceeds the pressure of the formation, and a part of the fluid collected in the well can be reabsorbed into the formation;



Analysis of periodic use of gaslift wells:

a – mixing chamber; b - single-row pipes with working hole and cocker. 1-inner pipe; 2-air drive; 3-mixing chamber; 4-5- reverse valve; 6-tap - switch; 7th automatic device; 8th sensor.

- after the next eruption, the liquid will be ejected from the riser pipe, causing an increase in the consumption of the working agent, resulting in an increase in the cost of 1 ton of oil.

In order to improve the efficiency of periodic use of gaslift wells, the well is equipped with a mixing chamber. Two rows of are lowered to the bottom of the well, the inner pipe is used as a riser, and the outer pipe is used as an air drive. The lower part of the second row pipe is immersed below the liquid level, has a large diameter and is equipped with a reversing valve. This part of the pipe is called a mixing chamber.

After the fluid is collected in the well, the working agent is pumped into the annulus, and when the check valve of the mixing chamber is closed, the fluid is shot into the riser pipe and then directed to the shot pipe. The presence of a reverse valve does not allow liquid to go to the formation.

After the liquid is shot from the riser, the driving of the working agent is stopped, the pressures in the riser and the shot system are equalized, while the mixing chamber is filled with the flow from the formation. A non-return valve is installed at the head of the riser pipe to prevent the flow rate of the well from decreasing due to flow through the riser pipe. In order to increase the efficiency of this method, a three-way "cock-cutter" is installed on the lines of connection with the driving system and the shooting system. The use of a mixing chamber in a periodic gaslift has the following disadvantages:

- two rows of pipes are lowered into the well;
- the size of the use ridge allows to lower two rows of pipes at all times;
- a slight carelessness during the loading and unloading process will cause an accident. Basically, this situation is dangerous when using deep and sloping wells.

The most effective scheme of periodic use of the gaslift well is also described.

In this case, the well is equipped with a single-line riser, a working hole and a check valve, and a packer is installed at the bottom of the pipe. In such an option, the function of the mixing chamber is performed by the pipe gap phase.

When using the well in this way, the "shearing tap" sensor and the automatic device work in automatic mode in the given program. In this method, a large amount of liquid is raised from the well under the same conditions. When there is not enough natural energy to lift the oil from the bottom of the well to the surface, the wells stop gushing. But to continue the fountain, compressed gas or air is pumped into the well with the help of The process of gas compression is carried out using a compressor device.

According to geological and technical conditions, the discharge of the well may be limited or not limited.

If the extraction of fluid from the well is not limited, then a small amount of pressure is created at the bottom of the well. In such conditions, the lifting are lowered to a distance less than the holed interval in the well.

During the use of piles, the formation pressure decreases. To achieve a constant value of fluid production, the bottomhole pressure is reduced and a constant depression is maintained. In wells, fountain fittings are used for use in the gas lift method after the end of the fountain period. Special

simplified and light fittings are used in this, but the difficulties that may occur are not dangerous in an open fountain. Fittings in gas lift wells are often adapted to drive gas through pipe spacing or through central pipes. If there is rapid formation of paraffin deposits during the operation of gas lift wells, the upper part of the armature is equipped with an additional lubricator and a scraper is inserted into the through it, paraffin deposits during the operation of the well are lowered into the well using a cable through mechanical cleaning. Other methods are used to deal with paraffin deposits. For example, when the walls of the pipes are covered with liquid glasses or when enameled pipes are used, paraffin does not stick to the surface of the smooth surface. A pressure-adjusting valve with a membrane-controlled mechanism is installed on the upper part of the gaslift wells, it serves to maintain the pressure of the gas pumped into the well, because sometimes there are pressure fluctuations in the main systems, the normal operation of the well is disturbed, and sometimes the well is full. have to stop.

One of the most important achievements in the field of gas lift operation is the installation of special eccentric chambers in the pump-compressor pipe and lowering it to the calculated depth. In this case, the gas lift valves are lowered into the well through the and the techniques and technologies for extraction have been created, and it is not necessary to lift the pipes when the valves or working valves operated through the pipeline assembly fail or break during the development process.

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