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NATIVE CONDITIONS AND FEATURES OF THE GEOLOGICAL STRUCTURE OF THE TERRITORY JSC «OZENMUNAIGAS» AND CHARACTERISTICS WORK

Abstract. Production activities of extraction and preparation of hydrocarbon raw materials JSC "Ozenmunaigas" has a certain impact on the components of the environment. Improvement of the ecological situation and rational economic use of natural resources is becoming the most important state problem of the region. In this regard, the timely assessment of the environmental condition of the territory and chemical and environmental studies actual.

Key words: production, environment monitoring, emission, JSC "Ozenmunaigas", geological structure, climatic conditions.

Introduction. Conducting industrial environmental control including its monitoring is the obligatory in the use of natural resources of the Republic of Kazakhstan.

Over the past few years, a number of important changes have occurred in the legislation of the Republic of Kazakhstan concerning the issues of environmental monitoring. A number of legislative and regulatory acts, such as the Law "Environmental protection of the Republic of Kazakhstan" (1997), the Law "Protection of atmospheric air" (2002), "Rules of organization and maintenance of the Unified state system of monitoring of the environment and natural resources" (2001), "Model rules of conducting industrial monitoring" (2007) and a lot of other acts, no longer valid in connection with the introduction of the Environmental Code of the Republic of Kazakhstan in 2007.

The item 137 of the Environmental Code of the Republic of Kazakhstan provides the concept of environmental monitoring: "State environmental monitoring (monitoring of the environment and natural resources) is a comprehensive system of monitoring the state of the environment, natural resources in order to assess, forecast and control changes in their state under the influence of natural and anthropogenic factors [1]. "Thus, the Environmental Code identifies the terms "ecological monitoring" and "monitoring of the environment and natural resources".

The content of the state Unified monitoring system of the environment and natural resources consist of the following subsystems:

- environmental monitoring;
- monitoring of natural resources;
- special types of monitoring.

The unified state system for monitoring the environment and natural resources is implemented at three levels (item 144 of the Environmental Code):

- local (industrial monitoring and monitoring on specific areas of settlements, water bodies and rivers, especially protected natural areas);
- regional;
- Republican.

According to the Environmental code of the Republic of Kazakhstan, industrial monitoring (IM) of the environment (monitoring, which is carried out by the nature user) is an element of industrial environmental control.

Environmental Code of the Republic of Kazakhstan, divides the production environmental monitoring into the following types:

- Operational monitoring includes monitoring of the parameters of the production process in order to ensure proper project operation and compliance with the conditions of the production process regulations;

- Monitoring of emissions to the environment involves monitoring emissions from sources of emissions and discharges in order to comply with the maximum permissible emissions (MPE) and maximum permissible discharges (MPE) standards. The choice of measurement points is determined by the location of specific sources of OS pollution;

- Impact monitoring. Monitoring of impacts is carried out when it is necessary to monitor compliance with environmental legislation of the Republic of Kazakhstan and regulations.

According to the project: № ARO05131111 JSC "Institute of Chemical Sciences A. B. Bekturova" will be carried out work on the theme. "Production monitoring of waste oil production for the development of resource-saving technologies." Production monitoring will be carried out in JSC "Ozenmunaigas".

Administrati on management of JSC "Ozenmunaigas" is located in the of Karakiyan district on the Mangistau region.

Among the offices of JSC "Ozenmunaigas", there are the main production management, which includes, first of all, the oil and gas production management (NGDU) and the management of oil preparation and production support, perform secondary functions that are ancillary or service nature. The main fields of the production branch are oil and gas fields Uzen and Karamandybas with a single field infrastructure.

In General, the branch production is growing. The water content of the extracted oil under the PF "Ozenmunaigas" does not increase significantly over time and is steadily maintained at the level of 80%.

In the produced oil fluid, its component, is associated gas. Production of associated gas has increased significantly over the past four years, which is probably due to the increase in gas caps of oil reservoirs.

The state of the well stock is largely reflected in the performance of field development. As oil production increases, the operating Fund of producing wells gradually increases, while part of the production Fund is transferred to other categories, this is due to the fact that with a significant decrease in the production rate of the producing well or a large water content of the produced fluid, the well is transferred to another category or goes to liquidation.

Table 1 – Monitoring objects of PF " Ozenmunaigas»

Branch	Control	
PF «OMG»	NGDU-1	Oil and gas production Department №1
	NGDU-2	Oil and Gas production Department №2
	NGDU-3	Oil and Gas production Department №3
	NGDU-4	Oil and Gas production Department №4
	UPN&PO	Oil preparation and production support
	UH&E	Department of ecology and chemialiration
	OEN	UzenEnergoNeft
	УРНО и ТК	Management Whie Management of chemicals and the environment
	UOC-1-UOC-5	WellServiceControls
	UAT	AutomationandTelecommunicationsDepartment
	UTT	Departmentoftechnologicaltransport
	UPTO&KO	Management of production and technical services and equipment

Mining technology for oil-1, oil-2, oil-3, oil-4 is typical. Oil production at Uzen and Karamandybas fieldsproduced by mechanized method, with the bulk of the production wells (98%), equipped with deep well pumps.

This method of production is basic and is used on all oil and gas branch. At the same time, production wells are equipped with wellhead platforms, foundations for rocking machines, shgn control stations and transformer substations. It should be noted that more than half of the production wells are in operation for more than 15 years.

Technological scheme of oil and gas gathering oil-1, oil-2, oil-3, oil-4 also is a model, and implemented the following scheme.

The fields use a single-tube pressurized system for collecting the extracted oil, through which the extracted fluid is supplied to the measuring unit (storage). Measurement of the flow rate of producing wells in the storage is carried out by the "Sputnik" installations. The number of wells connected to the measuring unit" Sputnik " is from 6 to 20 wells.

After the installation of the metering fluid flows in the group installing GU. At each site GU comes fluid from 2-5 measuring units. Technological equipment GU provides the primary preparation of oil and gas, transportation of oil flooded in the axial collector, transportation of associated gas in the axial collector.

Then on the center manifold the oil flows on UPSV NDA and to prepare it to the quality of commodity oil.

Collection and preparation oil at NGDU (CDG-1 and CGDU somewhat different from the considered technological scheme and implemented according to the project of reconstruction of the Uzen field on Blocks 2A and 3.

At the CDNG oil production is carried out mainly mechanically by means of pumping machines, from which the extracted fluid is extracted along the single –

tube beam closed-loop system on the swing lines to the measurement unit "ASMA" installed on the manifold station or GU.

The oil and gas mixture is collected from a group of wells connected to the corresponding gas or storage facility at the manifold stations (MS). From where the averaged flow is directed to the site of the preliminary separation of the oil and gas mixture (NS). Further, oil is sent through the pipeline for further preparation to UPSV-1.

On CDNG-10 at the flow lines of the downhole products are supplied to three-phase metering installation with 14 taps. After the parameters are determined, the extracted oil is transported to the General reservoir to the GU. At the group installation, all the collectors are combined into one collector, from where the fluid enters the separator, where the separation occurs (oil, gas, water).

The dehydrated oil is pumped by pumps through the communications of the group installation, where it is heated by a radiant furnace, to the axial collector, and then to the UPSV-1.

Dedicated passing gas through pipelines is transported to Kazgppz. Part of the gas is used for own production needs as fuel for furnaces and heating of premises in winter.

Management of preparation of oil and production supply. Oil preparation for the purpose of ensuring commodity conditions, preparation of reservoir water and provision of fields with necessary transportation means (field collectors) for pumping of oil and water through the fields Uzen and Karamandybas is carried out in management of oil preparation and production support. This management:

- installation preliminary water UPSV – 1 and UPSV – 2;
- workshop of preparation and pumping oil;
- oil transportation and equipment repair shop;
- plant transport of process liquids.

Pre-discharge water installations UPSV-1 and UPSV-2 are designed to separate free and partially bound water from oil by thermochemical action on water-oil emulsion entering the pre-discharge water installation (UPSV) from the fields of NGDU-1, NGDU-2, NGDU-3, and NGDU-4 .

Water-oil emulsion where water consisting over 80% from oil fields is fed to the sedimentation tanks, where there is a preliminary dehydration of oil from water 30 – 40%. Separated water up to 30-40%. Separated water from the sedimentation tanks enter the RVS.

Dehydrated oil, with water content about 5%, is supplied to the KSU under excess pressure, where gas is separated from oil. Gas is sent to the compressors, and oil is sent to the centred preliminary preparation of oil pipeline.

From RVS produced water is supplied to the filtration, and then to RVS №2/1 and №2/2 and further from these tanks is pumped by pipeline to the system of PPD.

Caught oil, RVS, No. 1/1, no 1/2 is returned to the head process.

The released gas from the KSU is sent to the compressor station and then to the GPP.

The main production indicators of the CCA are presented in table 2.

Table 2 – Production indicators of UWWR

Indicators	The project, m ³ / day	Actual, m ³ /day
The plant capacity	45 000	63 000
By oil	15 000	15 000
By water	30 000	48 000
Product water content		70-80%
Input	40%	5%
Output	5%	

Shop of preparation and pumping of oil (zppn). Oil treatment at the cppen is carried out by the method of thermochemical dehydration of oil-water emulsion coming from the UOC-1, UOC-2 units.

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From above units obtain following commercial products:

- commercial oil;
- gas terminal stages of separation;

Here is also waste water.

Characterization of the product oil are presented 3.

Table 3 – Characteristics of commercial oil and gas

The name	GOST or TU	Indicators GOST or TU		Note
		1 group	for the group of norm	
Marketable oil GOST	GOST 9965-76	Water, %	0,5	GOST -21534-76
		Content of chlorine salts, mg/kg	100	GOST – 6370 -83
		The content of mechanical impurities, %	0,05	ГОСТ- 6370-83
Gas end stage separation		Density, kg / m ³	0,79	

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Резюме

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«ӨЗЕНМҰНАЙГАЗ» АҚ АУМАҒЫНЫҢ ГЕОЛОГИЯЛЫҚ ҚҰРЫЛЫМЫНЫҢ ЕРЕКШЕЛІКТЕРІ МЕН АЙМАҚТЫҢ ТАБИҒИ ШАРТТАРЫНЫҢ СИПАТТАМАСЫ

«Өзенмұнайгаз» АҚ көмірсутегі шикізатын өндіру және дайындау нысандарының өндірістік қызметі қоршаған ортаның компоненттеріне айтарлықтай әсер етеді. Экологиялық жағдайды жақсарту және табиғи ресурстарды ұтымды пайдалану өңірдегі ең маңызды мемлекеттік міндетке айналды. Осыған байланысты аумақтың экологиялық жай-күйін және химиялық-экологиялық зерттеулерді уақтылы бағалау қажет.

Түйін сөздер: өндірістік мониторинг, шығарындылар мониторингі, «Өзенмұнайгаз» АҚ, геологиялық құрылым, климаттық жағдайлар, НГДУ.

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ХАРАКТЕРИСТИКА ПРИРОДНЫХ УСЛОВИЙ РАЙОНА РАБОТ И ОСОБЕННОСТИ ГЕОЛОГИЧЕСКОГО СТРОЕНИЯ ТЕРРИТОРИИ АО «ОЗЕНМУНАЙГАЗ»

Производственная деятельность объектов добычи и подготовки углеводородного сырья АО «Озенмунайгаз» оказывает определенное воздействие на компоненты окружающей среды. Оздоровление экологической обстановки и рациональное хозяйственное использование природных ресурсов становится сейчас важнейшей государственной задачей региона. В этой связи актуальны своевременная оценка экологического состояния территории и химико-экологические исследования.

Ключевые слова: производственный мониторинг, мониторинг эмиссий, АО «Озенмунайгаз», геологическое строение, климатические условия, НГДУ.