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### Issues of Legal Groundwork for Hydrocarbons Production in the Republic of Kazakhstan

In this article the author considers actual legal issues related to the environment in the extraction of hydrocarbons in Kazakhstan. Also it provides an analysis of the current legislation, moreover, considers Concept and Address to the nation of Kazakhstan "Kazakhstan Strategy-2050". Also the article suggests specific recommendations and proposals that could be actually applied while implementing the Strategy 2050 of the President of the Republic of Kazakhstan.

**Key words:** legal protection of environment, subsurface, oil and gas, hydrocarbon feedstock, natural resources.

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#### Проблемы правового обеспечения добычи углеводородов в Республике Казахстан

В данной статье автором рассмотрены крайне актуальные на сегодняшний день правовые проблемы, касающиеся охраны окружающей среды при добыче углеводородного сырья в Республике Казахстан. Автором дается анализ действующего законодательства, кроме того, рассмотрены Концепция и Послание народу Казахстана «Стратегия «Казахстан-2050»». В статье представлены конкретные рекомендации и предложения, которые могут быть реально применены при реализации Стратегии Президента РК.

**Ключевые слова:** правовая охрана окружающей среды, недропользование, нефтегазовый комплекс, углеводородное сырье, природные ресурсы.

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#### Қазақстан Республикасында көмірсутегілерді өндіруді құқықтық қамтамасыз ету мәселелері

Мақалада Қазақстан Республикасында көмірсутегі шикізатын барлау және өндіру кезінде қоршаған ортаны қорғаудың бүгінгі күнгі көкейкесті құқықтық мәселелері қарастырылған. Автор қолданыстағы заңнамаға талдау жасаған және сонымен қатар осы салада Қазақстан Республикасының Президенті Елбасы Н.Ә.Назарбаевтың «Қазақстан-2050» Стратегиясы – қалыптасқан мемлекеттің жаңа саяси бағыты» атты Қазақстан халқына Жолдауынан туындайтын тұжырымдар мен нақты ұсыныстарды жүзеге асыру жолдары көрсетілген.

**Түйін сөздер:** қоршаған ортаны құқықтық қорғау, жер қойнауын пайдалану, мұнай және газ орындарын игеру, көмірсутек шикізаты, пайдалы қазбалар.

Today, Kazakhstan is a tolerant dynamically developing state with a booming economy, developing industry and production sector. The President Nursultan Abishevich Nazarbayev has set a specific and ambitious goal for our country to rank among the most advanced and socio-economic countries of the global community. Development and progress in the production sector of our country's economy is clearly observed over the recent years of XXI century.

The President of our country in his Address to people of Kazakhstan has mentioned that many countries all over the world are in need and will further need raw materials and resources that are available in large quantities in our country. In the era of insatiable and expanding global economic crisis the gap between cultural, social and economic performance of the global community increases significantly. To this extent, the Address of the Leader of the nation of our country "Kazakhstan's Strat-

egy – 2050” was delivered right on time, in which the provision on introduction of elements of green economy to the industry and to the state – legal controlling mechanism is deemed as extremely progressive. In fact, the strategy “Kazakhstan -2050” is a timely response of the President of our country to new global challenges which are faced by the global community and our young sovereign state.

The issue on further preservation of minerals takes on enormous significance. Our state is recognized as a country with very rich natural resources. Oil and gas are classified worldwide as one of the largest energy resources but even they will deplete in the course of nature, so it is necessary to look for new resources for living. In this case, the fact that Kazakhstan has good ecosystems, soil, water and forest greatly enhances its position against other countries [1]. This implies environmentally friendly technologies, exhaustibility of natural resources, resources efficiency improvement and etc.

Following the independence, our sovereign Kazakhstan has managed not only to keep in hand achievements of when it was a union’s republic but also has greatly increased its resource and export potential in the field of exploration and production of raw hydrocarbons. Over these years, production of oil has increased by 3 times, natural gas – by 5 times. Revenues from mineral resources have been sent to the National Fund [2].

It should be noted that in order to implement the Republic of Kazakhstan Law On Subsoil and Subsoil Use dated June 24, 2010, the Government of the Republic of Kazakhstan has approved the Unified Rules for the Protection of Subsurface Resources upon the Development of Solid Commercial Minerals, Oil, Gas and Ground Waters in the Republic of Kazakhstan (URPS), which should be followed by all subsoil users in the development of mineral deposits in the Republic of Kazakhstan [3].

These Rules contain a set of requirements for rational and comprehensive use of mineral resources and their protection at all stages of subsoil use. Moreover, implementation of the rules is binding for all legal and individual persons regardless of forms of ownership, which are engaged in search and exploration, design, drilling and operation of wells, development, setting and construction related of commercial facilities, preparation of process fluid, energy sources and waste disposal. The Rules also do not supersede the requirements of applicable inter-sectoral and industry regulations in the field of

subsoil protection to the extent that it does not contradict them and the effective laws on subsoil use. In general, the Rules establish basic standards and requirements for all stages of development and industrial exploitation of oil and gas fields located in the Republic of Kazakhstan to the geological study of fields, calculations and recording of reserves, design and development of rational systems of development, construction and operation of all categories of wells and necessary field facilities, managing the development, protection processes of subsoil and environment.

As you know, a significant role in deterioration of the environment plays contamination of nature objects with oil products. Worldwide during the production, transportation, processing and use nearly 2% of annually produced oil is lost, moreover, 7 million tonnes – only during its production. From 50 million tons of oil losses 25 million tons are lost on land, 8 million tons in the ocean and 17 million tons are released into the atmosphere (in the form of gasoline vapor and other hydrocarbons). For comparison, natural flow of oil through the faults in the oceans does not exceed 0.5 million tons per year.

According to estimations of scientists from the world’s leading countries, Kazakhstan is ranked sixth in the world in terms of mineral resources reserves. According to estimations of some scientists the explored reserves of Kazakhstan subsoil is estimated at approximately USD 10 trillions.

Raw hydrocarbon resources in the Republic of Kazakhstan are estimated at 17 billion tons, of which 8 billion tons fall within the Kazakhstani sector of the Caspian Sea (hereinafter – KSCS). According to the proven oil reserves, Kazakhstan ranks among top 15 world’s leading countries. Kazakhstan has significant raw hydrocarbons reserves – 3.3 % of the world reserves. Large-scale exploration study of subsoil areas of the Caspian and Aral seas conducted by the republic will facilitate further building of resources potential of the oil and gas industry in Kazakhstan [4]. Discovery of Kashagan field in the north of Caspian in 2000 was called the most significant event in the world practice for the last 30 years. Prospects for oil and gas exploration are related to unexplored deep-seated structures in the Caspian Basin, the Aral Sea region and also with identified results of regional seismic studies of objects in the Northern, Central and Southern Kazakhstan.

There are real prospects for hydrocarbon reserves increasing in Kazakhstan as the potential of Kazakh-

stan's subsoil still remains high. At the moment it is primarily necessary to establish a system of environmental requirements, within the frame of which it would be possible to carry out economic activities without causing significant damage to the environment.

Thus, a database of statutes and regulations required for the organization of oil operations in the Caspian Sea is mainly created in Kazakhstan. Today, the legal and regulatory system of the republic has more than 20 statutes regulating issues of environmental protection. In order to regulate the offshore oil operations a number of regulations were adopted, including Special Environmental Conditions for Geophysical Surveys in the Kazakhstani sector of the North Caspian, special environmental requirements in the conservation area of the Kazakhstani sector of the Caspian Sea. Also there are Instructions on Compliance with the Environmental Safety Standards during Design and Run of Petroleum Operations in Water and Coastal Areas and Inland Waters of Seas, the National Response Plan to Oil Spills [5].

As you know, a hydrocarbons deposit – is one or more deposits geographically confined to one area and related with favorable tectonic structure or with other types of traps. A reservoir is understood as hydrocarbons accumulation in the natural unified hydro-gas-dynamic reservoir confined to one reservoir bed, two or three and more connecting reservoir beds of the deposits section, in the geological section of the deposit it may correspond to the number of productive formations or be less than it. If to take into consideration that almost all minerals deposits, particularly hydrocarbons deposits, are developed with participation of large foreign investors (multinational energy corporations ExxonMobil, Chevron, BP, BritishGaz, Lukoil, Total, Shell, China National Oil and Gas Company CNPC and etc.), which own considerable shares (stakes) in these projects. Oil and gas regions of the republic, where 172 oil and 42 condensate field are located occupy about 62% of the territory of Kazakhstan. Major oil reserves in Kazakhstan (90%) are concentrated in 15 major fields – Tengiz, Kashagan, Karachaganak, Uzen, Zhetybai, Zhanazhol, Kalamkas, Kenkiyak, Karazhanbas, Kumkol, North Buzachi, Alibekmola, Prorva Central and Eastern, Kenbai, Korolevskoye.

The fields are located in the area of six of the fourteen regions of Kazakhstan. They are Aktobe, Atyrau, West Kazakhstan, Karaganda, Kyzylorda and Mangistau regions. Moreover, nearly 70% of

hydrocarbons reserves are concentrated in the west of Kazakhstan.

Atyrau region has the most proven oil reserves, more than 75 fields with commercial reserves of 930 million tons are discovered there. More than 15 hydrocarbon deposits are located in the territory of West Kazakhstan region. Aktobe region is another promising region in terms of oil and gas potential. Nearly 25 fields have been discovered here. The basis of oil industry of Kyzylorda and Karaganda regions is Kumkol group of fields – the fifth oil and gas province of Kazakhstan in the order of significance. Large-scale exploration study of subsoil areas of the Caspian and Aral seas conducted by the republic will facilitate further building of resources potential of the oil and gas industry in Kazakhstan.

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According to experts' projections, the recoverable reserves of raw hydrocarbons in the Republic of Kazakhstan at the current production level should last for about 60-70 years; however, given the increasing production volumes at main oil and gas fields, the specified time frame could be significantly reduced. Therefore, further development of oil and gas industry should be provided by discoveries additions. There are real prospects for increasing hydrocarbon reserves in Kazakhstan as the potential of Kazakhstan's subsoil still remains high.

Despite large volumes of raw hydrocarbons production, today there is no complete process cycle of raw hydrocarbons deep conversion into products with high added value in Kazakhstan.

Raw hydrocarbons conversion is limited to oil and gas separation. There are three oil refineries and three gas processing plants in the country which were built in Soviet times and do not meet the modern standards.

In this regard, comprehensive programme for introduction of new investment projects is implemented, which provides for establishment of flexible, integrated and complete process plan of raw hydrocarbons (oil/gas) conversion which meets the international standards. It will enable to simultaneously solve several important objectives:

- to produce petroleum products in larger volumes and of higher quality;

- to receive basic petrochemical products which are already products with added value and demanded in the international market;

- to produce petrochemical feedstock for subsequent processing and production of enhanced selection of petrochemical products with high added value (construction, finishing and packaging materials, products of industrial and domestic purposes and etc.);

- to ensure integrated conversion of raw hydrocarbons;

- to reduce negative effect on the environment;

- create conditions for development of small and medium-sized businesses for production of petrochemical feedstock of specific products.

Investment projects for establishment of new petrochemical facilities and modernization and technological upgrading of Oil Refineries are included in the State Program on Forced Industrial-Innovative Development of Kazakhstan for 2010 – 2014 and Map of Industrial Develop of Kazakhstan for 2010 – 2014 [6].

Before moving directly to environmental issues during oil production, we will focus on the procedure of putting oil fields into the commercial development which is permitted if:

- works on oil field exploration have been completed, trial operation of deposits or pilot commercial development of the field's areas have been made (if necessary) and in relation to gas field – commercial test production of the field;

- state expert evaluation of oil, gas, condensate and other associated components have been carried out;

- there are mining and land allotments;

- licenses for oil production and respective licenses for the types of operations have been obtained by subsoil users;

- there are experts' opinions of the Ministry of Environment and Water Resources of the Republic of Kazakhstan and the Agency for Emergency Situations of the Republic of Kazakhstan in relation

to design documents for the development; process design documents for commercial development (flowsheets, project development), design estimates for improvement have been approved in the established procedure;

- contract for development of the field has been entered into between the Agency for Investments of the Republic of Kazakhstan and a subsoil user.

The Environmental Code of the Republic of Kazakhstan states that "environment" means an aggregate of natural and artificial objects, including atmospheric air, ozone layer of the Earth, surface and underground waters, fauna and flora, and also the climate in their interaction. Environment protection means a system of state and public measures aimed at the preservation and restoration of environment, prevention of negative impact of economic and other activity on the environment and liquidation of its consequences" [7].

In our opinion, the current environmental situation in the Republic of Kazakhstan raises serious concerns. Industry and the extractive sector, in particular, are developing at a rapid pace. The Environmental Code adequately covers public relations related to exploration, production and transportation of oil and gas but at the same time increasing production rates of minerals in solid, liquid and gaseous state demands close attention and certain adjustments and amendments to the national environmental legislation. Therefore, there is a need to develop and adopt a new model concept of environmental security.

In general, we believe that it is necessary to develop a system of governmental measures of phased and steady implementation of the state and public monitoring in the field of environmental protection during exploration, production and transportation of oil and gas. In our view, it would be possible to more closely pay attention to such important issue by involving active citizens and non-governmental organizations in issues related to the environment in the process of producing and service companies which operate in the oil and gas sector of our economy.

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