

OIL & GAS UKRAINE

3 RD
ROUND

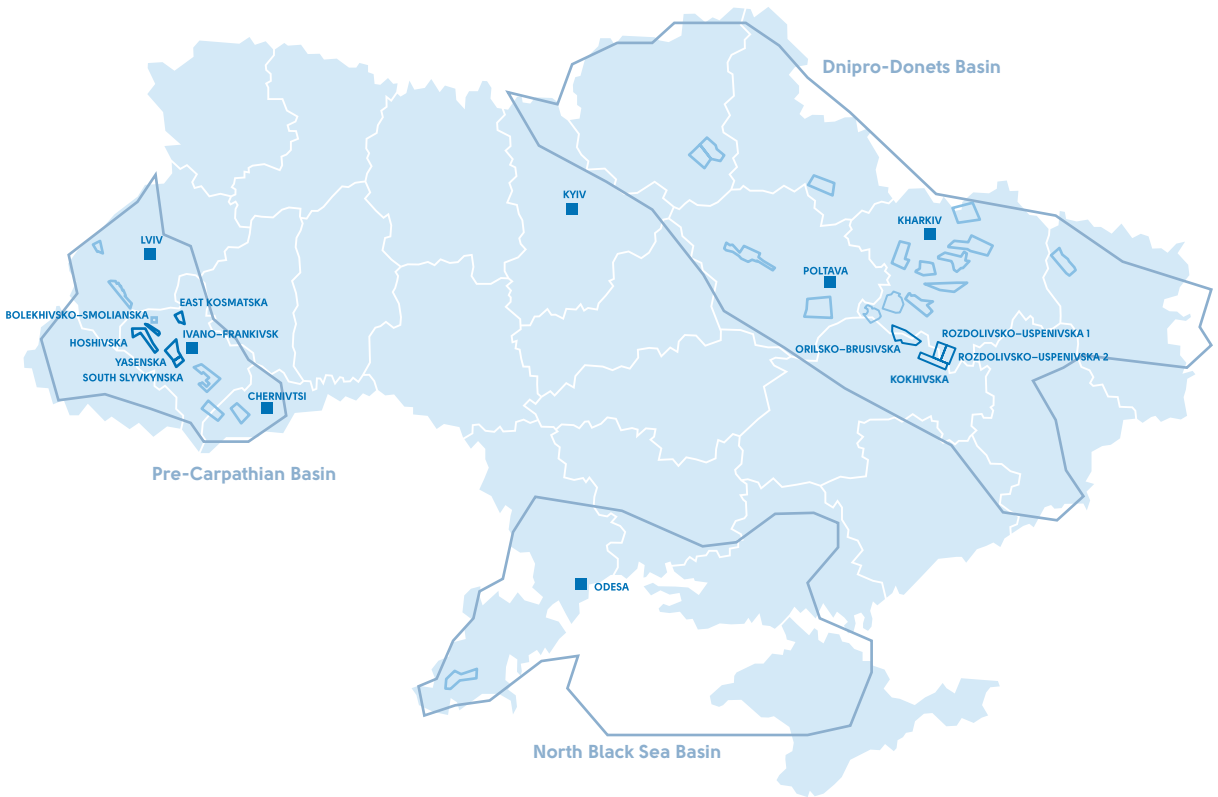
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AUCTION BLOCKS




LICENSING ROUNDS
INFORMATION AND
OPPORTUNITIES
2019

30

AUCTION BLOCKS FOR LICENSING ROUNDS



Round 3 (March - June 2019)

-  Blocks for round 3
-  Blocks for further rounds
-  Main oil and gas basins

Auction Blocks Release

No.	Block	Region	Area km ²	Application opening date	Auction date
1	Vatazhkivska	Poltava	181,80	December 2018	March 2019
2	Dubrivsko-Radchenkivska	Poltava	65,35	December 2018	March 2019
3	Svitankovo-Lohivska	Kharkiv	197,49	December 2018	March 2019
4	Pechenizko-Kochetkivska	Kharkiv	262,73	December 2018	March 2019
5	Saltivska	Kharkiv	26,16	December 2018	March 2019
6	Kniazhynska	Kharkiv	75,32	December 2018	March 2019
7	Pivdenno-Kobzivska	Kharkiv	368,08	December 2018	March 2019
8	Dykhtynetska	Chernivtsi/Ivano-Frankivsk	74,06	December 2018	March 2019
9	Zakhidnotokarsko-Krasnianska	Luhansk	91,06	December 2018	March 2019
10	Suvorivska	Odesa	462,95	December 2018	March 2019
11	North Yefremivska	Kharkiv	99,50	January 2019	April 2019
12	Dobrenska	Kharkiv	122,23	January 2019	April 2019
13	Opolonivska 1	Chernihiv	247,87	January 2019	April 2019
14	Opolonivska 2	Chernihiv	230,51	January 2019	April 2019
15	Kaliuzhna 1	Sumy	162,36	January 2019	April 2019
16	Drohobytka	Lviv	140,90	January 2019	April 2019
17	Kadobnyanska	Ivano-Frankivsk	21,17	January 2019	April 2019
18	Kokhivska	Dnipropetrovsk/Kharkiv	346,17	March 2019	June 2019
19	Rozdolivsko-Uspenivska 1	Dnipropetrovsk/Kharkiv	271,14	March 2019	June 2019
20	Rozdolivsko-Uspenivska 2	Dnipropetrovsk/Kharkiv	296,40	March 2019	June 2019
21	Orilsko-Brusivska	Dnipropetrovsk/Kharkiv	234,60	March 2019	June 2019
22	Hoshivska	Ivano-Frankivsk	49,00	March 2019	June 2019
23	Yasenska	Ivano-Frankivsk	35,35	March 2019	June 2019
24	Bolekhivsko-Smolianska	Ivano-Frankivsk	10,39	March 2019	June 2019
25	South Slyvkynska	Ivano-Frankivsk	11,69	March 2019	June 2019
26	East Kosmatska	Ivano-Frankivsk	6,91	March 2019	June 2019
	Yefremivsko-Oleksiivska	Kharkiv	237,35	In preparation	
	Novopokrovska	Kharkiv	181,43	In preparation	
	Tatalivska	Chernivtsi	24,10	In preparation	
	Luchkivsko-Berezivska	Ivano-Frankivsk	73,17	In preparation	
	Yavorivska	Lviv	43,95	In preparation	

INTRODUCTION

3RD INTERNATIONAL OIL AND GAS LICENSING ROUND IN UKRAINE

In December, 2018 the State Geological Service of Ukraine released 30 onshore petroleum blocks for sale in online auctions at the public trading platform Prozorro. Sale. The total acreage of blocks is 4 630 sq. km.

The concession blocks are auctioning in a series of licensing rounds. All parcels are located in proven petroleum provinces with well-developed midstream infrastructure and widely covered by geophysical surveys.

In the third round, announced on March 2019, nine blocks were offered in three regions of Ukraine, covering over 1 260 sq. km. All licenses are proposed for exploration and production of hydrocarbons for a period of 20 years.

The undiscovered oil and gas resources of all blocks are officially estimated as inferred. The company which submits the highest bid in terms of cash bonus will be awarded lease rights for a specific parcel.

There are also minimum exploration program requirements for each license, for instance: processing of legacy seismic data, conducting new seismic surveys and exploration drilling.

Bidders will have ninety calendar days to decide and submit their applications. The third online auction will take place on June 2019.

**Ukraine
NOW**



ROUND 3

BLOCK 18

KOKHIVSKA LICENSE

LOCATION

Kokhivska block is located in Pavlohrad, Yuriivka, Petropavlivka districts of Dnipro region and Blyzniuky district of Kharkiv region. Acreage of the block is 346.18 sq. km.

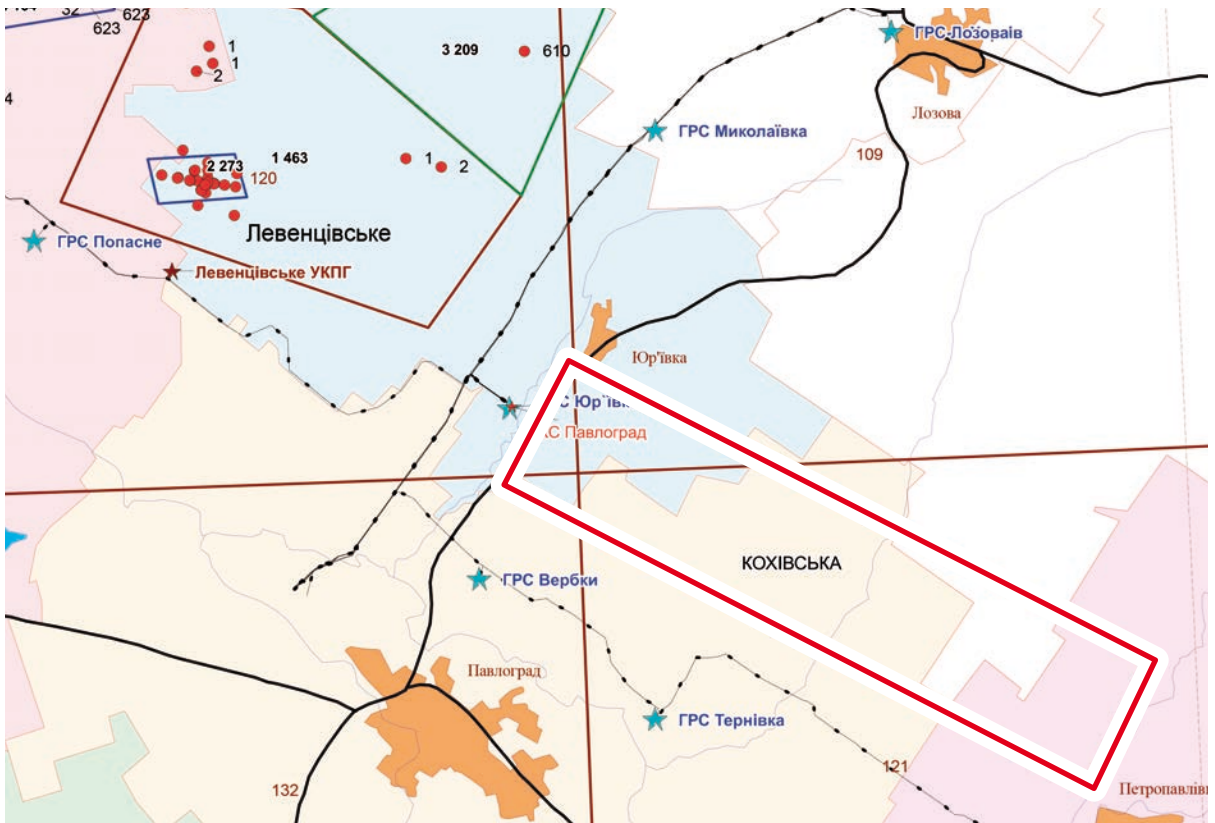
CONCESSION TYPE

Combined license for geological exploration with pilot and commercial development, and production of hydrocarbons. Duration - 20 years.

DEPOSITS DISCOVERED IN THE AREA

Novosilkivske and Holubivske oil and gas fields.

Map of Kokhivska block



MAP SYMBOLS

Point Number	USK 2000, E			USK 2000, N			SK-42, E			SK-42, N		
	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.
1	35	59	16.55	48	43	50.90	35	59	22.34	48	43	51.25
2	36	27	32.83	48	33	8.91	36	27	38.58	48	33	9.24
3	36	24	14.03	48	29	0.30	36	24	19.78	48	29	0.64
4	35	55	50.93	48	39	49.73	35	55	56.72	48	39	50.09

- well
- ★ gas-distribution plant
- gas pipeline
- KOKHIVSKA BLOCK

GEOLOGICAL CHARACTERISTICS

In terms of geotectonics, the block in the south-east belongs to the Samarian-Vovchansk nose of the southern flank of the Dnipro Donets Basin.

Within the block, the Kochivska and Novodachynska structures are explored by seismic surveys in Lower Carboniferous deposits. The latter is morphologically similar to Kohhivska and differs from it with less amplitude of discordant fault.

The geotectonic similarity of the Novodachynska structure to the Samarian-Vovchansk nose of the Novomoskovsk-Petropavlivska monocline assumes the probability of developing within it a wide range of trap rocks, which are typical to the Krutoyarivska structural and tectonic zone of the southern flank of the Dnipro Donets Basin.

The geological structure of the block is represented by the rocks of the Precambrian to the Cenozoic ages.

SURVEY INFORMATION AVAILABLE

Assessment of hydrocarbon resources (Ukrainian classification)

The Novodachynska structure includes undiscovered inferred resources (D1 category) of the natural gas in the amount of 430 million m³ in the Lower Visean stage of the Carboniferous.

Well data

There was no drilling at the block..

Seismic surveys

Year of surveys	Number of lines	Number of linear km	Fold
1990	19	234,53	24
1993	6	42,79	24
1994	11	142,38	24
1995	4	49,52	24
1998	1	9,0	24
1999	9	60,35	24
2002	1	7,8	24

EXPLORATION WORK PROGRAM REQUIREMENTS

Stage I (12 months) - processing and reinterpretation of 2D seismic data;

Stage II (12 months) – acquisition of 2D or 3D seismic data on ¼ of the block’s area;

Stage III (24 months) – one productive well drilling.



BLOCK 19

ROZDOLIVSKO-USPENIVSKA-1 LICENSE

LOCATION

Rozdolivsko-Uspenivska-1 block is located within Blyzniuky district of Kharkiv and Pavlohrad district of Dnipro regions. Acreage of the block is 271.15 sq. km.

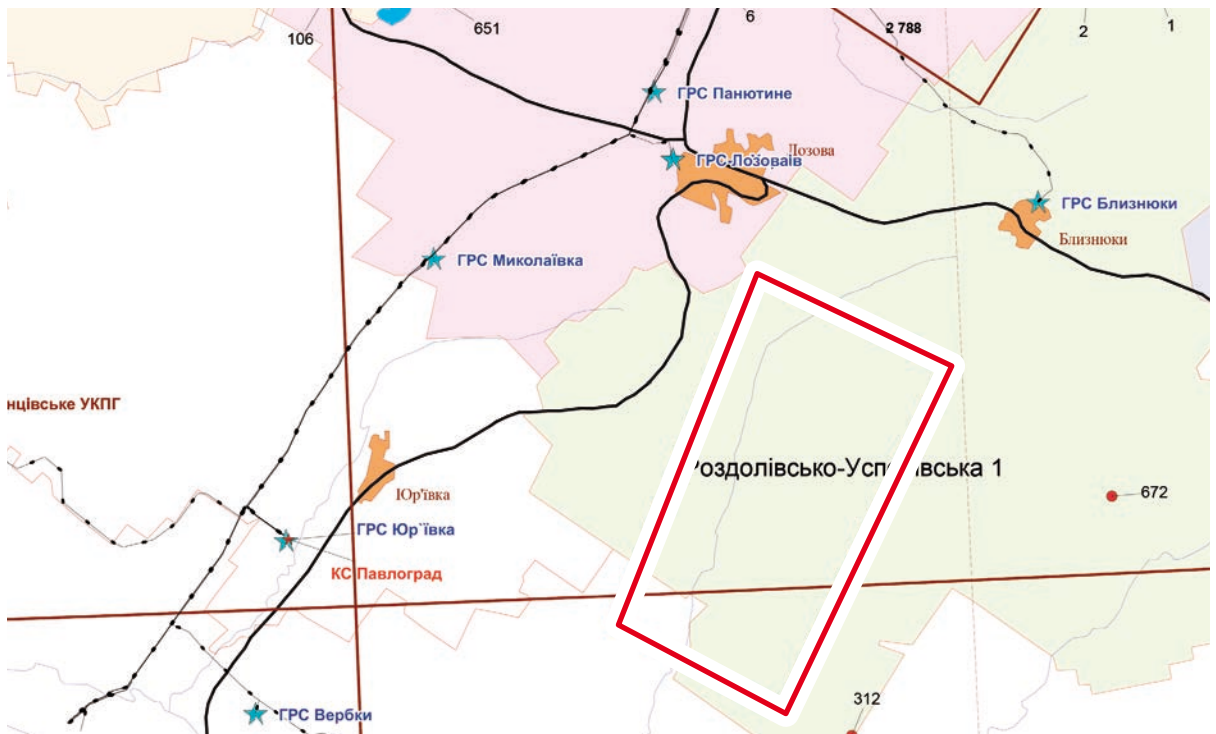
CONCESSION TYPE

Combined license for geological exploration with pilot and commercial development, and production of hydrocarbons. Duration - 20 years.

DEPOSITS DISCOVERED IN THE AREA

Novosilkivske and Holubivske oil and gas fields.

Map of Rozdolivsko-Uspenivska-1 block



MAP SYMBOLS

Point Number	USK 2000, E			USK 2000, N			SK-42, E			SK-42, N		
	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.
1	36	19	41.99	48	50	9.40	36	19	47.78	48	50	9.72
2	36	28	55.31	48	46	55.76	36	29	1.10	48	46	56.07
3	36	20	9.72	48	36	3.64	36	20	15.48	48	36	3.98
4	36	12	15.76	48	39	7.41	36	12	21.54	48	39	7.75

- well
- ★ gas-distribution plant
- gas pipeline
- ROZDOLIVSKO-USPENIVSKA-1 BLOCK

GEOLOGICAL CHARACTERISTICS

The Osterska and Rozdolivska structures are partially located within the block. The structures are located in the south-eastern part of the Southern flank of the Dnipro-Donets depression within the Krutoyarska structural and tectonic zone.

The Osterska structure, which is partly located within Rozdolivsko-Uspenivska-1 was discovered by seismic exploration in 1993 and is a semi-anticline fold, the southern wing of which is concordant fault, the amplitude of which varies from 110 m to 50 m from west to east within the framework of the development of the structure that plays the role of the screen.

The Rozdolivska structure, which is partly located within the block was discovered by seismic surveys in Lower Carboniferous deposits.

SURVEY INFORMATION AVAILABLE

Assessment of hydrocarbon resources (Ukrainian classification)

The total inferred resources of the block is accounted as 1765 million m³ of gas. The Rozdolivska structure, which is partly located within the Rozdolivsko-Uspenivska-1 block is accounted for by the Fund of objects in the oil and gas regions of Ukraine as of January 1, 2018, with inferred resources (D1 category) in the amount of 1.83 billion m³ of gas.

Well data

Prospects are associated with the rocks of the lower Syrpukhovian (C-18) and upper Visean (B-14) horizons by the results of exploration drilling in the well No. 1-Kokhivska and similar to Novosilkivske (C-18) and Holubivske (horizon B-14) fields.

Seismic surveys

Year of surveys	Number of lines	Number of linear km	Fold
1990	6	84	24
1993	2	24,3	24
1994	2	9,1	24
1995	1	13,4	24
1999	1	3,7	24
2002	12	154,9	24
2003	2	20,7	24

EXPLORATION WORK PROGRAM REQUIREMENTS

Stage I (12 months) - processing and reinterpretation of 2D seismic data;

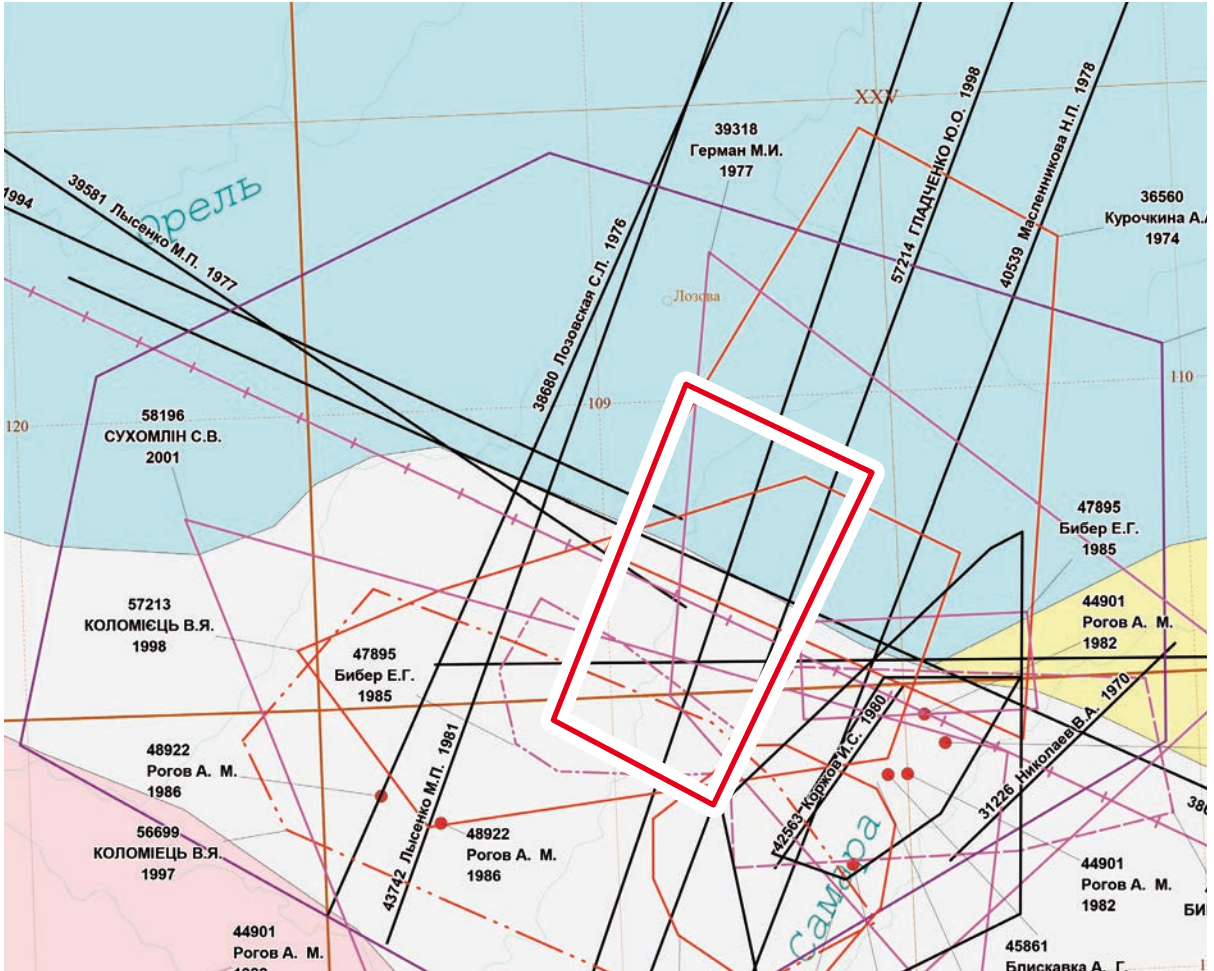
Stage II (12 months) – acquisition of 2D or 3D seismic data on ¼ of the block's area;

Stage III (24 months) – one productive well drilling.

BLOCK 19

ROZDOLIVSKO-USPENIVSKA-1 LICENSE

Map of geophysical surveys and seismic lines



MAP SYMBOLS

- 1:25 000
- 1:50 000
- 1:100 000
- geophysical survey
- seismic lines
- ROZDOLIVSKO-USPENIVSKA-1 BLOCK
- survey with no mapping
- 45860 report number
- Рогов А.М. author of the report
- 1982 year of the report



BLOCK 20

ROZDOLIVSKO-USPENIVSKA-2 LICENSE

LOCATION

Rozdolivsko-Uspenivska-2 block is located within Blyzniuky district of Kharkiv and Petropavlivka district of Dnipro regions. Acreage of the block is 296.41 sq. km.

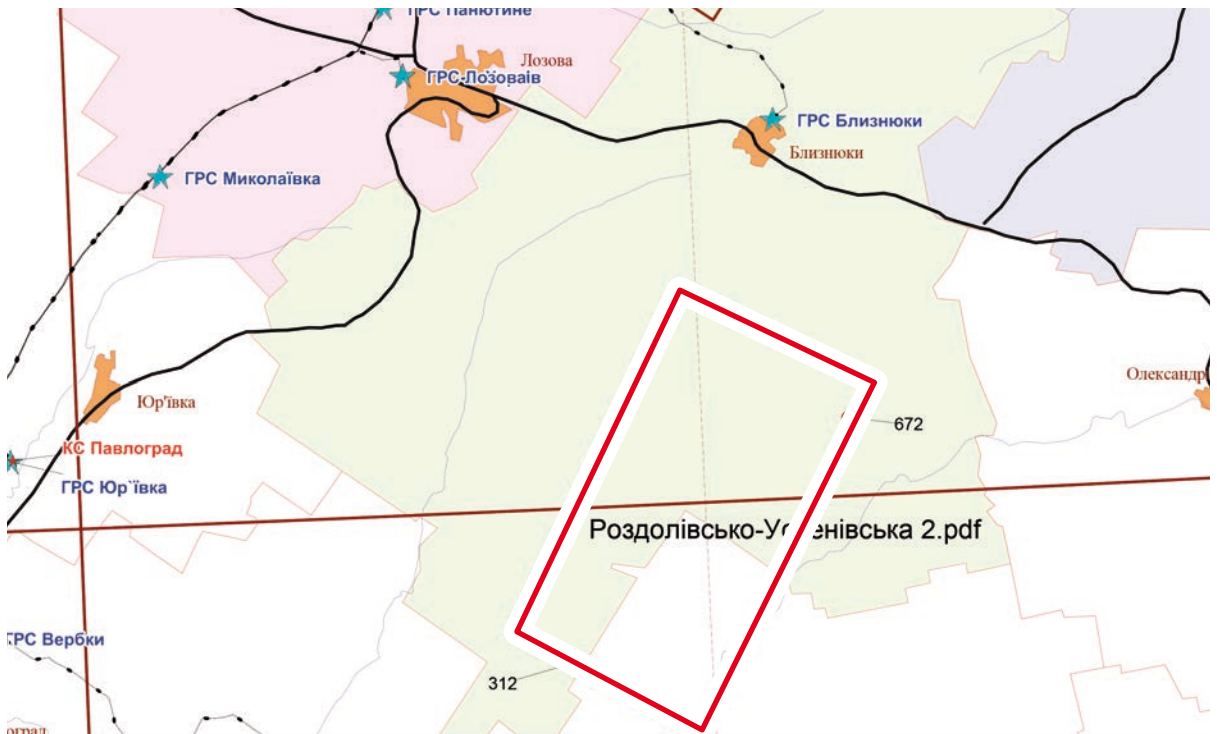
CONCESSION TYPE

Combined license for geological exploration with pilot and commercial development, and production of hydrocarbons. Duration - 20 years.

DEPOSITS DISCOVERED IN THE AREA

Novosilkivske and Holubivske oil and gas fields.

Map of Rozdolivsko-Uspenivska-2 block



MAP SYMBOLS

Point Number	USK 2000, E			USK 2000, N			SK-42, E			SK-42, N		
	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.
1	32	35	54.10	51	4	32.67	32	36	0.39	51	4	33.09
2	32	27	41.97	51	12	26.32	32	27	48.28	51	12	26.74
3	32	33	57.07	51	15	44.68	32	34	3.39	51	15	45.09
4	32	40	37.09	51	11	24.68	32	40	43.39	51	11	25.09
5	32	41	15.09	51	9	25.68	32	41	21.39	51	9	26.09
6	32	46	57.11	51	5	52.68	32	47	3.39	51	5	53.09
7	32	43	27.11	51	3	4.68	32	43	33.39	51	3	5.09

- well
- ★ gas-distribution plant
- gas pipeline
- ROZDOLIVSKO-USPENIVSKA-2 BLOCK

GEOLOGICAL CHARACTERISTICS

The Uspenivska and partly Osterska structures are partially located within the block. The structures are in the south-eastern part of the Southern flank of the Dnipro-Donets Basin within the Krutoyarska structural and tectonic zone.

The Uspenivska structure was discovered by seismic exploration in 1993 in the main reflection horizon V_B31 (Lower Carboniferous deposits) and is a semi-anticline fold, the southern wing of which is unconcordant bedding. The fault amplitude, which is the screen is about 40 m.

The Osterska structure, which is also partly located within Rozdolivsko-Uspenivska-2 was discovered by seismic exploration in 1993 and is a semi-anticline fold, the southern wing of which is concordant fault, the amplitude of which varies from 110 m to 50 m from west to east within the framework of the development of the structure that plays the role of the screen. In addition, the structure is complicated by an unconcordant bedding of the amplitude of 20 m, which divides it into two blocks.

SURVEY INFORMATION AVAILABLE

Assessment of hydrocarbon resources (Ukrainian classification)

The total inferred resources of the block is accounted as 1765 million m³ of gas.

Well data

The oil and gas prospects in the block are associated with the rocks of the lower Serpukhovian (C-18) and upper Visean (B-14) horizons by the results of the drilling well No.1 Kokhivska and in analogy with Novosilkivske (horizon C-18) and Holubivske (horizon B-14) deposits.

Seismic surveys

Year of surveys	Number of lines	Number of linear km	Fold
1990	6	80,76	24
1993	4	46,5	24
1994	2	7,9	24
1995	2	25,1	24
1998	4	47,44	24
1999	6	29,48	24
2002	11	117,55	24
2003	8	77,69	24

EXPLORATION WORK PROGRAM REQUIREMENTS

Stage I (12 months) - processing and reinterpretation of 2D seismic data;

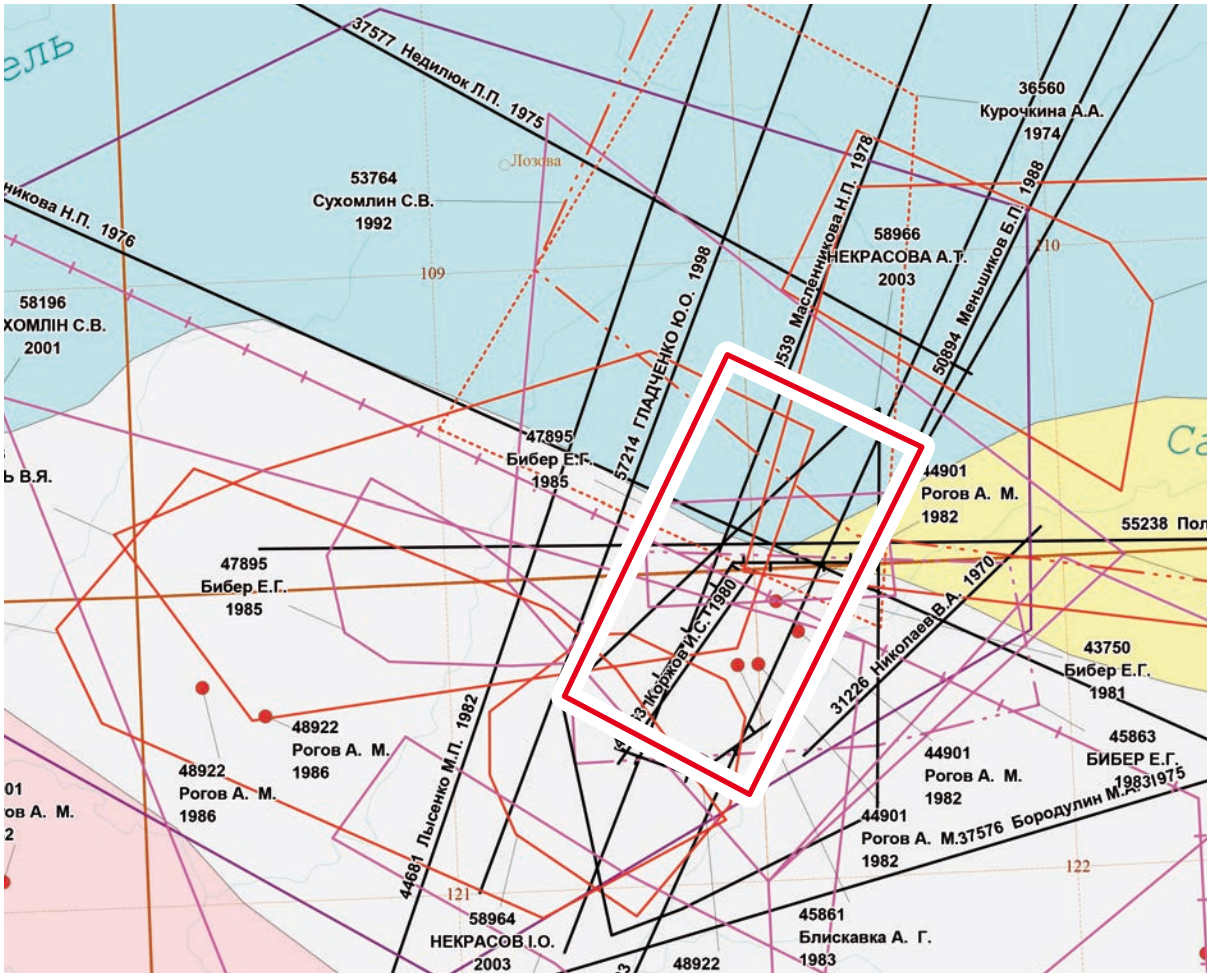
Stage II (12 months) – acquisition of 2D or 3D seismic data on ¼ of the block's area;

Stage III (24 months) – one productive well drilling.

BLOCK 20

ROZDOLIVSKO-USPENIVSKA-2 LICENSE

Map of geophysical surveys and seismic lines



MAP SYMBOLS

- 1:25 000
- 1:50 000
- 1:100 000
- geophysical survey
- seismic lines
- ROZDOLIVSKO-USPENIVSKA-2 BLOCK
- survey with no mapping
- 45860 report number
- Rogov A.M. author of the report
- 1982 year of the report



BLOCK 21

ORILSKO-BRUSIVSKA LICENSE

LOCATION

Orilsko-Brusivska block is located in Yuryivka, Novomoskovsk districts of Dnipro region and Sakhnovshchyna district of Kharkiv region. .Acreage of the block is 234.61 sq. km.

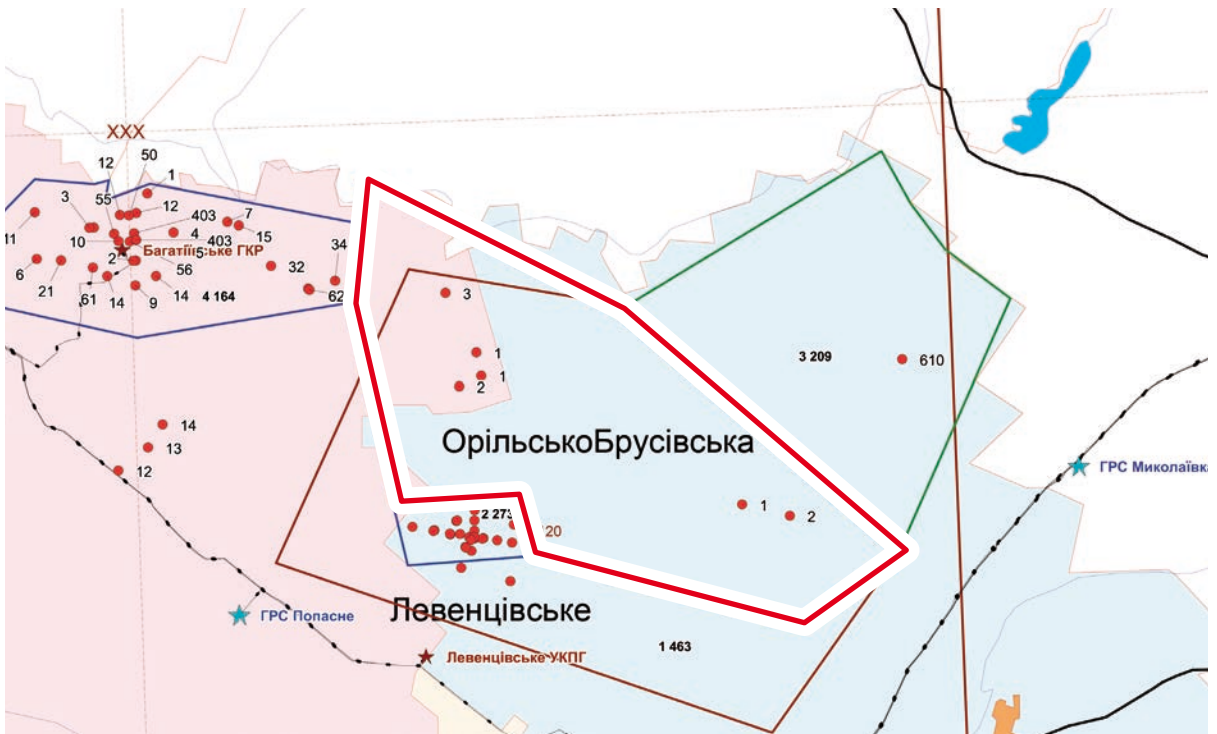
CONCESSION TYPE

Combined license for geological exploration with pilot and commercial development, and production of hydrocarbons. Duration - 20 years.

DEPOSITS DISCOVERED IN THE AREA

Leventsivske, Bohatoyiske fields.

Map of Orilsko-Brusivska block



MAP SYMBOLS

Point Number	USK 2000, E			USK 2000, N			SK-42, E			SK-42, N		
	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.
1	35	38	26.15	48	58	34.69	35	38	32.00	48	58	35.04
2	35	47	39.49	48	55	13.72	35	47	45.32	48	55	14.07
3	35	57	38.51	48	49	7.73	35	57	44.32	48	49	8.07
4	35	53	48.62	48	47	28.01	35	53	54.43	48	47	28.36
5	35	44	4.50	48	49	24.71	35	44	10.32	48	49	25.07
6	35	43	33.49	48	50	49.71	35	43	39.32	48	50	50.07
7	35	39	14.49	48	50	45.71	35	39	20.32	48	50	46.07
8	35	37	49.33	48	55	35.06	35	37	55.18	48	55	35.42

- well
- ★ gas-distribution plant
- gas pipeline
- ORILSKO-BRUSIVSKA BLOCK

GEOLOGICAL CHARACTERISTICS

The block belongs to the southern cutoff part of the Dnipro-Donets depression. Orilsko-Brusivska block is located in the Rudenkivsko-Proletarskyi oil and gas region, where explored productivity of the wide stratigraphic range from the Devonian to the Bashkirian sediments. For example, at Leventsivske field, the commercial gas content is discovered at the Bashkirian and Serpukhovian stages of the Carboniferous.

Orilsko-Novosandrivska structure was explored within the block by the seismic surveys at the Tournai stage. It is predicted that hydrocarbon traps can be combined, tectonically and lithologically screened. By analogy with the neighboring Bohatoyske and Leventsivke fields, gas deposits are expected at a depth of 3.0-5.0 km in the sandy horizons of the Bashkirian and Serpukhovian stages, as well as at carbonate deposits (B-24-26, T-1-2).

The Brusivska structure on the lower Visean deposits is partly located within the boundaries of the block. The structure is a low-amplitude anticline. By analogy with the Leventsivske field, gas deposits are expected in the terrigenous horizons of the Bashkirian (B-13), Serpukhovian (C-2-7, C-14-21) stages at depths of 2000-3000 m.

SURVEY INFORMATION AVAILABLE

Assessment of hydrocarbon resources (Ukrainian classification)

The Brusivska structure on the lower Carboniferous has undiscovered inferred resources of natural gas (category D1) 2.53 million m³. The density of undiscovered inferred resources (categories C3-D) in the block are 30-50 thousand tons of hydrocarbons per sq.km.

Well data

Information about wells drilled is available at the repository.

Seismic surveys

Year of surveys	Number of lines	Number of linear km	Fold
1974	7	109,24	12
1976	1	11,0	12
1979	2	21,48	12
1980	2	22,8	12
1984	16	195,81	12
1986	7	116,46	12-24
1988	1	20,6	48
1992	1	23,52	24
1998	5	82,0	24-48
2002	12	170,9	24-48
2003	23	335,48	24-48
2006	16	198,15	48
2007	3	48,87	48

EXPLORATION WORK PROGRAM REQUIREMENTS

Stage I (12 months) - processing and reinterpretation of 2D seismic data;

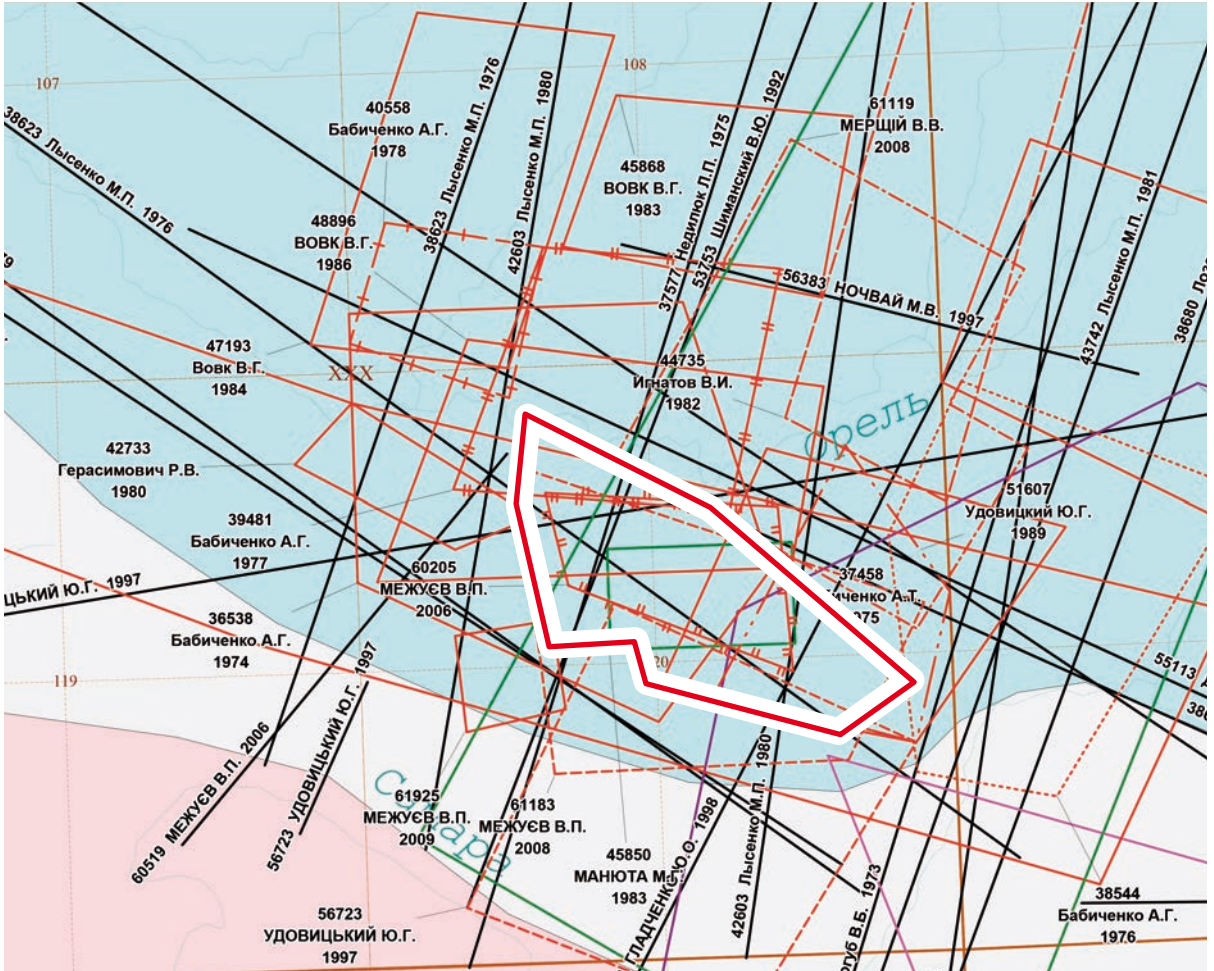
Stage II (12 months) – acquisition of 2D or 3D seismic data on ¼ of the block's area;

Stage III (24 months) – one productive well drilling.

BLOCK 21

ORILSKO-BRUSIVSKA LICENSE

Map of geophysical surveys and seismic lines





MAP SYMBOLS

 1:25 000

 1:50 000


 1:100 000

 geophysical survey

 seismic lines



ORILSKO-BRUSIVSKA
BLOCK

 survey with no mapping

45860 report number

Рогов А.М. author of the report

1982 year of the report



BLOCK 22

HOSHIVSKA LICENSE

LOCATION

Hoshivska block is located in the territory of Bolekhiv city and Dolyna district of Ivano-Frankivsk region. Acreage of the block is 49.01 sq. km.

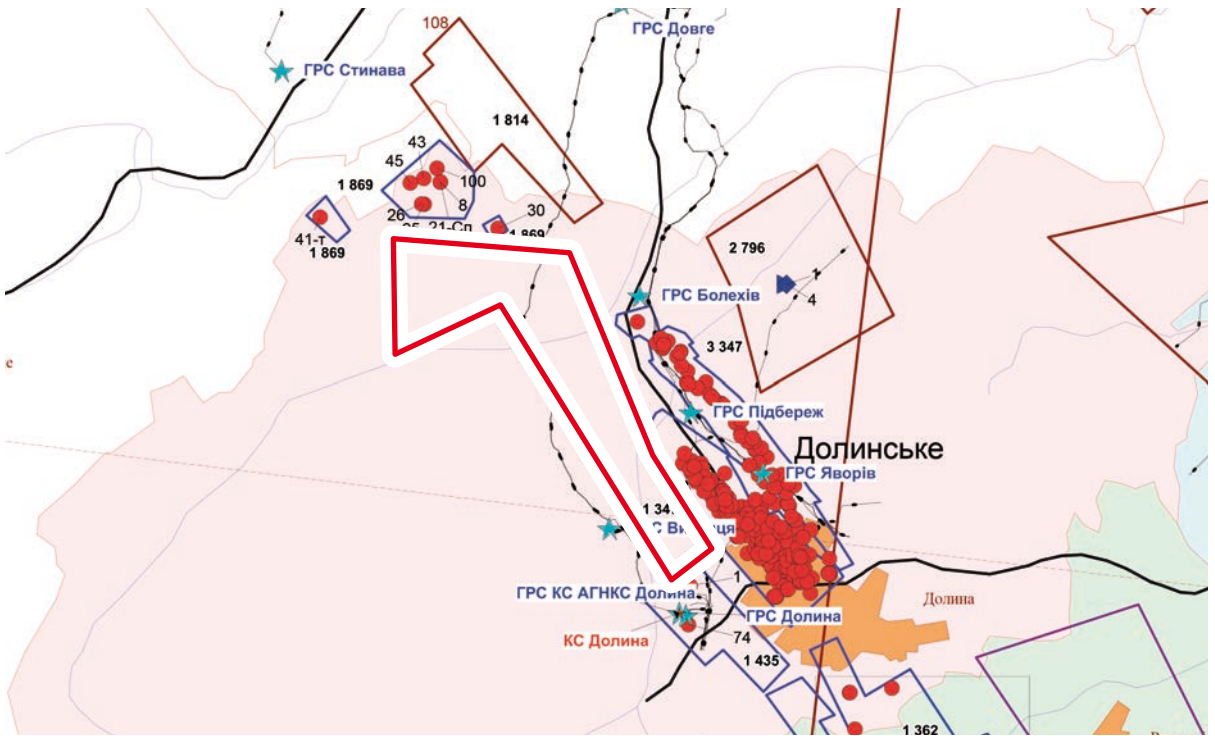
CONCESSION TYPE

Combined license for geological exploration with pilot and commercial development, and production of hydrocarbons. Duration - 20 years.

DEPOSITS DISCOVERED IN THE AREA

North Dolynske, Tanyavske, Vygodo-Vytyvske fields.

Map of Hoshivska block



MAP SYMBOLS

Point Number	USK 2000, E			USK 2000, N			SK-42, E			SK-42, N		
	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.
1	23	44	46.07	49	2	52.13	23	44	52.35	49	2	53.20
2	23	44	15.07	49	5	19.13	23	44	21.35	49	5	20.20
3	23	49	56.07	49	5	28.14	23	50	2.35	49	5	29.20
4	23	53	23.08	49	1	23.13	23	53	29.35	49	1	24.20
5	23	55	38.08	48	59	33.14	23	55	44.35	48	59	34.20
6	23	54	28.08	48	58	47.13	23	54	34.34	48	58	48.20
7	23	50	11.07	49	2	20.13	23	50	17.35	49	2	21.20
8	23	47	56.07	49	4	11.13	23	48	2.35	49	4	12.20

- well
- ★ gas-distribution plant
- gas pipeline
- HOSHIVSKA BLOCK

GEOLOGICAL CHARACTERISTICS

Hoshivska license is located on the Dolynske anticline. Within its limits, according to the deep drilling, three blocks are determined (from northwest to southeast): South-Dolynsky, Hoshivsky and Kropyvnytsky. Dimensions of the Hoshivsky fault together with the South-Dolynsky block on the Upper Menilithian sediments are: length - 16.0 km, width - 2.7 km.

Commercial oil and gas content of Hoshivska block is associated with the Menilite and Eocene deposits. In Menilite deposits productive are Middle and Lower Menilite sub-suits, which contain oil. Eocene deposits contain oil reservoirs with a gas cap.

SURVEY INFORMATION AVAILABLE

Assessment of hydrocarbon resources (Ukrainian classification)

Undiscovered inferred resources (category C3+D) are 50-100 thousand tons of oil equivalent per sq.km.

Well data

The block was partially explored in the process of drilling exploration and pioneer wells: No. 6, 68, 70, 76, 81-Vygoda-Vyvtitsa.

A non-commercial oil yield was obtained during drilling well No.76-BB in upper Menilite deposits. Exploitation of the well No. 81-VV during 2004-2014, which was drilled at the Hoshivsky block, proved promising (economic and technological) oil production from this block. Therefore, it is possible to expect the same, or better, results in the restoration of other wells that discovered the oil-saturated intervals of the Hoshivsky block.

Seismic surveys

Year of surveys	Number of lines	Number of linear km	Fold
1985	8	51,29	12
1986	1	13,9	12
1988	1	5,5	12
1986	1	3,0	12
1989	4	31,6	12
1991	2	11,65	12
1994	2	12,5	24
2015	3	13	24

EXPLORATION WORK PROGRAM REQUIREMENTS

Stage I (12 months) - processing and reinterpretation of 2D seismic data;

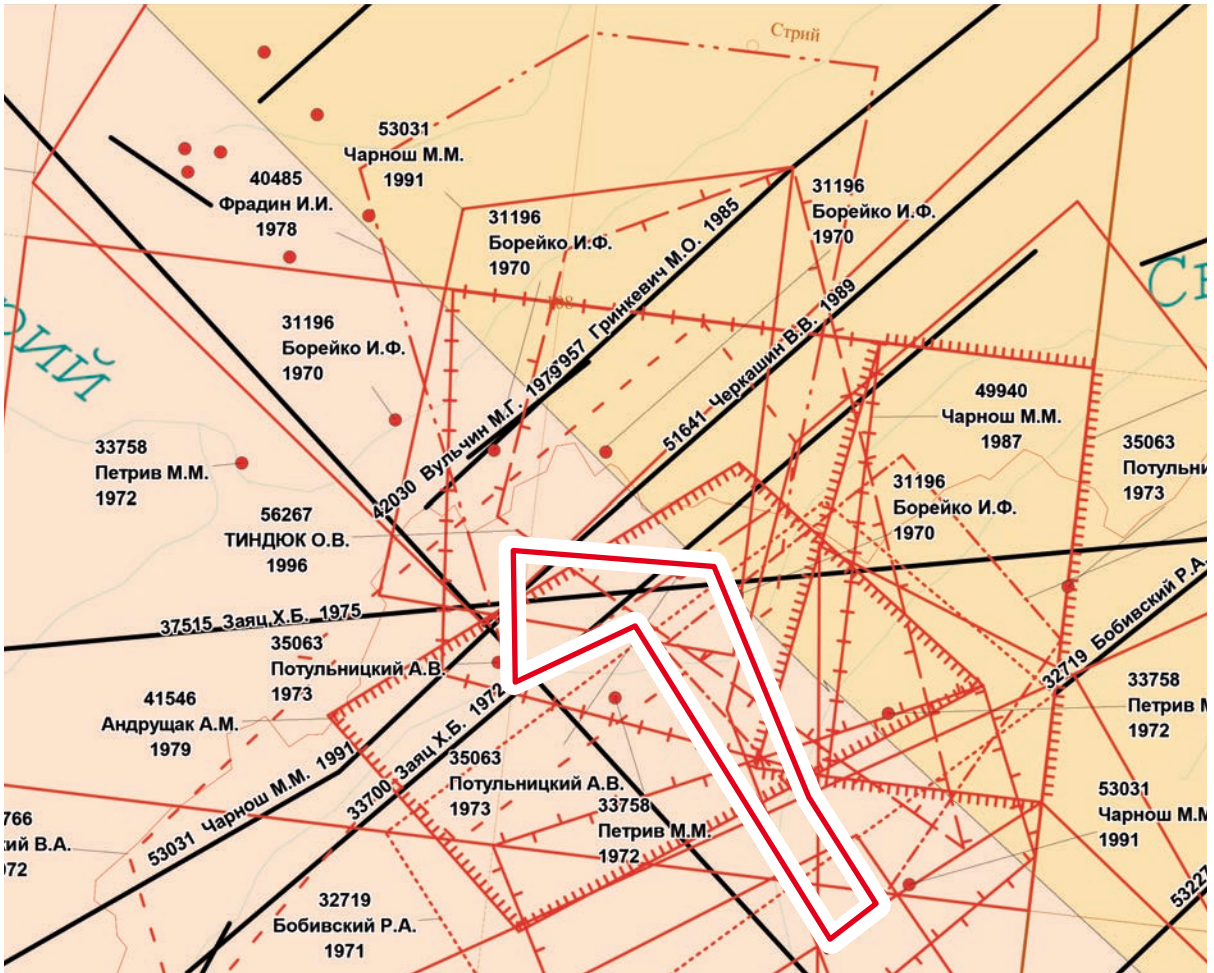
Stage II (12 months) – acquisition of 2D or 3D seismic data on ¼ of the block's area;

Stage III (24 months) – one productive well drilling.

BLOCK 22

HOSHIVSKA LICENSE

Map of geophysical surveys and seismic lines



MAP SYMBOLS

- 1:25 000
- 1:50 000
- 1:100 000
- geophysical survey
- seismic lines

- HOSHIVSKA BLOCK
- survey with no mapping

51238 report number

Павлюк В.А. author of the report

1988 year of the report



BLOCK 23

YASENSKA LICENSE

LOCATION

Yasenska block is located in Rozhnativ district of Ivano-Frankivsk region. Acreage of the block is 35.36 sq. km.

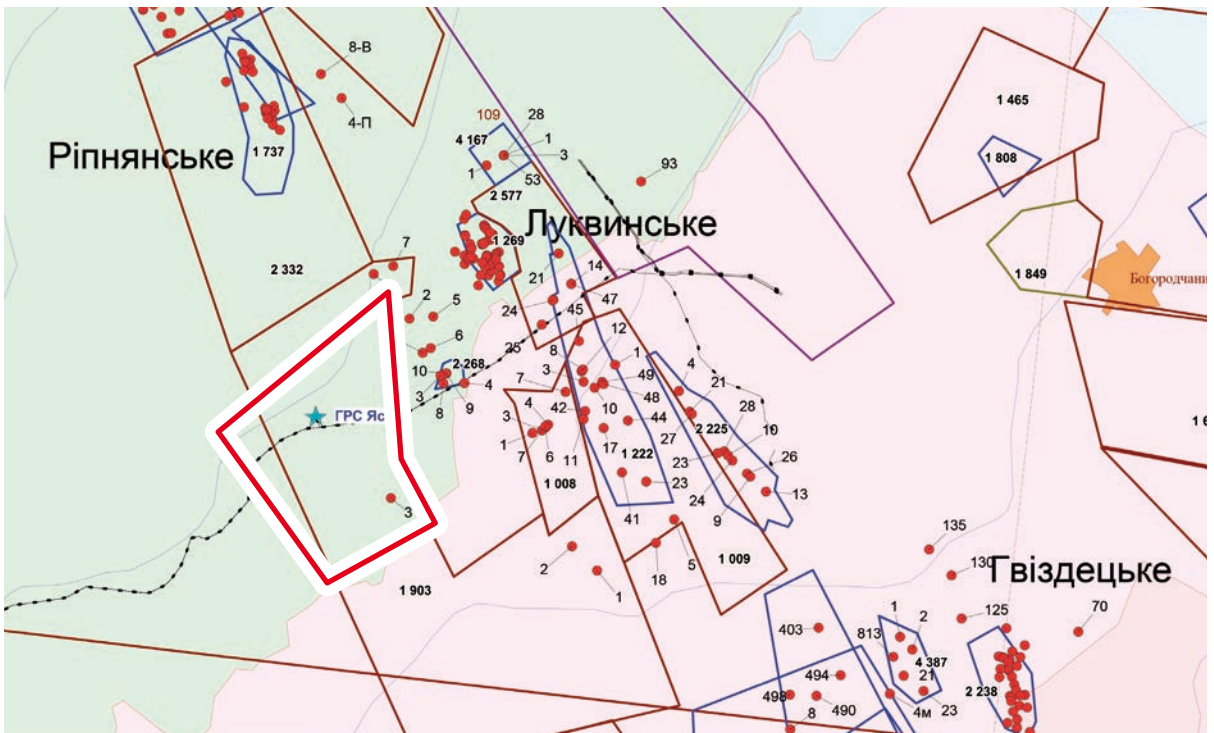
CONCESSION TYPE

Combined license for geological exploration with pilot and commercial development, and production of hydrocarbons. Duration - 20 years.

DEPOSITS DISCOVERED IN THE AREA

Bohrivske, Yablono-Krychkivske and Rudavtske oil fields.

Map of Yasenska block



MAP SYMBOLS

Point Number	USK 2000, E			USK 2000, N			SK-42, E			SK-42, N		
	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.
1	24	7	53.00	48	43	57.00	24	7	59.22	48	43	58.06
2	24	12	1.00	48	46	47.00	24	12	7.23	48	46	48.05
3	24	12	53.00	48	43	51.00	24	12	59.22	48	43	52.06
4	24	13	60.00	48	42	47.00	24	14	6.22	48	42	48.06
5	24	11	17.00	48	41	30.00	24	11	23.22	48	41	31.06

- well
- ★ gas-distribution plant
- gas pipeline
- YASENSKA BLOCK

GEOLOGICAL CHARACTERISTICS

In terms of geotectonics, the block is located in the second stage of the folds of the central part of the Boryslav-Pokutska zone.

Yasenska block is located in the area of Bohrivske and Rudavetske oil fields. The area of the deposits was explored in 1961-1965 by geological survey of scale 1: 25000 and 1: 50000, and in 1964-1965 by detailed seismic studies. As a result of the work, the Bohrivsk fold (southwest of Lukvinska fold) was discovered.

Flysch formations of the Upper Cretaceous (Stryan suite) and molasse sediments of the Miocene (Polyanytsia suite) form the geological structure of the fold.

In neighboring fields depths of oil-saturated intervals are in the range from 1000 to 3900 m.

SURVEY INFORMATION AVAILABLE

Assessment of hydrocarbon resources (Ukrainian classification)

Undiscovered inferred resources (category C3+D) from 50 to 100 thousand tons of oil equivalent per sq.km..

Well data

The field was discovered in 1979 by well No. 3, which gave 10 m³ /day of oil from the Menilite suite of Oligocene (interval 1024-1112 m) an at a dynamic level of 856 m. In total, 8 exploration and appraisal wells have been drilled.

Seismic surveys

Year of surveys	Number of lines	Number of linear km	Fold
1979	3	16,9	6
1981	1	7,7	6
1984	3	24,5	6
1988	4	49,52	6-12
1991	1	6,0	24
1995	3	17,7	12
2001	2	14,2	15

EXPLORATION WORK PROGRAM REQUIREMENTS

Stage I (12 months) - processing and reinterpretation of 2D seismic data;

Stage II (12 months) – acquisition of 2D or 3D seismic data on ¼ of the block's area;

Stage III (24 months) – one productive well drilling.



BLOCK 24

BOLEKHIVSKO-SMOLIANSKA LICENSE

LOCATION

Bolekhivsko-Smolianska block is located in Dolyna district of Ivano-Frankivsk region, 2 km northeast of Bolechiv. Acreage of the block is 10.39 sq. km.

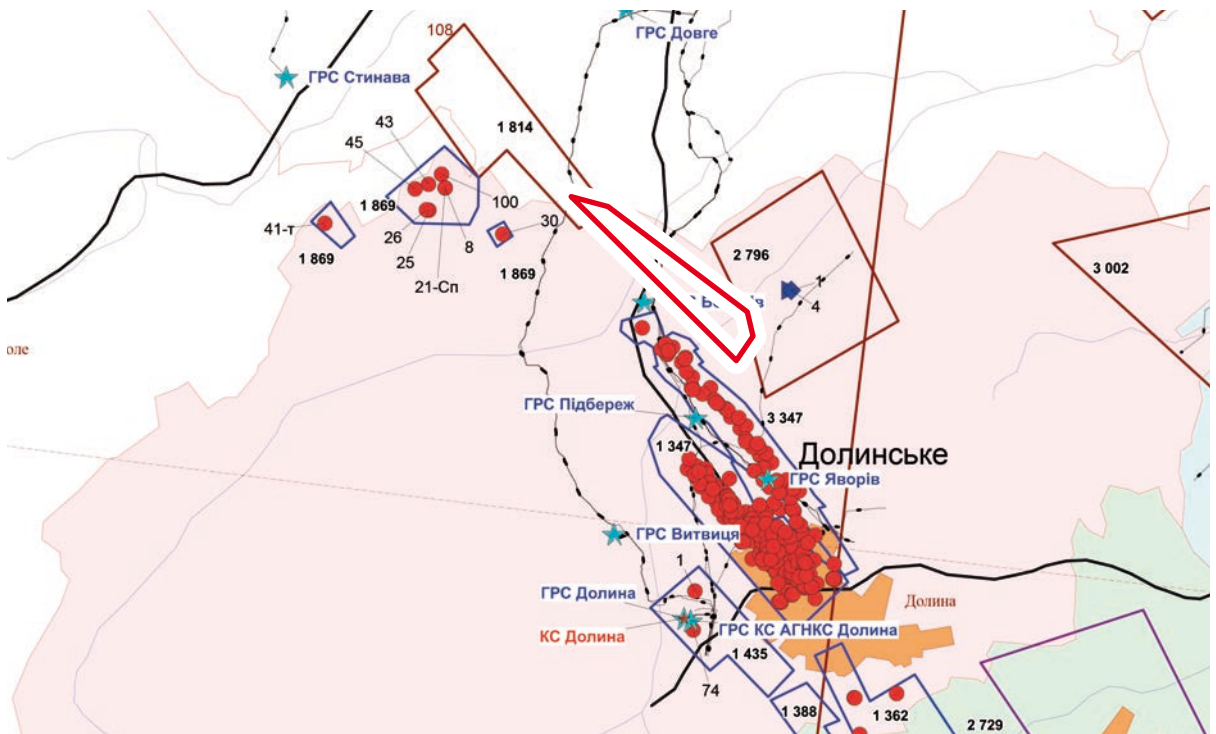
CONCESSION TYPE

Combined license for geological exploration with pilot and commercial development, and production of hydrocarbons. Duration - 20 years.

DEPOSITS DISCOVERED IN THE AREA

North Dolynske, Tanyavske, Vygodo-Vytyvske fields.

Map of Bolekhivsko-Smolianska block



MAP SYMBOLS

Point Number	USK 2000, E			USK 2000, N			SK-42, E			SK-42, N		
	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.
1	23	50	54.06	49	6	37.14	23	51	0.35	49	6	38.20
2	23	55	52.07	49	4	44.14	23	55	58.35	49	4	45.20
3	23	56	9.07	49	4	14.14	23	56	15.35	49	4	15.20
4	23	55	42.07	49	3	40.14	23	55	48.35	49	3	41.20
5	23	49	39.07	49	6	44.14	23	49	45.35	49	6	45.20

- well
- ★ gas-distribution plant
- gas pipeline
- / BOLEKHIVSKO-SMOLIANSKA BLOCK

GEOLOGICAL CHARACTERISTICS

Bolekhivsko-Smolianska license is located in the first stage of the faults of the central part of the Boryslav-Pokutska zone and belongs to the North-Dolynska fault of the Bolechivsky block.

The North-Dolynska fault is a narrow, linearly elongated anticline of northwest strike of 14.0 km long, 2.0- 2.5 km wide and 600 m high. It includes the Yakubivska structure, which is divided into 8 parts, conventionally merged into two blocks: Bolechivsky and Dolynsky.

Commercial oil and gas formation of the structure is associated with the Menilite, Bistritsia and Vyhodska suites. Reservoirs are sandstones and siltstones among clayey rocks. The thickness of oil and gas-saturated formations varies from a few meters to 47 meters.

Middle and lower Menilite formations contain accumulations of oil with a common oil-water contact (OWC). For the Menilite suite, there are four levels of OWC occurrence: -2027, -2075, -2418 and -2646 m. The oil deposit of the Yakubivska structure is much lower; Its OWC is located at an absolute depth of -3816.6 m. At one of the part of the Dolynsky block in the sandstones of the lower Menilite sub-suite, deposits of gas with condensate are also explored.

The Bistritsia and Vyhodska sub-suites contain deposits of oil with a gas cap at three levels of OWC: -2782, -2548, -2539 m, and two levels of gas-oil contact: -2421.5 and -2404 m.

SURVEY INFORMATION AVAILABLE

Assessment of hydrocarbon resources (Ukrainian classification)

Inferred resources (category C3+D) 30-50 thousand tons of oil equivalent per sq.km.

Well data

In total, 55 exploration and pioneer wells were drilled in the block. Wells of Bolechivsky block are exploited by deep-pumping method. The current reservoir pressure is 27.0 MPa. Exploration and periodic exploitation of well No.152-PnD in the period from 1998 to 2015 proves the promise of the Bolekhivsky block of this license.

Seismic surveys

Year of surveys	Number of lines	Number of linear km	Fold
1985	3	11,0	12-24
1989	4	17,0	12
1991	1	2,5	12
1993	3	15,5	24
1994	2	8,0	24
1995	1	6,0	24

EXPLORATION WORK PROGRAM REQUIREMENTS

Stage I (12 months) - processing and reinterpretation of 2D seismic data;

Stage II (12 months) – acquisition of 2D or 3D seismic data on ¼ of the block's area;

Stage III (24 months) – one productive well drilling.



GEOLOGICAL CHARACTERISTICS

South Slyvkuncka block belongs to the Nadvirna oil and gas region. In terms of geotectonics, South-Slyvkynska block is located at the junction of Ukrainian Carpathians and the Boryslav-Pokutska zone of the Pre-Carpathian Basin.

The South Slyvkynska structure was discovered by seismic surveys in 1985. In structural terms, the block covers the South Slyvkynska fold of the first stage of structures, which is represented by two blocks: the North-West (Pohorsky) and the South-East (Krychkivskyy).

Structural forms of these blocks, taking into account possible transverse faults are favorable for the existence of oil and gas deposits in them. Reservoir rocks are sandy-silty varieties of rocks with relatively high reservoir properties. In the Yamnian sediments, it is possible to expect horizons of sandstones with a total thickness of 10-15 m, in Manyavsky - 30-40 m, in Vypodsky - 20-35 m, and in Menilite - 100-150 m.

SURVEY INFORMATION AVAILABLE

Assessment of hydrocarbon resources (Ukrainian classification)

Undiscovered inferred resources (category C3+D) are estimated in 4051 million.m3 of oil equivalent.

Well data

There have been drilled 7 geochemical wells, which are located on two lines. The analysis of the results of geochemical studies showed that in all samples taken from drilled special geochemical wells, there are abnormal concentrations of hydrocarbon gas.

Seismic surveys

Year of surveys	Number of lines	Number of linear km	Fold
1981	4	16,9	6
1995	1	7,7	12

EXPLORATION WORK PROGRAM REQUIREMENTS

Stage I (12 months) - processing and reinterpretation of 2D seismic data;

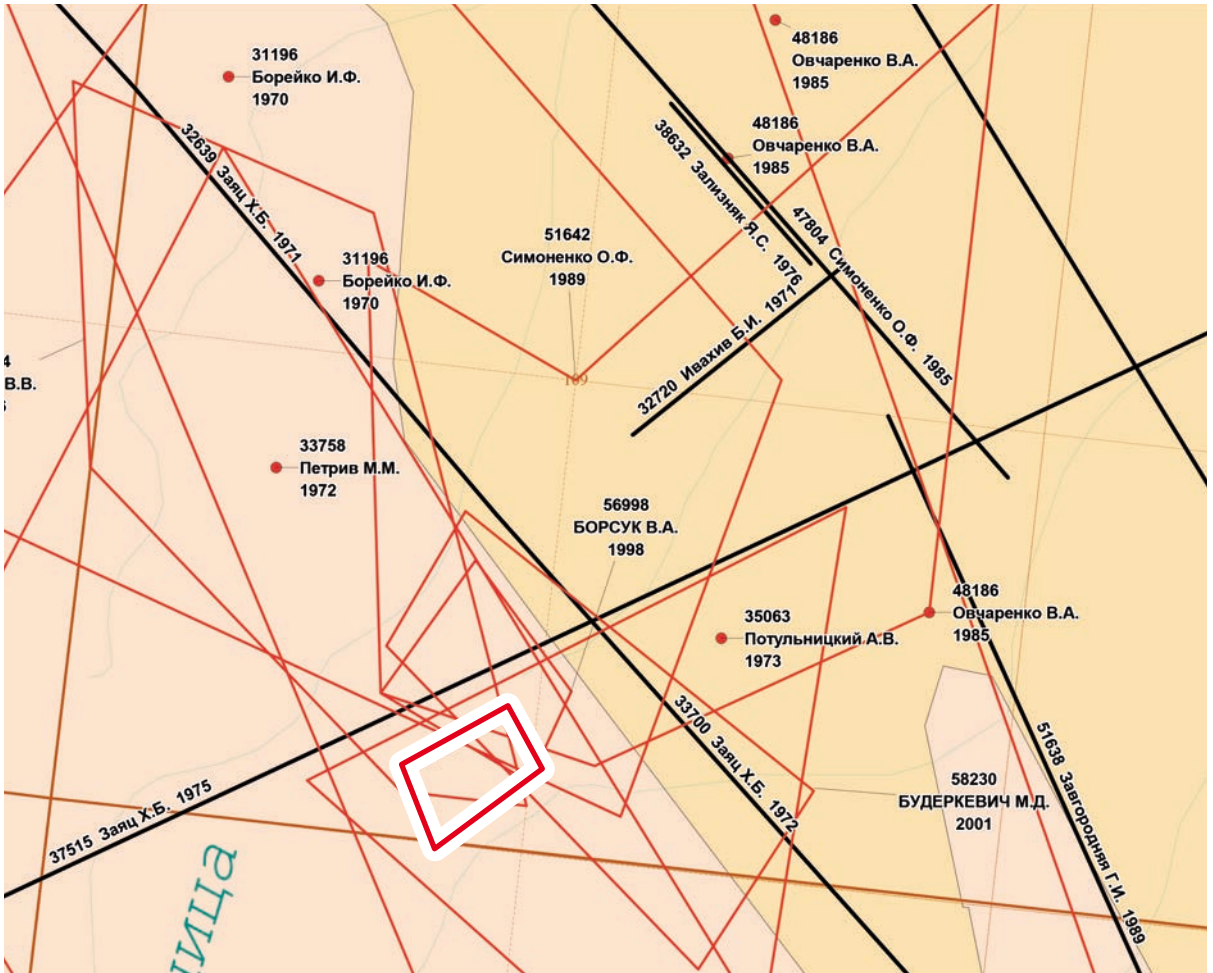
Stage II (12 months) – acquisition of 2D or 3D seismic data on ¼ of the block's area;

Stage III (24 months) – one productive well drilling.

BLOCK 25

SOUTH SLYVKYNSKA LICENSE

Map of geophysical surveys and seismic lines



MAP SYMBOLS

1:25 000

1:50 000

1:100 000

geophysical survey

seismic lines

SOUTH SLYVKYNSKA
BLOCK

survey with no mapping

51238 report number

Павлюк В.А. author of the report

1988 year of the report



BLOCK 26

EAST KOSMATSKA LICENSE

LOCATION

East Kosmatska block is located in Bohorodchany district of Ivano-Frankivsk region. Acreage of the block is 6.91 sq. km.

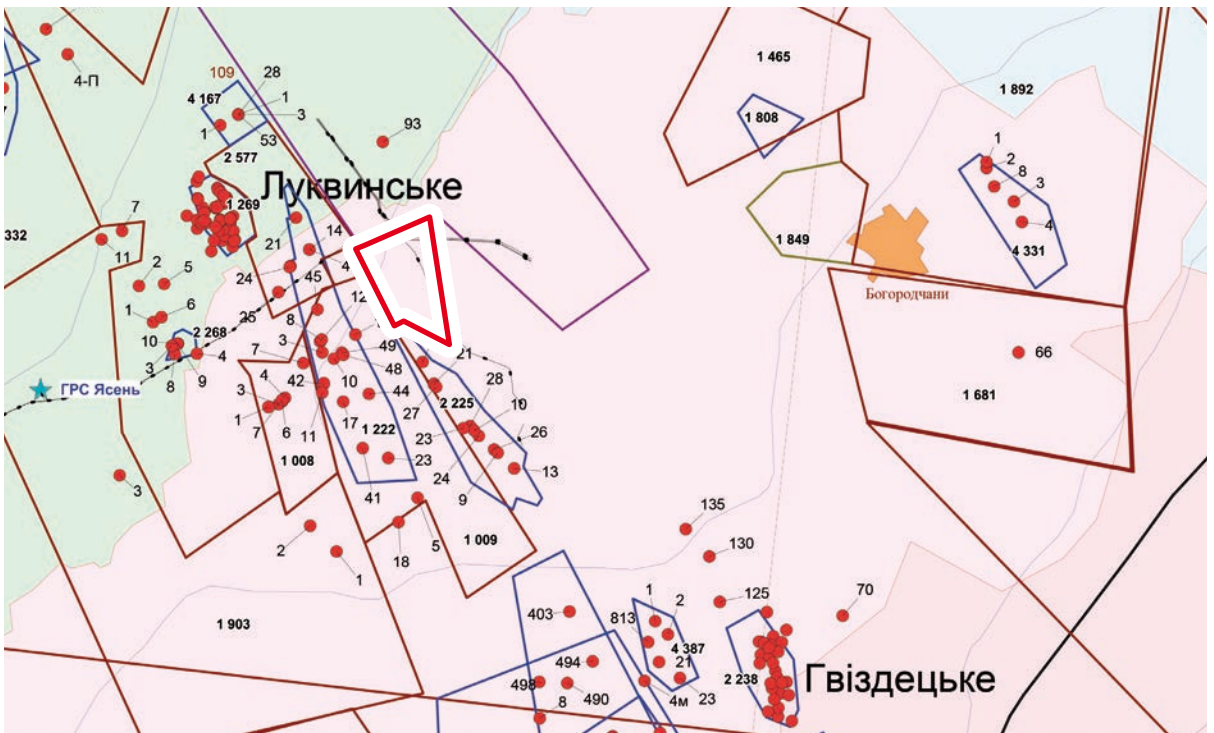
CONCESSION TYPE

Combined license for geological exploration with pilot and commercial development, and production of hydrocarbons. Duration - 20 years.

DEPOSITS DISCOVERED IN THE AREA

Rosilnianske gas condensate deposit and oil-saturated area Kitvan, gas and oil saturated area Dzvynych.

Map of East Kosmatska block



MAP SYMBOLS

Point Number	USK 2000, E			USK 2000, N			SK-42, E			SK-42, N		
	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.	deg.	min.	sec.
1	24	18	9.11	48	47	27.15	24	18	15.34	48	47	28.19
2	24	18	23.11	48	47	32.15	24	18	29.34	48	47	33.19
3	24	20	0.11	48	48	9.15	24	20	6.34	48	48	10.19
4	24	20	54.12	48	45	59.15	24	21	0.34	48	46	0.19
5	24	19	38.12	48	46	18.14	24	19	44.34	48	46	19.19
6	24	19	24.12	48	46	12.15	24	19	30.34	48	46	13.19

- well
- ★ gas-distribution plant
- gas pipeline
- EAST KOSMATSKA BLOCK

GEOLOGICAL CHARACTERISTICS

In terms of geotectonics, the block is located within the boundary of the Boryslav-Pokutska zone of the Precarpathian depression. In oil and gas it is in the Nadvirna oil and gas region.

Seismic surveys in East Kosmatska block and in neighboring areas have been carried out in 1957-58, 1968-69, 1973-74, 1976-83. East Kosmatska fold was discovered and mapped during seismic surveys in 1968- in the areas Kitvan-Maydan-Rosilna.

Geological structure of the East Kosmatska block includes Neogene deposits represented by rocks of the Vorotyshchenska and Polyanytska suites, and Paleogene deposits, composed of Oligocene (Menilite suite), Eocene (Bystrytska, Vyhodska and Maniavska suits) and Paleocene (Yamnian suite) deposits. The core of the fold is the sediments of the upper Cretaceous, represented by the Stryan suite.

SURVEY INFORMATION AVAILABLE

Assessment of hydrocarbon resources (Ukrainian classification)

Calculated inferred resources of the block, based on the estimated area 5.0 sq.km, and taking into account the density of reserves in neighboring fields - 1061 thousand tons / sq.km are estimated in the amount of 5,305 thousand tons of oil equivalent.

Well data

Two exploration wells No. 9-Rosilna and No. 4-Rosilna were drilled in 1962-65. Well No. 9- Rosilna demonstrated in Neogene deposits active gas manifestations in the form of discharge of drilling mud up to 4,0 m above the level of the rotor.

Seismic surveys

Year of surveys	Number of lines	Number of linear km	Fold
1985	2	10,1	6
1988	4	27,1	12
2014	2	8,0	80

EXPLORATION WORK PROGRAM REQUIREMENTS

Stage I (12 months) - processing and reinterpretation of 2D seismic data;

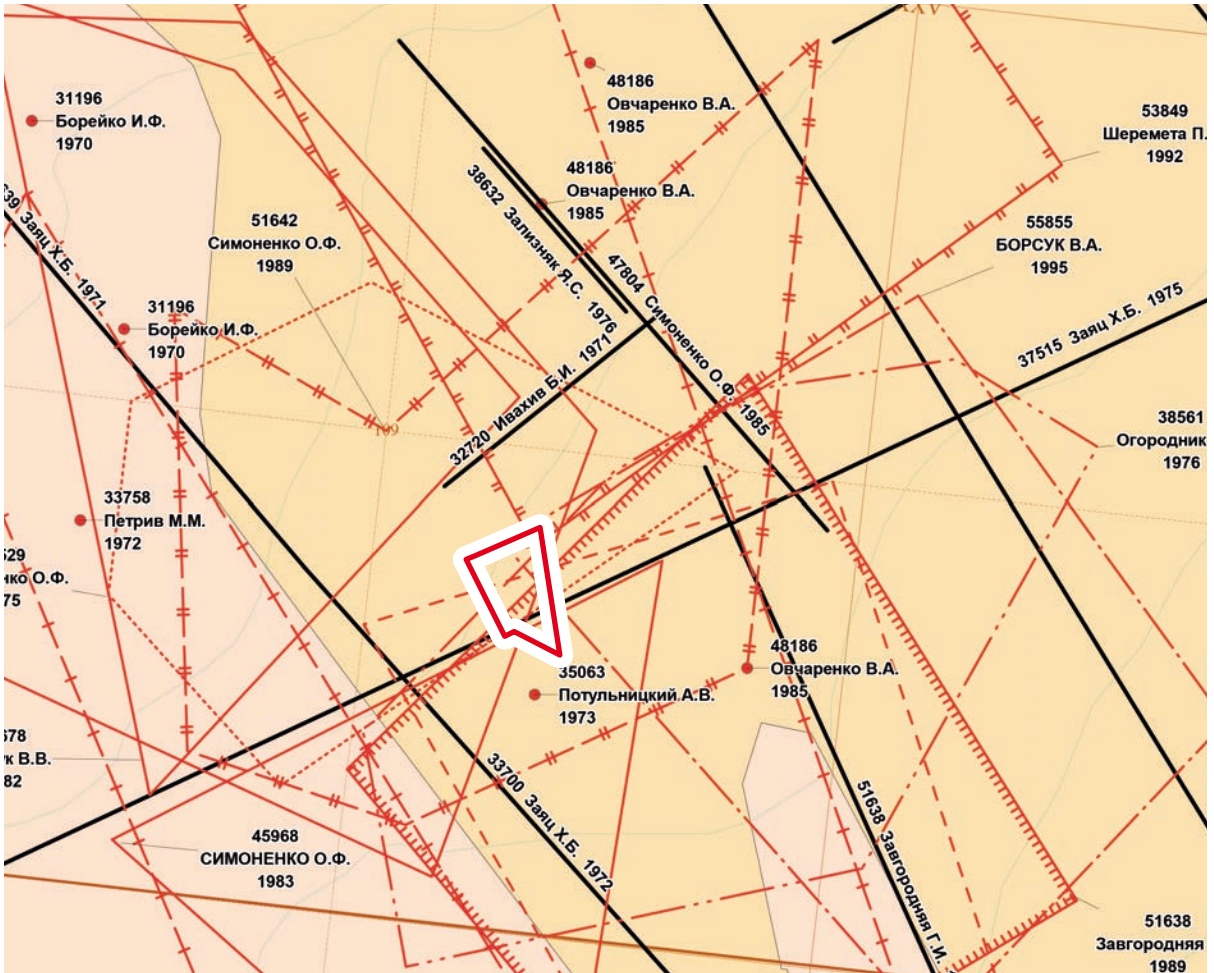
Stage II (12 months) – acquisition of 2D or 3D seismic data on ¼ of the block's area;

Stage III (24 months) – one productive well drilling.

BLOCK 26

EAST KOSMATSKA LICENSE

Map of geophysical surveys and seismic lines





MAP SYMBOLS

 1:25 000


 1:50 000

 1:100 000

 geophysical survey

 seismic lines

 EAST KOSMATSKA
BLOCK

 survey with no mapping

51238 report number

Павлюк В.А. author of the report

1988 year of the report

Contacts for obtaining information

Type of Data	Description	Contacts
Coordination	Organization of the auctions and coordination of state geological data disposal	State Geological Service of Ukraine Head of Permitting and International Relations Department +38 044 536-13-20 dozvilnadra@ukr.net Head of the Auction Department +38 044 456-60-56 auction@geo.gov.ua
Seismic surveys	Review of the reports is free of charge at the state enterprise Ukrgeofizyka. Acquisition of the right to use of data is possible upon request to the State Geological Service of Ukraine. Cost shall be determined after evaluating the amount of data requested.	Ukrgeofizyka Chief geologist +38 044 453-38-02 info@ukrgeofizyka.com.ua
Well data	Review of the reports is free of charge at the state enterprise Geoinform of Ukraine. Public register of oil and gas wells is at the link below: http://geoinf.kiev.ua/wp/sverdlovini.php Logging data is provided by the Ukrainian State Geological Prospecting Institute upon the request. Acquisition of the right to use of data is possible upon request to the State Geological Service of Ukraine. Cost shall be determined after evaluating the amount of data requested.	Geoinform of Ukraine Chief geologist +38 044 456-21-84 geoinf@geomail.kiev.ua Ukrainian State Geological Prospecting Institute Deputy director +38 044 430-70-26 gv@ukrdgri.gov.ua
Geological reports	Review of the reports is free of charge at the state enterprise Geoinform of Ukraine.	Geoinform of Ukraine Chief geologist +38 044 456-21-84 geoinf@geomail.kiev.ua
Licensed blocks data	Public map of licensed blocks is on the links below: www.geoinf.kiev.ua/wp/interaktyvni-karty-spetsdozvoliv.htm www.minerals-ua.info/mapviewer/goruchi.php	Geoinform of Ukraine Chief geologist +38 044 456-21-84 geoinf@geomail.kiev.ua
Land tracts	Public land tracts map is on the link below: www.map.land.gov.ua/kadastrova-karta	State Service of Ukraine for Geodesy, Cartography and Cadastre +38 044 244-82-47 land@land.gov.ua
Environmental Impact Assessment	It is necessary to conduct an EIA within a year after awarding a petroleum license	Ministry of Ecology, EIA Department +38 044 206-20-89 m.shimkus@menr.gov.ua

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