



Grupo POISK

Reexploração em campos maduros em produção

Projetos de exemplo

Estudo de caso I. Rússia. Campo de produção

Propósito do estudo

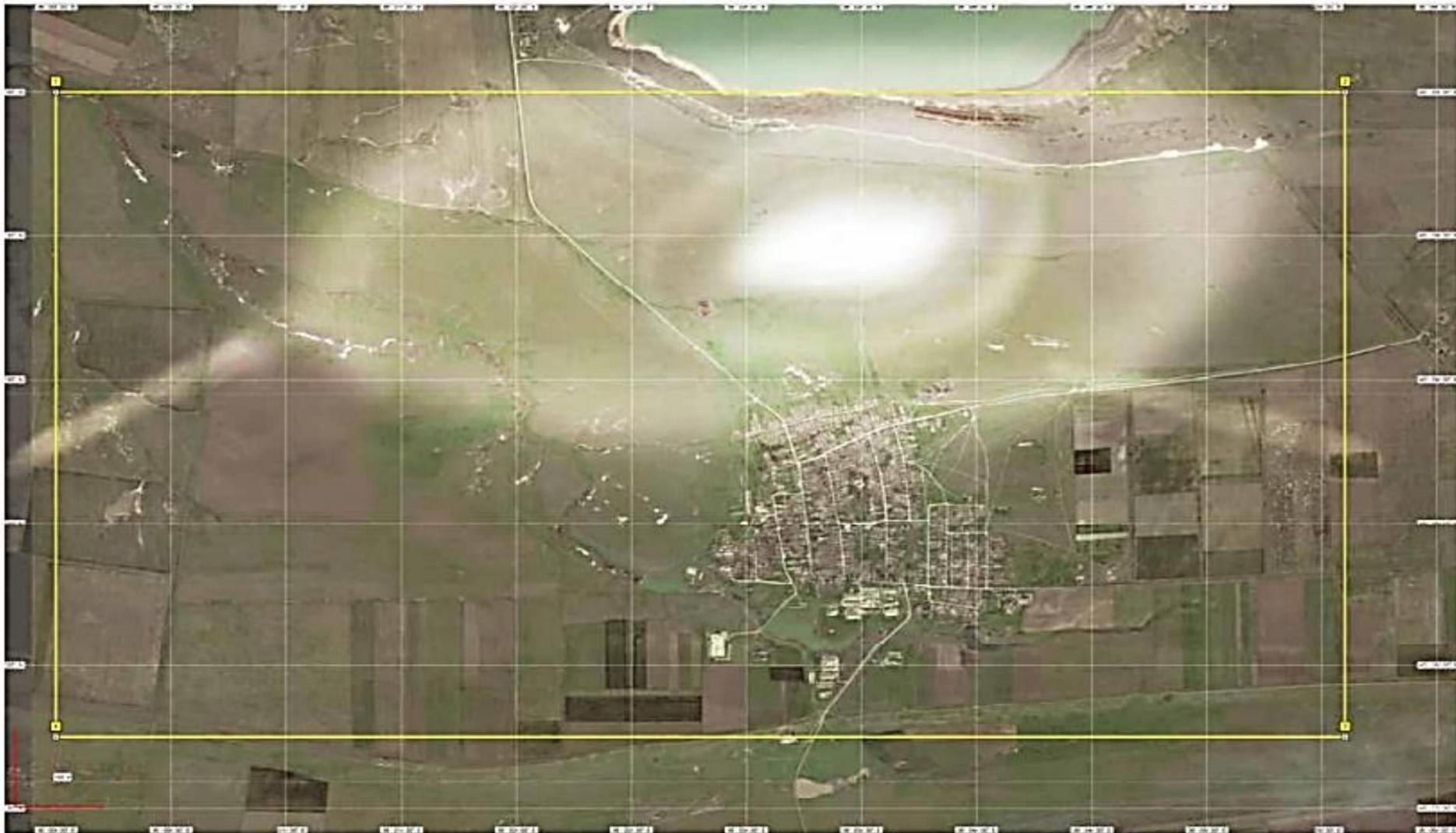
Identificação e delimitação de anomalias de hidrocarbonetos associadas a depósitos não perfurados ou descobertos no campo de produção de condensado de gás

- 1) Determinar anomalias de hidrocarbonetos na área de estudo processando dados de satélite (etapa I) e examinando detalhadamente as áreas anômalas usando equipamento móvel de campo de provas de ressonância (etapa II);
- 2) Medir as profundidades dos reservatórios de hidrocarbonetos em anomalias
- 3) Estimar a espessura dos reservatórios de hidrocarbonetos;
- 4) Estimar a espessura média da parte porosa da formação gasosa e a pressão do gás em cada horizonte;
- 5) Mapear rotas de migração de hidrocarbonetos através de rochas permeáveis a gases;
- 6) Determinar o tipo de rochas reservatório dos horizontes de hidrocarbonetos;
- 7) Construir perfis de profundidade de reservatórios de hidrocarbonetos sobre anomalias com passo de medição não superior a 500 m;
- 8) Estimar os recursos de hidrocarbonetos nas anomalias identificadas.

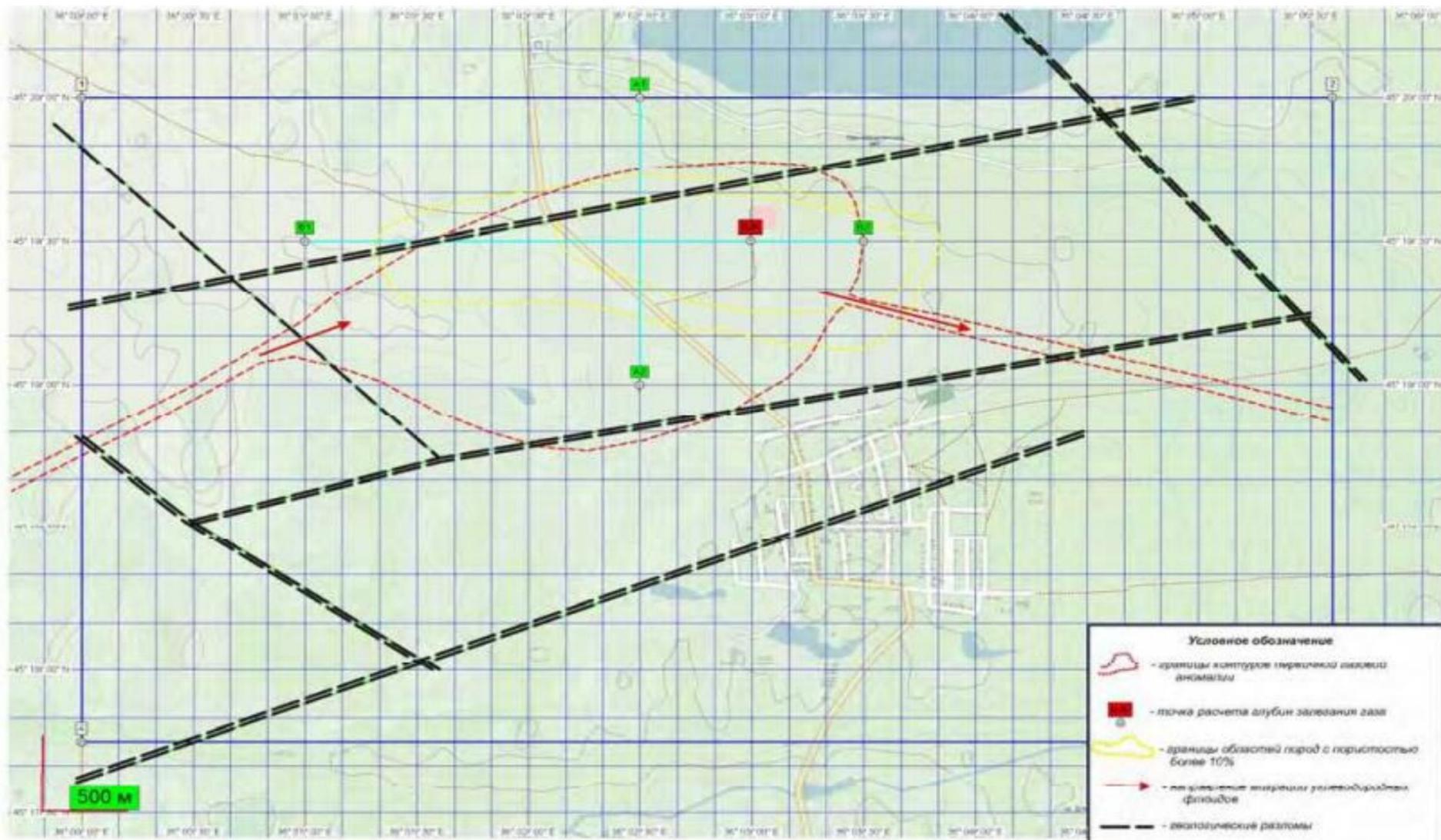
Estudo de caso I. Rússia. Campo de produção da Fase I (sensoriamento remoto). Disposição



Estudo de caso I. Rússia. Campo de produção da Fase I (sensoriamento remoto). Anomalias mapeadas

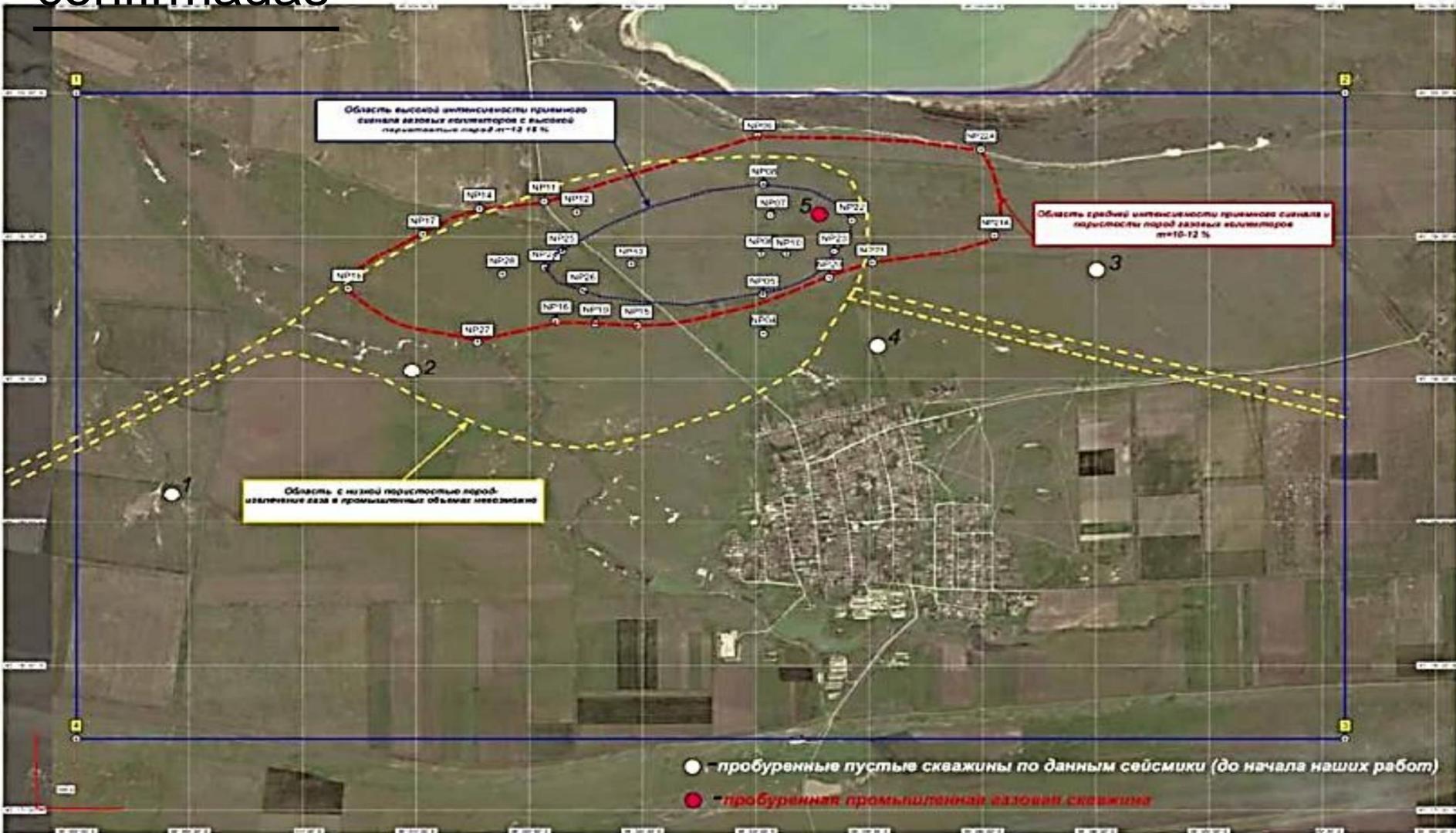


Estudo de caso I. Rússia. Campo de produção da Fase I (sensoriamento remoto). Padrões



Estudo de caso I. Rússia. Campo de produção

Fase II (levantamento de campo). Anomalias confirmadas

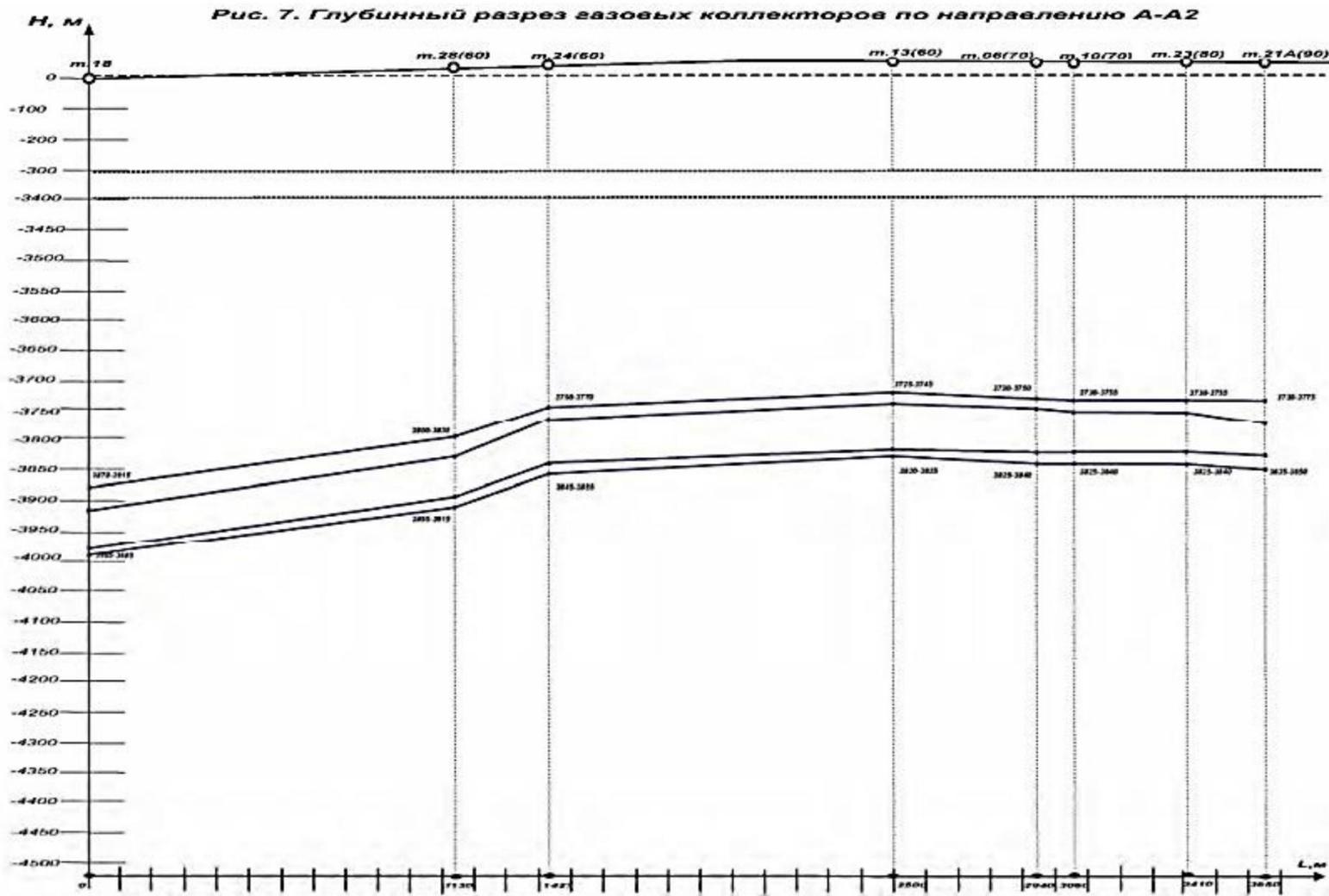


Estudo de caso I. Rússia. Campo de produção

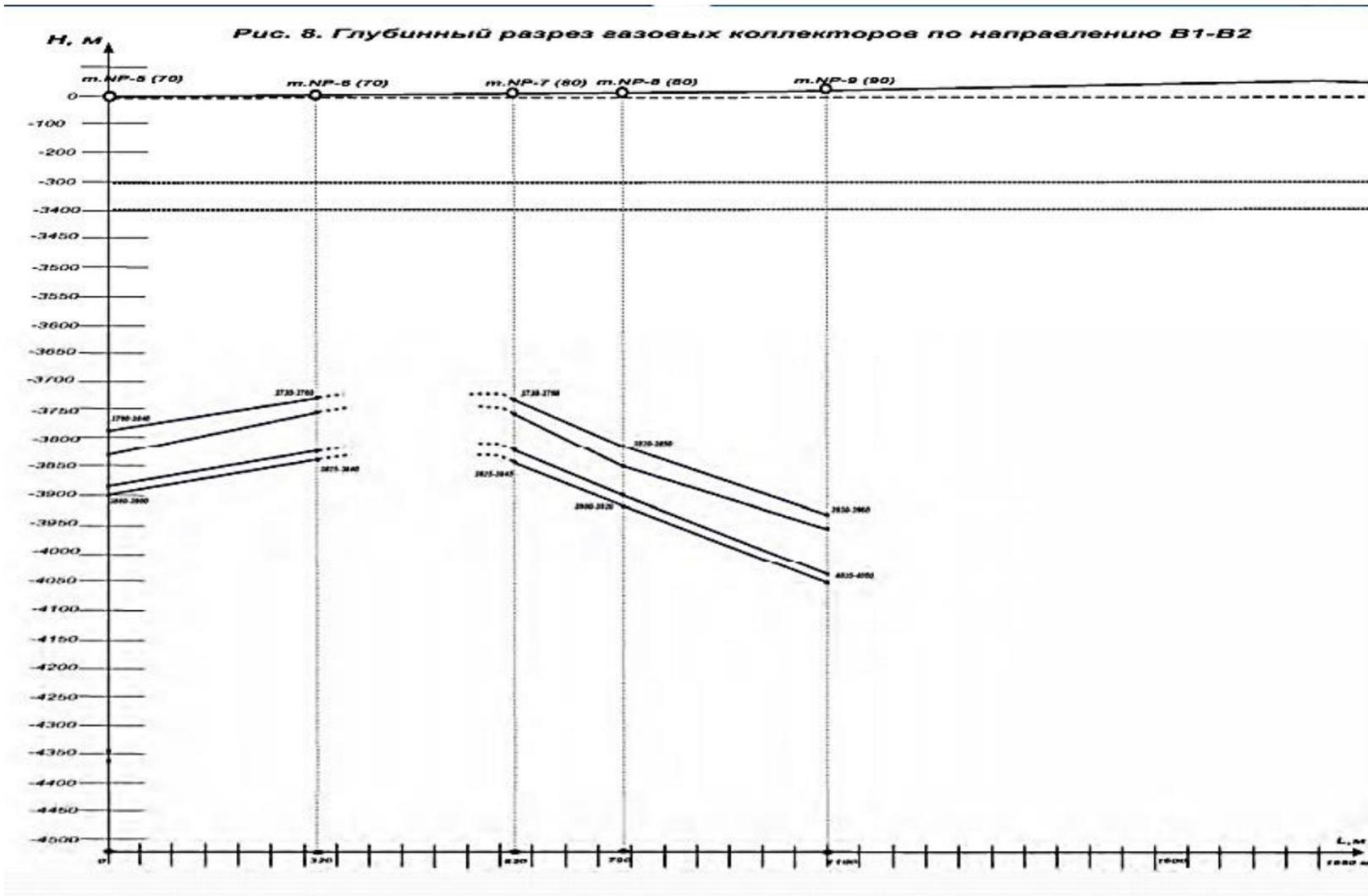
Fase II (levantamento de campo). Linhas de estimativa de profundidade



Estudo de caso I. Rússia. Campo de produção da Fase II (levantamento de campo). Estimativa de profundidade



Estudo de caso I. Rússia. Campo de produção da Fase II (levantamento de campo). Estimativa de profundidade



Estudo de caso I. Rússia. Campo de produção da Fase II (levantamento de campo). Propriedades do reservatório

Location	Lat, N	Signal features	Altitude above sea level (m)	Gas reservoirs depth -H ₁ , -H ₂ (m)	Rock types. Pressure (P, MPa)	Gas reservoir thickness, Δh (m)
	Long, E					
1	2	3	4	5	6	7
NP04	45°19'9,7" 36°3'2,0"	The "gas" signal, the background values of the signal. Of no commercial value	70	-	-	-
NP05	45°19'17,7" 36°3'1,8"	Gas. The southern tip of the productive anomaly. Maximum signal intensity. Measurement of gas reservoir occurrence parameters.	70	(I) -3790÷3830; (II) -3880÷3900.	Porous sandstone, P ₁ =50; P ₂ =55	30 10
NP06	45°19'26,2" 36°3'1,4"	Gas. The maximum amplitude of the signal. Measurement of gas reservoir occurrence parameters.	70	(I) -3730÷3760; (II) -3825÷3840.	Porous sandstone, P ₁ =50; P ₂ =55	25 10
NP07	45°19'34,4" 36°3'3,8"	Gas. The maximum amplitude of the signal. Measurement of gas reservoir occurrence parameters.	80	(I) -3730÷3750; (II) -3825÷3845.	Porous sandstone, P ₁ =50; P ₂ =55	25 10
NP08	45°19'40,7" 36°3'2,0"	The boundary of the intense signal at the northern part of the anomaly.	80	(I) -3820÷3850; (II) -3930÷3950.	Porous sandstone, P ₁ =50; P ₂ =55	25 10
NP09	45°19'51" 36°03'00"	Gas. Average signal intensity. The northern part of the anomaly. Measurement of gas reservoir occurrence parameters.	90	(I) -3930÷3960; (II) -4035÷4050.	-/-	25 10
NP10	45°19'25,9" 36°03'7,1"	Gas. Maximum signal intensity. Measurement of gas reservoir occurrence parameters.	70	(I) -3730÷3755; (II) -3825÷3840.	-/-	25 10

Estudo de caso I. Rússia. Campo de produção

Fase II (levantamento de campo). Dados de profundidade e reservatório

Nº	Location	Altitude above sea level (m)	The depth of occurrence of gas reservoirs from the sea level	Effective thickness of the gas reservoirs (m)
1	P-18	50	3870-3915 3965-3985	30 10
2	P-28	60	3800-3830 3895-3915	25 8
3	P-24	60	3750-3770 3845-3855	25 10
4	P-13	60	3725-3745 3820-3835	20 10
5	P-06	70	3730-3750 3825-3840	20 8
6	P-10	70	3730-3755 3825-3840	25 9
7	P-23	80	3730-3755 3825-3840	25 10
8	P-21A	90	3750-3775 3835-3850	20 8

Estudo de caso I. Rússia. Campo de produção

Fase II (levantamento de campo). Estimativa de recursos

Horizon	Gas reservoir size			Depth, H (m)			Average effective thickness h (m)	Porosity m (%)	Water saturation, %	Pressure P (MPa)	Resources ($\cdot 10^6$ M ³)	
	Width (m)	Length (m)	Area S(m ²)	Min	Average	Max					In-place	Recoverable
I	1,3	3,8	$3,2 \cdot 10^6$	3725	3820	3930	20	12÷15	30	50	582,4	416,0
II	1,3	3,8	$3,2 \cdot 10^6$	3820	3930	4048	10	10÷12	40	55	147,84	105,6
Total:			$6,4 \cdot 10^6$								730,24	521,6

Volumes recuperáveis:

$$V_{\text{gravando}} = S \cdot \bar{h} \cdot P \cdot \bar{\gamma} \bar{\gamma} \bar{\gamma};$$

onde $\bar{\gamma} \bar{\gamma} \bar{\gamma}$ – o fator integral de porosidade, temperatura, saturação de água, recuperação de gás

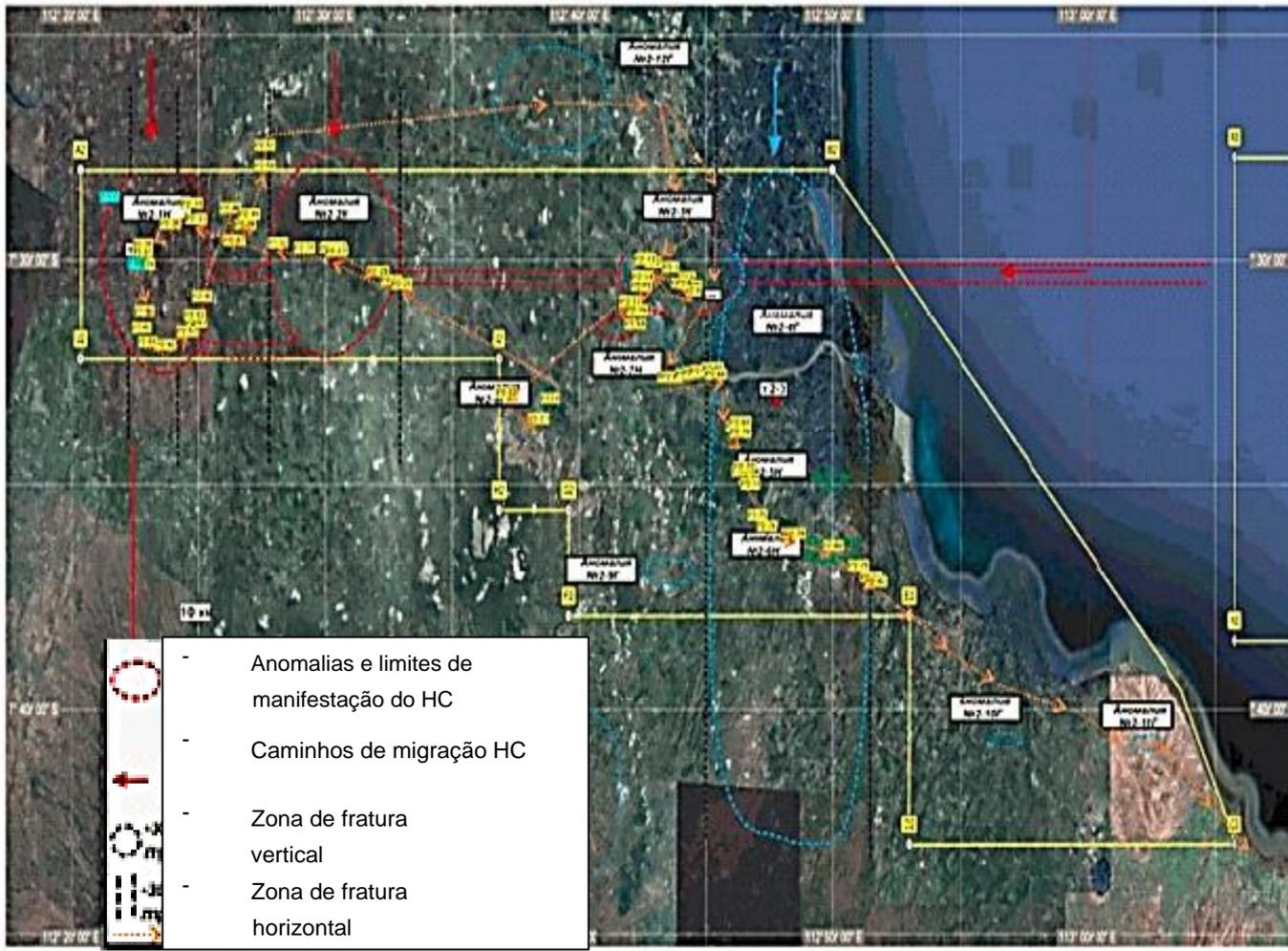
- $\bar{\gamma} \bar{\gamma} \bar{\gamma}$ – para horizonte I – 0,13
- $\bar{\gamma} \bar{\gamma} \bar{\gamma}$ para horizonte II – 0,06 -

Estudo de caso I. Rússia. Campo de produção

conclusões

- Acompanhamento do estudo da área licenciada utilizando tecnologia RS-NMR e processamento de imagens espaciais utilizando equipamento POISK (etapa I), anomalias de gases foram identificados e mapeados.
- Foram estimadas profundidades (aproximações) de ocorrência dos reservatórios de gás.
- Os tipos de rochas reservatório dos horizontes gasosos foram identificados e os espectros características dos campos eletromagnéticos ressonantes acima da anomalia têm foram registradas pelas quais as espessuras efetivas da parte porosa dos reservatórios saturados com gás são determinados.
- Algumas propriedades do reservatório foram previstas e os recursos de gás foram estimados
- Poços perfurados nos locais recomendados produziram um influxo de gás que provou a confiabilidade do método

Estudo de caso II. Indonésia. Campo de produção



License block in
Indonesia

Productive wells are sitting
within the areas outlined
marked with red color

Caso II. Indonésia. Testemunho



CV RussTechno Indonesia

Ruko Permata Boulevard Blok BA, No.1
Jl Pos Pengumben Raya Jakarta Barat 11550 – INDONESIA

Date : 1 June, 2012 r.

Re: SBRDSS report reference

In accordance Contract No.1, 28.11.2011 between RussTechno Indonesia and Sevastopol State University, Sevastopol's specialists (head of team - Ph.D. Kovalev N.I.) were involved with a set of equipment "Poisk" for remote search for oil and gas with identification its depth and deposit on Brantas Block in Java, Indonesia total area 3050 km². Off-shore – 2 blocks and On-shore – 3 blocks.

Previously, these areas were studied by traditional seismic methods and have more then 30 wells.

The study was performed in February 2012. Based on the results of study on Brantas Block by using remote method SBRDSS Sevastopol specialists discovered total 31 hydrocarbon anomalies.

SBRDSS remote method was proven by compare with seismic date available in Lapindo Brantas company. This method is cost effective and very accurate in depth and deposit result.

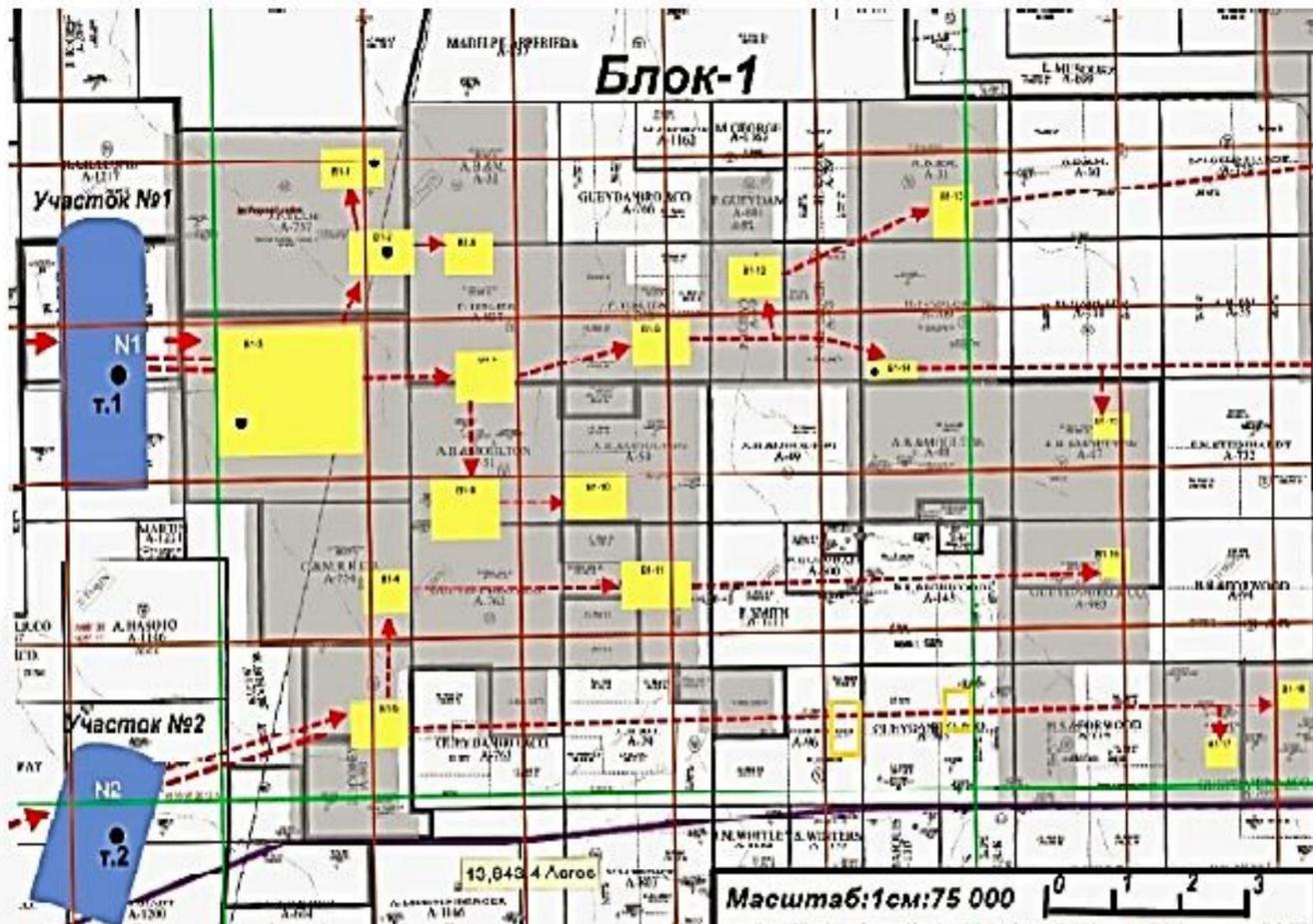
Regards,

Thanigasalam
President Director

A handwritten signature in blue ink, appearing to read "Thanigasalam", is written over the typed name.



Estudo de caso III. ESTADOS UNIDOS. Campo produtor de gás



License block in Texas, USA

Well N-1 penetrated shale oil formation as indicated by the corresponding anomaly

Caso III. ESTADOS UNIDOS. Testemunho

<p>«Інститут геофізики та проблем Землі»</p> <p>Товариство з обмеженою відповідальністю</p>		<p>«Institute of Geophysics and Problems of the Earth»</p> <p>Limited Liability Company</p>
<p>Україна, м. Київ, вул. К. Білокур 4, оф. 6 телефакс: +38 044 285 0826, моб.: +38 068 100 5153</p>	<p>Founded in 2007</p>	<p>Ukraine, Kyiv, K. Bilokur 4, of. 6 tel/fax: +38 044 285 0826, mobile: +38 068 100 5153</p>

Outgoing # 11/10-03

15.11. 2010

Conclusion
on the results of prospecting works performed by specialists of the
«Sevastopol National University of Nuclear Energy and Industry»
in the territory of Texas, USA

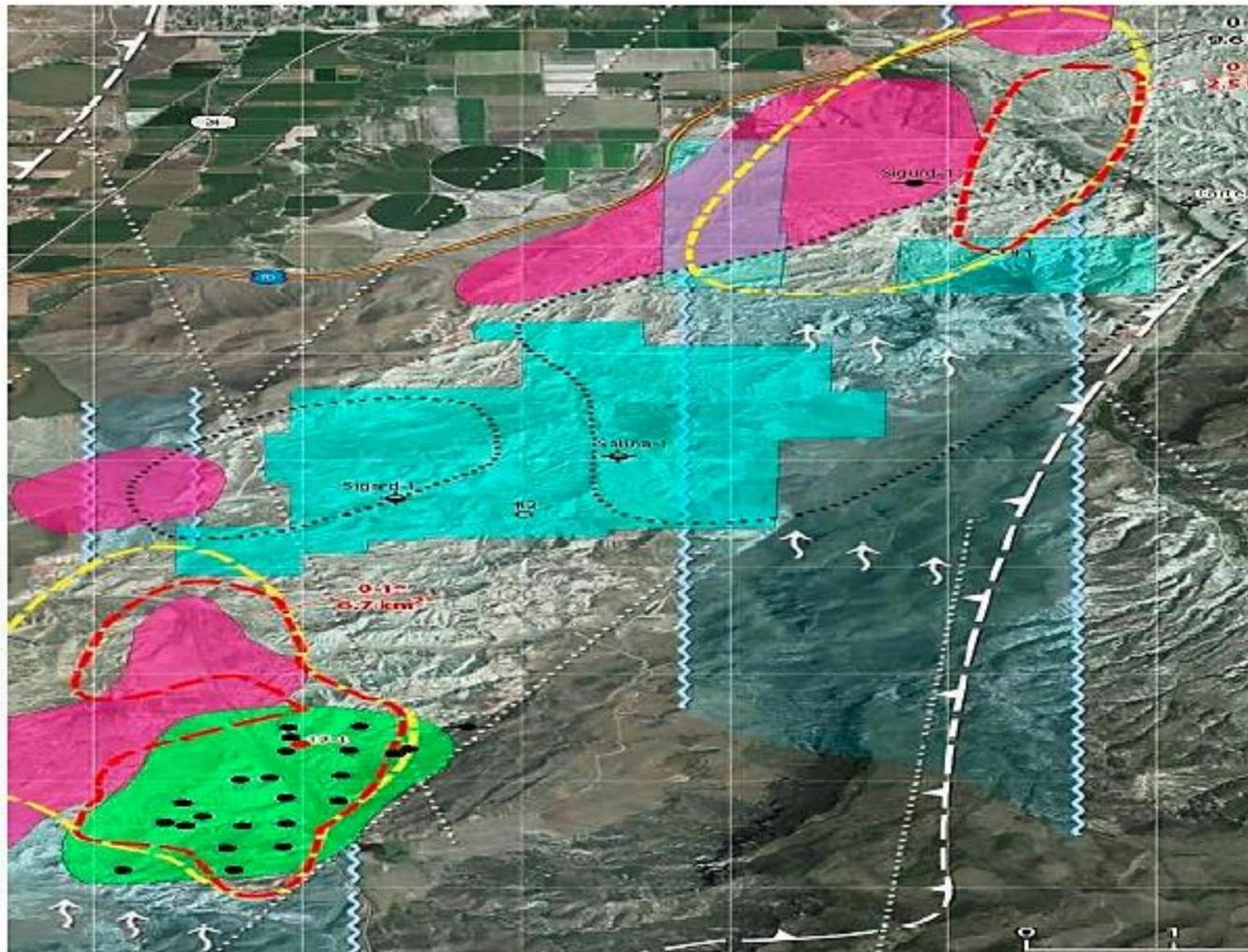
Commissioned by the Institute of Geophysics and Problems of the Earth (Kyiv, Ukraine) in 2010 specialists (Ph.D. Goh V.A., Ph.D. Kovalev N.I., Doctor of Geological and Mineralogical Sciences Filippov E.M., etc.) performed a search and exploration of natural gas deposits on the territory of Texas, USA using the equipment of the remote complex "Search". At the same time, remote search facilities were used to study the territory in the south of Texas, with an area of about 500 km².

Based on the results of work on a given territory, underground natural gas accumulations were discovered having industrial significance, 3 points for drilling industrial wells were selected and surveyed.

The results of drilling a well at one of the proposed points confirmed the presence of a natural gas reservoir. The gas pressure in the deposit proved to be abnormally high, 620 atm., in accordance with the survey data.

<p>Director of Institute of Geophysics and Problems of the Earth Pavel Ivashchenko</p>	
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Estudo de caso IV. ESTADOS UNIDOS. Campo de produção de petróleo



License block in Utah, USA

The oil accumulations and wells locations have proved the delineated anomalies. Recommendations were made to drill new wells at the identified anomalies to the north-east.

Caso IV. ESTADOS UNIDOS. Testemunho

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 Limited Liability Company
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 Cell:801-380-2087 ttvol333@gmail.com



"КАРПАТІЯ", ТОВ
 Товариство з Обмеженою Відповідальністю
 Cell:8063-740-4071 ttvol333@gmail.com

FINAL REPORT
 On Presentation-Demonstration of "Deep Vision" Model

"CARPATHIA", LLC, represented by Vasyl Lyubarets, as a party representing "Deep Vision" Model of discovering natural resources that being tested, and Kelly Alvey, as a party participating in the test, have executed this Final Report concerning final results of testing unique Model "Deep Vision".

Results of inspection of objects, located on the territory of the state of Utah, USA Dated 25 of February 2009

Object #	Kelly Alvey's data	"Deep Vision" data	Comparison %	CONCLUSION
X "0"	Nothing	Nothing	100 %	Matching results
X 1	Nothing	Nothing	100 %	Matching results
X 911	6780	6150-6450	100 %	Matching results
X 912	6380	6150-6420	100 %	Matching results
X 913	6500 ; 9500-10000	6040-6420 ; 9450-9750	98 %	Matching results

Director of "Institute of Geophysics and Problems of the Earth"
 Technical Director of "Benif International" Corporation



Pavlo N. Ivashchenko

Inventor of "Deep Vision" Model
 Professor [Signature] Vitaly A. Gokh

Inventor of "Deep Vision" Model
 Professor [Signature] Mykola I. Kovalyov

Signatures of Witnesses

[Signature]
 Vasyl O. Lyubarets, Leader-President
 of "CARPATHIA", LLC

[Signature]
 Kelly Alvey

[Signature]
 Rex W Hardy, Lawyer

[Signature]
 Roy Moore, Wolverine Gas and Oil
 Company of Utah, LLC. Landman

[Signature]
 Ray Beckham, BYU Professor

[Signature]
 Jeffrey F. Chivers, "ENDEAVOR"
 Capital Group, LLC

[Signature]
 Brad Whittaker, CEDO Executive
 Director

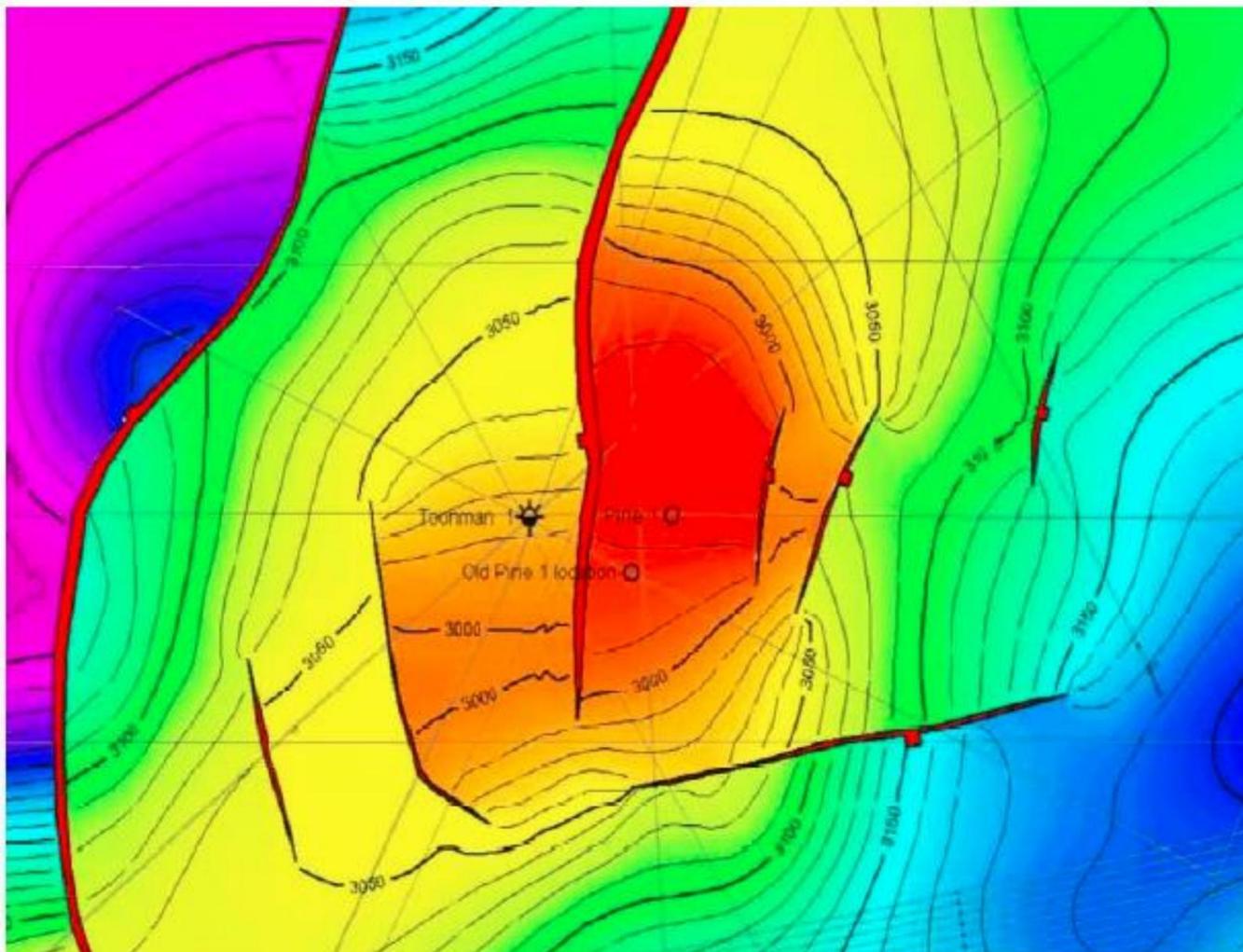
[Signature]
 Edward W. Fall, P.G.-UT Government
 Department of Natural Resources
 Phillip Babcock

Arbitrator [Signature] Elizabeth Goryunova,
 Director of International Relations
 Salt Lake Chamber of Commerce



Estudo de caso V. Austrália.

Campo de produção de petróleo



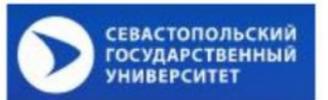
License block
Pel-105 in Aus-
tralia

Well Pine-1 location was
changed as suggested the
identified anomaly. The well
has been drilled and proved
to be productive.



RSS NMR
THE SIMPLE WAY OF EXPLORATION

By Fands-LLC



RSS-NMR SEVSU Poisk

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