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Gherghiceanu Dumitru



Brief history of oil & gas industry in Romania

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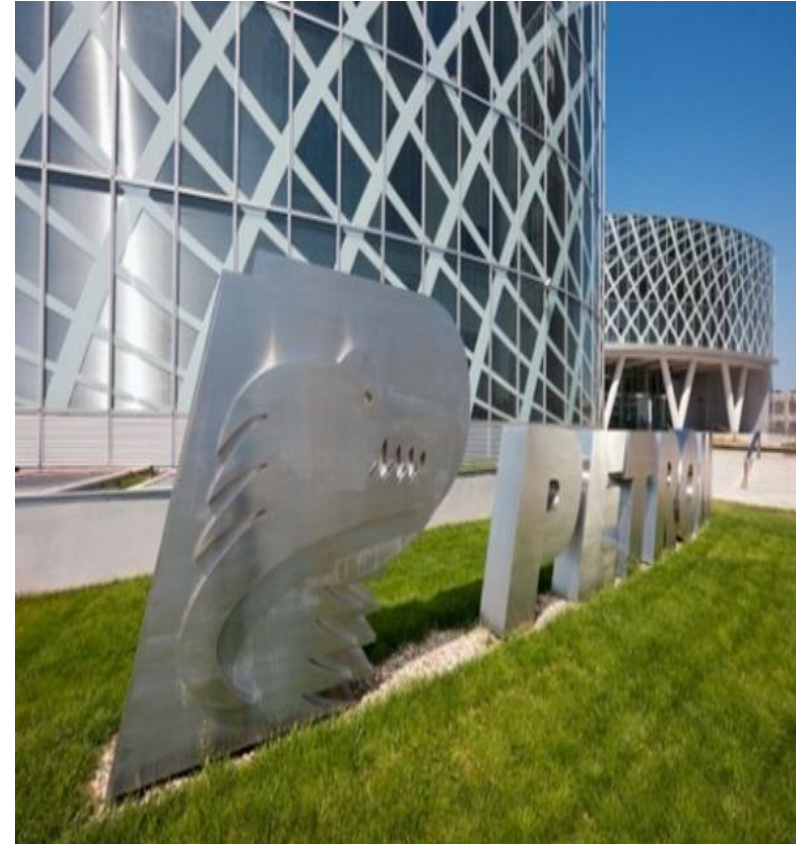
Gherghiceanu Dumitru











Motto

“Who knows his past has the guarantee of his future also;
but who has his future guaranteed knows how to appreciate his present as well.”

“Cine isi cunoaste trecutul, are garantia viitorului;
dar cine are viitorul garantat stie sa isi aprecieze si prezentul”



Brief history of oil & gas industry in Romania

- 8 historical periods of evolution
-  1st age – 1857 : pre-history of activity
-  1857 – 1914 : the beginning of industrial activity
-  1914 – 1918 : the 1st World War
-  1919 – 1939 : the development of petroleum industry
-  1940 – 1945 : the 2nd World War
-  1945 – 1989 : petroleum industry in communism
-  1990 - 2005 : after communism revolution
-  2005 – to date : post OMV – PETROM merging

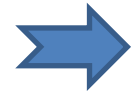
- The oil is mentioned as bitumen since I-VI century in:
- Archeological reports performed in Sucidava, Histria, Tomis, Targisorul vechi;
 - Different sales purchase documents (1440-Lucacesti; 1517- Sat Secareni (Tintea);1546- Tazlau

Brief history of oil & gas industry in Romania



Romanian oil & gas industry : Over 160 years

Year **1857** : 3 world petroleum performance for Romania:

- The 1st country which monitored oil production – 257 t/y;
- The 1st refinery in function;
- Bucharest , the 1st city which used oil for street illumination



Brief history of oil & gas industry in Romania 1 - 4

- ▶ 1861 - Mosoarele, 1st well drilled with a mechanic method (similar Drake's method)
- ▶ 1903 – In Romania 37 Oil companies were active ;
- ▶ 1904 - "Birth" year of Petroleum pre-university School in Romania. 
"Drilling and Refinery Foremen School" is founded in Campina. 
- ▶ 1905 – Romania presented the 1st exhibition at 2nd International Oil Congress at Liege;
- ▶ 1907 - L. Mrazec talk for the 1st time about “Diapirism of salt”
- ▶ 1914 - "Birth“ year of the Petroleum Institute; the "Mines and Petroleum" section was founded within "National School of Bridges and Roads"

▶ 1926 - 204 Astra Romana well, used the 1st BOP; the prototype of BOP was developed by Virgiliu Tacit in 1912. BOP with hydraulic action from distance for 100 bar maxim pressure;

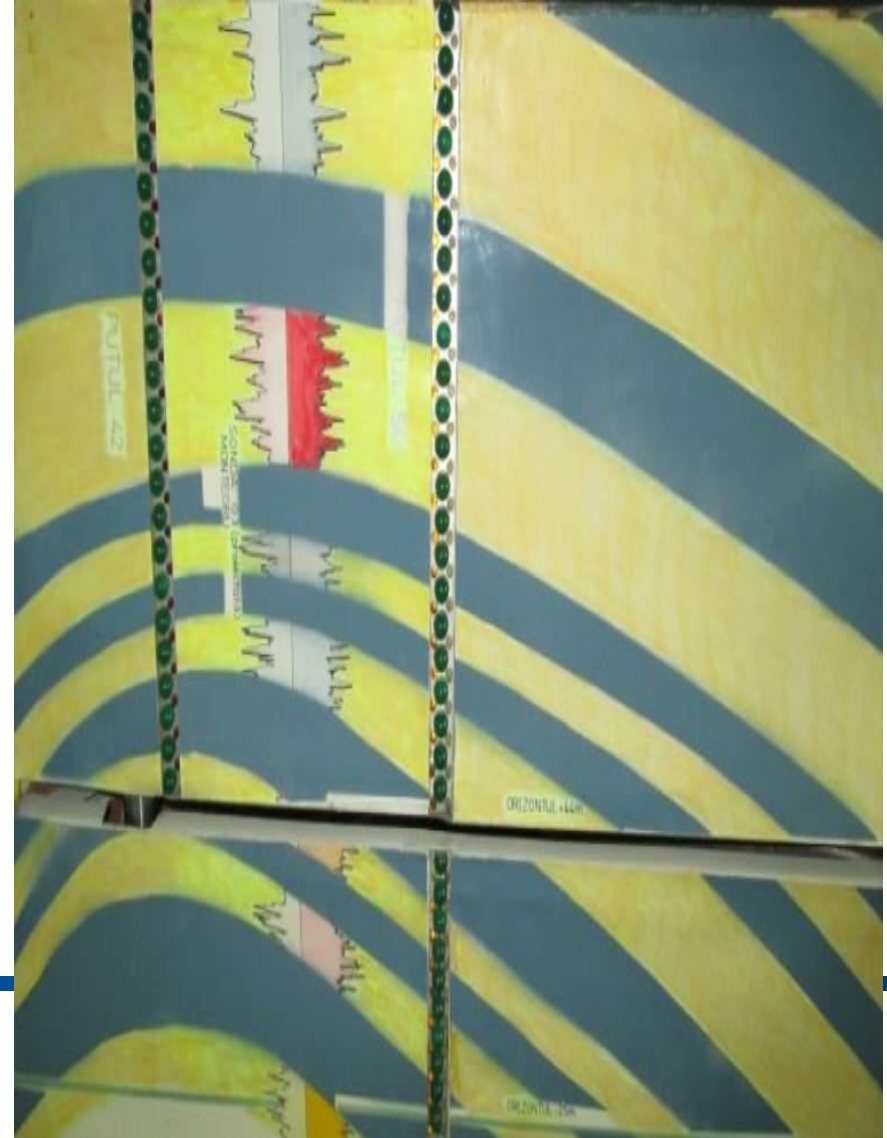


▶ 1930 - A. Dragulescu – single casing running method; his method was patented and used by others; the meter drilled cost was reduced with 58%

▶ 1933 - 1st World Oil Congress, London; Ion Basgan presented a technical paper “Scientific Consideration of the Technic of Modern Drilling”

Brief history of oil & gas industry in Romania

- ▶ 1st stage (1925-1948) - 2 wells (P42 & P50) to 230 m and a gallery system with 85 horizontal & 16 descending wells.
- ▶ 2nd stage (1979-1994) - deepening of P50 well to 307 m and the opening of the 2nd exploitation line.



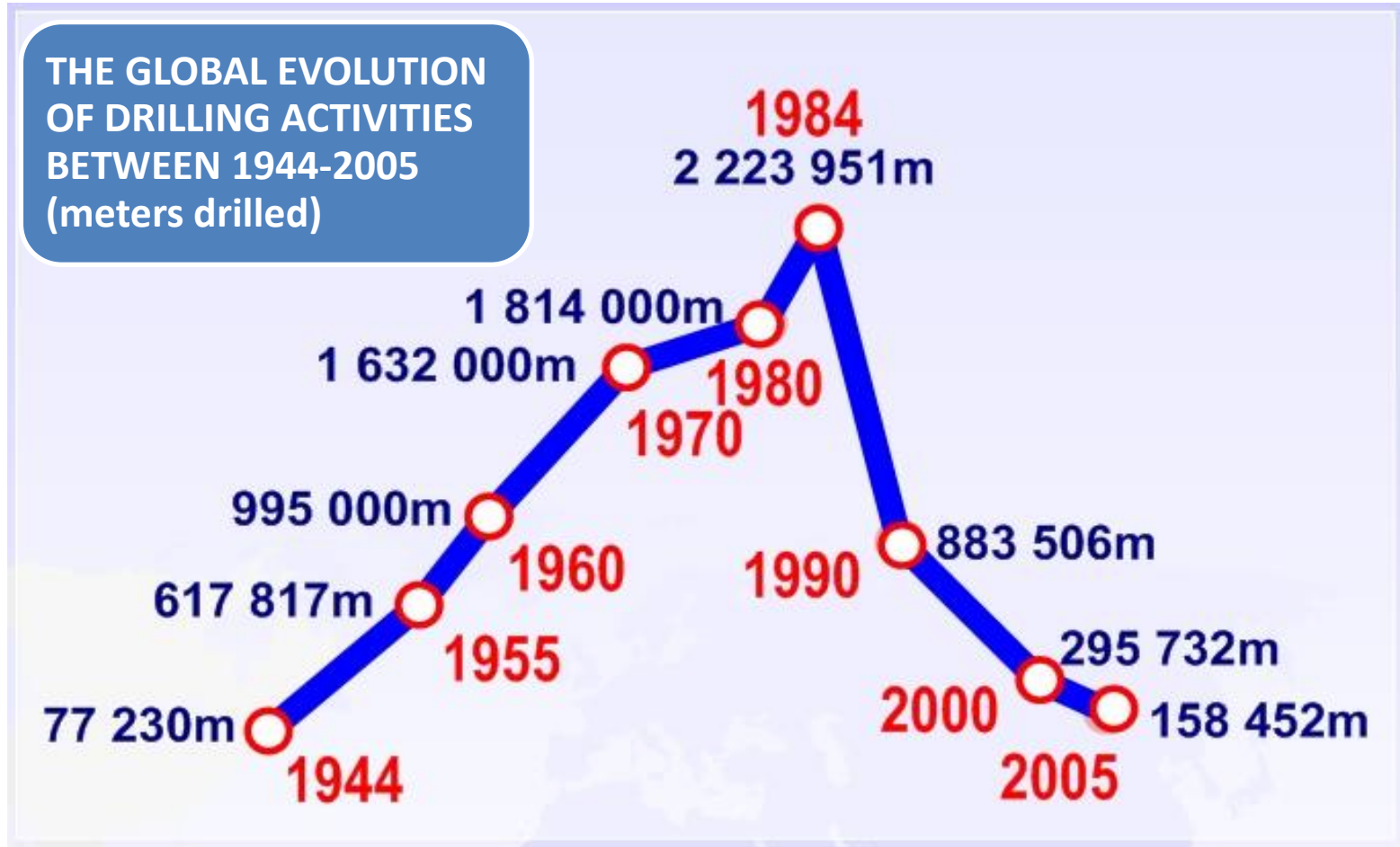
Brief history of oil & gas industry in Romania

- ▶ 1934 – 1 Chitorani well was drilled at 3382 m
only 60 m less than world record at that moment
- ▶ 1935 – Romania on 4th position in the world as production;
Romanian geologists Gavat & Socolescu used gravimetric and seismic investigations; Ceptura-Urlati, Moreni & Gura Ocnitei fields were discovered as new oil fields.
- ▶ 1938 – 100 drilling rigs in operations
 - 65 rigs – steam power;
 - 20 rigs – electrical power;
 - 15 rigs – diesel power

Brief history of oil & gas industry in Romania

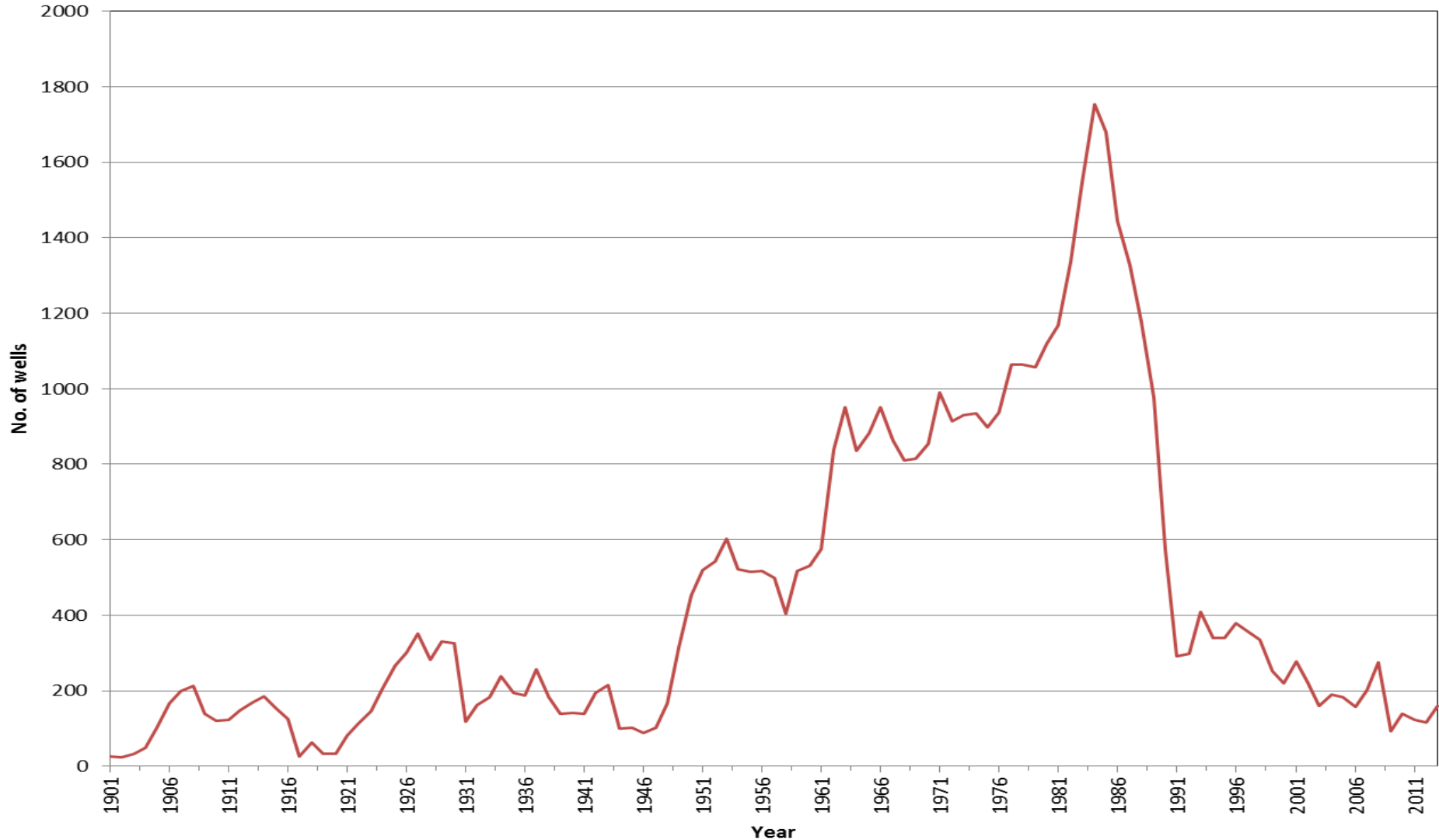
- ▶ 1940 – Romania was the 2nd oil producer in Europe;
- ▶ 1949 – Design and research centers were organized in Bucharest, Ploiesti and Campina;
- ▶ 1976–1977 – The biggest oil production realized in Romania (15 mil t/y) ;

Brief history of oil & gas industry in Romania



Brief history of oil & gas industry in Romania

No. of drilled wells per year



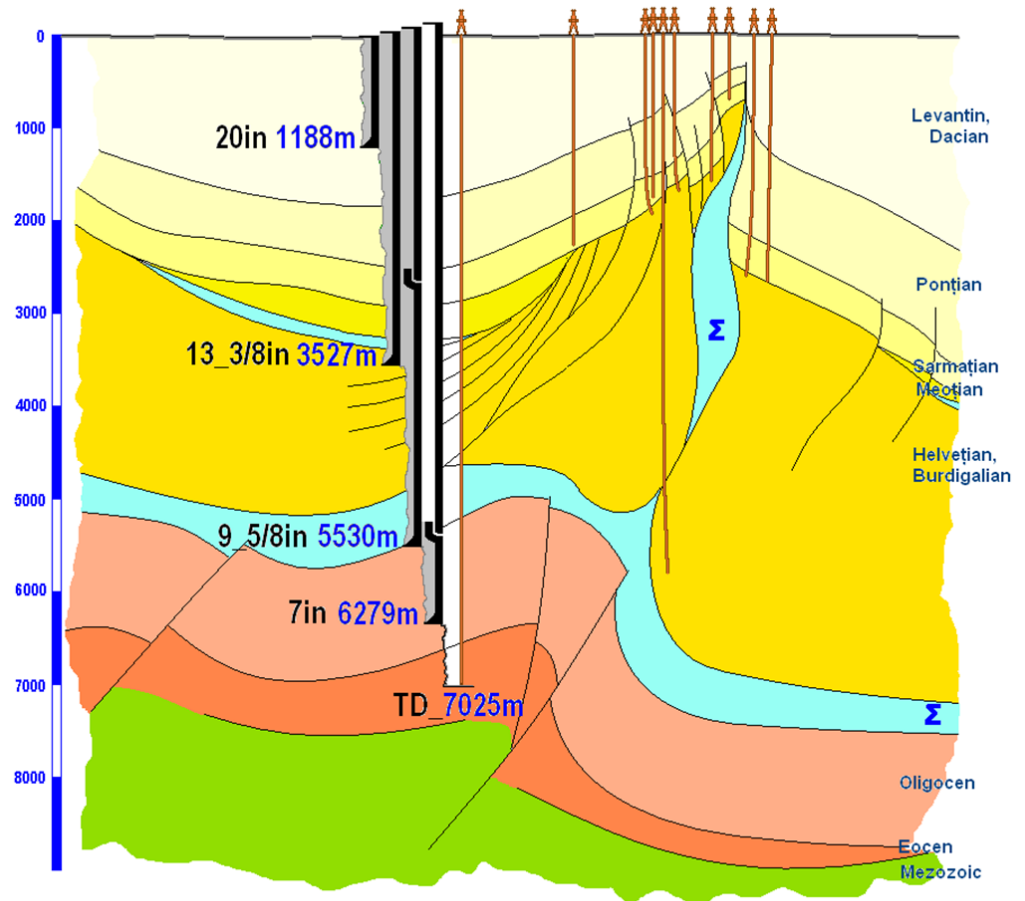
Brief history of oil & gas industry in Romania 3 - 4

- ▶ 1975 – The 1st offshore platform was on location in Black sea;
- ▶ 1979 – Bucharest organised the 10th World Petroleum Congress;
- ▶ 1995-1996 – First horizontal wells drilled onshore. (Bacea, Blejesti);
- ▶ 1995-2000 – Aerated mud system used in highly depleted fields (Ochiuri, Bacea- horizontal ST, Bradesti);
- ▶ 1990 – 2000 - 18 horizontal wells drilled Offshore and onshore;

Brief history of oil & gas industry in Romania

7000 BAICOI Well

The deepest well drilled in Romania
- 7025 m



Brief history of oil & gas industry in Romania

2005 – PETROM became member of OMV Group



Brief history of oil & gas industry in Romania 4 - 4

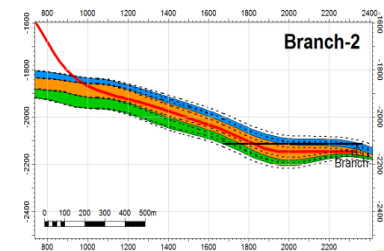
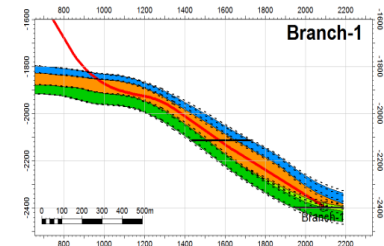
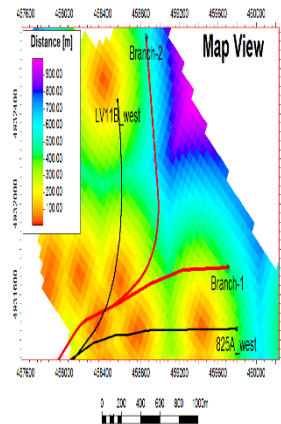
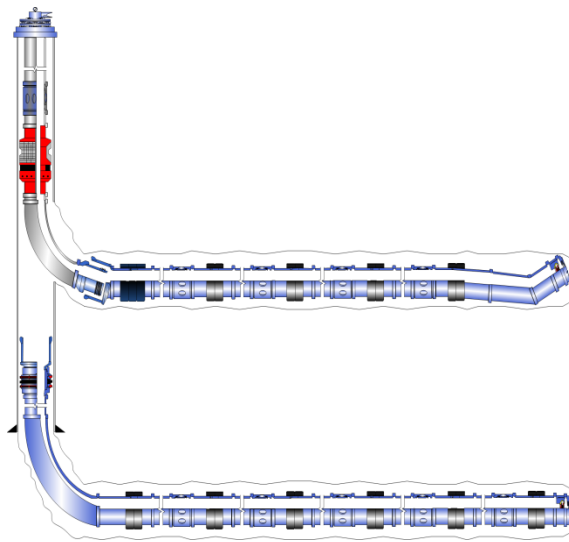
- ▶ 2010 - 1 000 000 man hours worked without incidents; a new HSE culture been approached;
- ▶ 2013 - World record of a shallowest horizontal well (131E Suplac well)
Depth : 159.7 m TVD (361m MD);
Horizontal section =152 m; ERD ratio=3.65
- ▶ 2013 - The most aggressive Suplac horizontal well (23H) : 1100 m MD/208.8 m TVD ; 766.3m horizontal displacement;
- ▶ 2013 - World record, for 20" (24" bit) casing drilling : 503m (4545 Totea)
- ▶ 2013 - European record for 13 3/8 in casing drilling: 1423 m (5022 Turburea Bibesti well)

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- ▶ 2014 - Record of meters drilled /day in OMV
(4567 Mitrofani well): 1489 m with 12 ¼ in bit;
- ▶ 2014 - New European record, for 20" casing drilling:
739 m from 153m to 892 m(Marina 1-offshore)
- ▶ 2014 - European record for 9 5/8 in casing drilling:
1204 m(494 Abramut)
- ▶ 2018 – First multilateral well drilled in OMV Petrom- LV 07 well
- ▶ 2018 – Heaviest casing string run in Romania: 535 t,
13 3/8 +14 in at 3801 m

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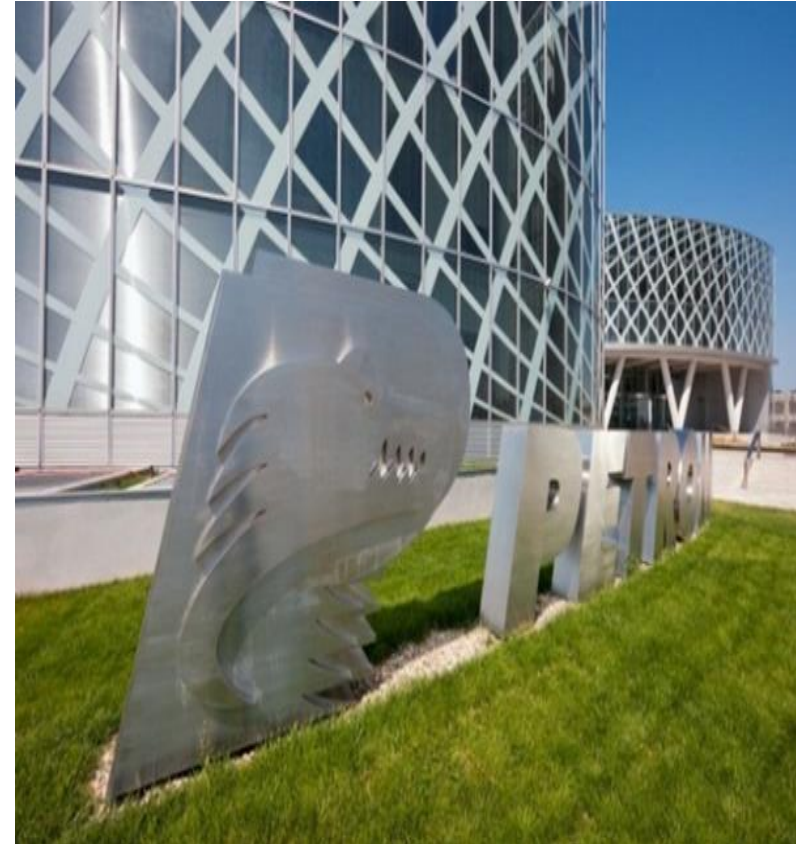
LVO7 - First OMV Petrom Multilateral Well-2018



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Questions & Answers



Thank you!



Oil production monitoring

LA PRODUCCIÓN MUNDIAL DE PETRÓLEO CRUDO EXPRESADA EN TONELADAS

AÑO	RUMANIA	ESTADOS UNIDOS	ITALIA	CANADÁ	RUSIA	POLONIA	JAPÓN	ALEMANIA	INDIAS BRIT.
1857	275	--	--	--	--	--	--	--	--
1858	495	--	--	--	--	--	--	--	--
1859	605	--	--	--	--	--	--	--	--
1860	1.188	68.774	--	--	--	--	--	--	--
1861	2.403	289.618	--)	--	--	--	--	--	--
1862	3.226	418.809	--)	1.644	--	--	--	--	--
1863	3.886	357.707	--)	11.371	5.617	--	--	--	--
1864	4.591	289.892	--)	12.330	8.905	--	--	--	--
1865	5.426	342.226	274	15.070	9.179	--	--	--	--
1866	5.915	492.926	137	23.975	11.371	--	--	--	--
1867	7.070	458.539	137	26.030	16.440	--	--	--	--
1868	7.700	499.502	--)	27.400	12.056	--	--	--	--
1869	8.140	577.455	--)	30.140	27.674	--	--	--	--
1870	11.649	720.757	--)	34.250	27.948	--	--	--	--
1871	12.520	713.085	--)	36.990	22.605	--	--	--	--
1872	12.690	862.141	--)	42.196	25.345	--	--	--	--
1873	14.468	1.355.478	--)	50.005	65.075	--	--	--	--
1874	14.350	1.496.999	137	23.153	80.145	20.550	--	--	--
1875	15.100	1.203.956	137	30.140	95.489	21.646	685	--	--
1876	15.480	1.251.221	411	42.744	180.977	22.468	959	--	--
1877	15.100	1.828.950	411	42.744	246.737	23.290	1.370	--	--
1878	15.200	2.109.389	548	42.774	328.937	24.112	2.466	--	--
1879	15.300	2.728.218	411	78.775	378.257	29.455	3.151	--	--
1880	15.900	3.601.182	274	47.950	411.137	31.573	3.562	1.233	--
1881	16.900	3.789.557	137	37.675	493.337	39.319	2.329	3.973	--
1882	19.000	4.157.950	274	37.675	621.706	45.210	2.055	7.946	--
1883	19.400	3.212.650	274	34.250	822.274	50.005	2.740	3.699	--
1884	29.300	3.317.866	411	34.250	1.480.285	55.896	3.836	6.302	--
1885	26.900	2.994.683	274	34.250	1.907.725	63.705	4.110	5.617	--
1886	23.450	3.844.905	274	80.008	2.466.822	41.922	5.206	10.139	--
1887	25.300	3.874.771	137	72.062	2.516.416	47.128	3.973	10.139	--
1888	30.400	3.782.844	137	95.215	3.157.713	63.979	5.069	11.645	--
1889	41.400	4.817.468	137	96.585	3.371.433	70.555	7.261	9.316	12.878
1890	53.300	6.277.888	411	108.915	3.930.667	90.283	7.124	14.796	16.166



Drilling and refinery foremen school (now cityhall)



1904



Now



Foremen Diploma



First BOP Concept

