

Bóbrka - history of the site.

A 19th-century mine in the Ignacy Łukasiewicz Oil and Gas Industry Museum

Barbara Olejarz, Michał Górecki

Abstract: The 19th-century oil mine in Bóbrka has retained much of its authenticity due to the fact that it has been in continuous operation since 1854. The technical facilities have survived in excellent form, and, above all, the historical spatial and landscape layout remains. This is what makes the facility not only of national, but also international importance. Due to the continuity of extraction and its industrial form, the Bóbrka mine can be described as the world's oldest, oil extraction site and thus the cradle of the oil industry.

Keywords: Crude oil, Ignacy Łukasiewicz, mine, Bóbrka, kerosene, museum

Introduction

From time immemorial in the Bóbrka Forest, there was a source of oil, which, collecting on the surface of the ground, was of great interest to local residents. The place, characterised by bubbling black crude oil, was called "Wrzanka" or "Wrzączka" ["Boiling" - trans.] and was attributed with magical properties. However, many years had to pass before industrial oil production began in Bóbrka. It also took decades before the mines were recognised as a site of great cultural heritage importance and appropriate conservation measures were applied.

The Mine

In 1854, an oil mine was established in Bóbrka, which was co-founded by: Ignacy Łukasiewicz, Tytus Trzeciecki and Karol Klobassa-Zrencki.

The start of the mine was a ditch 120 metres long and 1.20 metres deep, which was dug at a site where abundant rock oil spills were observed. The next stage in the development of the mine was the drilling of oil wells known as *kopanki*.

The first wells were not abundant in rock oil. The breakthrough year turned out to be 1855, when such a high tide of rock oil was encountered in the "Wojciech" mine that in 1856 Łukasiewicz established a three-boiler oil distillery in Ulaszowice. In 1858, the "Małgorzata" well produced 1,000 pots of oil per day, which determined the success of the mine (Klein 1912: 70).

Around 1861, the three men formed a partnership. Tytus Trzeciecki donated funds for its development, Karol Klobassa provided the land for the mine, while Ignacy Łukasiewicz took charge of the entire enterprise. Income from the mine allowed Łukasiewicz to buy the village of Chorkówka, and he also built a modern refinery there. In 1871, Łukasiewicz decided to give up his stake in the company and remain just the director of the Bóbrka mine. The mine was famous for its modern drilling and mining methods, as well as its excellent organisation.

Being the director of the mine, Łukasiewicz continued to take great care of the workplace, using the expert advice of the authorities in the field of geology and drilling at the time, he introduced many modernisations to the mine. The Bóbrka mine played a significant role in the local community, as reported in 1874 by Edward Windakiewicz: *"(...) the impact of this industry on the surrounding population, and the entire area in general, is very beneficial. One need only see the roads, the cultivation, the dwellings of the small and larger owners, and finally the people themselves on the way to Bóbrka, in order to experience such an impression as if one had been transferred to some better cultivated area of Germany or France"* (Windakiewicz 1875: 75).

In 1861, Henry Walter arrived in Bóbrka. Together with Łukasiewicz, he began work on introducing technical improvements at the mine. Some of the most important changes that Walter introduced were improvements in the operation of fans that supplied air to the miner who worked at digging the shafts, the introduction of a method of closing the spring with bags filled with flax seeds and broad beans. In 1862, Walter introduced a hand-held impact drilling device. Through the use of this device, Walter became one of the pioneers in the development of drilling technology and contributed to the development of oil exploration in Poland, and the Bóbrka mine embarked on a new path of development. This technology enabled the drilling of deeper and more efficient shafts.

In 1868, while digging one of the shafts, mineral waters were encountered. Plans to establish a spa in Bóbrka were derailed by the appearance of oil in the mineral water wells. In 1869, steam engines were used at the mine for the first time, serving as a drive for pumps pumping water and later oil from the "Mineralna" dig site.

An important figure at the Bóbrka dig site was Adolf Jabłoński, a pharmacist and participant in the January Uprising, who was employed at Bóbrka in 1870. Jabłoński's commitment to the activities and development of the mine was recognised by Łukasiewicz and Klobassa, who financed the trip of Adolf and his son Wiktor to the United States. The result of Jabłoński's trip to the United States was to learn about the technology used in the oil industry there, and to apply it to the Bóbrka mine. From 1873, Jabłoński became the mine manager.

Łukasiewicz, on the other hand, dealt entirely with oil processing, obtaining exceptionally good grades of kerosene, in which the world's oil industry giants took an interest. He combined industrial activity with public and social activities.

In 1866, he created the "Brothers' Funds", which were the first insurance institutions in Poland and Europe to protect in case of illness and disability.

After the death of Łukasiewicz, Jabłoński became the director of the mine, followed by Zenon Suszycki, during whose reign drilling using the Canadian method was introduced at the mine, which contributed to an increase in oil production. According to an 1897 estimate, some 200,000 hundredweight of oil were produced in Bóbrka between 1861 and 1868 (Bonusiak 1987:10).

The mine in Bóbrka survived the war effort. In the 1950s, new oil wells began to be drilled again. Unfortunately, the Bóbrka deposits are no longer as rich in raw material as they were in the 19th century, but nevertheless, pumpjacks are still operating at the mine, pumping black gold from inside the earth.

The Museum

Exactly on the centenary of the founding of the Bóbrka mine, an oil exhibition was organised at the PTTK Museum in Krosno, which provided the impetus for activities aimed at organising an "Open Air Oil Museum" in Bóbrka. After many difficult and arduous negotiations, the museum was established in 1961 on the site of the active 19th-century oil mine. The Society of Petroleum Engineers and Technicians took custody of the newly established facility, and financial maintenance was provided by oil and refining companies.

Initially, the museum area was to cover less than 7 hectares of wooded land, at the same time a mining area. Over the years, the institution has significantly expanded its boundaries, collecting valuable and unique exhibits that bear witness to the history and development of the oil industry.

Since 2004, the facility has been managed and financed by the Ignacy Łukasiewicz Petroleum and Natural Gas Industry Museum Foundation, which also looks after the further development and promotion of the oldest oil mine. The entire area was placed under conservation protection as recently as 1991, and in 2018, by decree of the President of the Republic of Poland *"the 19th-century oil mine in Bóbrka, now in the area of the Ignacy Łukasiewicz Museum of the Oil and Gas Industry"* has been declared a Monument of History, thus joining the pantheon of Poland's most important heritage sites.

Thanks to the fact that the 19th-century mine has been in continuous operation since 1854, it has largely retained its authenticity. The collected artefacts remain in a natural and historical setting and have not been stripped of their natural context. The realism of the place is prevalent and allows visitors to feel the atmosphere of the old Łukasiewicz mine. Thanks to the iconography from the early days of the mine and especially the 1879 mine plan, we can see that the scale of the transformation has not been huge, and that the 19th-century mine infrastructure buildings are located in the places marked on the plan. The site is appropriately presented, while at the same time all buildings and exhibits correspond perfectly with the surroundings, creating a harmonious and clear view of the original, but still active, black gold-oil mining company.

The most valuable artefacts that have survived intact and date from the early days of the mine are the deep wells, or shafts, from which oil is still extracted. The "Franek" digging pit of 1860 and the "Janina" digging pit of 1878 are perfectly preserved and are a unique testimony to the continuity of mining, and at the same time evidence of the craftsmanship of 19th-century oil workers.

In recent years, the museum has reconstructed, in accordance with the art of 19th-century oil mining, five diggings, which are actually abandoned mine workings. Using archival documentation, sinkholes were found and cleaned and secured. Reconstructions reflecting the various supplies of the original shafts have been built in place of the former diggings. The reconstructions of the *mill-fan*, the so-called *vestry* – a place for storing tools – are not only attractive to tourists, but also provide educational value when learning about the mine's work in pioneer times.

"The historic oil mine complex in Bóbrka is preserved fragmentarily, and its elements form distinct enclaves within the Museum's boundaries. At the same time, these are elements of the highest documentary value, as they are testimony to the beginnings and continuity of the mining enterprise in the area "(...)The museum coexisting with the active mine appears as a natural continuation of the history of the place. The result of such evolution is a second layer of land use, which consists of reconstructions and original exhibits related to the history of oil and gas production. It is possible to define this layer as an added value, not depreciating the most worthy historical values of the place. The consequence of the evolution of the site, subordinated to its value, and at the same time formally complementing the compositions of the site" (Szmygin, Fortuna-Marek, Siwek 2017: 32-33).

In addition to the most valuable, authentic mine shafts that are still in operation, the original buildings have been preserved, dating back to the time when the Bóbrka mine was beginning to be a model in terms of management and organisation:

- a stone obelisk from 1872, which was funded to commemorate the founding of the mine
- a mine forge from 1856, the place where blacksmiths made tools for digging wells while upgrading parts for drilling and mining equipment
- mine workshop from 1864 equipped with original antique machinery and tools
- boiler house from 1867, where the boiler produced steam, the primary source of energy at the time
- a warehouse and group well pumping wheel from 1875
- an oil pump, "Drapper" type, from the 19th century
- a prototype of a pumping wheel from the second half of the 19th century.

The building popularly known as the "Łukasiewicz House" requires special attention. This is a building that served as the management's office during the days when Ignacy Łukasiewicz was director of the mine. The building, which probably

dates back to 1864, currently houses a pharmacy exhibition, a laboratory, Łukasiewicz's lounge, as well as a collection of kerosene lamps.

In addition to the oldest sector of the mine in the Museum, it is also worth visiting the sectors where slightly younger, but equally priceless and valuable objects have been sited. All the artefacts collected at the Bóbrka Museum have historical value and, together with the oldest sector, constitute a unique picture of the formation and development of the oil, gas and refining industry. All the equipment is authentic and is proof of the competence and proficiency of the old petroleum engineers.

The scientific and educational significance of the Bóbrka mine is overwhelming and is based on authentic buildings, boreholes, and drilling and mining equipment. The authenticity of the facilities is undeniable and represents a unique example of a mine complex that, despite continued activity, already plays a significant historical role. In addition to the collection of heritage property in the museum, there are documents, publications, and photographs that speak of the people who laid the foundations and later cared for the quality of the Bóbrka oil company.

"On the nationwide scale, the historic oil mine in Bóbrka is a unique monument to history – the first oil mine, a complex illustrating the Polish contribution to the development of the oil industry, with preserved original and reconstructed technological artefacts representing the heritage of the oil extraction industry and the art of engineering; a place associated with the activities of a prominent Pole – Ignacy Łukasiewicz, known primarily as the inventor of the kerosene lamp, and with many famous pioneers of the oil industry in this part of Europe – prominent mining engineers, geologists, entrepreneurs (...)"

And although Poland is not currently a potentate in the world oil industry, without the mine and museum in Bóbrka, knowledge of the origins of the world oil industry would be incomplete. The historic mine in Bóbrka, an outstanding technical monument with all the richness of its history and preserved material evidence of it (buildings, equipment and relics of the mine landscape) undoubtedly bears unique testimony to a civilisation that is still alive and whose importance for the progress of the modern world cannot be overestimated. It is also a place with a set of technical buildings preserved in situ, which represents an extremely important stage in human history – the pioneering, specific period of development of the oil industry.

Regardless of the findings adopted in various countries and various studies as to the location of the world's first mine, there is no doubt that Poland belongs – along with Romania, Russia, the USA and Canada – among the few countries in the world that launched the global career of this industry, and the mine in Bóbrka is of fundamental importance for the development of the oil industry in south-eastern Europe" (Szymgin, Fortuna-Marek, Siwek 2017: 82-83).

One of the most important recommendations arising from the above-quoted *Management Plan* is the preparation of the site, and the subsequent preparation of documentation aiming to be inscribed on the prestigious UNESCO World Heritage

List. The work is well advanced, and the chances are quite considerable and real, as the universal values of the site and its clear dominance over similar sites in the world are unquestionable.

The Museum in Bóbrka is not only an institution that safeguards and cares for the proper preservation of the 19th-century mine, but also an institution that strives to properly expose and advertise the cradle of the oil industry.

In this regard, the museum seeks to "*utilise the assumptions and principles of heritage interpretation that serve to present heritage in a reliable but also interesting way for visitors (...) Appropriate interpretation is based on six principles: (...) it should be provocative (...), it should be revealing (...), it should appeal to experience (...), it should be creative (...), it should be reliable (...), it should be tailored to the audience (...)*" (Dziedzictwo... 2016: 188). The above recommendations are implemented through a number of activities: organisation of interesting exhibitions, lectures, conferences, museum lessons, workshops, and finally science picnics. The more interesting the form of presentation, the wider the response of satisfied tourists, and thus the assumption from the statutory activity is fully realised: popularisation and promotion of the Museum and knowledge of the history of the oil and gas industry. Museum promotion not only includes the organisation of permanent and temporary thematic exhibitions, but also the maintenance of a website, a profile on Facebook, Instagram and a YouTube channel. Extensive publishing activities (brochures, guidebooks, albums, leaflets), organising and co-organising cyclical cultural events (including Night of Museums, the Lighted City, Oil Picnics, European Heritage Days), and finally a wide range of workshops and museum lessons also serve to promote and popularise the site. It should be noted that the presentation of the historic mine is attractive not only because of the wide variety of tourist offerings, but also due to its location in a natural landscape. A walk among the museum's alleys is pleasant, not only for technology enthusiasts, but also for lovers of nature and active recreation. Thanks to modern multimedia exhibitions, visitors to the museum experience a kind of journey into the past, when Polish lands occupied one of the leading places in terms of oil production. Artificial inclusions in the form of holograms are located in special places, so that with their modernity they do not interfere with what is most important in the museum – the heritage. It seems that promotional activities are being carried out correctly, and tangible results can be seen in visitor statistics.

Conclusion

When the Bóbrka oil mine was established in 1854, probably none of the organisers predicted that this first rock oil extraction enterprise in the world would survive for so many years. Meanwhile, in spite of the sometimes very difficult situation and unfavourable economy, it has been possible to maintain not only mining, but also to save historic machinery, equipment and, finally, mining pits.

The strength of the industrial heritage of the Bóbrka mine is fulfilled in the natural context that surrounds it. Machines dating back to the 19th century are not

stripped away from the past and embedded in an ossified message from a bygone era, as they remain in an environment that evokes images of the mine's heyday, easily recreating the toil of the time and the efforts of our ancestors. Covering the topic of the difficult mining situation, the dangers of the hazards that accompany digging or drilling for oil was easy in that it did not require the introduction of foreign content to the mine.

The Bóbrka mine is a monument of the highest national rank, which on December 10, 2018, was declared a monument of history by decree of the President of Poland. The site has a unique and universal historical value, and thus has the potential to be considered a UNESCO World Heritage Site.

Bibliography

1. Affelt W.J., *Technitas. Konteksty dziedzictwa kulturowego techniki*, Zabrze 2015.
2. Angerman K., *Naftowy Pas Bobrzecki* [in:] *Kosmos*, 1895.
3. Bełza W., *Kopalnia w Bóbrce* [in:] *Iwonicz i jego okolice*, Warszawa 1885.
4. Bonusiak W., *Życie i działalność Ignacego Łukasiewicza*, Rzeszów 1985.
5. Brzozowski S., *Ignacy Łukasiewicz*, Warszawa 1974.
6. Chłędowski K., *Pamiętniki*, vol.1, vol.2, Kraków 1957.
7. Cząstka J. J., *Ignacy Łukasiewicz twórca polskiego przemysłu naftowego* [in:] *Muzeum-skansen przemysłu naftowego w Bóbrce*, Kraków 1974.
8. Cząstka J.J., *Kopalnia ropy naftowej w Bóbrce*, [in:] *Wiertnictwo Nafta Gaz Zeszyty Naukowe Akademia Górniczo- Hutnicza im. S. Staszica*, no. 5, Kraków 1989.
9. Długosz Jan, *Liber beneficiorum*, Vol.II, Vol.III Kraków 1864.
10. *Dziedzictwo obok Mnie - poradnik zarządzania dziedzictwem w gminach*, Warszawa 2016.
11. Franaszek P., *Przesłanki górnictwa naftowego w Galicji* [in:] *Studia Austro-Polonica* 5, Kraków 1997.
12. Górka H., *Muzeum-Skansen Przemysłu Naftowego im. Ignacego Łukasiewicza w Bóbrce*, Kraków 1974.
13. Jabłoński A., *Kopalnictwo nafty*, Kraków 1884.
14. Jastrzębski F., *Fragmenty z pamiętników starych nafciarzy*, [in:] *Przemysł Naftowy* 1933, R. VIII
15. Klein R., *Pierwsza kopalnia oleju skalnego-Bóbrka*, [in:] *Ropa*, no. 6, Borysław 1912.
16. Macudziński W., *Wiadomości o Bóbrce*, nakładem autora, Jasło 1871.
17. Majewski M. W., *Poszukiwania złóż ropy naftowej i gazu w Polsce (1919-1939)*, [in:] *Annales Universitatis Paedagogicae Cracoviensis Studia Historica* VIII, 2009.
18. Morawski S., *Ignacy Łukasiewicz i ropa galicyjska (zeznanie własne)*, [in:] *Świątek Boży i życie na nim*, Rzeszów 1871.
19. Obtulowicz J., *Kopalnia Bóbrka*, [in:] *Geologia i Statystyka Naftowa Polski*, no. 12, 1932.

20. Praca zbiorowa pod redakcją Józefa Sozańskiego. *Bóbrka naftowe dziedzictwo*. Wyd. Krosno 1996.
21. Roeske W., *Ignacy Łukasiewicz 1822-1882*, Warszawa 1974.
22. Sarna Władysław, *Opis powiatu krośnieńskiego pod względem historycznym*, Przemysł 1898.
23. Szmyd J., Kopalnia Bóbrka - 155 lat wydobywania ropy naftowej, [in:] *Wiek Nafty Zeszyty Naukowo-Historyczne*, marzec 2009.
24. Szmygin B., *Światowe dziedzictwo kultury UNESCO - charakterystyka, metodologia, zarządzanie*, Warszawa - Lublin 2016.
25. Prof. Dr. hab. Bogusław Szmygin, Anna Fortuna-Marek, Dr. Andrzej Siwek, *Plan Zarządzania Dobra Kopalnia w Bóbrce - pierwsze miejsce przemysłowego wydobywania ropy naftowej*. Maszynopis. Bóbrka 2017.
26. Tomanek L., *Ignacy Łukasiewicz. Twórca przemysłu naftowego w Polsce. Wielki inicjator-wielki jałmużnik*, Miejsce Piastowe 1928.
27. Windakiewicz E., *Olej i wosk ziemny w Galicji*, Lwów 1875.
28. 55 lat jasielskich poszukiwań. 10 lat spółki w liczbach. Jasło 2008.
29. Wais T., *Kopalnia ropy naftowej w Bóbrce. 160 lat działalności*, [in:] *Wiek Nafty. Zeszyty naukowo-historyczne*, grudzień 2014.

Barbara Olejarz MA – Graduate of cultural management at the Faculty of Management and Social Communication at the Jagiellonian University, museology and ethnology at the Faculty of History of the Jagiellonian University. Certified cultural manager, she has been professionally involved with the Ignacy Łukasiewicz Museum of the Oil and Gas Industry in Bóbrka for 15 years, and has served as director of the facility for 10 years. The author of the proposal to include the 19th-century oil mine in Bóbrka on the elite list of Monuments of History. In the sphere of scientific and research activities, she is the author of many articles on the origins of the oil industry, oil folklore, as well as the influence of the industry on the development and social and economic changes of 19th-century Galicia. She has been a speaker at many conferences, especially on the topics of mining history, the beginnings of the oil industry, and the protection of industrial heritage. Author of museum publications, exhibition scenarios, and museum lesson plans. Member of the Association of Polish Museum Professionals, Secretary of the Editorial Board of the Scientific and Historical Notebooks "The Age of Oil", Chair of the Committee on the History of Oil. History and Museum Studies at the General Board of the Scientific and Technical Association of Engineers and Technicians of the Oil and Gas Industry.

Michał Górecki MA – Born in 1981. Graduated from the Oil Technical School in Krosno, majoring in gas industry equipment and installations, graduated from the Catholic University of Lublin, Faculty of Humanities and majoring in history – archival studies. Adjunct professor in the history department of the Ignacy Łukasiewicz Petroleum Museum of the Natural Gas Industry Foundation

in Bóbrka. At the museum, he is in charge of contacts with foreign museums, acquiring, developing and providing access to museum collections, organising exhibitions, conducting educational activities, and taking care of the museum library and archives.