

## AFD 305 Links and Notes - Part 1: The Early US Oil Industry

- [https://en.wikipedia.org/wiki/Pennsylvania\\_oil\\_rush](https://en.wikipedia.org/wiki/Pennsylvania_oil_rush)
  - 1859, Titusville PA, Drake's Well - far northwestern corner of PA around 45-50 miles southeast of Erie PA which is 103 miles along Lake Erie from Cleveland OH ... alternatively, there was Oil Creek's connection to the Allegheny River and then 132 miles of river south to Pittsburgh
  - There was a free-for-all from 1859 into the early 1870s, when the industry began controlling production more. By the 1890s, production peaked completely in PA and other regions of the US became the major focus of oil drilling
  - Storage (see below)
  - Transportation (see below)
- <https://archive.org/details/historyofstandar00tarbuoft/page/vii/mode/1up>
  - Pp. 0-37 (digital pages): Detailed Table of Contents/Summary and Chapter 1 on the emergence of the oilfield industry and transportation sector of Pennsylvania
    - Prior history of oil before the Pennsylvania oil rush
      - Medicines and some early lamps
      - Lamp oil, gas, paraffin wax, lubricating oil
      - Various experiments and publications from the mid-1850s to 1859
      - There were already saltwater drilling sites in the region by the time Col. Drake used a steam engine to sink a well 69.5 feet specifically for pumping crude oil. It took him nearly a year to figure out how and where to drill and to procure the needed equipment & crew. Immediately other people in the area began rushing to buy land and start drilling, sometimes even with the older rudimentary drills. Eventually wells might reach 1600 feet with decent equipment.
      - From 1859-69, there were over 5,500 wells drilled although nearly 4,400 of them were false attempts that failed to find oil or enough oil to be profitable
    - Capital investment arrives: "from the East came men with money and business experience, who formed great stock companies, took up lands in parcels of thousands of acres, and put down wells along every rocky run and creek, as well as over the steep hills." "The methods Drake had used were crude and must be improved. The processes of refining were those of the laboratory and must be developed. Communication with the outside must be secured. Markets must be built up." [See also the section on oil purchases and agreements with distant refineries and crude exporters in the big cities and on the US coast:  
<https://archive.org/details/historyofstandar00tarbuoft/page/28/mode/1up> ]
      - Capital in the region in 1865 was \$100 million, rising to \$200 million by 1872. Total capital investment from 1859-69 might have been \$350 million although it's hard to tell given a proliferation of fake/paper companies.
    - Workers: Former gold miners returning from California, then former soldiers returning from the Civil War
    - Storage tanks: Wooden then iron
      - "There were not barrels enough to be bought in America, although turpentine barrels, molasses barrels, whiskey barrels – every sort

of barrel and cask – were added to the new ones made especially for oil. Reservoirs were excavated in the earth and faced with logs and cement, and box-like structures of planks or logs were tried at first but were not satisfactory.”

- One schoolteacher returning home to the region from the west began a business producing wooden storage barrels for 10 years until he left the business when iron barrels became popular.
- 200-1200 barrel capacity wooden tanks → 20k-30k capacity iron tanks
- Transportation: Teamsters, river floats, railroads, pipelines
  - “There was but one way to get the oil to the bank of Oil Creek or to the railroads, and that was by putting it into barrels and hauling it. Teamsters equipped for this service seemed to fall from the sky. The farms for hundreds of miles gave up their boys and horses and wagons to supply the need. It paid. There were times when three and even four dollars a barrel were paid for hauling five or ten miles.” (These were terrible roads and often required improvisation including diverting through farmers’ lands.) Many teamsters made so much money that they became oil tycoons themselves, especially when it was time to leave the hauling business because of pipelines being invented.
  - Men who could transport the oil by river to Pittsburgh could sometimes make \$70,000 per trip.
  - By 1863, rail access had been put south from the Erie area to Titusville. This allowed shipping of oil from the PA Oil Regions to the Atlantic coast cities.
  - P. 17 (digital): invention of oil pipelines  
<https://archive.org/details/historyofstandar00tarbuoft/page/17/mod e/1up>
    - Van Syckel’s pipeline could carry 80 barrels per hour
    - Teamsters began immediate sabotage campaigns
    - One of the pipeline & transportation companies (Empire Transportation Company) also became a sort of intermediary between all the railroads, which initially did not cooperate very well and had totally non-standardized equipment
    - The pipelines generally at first just moved the oil over the local terrain to the rail connections
    - ETC invented a system of certificates for balances of oil so that producers could put all their oil together in one pipeline and get paid out an appropriate amount for what arrived on the other end. These certificates became a convenient mechanism for trading oil on exchanges around the country even quite far from the physical oil.
    - ETC also established a kind of tax on the producers to cover potential damages to the pipelines from fires etc
- Boom and bust cycle: very volatile, as wells were discovered (or rumored to be discovered overseas!), prices bottomed out, storage became very

important to control supply (Jan 1860 \$20/barrel → end of 1861 10¢/barrel) - see p.32 (digital) about the farmer McCray who kept storing his oil because he didn't like the price under \$5 and it kept dropping to \$1.20 and he eventually sold at a huge loss

- By 1872, oil coming out of Pennsylvania had totaled 40 million barrels and was the US's 4th-largest foreign export at 152 million gallons in 1871, with a demand market developed worldwide
- <https://www.bloomberg.com/news/articles/2020-04-26/the-next-chapter-of-the-oil-crisis-the-industry-shuts-down>
  - "shipping prices are surging to stratospheric levels as the industry runs out of tankers"
  - "West Texas Intermediate fell to -\$40 a barrel"
  - "Before the coronavirus crisis hit, oil companies ran about 650 rigs in the U.S. By Friday, more than 40% of them had stopped working, with only 378 left."
  - "North Dakota, which for years was synonymous with the U.S. shale revolution, is witnessing a rapid retrenchment. Oil producers have already closed more than 6,000 wells, curtailing about 405,000 barrels a day in production, or about 30% of the state's total."
  - "Before the crisis hit, the world was consuming about 100 million barrels a day. Demand now, however, is somewhere between 65 and 70 million barrels. So, in a worst-case scenario, about a third of global output needs to be shut."
- <https://www.bloomberg.com/news/articles/2020-04-25/the-20-minutes-that-broke-the-u-s-oil-market>
  - "The price set new low after new low in rapid-fire succession: the lowest since the Asian financial crisis of the 1990s, the lowest since the oil crises of the 1970s, the first time ever below zero."
  - "the world's most important commodity closed the trading day at a price of minus \$37.63. That's what you'd have to pay someone to take a barrel off your hands."
- <https://finance.yahoo.com/news/oklahoma-regulators-approve-application-classifying-150734409.html>
  - *Oklahoma's energy regulator said on Wednesday that oil producers could close wells without losing their leases, the first victory for struggling U.S. companies seeking relief from states after the market crash.*

*Several U.S. states have considered aiding oil companies, many of which were already hurting before demand tanked during coronavirus pandemic lockdowns. That, and ballooning supply, sent U.S. prices into negative territory for the first time ever on Monday.*

*In an emergency order, the state energy regulator said oil companies could consider their unprofitable production economic waste, allowing oil and gas producers with money-losing wells to retain leases that could otherwise be voided if they halted output.*