Abstract

Kentucky's petroleum industry began with exploration and development of brines and salt. The importance of these resources is reflected both in the abundance of Kentucky place names such as Oil Springs and Salt River and in the resources’ continued protection. This usually forgotten history tells the tale of emerging resources and technology development before 1859 when Col. Drake drilled his well in Pennsylvania, often recognized as the birth of the modern oil industry. In 1806, the Ruffner brothers invented surface casing, tubing, and packers in their quest for salt water near Charleston, W.Va., and demonstrated that brines could be produced by drilling. In 1807, John Francis discovered salt water on Richard Slavey’s homestead at the confluence of Bear Creek with the South Fork of the Cumberland River, McCreary County, Kentucky. In 1811, Francis and Slavey petitioned the Commonwealth and received a grant of 1,000 acres on the condition that they produce 1,000 bushels of salt, which they accomplished before 1818. Around this time, Martin Beatty was operating an iron furnace at Cumberland Gap and very likely heard of the successes of Slavey and Francis. He crossed the gap into Kentucky and acquired 1,000 acres from Francis to establish his own salt works. He contracted with Marcus Huling and Andrew Zimmerman to sink a well near the mouth of what is now Oil Well Branch along the South Fork. Sometime before Dec. 4, 1818, at a depth of about 170 feet, the well began flowing up to 100 barrels of oil per day, becoming the "Father of American Flowing Wells". The oil having ruined the salt water, Beatty abandoned the well, established a salt works downstream, and pursued a career in politics. Huling and Zimmerman, however, contracted with Beatty to construct wooden barrels and with local fishermen to take petroleum downriver by boat. After two disastrous attempts, a longer overland route was found and the oil was sold to local merchants, who in turn sold it to the manufacturers of medicinal preparations. In an 1820 letter, Huling indicated he had sent about 2,000 gallons of the oil to Europe, but had not yet made any money. Many tales are told of this well: rivers on fire, a fugitive murderer, and ruined
goose feathers. The U.S. Forest Service finally plugged the well October 18, 2011. By virtue of sales and international speculation, the
Beatty well is thus not only one of the earliest oil producers, but one of the first commercial oil wells in North America.

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Kentucky Oil History:
The Approaching 200th Anniversary of the Beatty Well

Brandon C. Nuttall
Eastern Section AAPG, Morgantown, WV
27-Sep-2017
Relevance: Why Care?

• 14,000+ known orphan wells
• Water quality issues
  • Waste water (brines)
  • Dissolved methane
• TENORM
• Pre-law wells
Some Wells Have Stories

Kentucky has an often overlooked role in the petroleum history of North America.
Before Drake

Modified from Giddens (1948)
Evans (1755) A general map of the Middle British Colonies, in America
Brine and an Important Pass

Evans (1755) A general map of the Middle British Colonies, in America
Story Begins With Salt

Evans (1755) A general map of the Middle British Colonies, in America
Looking for Salt Springs

Vaughn Creek, Cumberland Co., Kentucky
Here in 1773 the Van Bibbers and others found gas bubbling through waters of a spring, which, much to their surprise, ignited. Two years later, this tract of land was patented by George Washington and General Andrew Lewis.
The Ruffner Brothers: 1806 to 1808

- 1785 – Joseph Ruffner secures land
- 1796 – Elisha Brooks erected a salt furnace
  - 24 kettles
  - Uses hollow logs, “gums,” as casing
- 1806 – Sons Joseph & David
  - Source of brine
  - Secure a more reliable supply

Developed
- Spring pole rig
- Rock bit
- Tubing and packer

McLaurin (1896, p. 27)
South Fork of Cumberland River

- 1807 – John Francis reports saltwater where Richard Slavey lives.
- 1811 – Petition State and receive grant of 1,000 acres provided they produce 1,000 bushels of salt.
Martin Beatty

- Born 1784
- Family interests in iron and salt
- Moved west to the Cumberland Gap
The Gaps

- 1813 – Beatty builds iron furnace operated by Newlee

USGS Cumberland Gap (1886), 1:125,000

View southwest from Pinnacle
1817 – Martin Beatty Invests in Salt

- Purchased an interest in 1,000 acres from John Francis
Kentucky (1882)

(Near the top of the Mississippian Paragon, pay would be in a “Pennington” sand.)
Murphy & Miller (1928)
McLaurin (1896, p. 30-35)

Guided to site by an unfortunate squatter who was hiding with his family in fear of murder charges stemming from a bar fight in Louisville.
Drilling the Well

- Cribbed pit 9 ft. square
- 3” well punched to 170 ft.

Cribbed well ca. 1850s near Petrolia, Ontario, Canada
The Springpole Rig

- Marcus Huling and Andrew Zimmerman
- “Surk” 16 year old slave

(Accounts do not relate information about a tripod derrick, but some arrangement to raise and lower tools must have been made.)
“Kicking” down the Well

If they made 5 ft. in a day, they “knocked off” and went “a-fishing.”

Tuttle (1890s)
December 4, 1818

• *Argus of Western America* reported flowing oil

• Accounts of catching the river on fire likely conflated with *Old American Well* (1829)

USGS Barthell (1934), 1:125,000
Beatty Salt Works

- Established salt works across from mouth of Bear Creek
Beatty Salt Works

Lloyd (1862)

Bear Creek
Huling and Zimmerman

- Got barrels from Beatty
- Arranged with local fishermen to construct a dugout boat
Devils Jump

• Twice met disaster trying to ride floods through the narrows
Overland Route

- Local merchants
- Kentucky, Tennessee, Virginia
- Huling sent 2,000 gallons to Europe
- British Oil, Seneca Oil
The Well Runs “Afowl”...

Several women of Wayne County, who made their living selling goose feathers, prevailed upon the Sheriff to subpoena Martin Beatty and Marcus Huling to appear and answer a suit for damages caused by the oiling of their geese each time the animals took to the water, thus ruining the feathers.

Jillson (1952)
Martin Beatty

- Kentucky Senate: 1824-28 and 1832
- Presidential elector
  - 1832 – Clay and Sergeant
  - 1836 – Harrison and Granger
- Member 23rd Congress: 1833-1835
- Kentucky House of Representatives: 1848
- Moved to Texas (farming)
- Died 1856, age 72
Permit N1790 Plugged 28-Nov-2011

Photo by Marvin Combs
Thank you!

Brandon C. Nuttall
bnuttall@uky.edu
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