

ALLEGHENY



OIL HERITAGE

Pennsylvania is considered the birthplace of the modern petroleum industry, signified by the drilling of Edwin Drake's famous oil well near Titusville in 1859. Through the turn of the twentieth century the greater Appalachian Basin oil region, stretching along the western flank of the Allegheny Mountains from New York to Tennessee, revealed hundreds of oil and gas fields which produced the particularly fine "Pennsylvania Grade" crude oil. Pennsylvania's oil fields dominated the industry until 1900, when new production to the southwest shifted the industry's momentum away from the Appalachian region. Today Pennsylvania produces roughly 1 percent of the nation's total crude oil output. The Appalachian oil fields remain active, due primarily to the paraffin-based crude's suitability for refining into lubricating oil.

Significantly, the "central power" process of well pumping arose in the oil fields of Appalachia, and Pennsylvania producers played a key role in its development and perfection. Oil wells in the western Allegheny Plateau followed a pattern of high initial production (sometimes hundreds of barrels a day per well) followed by a rapid drop-off to settled production of a few barrels a day or week. Wells from which oil had first flowed freely eventually required intermittent mechanical pumping if production were to continue. The unforgiving economics inherent in small-scale production, in combination with the value of Pennsylvania Grade crude oil, gave rise in the late nineteenth century to the central power system of multiple well pumping. By the early twentieth century central powers were used in oil fields around the world.

The central power process used one power source, usually a two-cycle gas engine, to operate as many as twenty wells in

the vicinity. Transformation of the engine's rotary motion to the reciprocating motion at each pumping jack required power reduction and a web-like array of connecting and directional-change devices. Structures like that illustrated below housed the prime mover and power distribution unit. Central power systems, known simply as "powers" in the oil region, became an integral part of the larger process of pumping, transporting, and refining crude oil in Appalachia. Though employed primarily from ca. 1890 to ca. 1940, the simplicity and durability of this technology enabled scattered examples to remain in service into the 1990s.

Appalachia's oil fields, the oldest developed fields in the country, provide excellent examples of historic production-related equipment and structures. The Allegheny National Forest (ANF) in northwestern Pennsylvania encompasses numerous historic oil fields. These resources provide ANF the opportunity to interpret their significance as part of a complex regional land-use pattern. The following drawings represent central power systems on five separate sites in the ANF region.

The Allegheny Oil Heritage Recording Project was undertaken during the summer of 1997 by the Historic American Engineering Record (HAER, Eric N. DeLony, Chief) a long range program to document historically significant engineering, industrial, and maritime works in the United States. The program is part of the Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) Division of the National Park Service, U.S. Department of the Interior. This project was sponsored by cooperative agreements among HABS/HAER, E. Blaine Cliver, Chief; the West Virginia University Institute for the History of Technology and Industrial Archaeology (IHTIA), Dr. Emory Kemp, Director; Allegheny National Forest, a unit of the Eastern Region of the U.S. Department of Agriculture (USDA) Forest Service, John Palmer, Supervisor. Major funding was provided by the Southwestern Pennsylvania Heritage Preservation Commission, Randy Cooley, Director.

The field work, measured drawings, historical reports and photographs were prepared under the general direction of Christopher Marston, HAER project leader, with consultation from Phil Ross, ANF historian. The field team was led by Eric Elmer, HAER field architect supervisor and Michael Caplinger, IHTIA historian. The team included Arturs Lapins, US/ICOMOS intern (Latvia); and IHTIA delineators Paul Boxley, Scott Daley, Kara Hurst, and Kevin McClung. John T. Nicely undertook the large format photography.



LOCKWOOD POWER BUILT, 1909

DELINEATED BY: ARTURS LAPINS (U.S./ICOMOS), 1997
 ALLEGHENY NATIONAL FOREST
 OIL HERITAGE RECORDING PROJECT
 UNITS OF THE HISTORIC AMERICAN ENGINEERING RECORD

WARREN VICINITY
 WARREN COUNTY

ALLEGHENY NATIONAL FOREST OIL HERITAGE RECORDING PROJECT
 NATIONAL PARK SERVICE, NAME OF DELINEATOR, DATE OF THE DRAWING

PENNSYLVANIA

HISTORIC AMERICAN
 ENGINEERING RECORD
 PA - 436

SHEET
 1 of 3