



## OPERATIONS

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Maintains interests in over 200,000 gross acres in Oklahoma and Kansas. Actively acquiring leases for horizontal development of several formations in Oklahoma, Kansas and Texas Panhandle.

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### **Anadarko Basin – 1960's through 1980's:**

Beginning in the 1960's, through the 1970's and 1980's, Robert A. Hefner III and GHK were best known for pioneering deep, high pressure natural gas development in the Anadarko basin of Western Oklahoma and the Texas Panhandle, where Hefner and the company literally opened up the basin and led the industry in technological innovation to successfully drill and produce many of the world's deepest and highest pressure wells. GHK also successfully organized and executed large joint ventures with independent and major oil and gas companies. GHK was directly responsible for major advancements in natural gas drilling, completion and production technology and set numerous technological and mechanical world records and industry "firsts." GHK's #1 Green well, completed in 1969, was drilled to 24,453 feet, then the second deepest in the world and recorded the world's then highest surface pressure of 15,130 psi. Also, the #1 Green had the world's first 20,000 psi wellhead, a world record string of 2 7/8 inch specially designed pipe, and the longest continuous 5 1/2 inch casing string ever run in the earth – 24,147 feet that retains the world record to date. From 1972 through 1974, GHK initiated, engineered and participated in the western world's two deepest wells: The #1-27 Bertha Rogers well (31,441 feet total depth) and the #1-28 E.R. Baden well (30,050 feet total depth). From the 1960's through the 1980's GHK drilled and operated 137 wells, without a blowout, in the deep and high pressure Anadarko Basin.



### **Potato Hills**

In the late 1980's, GHK, believing that the Ouachita overthrust province of eastern Oklahoma held large undeveloped reserves, began a detailed geological and geophysical analysis of the geologically and geophysically complex fold and thrust belt. The analysis included earth satellite, surface and subsurface geological studies and integrated 2-D regional and local seismic. The analysis proved correct when, in 1997, GHK drilled a rank wildcat well, the #1-33 Ratcliff that became the discovery well for the Potato Hills natural gas field. The Potato Hills field is located on a large structural element known as the Potato Hills anticlinorium and, at the time, was one of the larger onshore natural gas discoveries in North America in recent decades. GHK was the sole developer of the field, where the company drilled 53 wells with an average producing depth of 5,200 feet. The daily natural gas production from the Potato Hills field was in excess of 140 million cubic feet per day in 2000, and at that time, the Potato Hills field included seven of the top ten producing gas wells in the state of Oklahoma. In February 2010 GHK sold its Potato Hills asset to Lime Rock Resources.

**Anadarko Basin – Indian project:**

In 2003 GHK returned to the Anadarko Basin and acquired 50,000 gross acres in an area of about 75 square miles in Roger Mills County, Oklahoma. Primary objectives were the Morrow/Springer and Hunton reservoirs. First natural gas sales in the new Indian Field commenced in late 2004 after construction of the Wildhorse Gas Gathering System. GHK drilled and completed 26 wells in the Indian Field, establishing production in 10 reservoirs between 8,500 and 22,500 feet: Tonkawa, Cottage Grove, Marmaton, Prue, Skinner, Red Fork, Atoka, Lower Morrow, Springer, and Hunton. GHK bought 257 square miles of 3D seismic in the area. In 2010 GHK sold a 70% stake in its Indian project to Cordillera Partners III. In 2012 GHK participated with Cordillera Partners III in selling the remainder of its Indian project to Apache.

**Anadarko Basin – Oxbow project:**

In late 2007, believing that horizontal drilling and completion technology could unlock large commercial development of Anadarko Basin oil and gas reserves, previously only partially drained by vertical wells, GHK performed a detailed geologic analysis of the Tonkawa formation in Western Oklahoma and then initiated its Oxbow project, initially acquiring about 100,000 gross acres, and beginning a drilling program to test the commerciality of the concept. Seven successful horizontal producing wells were drilled that proved the economic feasibility of the horizontal play. In 2009 GHK sold a 60% stake in its Oxbow project to Cordillera Partners III. In 2012 GHK participated with Cordillera Partners III in selling the remainder of its Oxbow project to Apache.

*Over its history, GHK has accumulated over 2 million feet of drilling experience as a direct operator and has participated in an additional 10 million feet of drilling with others. The firm's overall success rate for all drilling operations, including its significant wildcat exploratory drilling, since founding is 76%. While GHK drilled less than 1% of the wells in the state of Oklahoma on an annual basis, the company historically has been responsible for nearly 10% of the state's top producing gas wells.*