A TRIBUTE TO CHARLIE LEIB GRANDFATHER OF KLAMATH FALLS GEOTHERMAL DEVELOPMENT

Charles B. "Charlie" Leib, 95, died November 21, 2001 of natural causes in Klamath Falls. He is considered the grandfather of geothermal development in this southern Oregon city, and is especially noted for his work with the downhole heat exchanger (see Vol. 20, No. 3 for more details on this subject).

Mr. Leib was born January 16, 1906, in Olbendorf, Austria and as a teenager, he moved with his parents to the United States. He then lived and worked in Philadelphia, Pennsylvania for a few years before moving west with his parents.

Charlie first moved to Klamath Falls in the winter of 1928. As a former East Coast resident, he found the climate of Klamath Falls and the superb opportunities for hunting and fishing most desirable. He had been apprenticed to an engineering contracting firm in Philadelphia, that did a variety of work including plumbing and heating. He completed his apprenticeship, joined the local plumbers' union, and gained invaluable experience during his stay with that company and with two other Philadelphia firms.

But when his last employer wanted to transfer him to another state to work as a superintendent, Charlie refused the position and came to Oregon. His parents had settled in Ashland, so a visit to Klamath Falls was imminent.

During his first years in Klamath Falls, Charlie spent some of his time employed by Lorenz Company working with local hot water wells. The firm, which is no longer in existence, primarily worked in plumbing. He began work with Sears plumbing department in 1937, but was still not professionally involved with hot water wells. During this time; however, he did some important work on these wells for neighbors and friends. His first professional geothermal project in Klamath Falls was a four-unit apartment complex. It was an innovative effort, taking a year and a half to complete. The system incorporated automatic controls to regulate the pumps and individual heating units for each residence. The apartment complex, located on Eldorado Boulevard and Earle Street in Klamath Falls, still has an operating geothermal well today.

The start of WWII (1939-1941) had an impact on the direction of Charlie's career. A bout of crippling rheumatism made him ineligible to join the Army. The lack of materials for domestic use due to the war, limited the work effort of the Sears heating department and led Charlie into business for himself. This began his full-time interest in the hot water wells of Klamath Falls.

Charlie's earliest accomplishment was the first use of the downhole heat exchanger (DHE) in Klamath Falls for a geothermal heating system some 70 years ago. This first system, installed in 1931, lasted 25 years and probably would have lasted longer if the well had not caved in. He was also instrumental in getting well owners to fully case their wells and provide perforations for circulation--necessary for the DHE to work properly. He determined this to be a better design, not so much by calculation and theory, but more through observation and experience. The first perforations installed in a well in Klamath Falls were in 1945 under Charlie's supervision. A major problem with early wells in the area was the failure of the coil or heat exchanger in the well itself, especially at the air/water interface. Oil was commonly used to prevent corrosion of the pipes, but was harmful to the environment. Charlie convinced homeowners, starting in 1945, to use paraffin instead. The wells in Klamath Falls treated with paraffin have lasted longer, as Charlie anticipated.

Because of Charlie's pioneering work, there are over 500 geothermal wells equipped with the downhole heat exchanger in Klamath Falls. These are used by single homes, shared by several homes, and provide heat to apartments and schools. He was concerned with the efficient use of the resource, obtaining and studying well logs, and attempting to understand the regional reservoir characteristics in order to provide an efficient and workable heating system for the proposed downtown district heating system. This system has since been installed and is working well, heating 20 downtown buildings and providing snow melt for sidewalks.

This article is based on an interview by Ann Fornes, former staff member of the Geo-Heat Center, and published in our *Quarterly Bulletin*, Vol. 6, No. 1, March 1981 as "Charlie Leib - Veteran of Geothermal Development."