

## **Appendix A. History of Water-Resources Development within the Warm Springs Area Near Moapa, Nevada**

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## History of Water Resources Development

The Warm Springs area has a rich history of farming, ranching, and recreation. The first known dwellers within the area were the Anasazi and the Southern Paiute Indians (Baxter and Haworth, 1996). Little is known about the Anasazi in southern Nevada. By the early 1800s, the Paiutes had sizable populations along the Muddy and Virgin Rivers (Holt, Ronald, accessed July 22, 2004 <http://www.onlineutah.com/paiutehistory.shtml>). Although most of these riverine and desert groups were primarily foragers and hunters, the Paiutes were known to also have irrigated crops, such as corn, squash, melons, and wheat, along the banks of the Muddy River (Mozejko, 1981). In addition to using the river as a source of irrigation and drinking supply, the Paiutes also used it for ceremonial rites, which are still practiced today within the Moapa Paiute Indian Reservation (Phil Swain, Moapa Band of Paiutes, oral commun., 2004).

From the 1870s to the early 1880s, Warm Springs was cohabited by Indians, outlaws, and prospectors. The first known ranch in the Warm Springs area was started in 1871 with several cattle and horses rustled by a fugitive bank robber from Texas. He built a rock house just north of the current Church of the Latter Day Saints (L.D.S.) Recreation Area (Baxter and Haworth, 1996). He called the ranch Stone Cabin Springs and worked it until his death in 1882.

The first Mormon settlers arrived in the Warm Springs area in 1889 and cleared and irrigated about 30 acres to grow alfalfa and cotton. Although several other ranches subsequently sprang up in the area, the longest worked ranch was the Home Ranch, which began about 1910. It was located north of Warm Springs Road, across from the Pederson Spring area. From 1910 to 1950, the Home Ranch changed ownership frequently but continued to be used primarily for farming and ranching. The largest parcel of land irrigated during this period was about 60 acres (Baxter and Haworth, 1996). By the 1940s, several of the larger springs in the area had gained popularity with locals and visitors for camping, swimming, and bathing (Jim Haworth, local resident, oral commun., 2004).

In 1950, Francis Taylor acquired the Home Ranch and changed the name to Warm Springs Ranch. Taylor eventually expanded the size of the ranch to about 1,200 acres, which was used, in part, to experiment with different pasture grasses and to breed cattle suitable for the desert environment (Baxter and Haworth, 1996). A large mansion that still exists and bears his name ([fig. A1](#)) was built adjacent to a large spring-fed pool (Muddy Springs) that is the source of flow discharging from the current L.D.S. Recreation Area. During the 1950s and early 1960s, large amounts of water were diverted from the springs when a network of approximately 6.5 miles of irrigation ditches, mostly concrete ([fig. A2](#)), were installed throughout the valley (Jim Haworth, local resident, oral commun., 2004). Only a few of these irrigation ditches are in use today as most have been abandoned or are unusable ([fig. A2](#)).

At the same time that the Warm Springs Ranch was expanding under Taylor's proprietorship, the 1950s ushered in two private recreational developments. The first was called the 7-12 Warm Springs Resort, which was located in the area currently known as the Pederson Springs area; it consisted of trailer parking, two swimming pools, a snack bar, and residential housing. The small pool ([fig. A3](#)) was filled directly by discharge from a spring below the pool, and the larger pool ([fig. A4](#)) was filled by diverting discharge from a spring. The second development became known as the Desert Oasis Warm Springs Resort, which encompassed most of the area currently called the Plummer Springs area but also included the former pool which is now known as Pederson East Spring ([fig. A5](#)). By the 1990s, the Desert Oasis Warm Springs Resort had developed into a private time-share/spa that ultimately included trailer parking, a spa, a swimming pool, ponds, a 5,000-ft<sup>2</sup> mansion, and a water slide ([figs. A6, A7, and A8](#)).

In 1954, the Moapa Valley Water Company and the Overton Water District entered into a joint agreement to pump water from the Warm Springs area to residential, business, and dairy establishments to the south (Hafner, 1967). A small spring on a hillside on Francis Taylor's ranch was selected for a pump house and developed to create a discharge of about 2 ft<sup>3</sup>/s. In 1960, the pump house was installed on what is now called the Apcar (Pipeline Jones) Springs ([fig. A9](#)). Water (1 ft<sup>3</sup>/s) and land (1 acre) at the spring were donated to the Moapa Valley Water Company by Francis Taylor (Baxter and Haworth, 1996). Frederick Apcar subsequently purchased approximately 45 acres of land surrounding the spring and used the area primarily for his own private recreation. Apcar enlarged and concreted one of the springs and constructed a large swimming pool ([fig. A9](#); Baxter and Haworth, 1996). A new pump house was constructed at Apcar Springs during the summer of 2004 by the Moapa Valley Water District ([fig. A9](#)).

In the mid-1960s, a coal-fired powerplant (Reid Gardner Generating Station) was constructed along the east bank of the Muddy River about 3 mi southeast of the Warm Springs area ([fig. 1](#)). Water required for plant operations initially was obtained from the Muddy River near the plant and from several wells owned by Clarvid Lewis located in the northwest corner of Warm Springs area (Richard Willer, Nevada Power Company, oral commun., 2004). By the early 1970s, the NPC constructed a diversion and pumping station along the north bank of the Muddy River about 100 ft upstream of the USGS stream-gaging station at Warm Springs Road ([fig. A10](#)). Water is pumped directly from the river and transmitted by pipeline to the powerplant.

In 1968, shortly after the death of Francis Taylor, Howard Hughes, having seen the Warm Springs area during a test flight, purchased the entire Warm Springs Ranch. Although Hughes owned the Ranch for nearly 8 years, he reportedly never set foot on it (Baxter and Haworth, 1996). By the

early to mid-1970s, water diverted for irrigation for ranch operations reached its maximum (Jim Haworth, local resident, oral commun., 2004). Water demand, however, continued to grow in the rest of Moapa Valley, and in 1974 the MVWD installed a pump house at Baldwin Springs ([fig. A11](#)). This pump house is still operating; however, the amount of water withdrawn, 6.5 acre-ft during 2003 (Converse Consultants, 2004), is significantly less than the amount pumped from Apar Spring.

In 1978, 2 years after the death of Howard Hughes, the Warm Springs Ranch was purchased by the L.D.S. Church. After a couple of years, the cattle operation started to decline, and the church planted fruit and nut trees, hoping to develop the ranch as a welfare farm (Gary Holt, L.D.S. Recreation Area, oral commun., 2004). The experimental welfare farm was unsuccessful, and by the mid-1980s the Church had leased most of its water rights to NPC and sold off all but about 73 acres of the Ranch. The remaining church property, which kept the name of the Warm Springs Ranch ([fig. A12](#)) was subsequently developed into a recreational center for L.D.S. Stakes in southern Nevada. The area is now called the L.D.S. Recreational Area and includes a large swimming pool ([fig. A12](#)), campgrounds, and the renovated Francis Taylor mansion ([fig. A1](#)). The mansion survived a fire in 1987 that destroyed many of the old Warm Springs Ranch homes, barns, and corrals. The spring-fed pond is still used for swimming, and the large swimming pool is periodically filled with water from the spring-fed pond. The L.D.S. Recreation Area hosts numerous group outings and uses ground water pumped from a private well to support on-site residential and campground facilities.

In 1979, approximately 90 acres of land that included most of the 7-12 Warm Springs Resort and a small part of the Desert Oasis Warm Springs Resort was deemed by the Federal government as habitat for the endangered Moapa dace (*Moapa coriacea*). The property was purchased by the government and was designated as the Moapa Valley National Wildlife Refuge. The U.S. Fish and Wildlife Service (FWS) assumed custody of the refuge and began a long-term restoration program.

Development of another recreational area on L.D.S. church property was attempted in the early 1980s at the northwest end of the valley. Although the development reportedly was built by Lee Earl (Richard Pedersen, local resident, oral commun., 2004), the area has been called Cardy Lamb (Scoppettone and others, 1987). A large concrete pond and a bathhouse were built about 400 ft east of Warm Springs

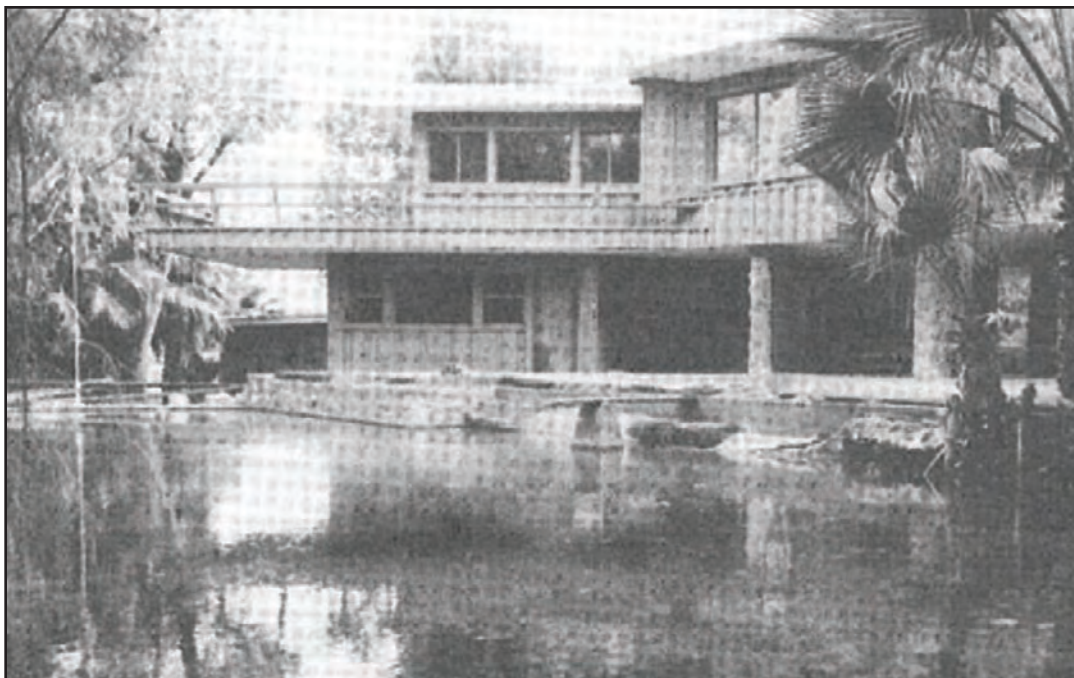
Road ([fig. A13](#)). The pond was built over one of the springs that had previously supplied irrigation water through the original concrete-ditch network to fields east of the area. The facility never materialized and the property eventually was sold (Richard Pedersen, oral commun., 2004). Water from the pond is used by the current owner to irrigate several nearby fields for livestock grazing. An underground drainage pipe connects the pond to the irrigation ditches.

In the early 1980s, NPC significantly increased the capacity of the Reid Gardner Generating Station. Although additional water was available from their Meadow Valley wells, the quality of the water was poor; consequently the company began purchasing water rights from the L.D.S. Church and other private owners in the Warm Springs area (Richard Willer, Nevada Power Company, oral commun., 2004). Currently, NPC pumps water from about 12 wells and 1 surface-water diversion from the Muddy River near Moapa (another intake pump was installed in 1999) in the Warm Springs area.

By 1986, most of the existing 7-12 Warm Springs Resort recreational facilities within the initial refuge boundary had been removed. These included the trailer hookups, swimming pools, and snackbar. The current conditions of the areas where the two swimming pools had been located are shown in [figures A3](#) and [A4](#). The Desert Oasis Warm Springs Resort continued to operate until a fire swept through the area in 1994. After the fire, the resort essentially remained unused until 1997 when the property was purchased by Del Webb and turned over to the FWS to be incorporated as part of the Moapa Valley National Wildlife Refuge (Amy Sprunger-Allworth, U.S. Fish and Wildlife Service, oral commun., 2004).

In 2001, the Federal government purchased the 45 acres adjacent to Apar Spring and incorporated that property as part of the wildlife refuge. By spring 2002, the FWS had removed the former recreational pool at Pederson East Spring and many of the palm trees within the Pederson Spring Group ([fig. A5](#)) and had begun restoration projects in the Plummer and Apar Spring areas.

Farming and ranching continues today within the Warm Springs area, but land usage has dropped significantly since its peak in the mid-1970s. The set of aerial photographs in [figure A14](#) depict the difference in the amount of acreage irrigated during 1976 and 2003. Estimated acreage irrigated in 1976 was about 600 acres compared with about 100 acres in 2003.



**A.** View of the mansion during the mid-1970s. Photograph from Baxter (1996).



**B.** View of the mansion in July 2004. Photographed by D. Beck.

**Figure A1.** Francis Taylor mansion, built in the 1950s in the Warm Springs area near Moapa, Nevada.





**A. Concrete irrigation ditch east of Cardy Lamb Swimming Pond.**



**B. Former concrete irrigation ditch south of Cardy Lamb Swimming Pond that has been completely filled in with dirt.**

**Figure A2.** Concrete irrigation ditches near Cardy Lamb Swimming Pond in the Warm Springs area near Moapa, Nevada. Both views photographed in June 2004 by D. Beck.





**A.** Former 7-12 Warm Springs Resort small swimming pool during the 1950s. Photograph courtesy of R. & L. Pederson.



**B.** Same area after small swimming pool, trailer hookups, and palm trees were removed by the U.S. Fish and Wildlife Service. Photographed in June 2004 by D. Beck.

**Figure A3.** Former Warm Springs Resort small swimming pool, Warm Springs area near Moapa, Nevada.



**A.** Former 7-12 Warm Springs Resort large swimming pool during the 1960s. Photograph courtesy of R. & L. Pederson.



**B.** Same area after large swimming pool, bathhouse, and snackbar were removed by the U.S. Fish and Wildlife Service. Photographed in June 2004 by D. Beck.

**Figure A4.** Former Warm Springs Resort large swimming pool, Warm Springs area near Moapa, Nevada.





**A.** View in April 2000 of the spring and site of the former recreational pool.



**B.** Same view in July 2004 after the pool structure and palm trees had been removed.  
Photograph by D. Beck.

**Figure A5.** Pederson East Spring in the Moapa Valley National Wildlife Refuge near Moapa, Nevada.





**A. View of the mansion and spring area.**



**B. View of the mansion and parking area.**

**Figure A6.** Former Desert Oasis Warm Springs Resort in the Warm Springs area near Moapa, Nevada. Both views photographed in July 2004 by D. Beck.





**A. Spring-fed swimming pool.**



**B. Remains of a water slide and pool.**

**Figure A7.** Recreational facilities of the former Desert Oasis Warm Springs Resort in the Warm Springs area near Moapa, Nevada. Both views photographed in July 2004 by D. Beck.





**Figure A8.** View of the spa and mansion at the former Desert Oasis Warm Springs resort in the Warm Springs area near Moapa, Nevada. Photographed in July 2004 by D. Beck.



**A. View of Moapa Valley Water District's old (right) and new (left) pump houses in the foreground.**



**B. View of former swimming pool built by Frederick Apcar around 1980.**

**Figure A9.** View of Apcar (Pipeline Jones) Springs in the Warm Springs area near Moapa, Nevada. Both views photographed in June 2004 by D. Beck.





**Figure A10.** View looking downstream at Nevada Power Company water diversion and pumping station on the Muddy River, in the Warm Springs area near Moapa, Nevada. The diversion is about 100 feet upstream of the U.S. Geological Survey streamflow-gaging station at Warm Springs Road. Photographed in February 2004 by D. Beck.



**Figure A11.** View of the Baldwin Springs area and the Moapa Valley Water District pump house in the Warm Springs area near Moapa, Nevada. Photographed in June 2004 by D. Beck.





**A. Entrance to the recreation area.**



**B. Swimming pool in the recreation area.**

**Figure A12.** Church of the Latter Day Saints Recreational Area in the Warm Springs area near Moapa, Nevada. Both views photographed in June 2004 by D. Beck.



**A. View of spring-fed pond and bathhouse, with pond nearly drained. Photographed in June 2004. Photographed in June 2004 by D. Beck.**

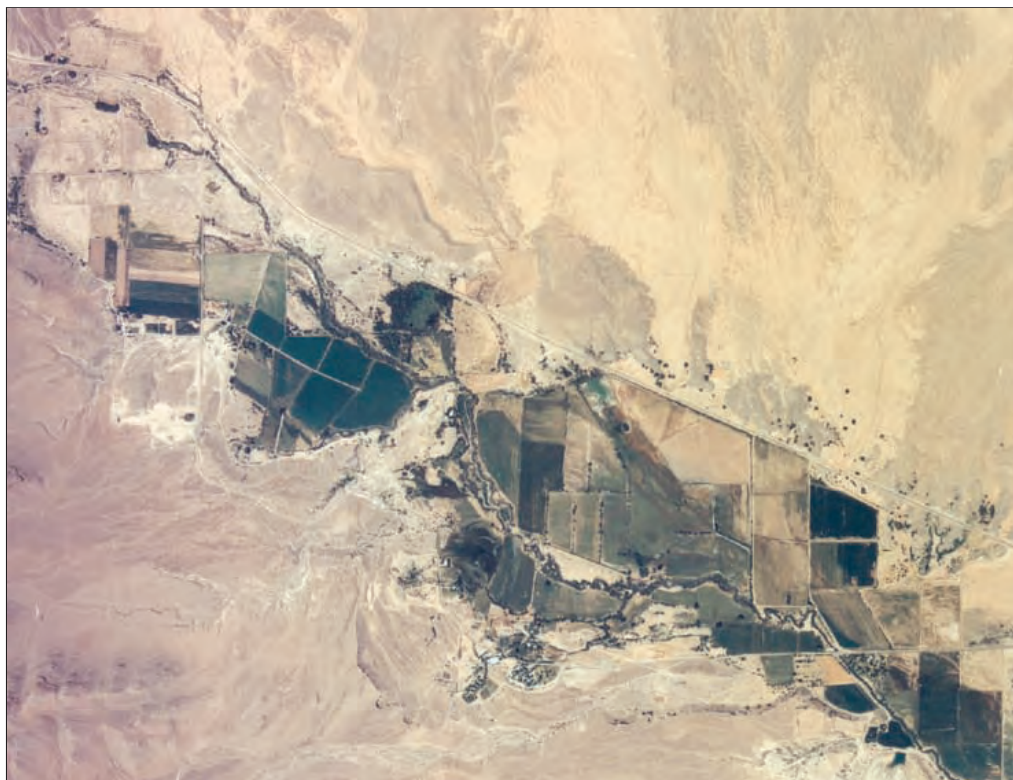


**B. View of pond when fully filled. Photographed in September 2004 by D. Beck.**

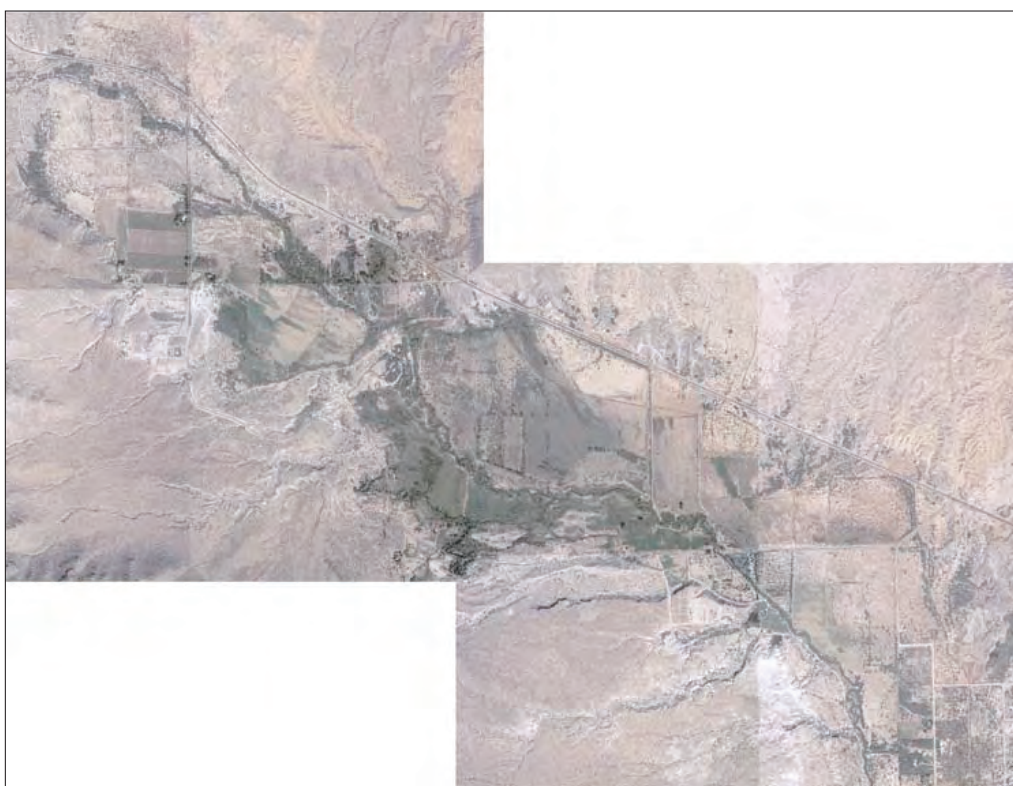
**Figure A13.** Church of the Latter Day Saints Recreation Area at Cardy Lamb Springs, in the Warm Springs area, near Moapa, Nevada.



1976



2003



**Figure A14.** Irrigated acreage in the Warm Springs area near Moapa, Nevada, in 1976 and 2003.



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