HOT SPRING RESORTS IN THE CANADIAN ROCKIES

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According to Woodsworth (1997), there are approximately 110 known hot and warm spring in Canada, most in British Columbia and the remainder in other western provinces. His preface states:

> *"These springs, which are often in spectacular surroundings, include steaming pools, reach after a long hike up a mountain valley, tide-washed streams where you can dangle your toes in the ocean while you stay deliciously warm, rustic wooden pools beside gravel roads, and fully developed commercial resorts."*

This article will describe several of the main commercial hot spring resorts located in or near the Canadian National Parks in Alberta and British Columbia, along or adjacent to the Rocky Mountains. Four of these were visited by the author and his family during the summer of 2002. Information on the Canadian Rockies Hot Springs consisting of Banff Upper Hot Springs, Radium Hot Springs and Miette Hot Springs can be obtained from their website: www.parkscanada.gc.ca/Parks/enterprice/hotsprings/english/, or by writing: Box 900, Banff, Alberta, Canada T1l 1K2. These hot spring pools and resorts are located in Banff National Park, Kootenay National Park, and Jasper National Park, respectively, and are the members of the Canadian Rockies Hot Springs group.

BANFF HOT SPRINGS

There are actually several hot springs in the city of Banff, located in Banff National Park. The local Blackfoot Indians named the area Nato-oh-sis-koom, meaning "holy springs." The name Banff was provided by Lord Strathcona, a promoter of the Canadian Pacific Railway, after his birthplace in Scotland (Woodsworth, 1997). There are four hot springs located adjacent to the Bow River in Banff. The first hot springs developed at Banff were the Cave and Basin hot springs. Cave Spring is accessed through a tunnel to a 6-m (20-foot) high cave. This circular pool, about 12 m (40 feet) across, has a maximum water temperature of 31°C (88°F) with a strong sulphur smell. Originally, the cave ceiling was covered with stalactites, but all have been taken by souvenir hunters. The pool is no longer used.

The Basin Spring was the original bathing pool at Banff; however, swimming has been prohibited since 1971 as the water cannot be properly chlorinated. The pools is about 8 m by 12 m (25 feet by 40 feet) with water temperature of 35°C (95°F). The water is a clear blue with water and gas bubbling from the bottom.

A large concrete pool as part of an aquacourt, and the largest in Canada when it was opened in 1914, was fed by water from the Cave and Basin Springs and supplemented from two small springs on the slope above the pool. It was closed in 1993, due to deterioration, decrease in attendance and policy change by Parks Canada.

These springs, first visited by Europeans in 1859, were development starting around 1883. Due to private claims to the title of the springs, the Canadian government decided to set aside the Banff springs and surrounding land as a park reserve. Thus, Banff National Park was formally created in 1887, as the result of a dispute over the ownership of the springs.

BANFF UPPER HOT SPRINGS

This is a commercial pool located above the town of Banff on the slopes of Sulphur Mountain and according to Woodsworth (1997), *"is probably the most popular hot spring pool in the Canadian Rockies."* The spring, at its maximum recorded temperature of 47°C (117°F) is the warmest at Banff, and the pool, kept at 40°C (104°F), is open daily all year round.

The Europeans first visited the Upper Hot Springs in 1884, and in 1886 the first log shack and the Grand View Villa and bathhouse, later know as the Grand View Hotel, were built. The Grand View Villa was destroyed by fire in 1901, rebuilt and burns again in 1931. The Canadian government then took over the facility and opened the present bathhouse, complete with sulphur water swimming pool, plunge baths, steam rooms, tubs, showers and dressing rooms in 1932. The bathhouse was restored in 1995 to its 1930s appearance, and period bathing suits are available for rent. Almost half a million visitors use the pool annually. Additional historical information can be obtained from the Parks Canada website: (www2.parkscanada.gc.ca/ parks/ enterprise/hotsprings/english/history_e.htm).

Water from the spring was also piped to a privately owned bathhouse and hotel near the site of the present pool building. Water also went down the hillside to Banff Springs Hotel, which opened in 1888, and to Dr. Breet's sanatorium near the bridge across the Bow River. In general, the upper springs were thought to have greater curative powers than the other springs, probably due to the higher temperature and mineral content (Woodsworth, 1997). At present, only the pool uses the spring water.

The springs flows over a small brick wall on the road up to the pool, forming an extensive orange tufa bench (Figure 1). Flowing at a maximum of 11.4 L/s (180 gpm), the temperature in late fall and winter is about 41°C (106°F), and

during spring runoff can be as low as 33ºC (91ºF). During droughts, the flow is lower and in winter they have trouble meeting the heat demand for the pool, thus supplemental heating is then used to boost the temperature. The water is piped from the spring to the building, where it is chlorinated and filtered before going to the swimming pool. The water has about 1,677 mg/L (ppm), mainly sulphate.

Figure 1. The springs at Banff Upper Hot Springs.

The pool is outdoors in a spectacular forest setting looking down the Bow Valley and across to Mt. Rundle, which dominates the view above Banff. The irregularly shaped pool is approximately 25 m long and 10 m wide (80 ft by 30 feet) (Figure 2). The facility also has a spa with steam room, massage studios and aroma-therapy treatments, gift shop, a 35-seat restaurant and snack bar. For more information call: 1-800-767-1611 (toll-free from Canada and the U.S.), direct phone at 403-762-1498, or use the Parks Canada website.

Figure 2. Banff Upper Hot Springs Pool.

RADIUM HOT SPRINGS

The springs are located east of the town of Radium Hot Springs, about one kilometer after passing through the narrow Sinclair Canyon. The aquacourt consists of two open-air pools, one hot and the other warm (39º and 29ºC - 103º and 84ºF respectively). The springs are located in the canyon of Sinclair Creek and enter in the center of the hot pool. The water contains 700 ppm of solids, mainly sulphate, bicarbonate and calcium. The name of the springs comes from small traces of radon found in the water that is radio-active. The radioactively is too weak to be harmful, and is much less than that given off by an ordinary watch dial. At one time, in the early 1900s, a scheme to bottle and sell the water was almost carried out, as it was thought to have therapeutic and medicinal value.

These springs were used by the Kootenai Indians for centuries before the coming of the Europeans in the 1840's (Zieroth, 1978). The first recorded visit by Europeans was by Sir George Simpson, the governor of the Hudson's Bay Company in 1841. He bathed in a one-person sized pool dug out of the gravel. James Sinclair, a guide for the Hudson's Bay Company, followed Simpson on his way to Oregon with a group of Red River Settlers several weeks later. The first legally registered owner was Roland Stuart, an Englishman, who purchased the springs in 1890 for $160 and owned them until 1922. A concrete bathing pool, log bathhouse, small store and a home for the caretaker were built in 1914. The springs were key in the formation of the Kootenay National Park, adjacent to and west of Banff National Park, and were expropriated for inclusion in the park in 1922 (Parks Canada information sheets).

A new bathhouse was built in 1927 and the pool extended. The construction of the Aquacourt was begin in 1949 and completed in 1951 at a cost of almost one million dollars, after a fire that destroyed the facility in 1948. A new hot pool replaced the original 1919 pool in 1968, and the cool pool was refitted with a new smooth vinyl liner in the summer of 1996. Renovation of the main building began in 1997 and now contains Park Information and Registration, expanded food and retail services, improved spa facilities (Pleiades Massage and Spa), and the source of the spring is again visible. Presently, approximately 3,000 people use the facility a day, and 400,000 a year.

The cool pool, adjacent to the main building, is a 24-m long (79-ft) rectangle and 1 to 3 m (3 to 10 ft) deep (Figure 3). Hot water is cooled with creek water to 29ºC (84ºF), just right for lap swimming. The large hot pool, Canada's largest hot springs pool at about 100 m long, is situated at the end of the main building, is a constant 1.5 m (5 ft) deep with a concrete sloping end to relax on (Figure 4). A round fountain in the middle is the source of the spring water. The buildings and shower water are also heated with geothermal energy through two plate heat exchangers (Figure 5). Base board, ceiling forced air and radiant floor heating systems are all used in the facility. The manager , Scott Turnbull, reports that it costs $1,000 per day for heating when the geothermal system is shut down. The entire facility sits in a narrow canyon - with hiking trails that provide a beautiful view down on the pools and towards the town of Radium Hot Springs. The pools are open year round. Additional information can be obtained by calling 1-800-767-1611 (toll-free from Canada and the U.S.), direct phone at 250-347-9390, or be searching the Parks Canada website.

Figure 3. The cool pool at Radium Hot Springs.

Figure 4. The hot pool at Radium Hot Springs.

Figure 5. The plate-heat exchangers at Radium Hot Springs (Thomas Lund).

MIETTE HOT SPRINGS

These springs are the hottest in the Canadian Rockies (55ºC - 131ºC). Little is known of the early use of the three hot springs located in the narrow valley of Sulphur Creek, but they were likely first used by the local Indians who in turn introduced them to members of the Hudson's Bay and North West Companies in the 19th century. The coal-mining and construction town of Pocahontas was built in 1909, and a crude pack trail accessible by horse or on foot was blazed to the site in 1910. This was not a trail for the faint-hearted as several died on the trail from over exertion. A makeshift log bathhouse and sleeping shelter was built in 1913, and by 1919 a temporary bathhouse and two sweathouses were built by striking coal miners.

In 1932, a road from Pocahontas to the springs was opened to the public at infrequent times. An aquacourt was built from 1936 to 1938, and the road upgraded. Built as a Depression unemployment relief project, the aquacourt consisted of a concrete pool and bathhouse (Figure 6). Several hundred men worked on the access road, parking lot, campground and aquacourt. During WWII, use was restricted to those with a doctor's certificate, but full public access resumed in 1945 (Woodsworth, 1997).

Figure 6. Remains of the original aquacourt.

In 1984, the aquacourt was permanently closed because of unstable slopes in the narrow canyon, deteriorating concrete, over crowding, poor access, and aging equipment. The facility was moved approximately one km down to the mouth of the canyon where more space was available. The new facility, consists of three pools, changing room and café (Figure 7). There is also a private restaurant and motel just below the facility. When my family visited the pools, there were "wild" mountain sheep wandering all through the parking lot and on the grounds.

Figure 7. Miette Hot Springs building.

The water is high in dissolved solids at 1,798 mg/L (ppm), flowing at a rate of 25.7 L/s (407 gpm). The water is high in calcium, sulphate, bicarbonate and magnesium and has a strong hydrogen sulfide (rotten egg) smell. You can still walk up the narrow canyon to the ruins of the old aquacourt and see the source of the springs. The spring water is collected from three vents, the first at the old pool site, the second under the boardwalk and the third on the far side of sulphur creek (the hottest) (Figure 8). This combined water is piped into a prechlorinating tank, then sent into a precipitant tank, located in the basement, where the sulphur settles out. From there chlorine is added again and sent to the pool. The used water is then dechlorinated and sent back into the creek. The water is also passed through a plate heat exchanger and used for the domestic hot water and radiant floor heating (Figure 9).

Figure 8. The hottest spring in Sulfur Creek.

Figure 9. Plate heat exchangers in the basement of the resort.

There are three pools, two at 39°C (102°F), one with a handicap ramp for wheelchair access, and a cold pool (Figure 10). Due to the difficult access from the main highway, the resort is closed in the winter, and in fall and spring it is not unusual for guests to be stranded for several days due to sudden snow storms. The normal operating period is mid-May to early October. It is located 46 km (28 miles) east of Jasper on Highway 16, and then 17 km (11 miles) south on a winding paved road through beautiful country. You can call the Jasper National Park for additional information to 1-800-767-1611 (toll free from Canada and the U.S.) or access the Parks Canada website. The direct number to the resort is: 780-866-2233.

Figure 10. The hot pool at Miette with the handicap ramp on the right.

FAIRMONT HOT SPRINGS RESORT

This is one of many commercial hot spring resorts in Canada, located south of Radium Hot Springs on Highway 93 on the west side of the Rocky Mountains. The hot springs water issue from two main areas: from the original bed of Fairmont Creek which is piped to the swimming and soaking pools in the resort; and a group of springs on a little knoll above the resort called the "Indian Baths." These waters average 42°C (108°F) and are cooled with creek water as needed, chlorinated and piped to the pools. The spring water has a total solid content of 2449 mg/L (ppm) consisting mainly of calcium bicarbonate, calcium sulphate, and magnesium sulfate with a small amount of dissolved radium.

There are three outdoor public pools, covering about 930 m^2 (10,000 sq. ft.), making it the largest hot spring pool complex in Canada (Woodsworth, 1997) (Figure 11). The largest pools has lanes for swimming at a temperature of about 31°C (88°F), a diving pool at the same temperature, and a soaking pool at 40°C (104°F). Another pool, reserved for those staying at the resort, is kept at 40°C (104°F). The "Indian Baths" consists of a bathhouse set on top of a colorful tufa mound that has three individual bathing rooms, each with its own entrance (Figures 12 and 13). Each room has a bathtub and bench for changing or sitting. Water is piped into each bathtub and then drains at the other end. The temperature of the water can vary. There are also several small two-person pools dug out of the tufa on the plateau behind the bathhouse. The outflow from the bathhouse and springs (recorded as high as 49°C - 120°F) coats the hills with new tufa and orange, brown, green and blue algae.

Figure 11. ***View looking east of the Fairmont Hot Springs' pools.***

Figure 12. ***"Indian Baths" bathhouse and tufa mound.***

Figure 13. ***One of the baths in the "Indian Baths" bathhouse (Thomas Lund).***

The history of the resort development is described in the brochure: "The History of Fairmont" (undated) issued by the resort and in Woodsworth (1997). The early history of the hot springs include use by the local Indians. Recorded history first mention a visit to the hot springs by Sir George Simpson in 1841. The first homesteader in the area was George Geary, an Englishman in 1887. His vast homestead included the hot springs, but he soon tired of the lack of night life, thus in 1888 he turned his holding over to Sam Brewer from the U.S. who built a stage stop on the property. The name Fairmont was given to the place by Mr. John Galbraith, wife of a ferry operator in the area after her father's home in West Virginia. The property was then purchased by W. Heap Holland, a manufacturer from Manchester, England who operated it as a ranch and resort. In 1923 he diverted the hot springs in Fairmont Creek and built the first swimming pool on the site of the present pools. He also built a restaurant, tent camp, bungalows, and the bath house on the hill to be used by the native people free of charge. He changed the name to Radium Hot Springs. In 1957 Earl and Lloyd Wilder purchased the property with a group of investors. A major expansion resulted with a golf course in 1965, a ski hill in 1969 and the present pool and lodge built from 1969 to 1972. The name was changed back to Fairmont. Today the resort is visited by half a million people annually. The resort can be contacted toll free at 1-800-663-4979 or through their website: www.fairmontresort.com.

ACKNOWLEDGMENTS

I would like to thank the following person for showing me around and answering questions about their hot spring resort during my visit to Canada: Lynn Barrett, Operations Manager, Banff Upper Hot Springs; Scott Turnbull, Operations Manager, Radium Hot Springs; Jill Hughes, Operations Manager, Miette Hot Springs; and Gordon Just, Pool Area Manager, Fairmont Hot Springs Resort Ltd.

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