

# Brief History of Coal-mining in the Bow Valley

By Ben Gadd, 2014

Walter Riva, former manager of Canmore Mines and author of a definitive mining history of the area,<sup>\*</sup> notes that the aboriginal Stoney/Nakoda people knew of coal along Devil's Creek, the original outflow of Devil's Lake, now dammed to become Lake Minnewanka.

The first written account of coal in the Bow Valley is often credited to **Pierre-Jean de Smet**, a Belgian Catholic missionary who was working out of St. Louis. However, in his *Oregon Missions and Travels over the Rocky Mountains in 1845–46*, de Smet makes no mention of coal in the Bow Valley or its surroundings.<sup>†</sup>

What de Smet does say about coal begins on page 159 —

In pursuing our route, the 27th [of September, 1845] on one of the branches of the river “a la Biche” (Red Deer on the maps) [his parentheses], we remarked several sulphurous fountains, which furnish great quantities of sulphur, and a coal mine, apparently very abundant.

I here beg the favor of a short digression from my subject. Coal abounds east of the Rocky Mountains, on the border of the Missouri and the Yellow Rock, on the Sascatchewan and Athabasca.”

He had to be speaking of foothills and prairie coal, which he saw exposed along rivers east of the front ranges.

**Thus, crediting de Smet as the discoverer of Bow Valley coal is probably incorrect.** We do know that George Dawson, Alfred Selwyn and Eugene Coste collected coal along the Cascade River in 1883 as part of the Geological Survey of Canada's mapping project along the new **Canadian Pacific Railway** line. Theirs is the first official report, although by then the presence of coal in the valley must have been common knowledge.

By the way, de Smet wrote about coal on the *west* side of the Rockies. In a letter dated 2 September 1845 (pages 124-125 in de Smet's book) written on the Tobacco Plains of the southern Rocky Mountain Trench, near present-day Grasmere along the Kootenay River (he called it the “Flatbow”), he notes —

and having remarked large pieces of coal along the river, I am convinced that this fossil could be abundantly procured.

De Smet was almost certainly referring to coal beds found in the **Kishenehn Formation**, up to 2500 m thick and late Eocene to late Oligocene in age, 42–24 million years old. The Kishenehn is mostly coarse material

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<sup>\*</sup> Riva, Walter J. (2008) *Survival in Paradise, a Century of Coal Mining in the Bow Valley*, published by the Canmore Museum & Geoscience Centre, page 2

<sup>†</sup> The man was Flemish, so say “de SMET,” not “de SMAY.” Travelling northward up the Kootenay River from what is now northwestern Montana, de Smet and his party followed the Rocky Mountain Trench to what is now Radium Hot Springs. There they left the trench and followed Sinclair Creek—the route of today's Highway 93 through Kootenay National Park—over Sinclair Pass (already named) to join the Kootenay again in its upper section. From there they followed the Cross River to White Man Pass (both named later in honor of de Smet, who raised a cross at the pass), where they crossed the divide into what is now Banff National Park. Following White Man Creek down to the Spray River, they continued down the Spray to the Bow. De Smet's account of his ride along the Bow River past the future site of Canmore states that “the aspect of the country offered nothing very interesting.” He doesn't mention coal. He goes on mainly about how difficult the riding was, at times in a snowfall. At one point he was left hanging from a “fir” (Douglas-fir?) branch as his horse continued without him.

(sand, gravel, boulders) eroded from the mountains on either side of the trench, plus lakebed deposits of silt and oil shale.

De Smet then mentions **lead** in the area, which could have only been in the environs of what is now Kimberley and the **Sullivan Mine** —

Great quantities of lead are found upon the surface of the earth; and from the appearance of its superior quality, we are led to believe there may be some mixture of silver.

Then he goes on to say immediately, in the next paragraph —

Poor, unfortunate Indians! they trample on treasures, unconscious of their worth, and content themselves with the fishery and the chase. When these resources fail, they subsist upon roots and herbs; whilst they eye, with tranquil surprise, the white man examining the shining pebbles of their territory. Ah! they would tremble, indeed, could they learn the history of those numerous and ill-fated tribes that have been swept from their land, to make place for Christians who have made the poor Indians the victims of their rapacity.

Clearly, de Smet could see what was coming for the aboriginal people of the Pacific Northwest.

### ***Bow Valley coal mines***

According to Walter Riva, and most of the info from here on has been taken from his book or in conversation with Gerry Stephenson,\* mining began before 1883—but perhaps only a year or two prior—at the **Marsh Mine**, named for Marsh Creek, which drains the steep slopes at the eastern end of Wind Ridge, on the west side of the Bow Valley 8 km southwest of Canmore.† When the Canadian Pacific Railway was built through the Bow Valley in 1883, they found miners already at work at the Marsh Mine, hoping, no doubt, to sell coal to the CPR.

Not to be. The Marsh Mine soon closed. In 1883 the **Cascade Coal Company** began mining near what would soon become the town of **Anthracite**, not far from today’s location of the Banff hydro plant, as did the competing **Black Diamond** company. In 1886 the **Canadian Anthracite Company** began mining at Anthracite proper and built a village there. **In 1887 they opened the first mine at Canmore, the No. 1**, along Canmore Creek (also known as “Whitemans Creek,” perhaps also referring to Pierre-Jean de Smet) about a kilometre upstream from its confluence with the Bow.

Other mines were opened by other companies, including the **Cochrane** (1888, by the site of today’s Rundle power plant in Canmore, nothing to do with the town of Cochrane to the east) and the **Georgetown** (1913, 5 km northwest of Canmore, also along the southeastern bank of the Bow).

None of these were CPR companies, but they all needed CPR business to succeed. When the railway opened its own mine at **Bankhead**, northeast of Banff, in 1904, the other mines were doomed—except for the

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\* Gerry was the chief engineer at Canmore Mines from 1968 to 1974, late in its history. I spoke with him 27 May 2010 and again 6 Sep 2012. His CSPG slide talk on Canmore mines (I have a PDF) provides more facts and figures, including the total tonnage produced by all the Canmore mines, 16 million.

† Aside from a mention of the Marsh Mine in a report for the Geological Survey of Canada by George Dawson, not much is known about it. Workers in the Canmore Mines No. 3 Mine, which opened in the same area in the late 1940s, unexpectedly broke into the old Marsh workings.

Canadian Anthracite Company's No. 1 Mine, 1887, and their **No. 2 Mine, which opened in 1903**. Both these mines sold coal to the CPR. The No. 1 Mine operated along Canmore Creek east of today's Spray Lakes Road. Some concrete footers remain beside the trail up the creek. The main entrance to the No. 2 Mine was at "the Prospect," no doubt referring to the coal-bearing outcrop found there, a place name still in use today for the large open area found southeast of the Van Horne neighborhood in south Canmore. The Prospect is the reclaimed minesite. Near the concrete main portal—in mining parlance the **pitmouth**—is the **Lamphouse**, the only building still standing. (More on the No. 2 Mine on page 4.)

Both No. 1 and No. 2 produced exceptionally good coal at a lower cost per ton than the Bankhead mine did, where the mining conditions were difficult, the coal was crumblier and worker/management relations were poor. The railway had the money and influence to buy whatever it wanted, yet it never took over the Canmore mines. I could find no explanation for this.

In 1911 a company reorganization resulted in the No. 2 mine officially belonging to the new **Canmore Coal Company**, in which Canadian Anthracite Coal Company had 51 percent of the shares. In 1938 Canadian Anthracite became **Canmore Mines Ltd.**, eventually expanding into a total of **eight underground mines and three fairly deep but short-lived open-pit mines**, with other small open pits here and there.

The Canmore mines survived the closing of Bankhead in 1922. Until the early 1960s the CPR was the main customer (85 percent of production), because Canmore coal worked well in locomotives and for heating passenger cars. Sales for industrial and domestic heating comprised the rest.

Re the miner's union and strikes, what I wrote about Bankhead\* also applied to Canmore. The **United Mine Workers of America**, organized and led internationally by the famous John L. Lewis, represented Canada's western coal miners. Riva says that Canmore was organized by 1907, when all the miners in the Bow Valley held their first strike. The Canmore local was 7297. It built the **Miners Union Hall** in 1913. This building still exists, the exterior restored to its original look in 2013. These days the hall is used mainly for musical performances and other travelling shows.

All the coal mines in western Canada struck together. After the initial 1907 strike and the winning of the first contract, there were strikes in 1909, 1911, 1916, 1919, 1920, 1922 and 1924.

The 1920 strike was short (three months) and unusual. It was organized by the **One Big Union**, a Canadian industrial union modeled on the American **Industrial Workers of the World**, the "wobblies." This was part of a general worldwide political radicalization of workers after the horrors of World War One and the post-war depression.

The OBU was founded in 1919 and grew quickly in western Canada. It supported the Winnipeg General Strike of 1919 but did not organize it. The OBU tried to displace the more-moderate UMWA crafts union, resulting in a strange union-against-union national strike in 1920, which failed. By this time the OBU was under attack by the federal government as well as industry. By 1921 its membership had dropped from over 40,000 to only 5000, and to 1600 in 1927, raising funds through lotteries, which were unlawful in Canada. Somehow the OBU avoided prosecution. It hung on with members in the Winnipeg transit system, eventually dissolving and merging with the **Canadian Labour Congress** in 1956.

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\* My book *Bankhead, the Twenty Year Town*, was published by Parks Canada and the Coal Association of Canada in 1989.

In 1924 the markets were depressed—Bankhead had closed—and a bitter five-month strike was lost, resulting in a one-third reduction in wages, back to the 1917 level of **\$4.50 for an eight-hour shift**. During the Great Depression, the mines operated only two or three days a week, and no strikes seem to have occurred. In 1930 the company was able to impose a two-year contract without a strike. The next strike was in 1940, to raise wages during the increased demand for coal brought on by WWII. Production remained strong after the war. In 1948 a five-week strike brought the **daily miner's wage to \$12**.

In the 1950s the railways switched to diesel-electric locomotives. The use of coal for heating in western Canada declined in the 1960s, replaced by natural gas and electricity. Coal-mining in Canmore might have ended, but **the Japanese steel-making boom** revived the mines for a time in the late 1960s and early 1970s. Little coal suitable for use in iron smelters was found in Asia, while Rockies coal was excellent, well priced and reliably available.

However, **open-pit coal-mining** was becoming a cheap alternative to underground mining. Canmore-area coal seams were unsuitable for open-pit mining, which succeeded best where the seams were either (a) thick and very steeply dipping or (b) found close to the surface and dipping at about the same angle as the surface, such that the overburden could be removed easily. The Crowsnest Pass area and the Coal Branch (Edson and west to the mountain front) offered many locations suitable for open-pit mining, but conditions in Canmore were not favorable.

Still, the company tried. Having signed contracts with Japanese steel companies for more coal than it could produce from the existing underground workings, Canmore Mines started mining by backhoe in 1968. It created open-pit mines close to Canmore at what is now **Quarry Lake** (25 m / 80 feet deep) and the small **Salamander Ponds** nearby. Farther northwest it opened the **Walker Strip Mine**, now a large clearing in today's **Canmore Nordic Centre**. This spot is well northwest of the main facilities, which do not occupy a minesite. The open-pit workings allowed the company to fulfill its contracts, but they were not sustainable for long. The writing was on the wall.

In 1970 Canmore Mines was lucky enough to find a buyer: the Hawaiian **Dillingham Corporation**, which was still optimistic about Bow Valley coal. Two new underground mines were started near the old No. 2 mine: **No. 4B** and **Riverside**. The coal market had become unstable, with big price fluctuations. Dillingham made large profits in some years but lost money overall. **On July 13, 1979, known locally as "Black Friday," the entire operation shut down.** At closing, the total amount of coal that had been produced by all eight Canmore Mines / Dillingham open pits and underground mines since 1887 was about **16 million U.S. tons or 14.5 million metric tonnes**.

### ***Reclamation, mine stability and minesite locations***

Gerry Stephenson was the chief engineer with Canmore Mines from 1968 to 1974. When the mines closed in 1979, his consulting company Norwest was hired by the then-new Three Sisters corporation, which took over the coal leases, to rehabilitate the minesites and make the area safe for housing development. Over seven years, Gerry's company sealed mine entrances, **back-filled the close-to-the surface workings of the No. 4B Mine** (mixture of cement, coal ash and water), revegetated and otherwise reclaimed the minesites and worked out safety zoning for the entire development.

Gerry is renowned for turning one of the open-pit mines into **Quarry Lake**, a popular Canmore municipal park.

After Three Sisters went broke (must have been about 1986), Gerry was replaced—too expensive, according to the new owners—by **Golder Associates**, which tried to finish the job cheaply. His zoning was not always followed. For example, **a building now sits directly over the entrance of the No. 4 Mine**, from which, during operation, large quantities of water would sometimes issue.

Gerry advised me that since Golder took over reclamation and safety concerns in the mining area, he was no longer responsible. Questions about the stability of any building or location in the area—might a collapse occur?—should be referred to Golder, not to Gerry.

I have worked with Gerry to locate the **main entries for all the underground mines in the Canmore area**, with the exception of the “Marsh Mine,” entrance uncertain. Based on this information and Gerry’s 2004 map *Illustration of Areas Worked at Canmore Mines*, in September of 2012 I prepared an annotated Google Earth view of the mine entrance locations, plus a rough approximation of where all the underground workings lay. This map, entitled *Canmore-area Mines*, is downloadable at no charge from my website, as are these notes.

### ***Structures at the No. 2 minesite***

**The Lamphouse** is the only roofed Canmore Mines structure left. This is where the lamps used by the company’s miners in most of the local mines were kept when not in use. (The No. 1 Mine had its own lamphouse.) Keeping the lamps in one location was a way to keep track of all the miners as they went in and out of the mine—equivalent to punching in and out—and just importantly for safety, so that management would know exactly who was underground at any time.

According to Walter Riva’s book, and confirmed by Gerry Stephenson, the two mine entries here both follow the **Sedlock Seam** (also known as the **No. 2 seam**) gently downward. **The entry made of concrete was the main mine portal (the “pitmouth”)**, with the most activity in and out. The other entry, restored in outward appearance in the 1990s but bulldozed in 2012 when it started to cave, was termed a **“manway.”** It was also used, but less so. Together the two lower entries formed a **ventilation loop**. Fresh air was drawn in at the pitmouth and on through the mine. Exhaust air containing dust and methane was pulled out by fans near the other portal. For areas deep in the mine, **ventilation shafts** were driven upward to the surface.

**The entry along Three Sisters Parkway is another entry to the No. 2 Mine**, probably in the **Stewart Seam**, the next one above the Sedlock. But I’m not sure. The valuable and heavily mined **Carey Seam** was *below* the Sedlock, entirely subsurface with no outcrops at this minesite, so it was reached by a 120-foot (37 m) vertical shaft driven downward from the Sedlock workings.

**The horizontal box-like concrete structure low on the hillside just north of the Lamphouse** probably acted as a cable housing. This feature came to light during excavations for the Three Sisters housing development nearby. There were many mine-related buildings at this location, including the big **tipple** (coal-processing plant) and a large **briquette plant** for mixing tar with coal fragments to produce fuel for heaters and locomotives. Judging from maps of the No. 2 minesite, especially the map on pages 70 and 71 of Riva’s book, the box is probably part of the **“Gantry Ramp Enclosure,”** a long housing for a cable that hoisted and lowered coal cars up and down the main slope. Gerry Stephenson agrees. This structure—a gantry in the sense of a structure directing a hoisting and lowering cable—was built parallel to the slope and curved into the concrete mine portal, the pitmouth.

— BG, July 2014