

**Silver-Lead-Zinc Mining & Cominco (1 of 5)**

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Although coal mining was the main reason for building the Crowsnest Pass Route of the Canadian Pacific, the mining and processing of metals was inevitably tied to the railway. Discoveries of lead-zinc deposits near Cranbrook at Kimberley and at Moyie Lake proved to be very important for the railway.

The most important ore deposits along the Crowsnest Route in the East Kootenay were the massive lead-zinc ores at Kimberley. The deposits were staked in 1892 and by the end of the decade some surface exploration had been carried out and several small shafts had been dug. In 1900 the first ore shipments were made to the Hall Mines smelter at Nelson and to the smelter at Trail. The completion of the railway to Kimberley made the large scale development of the deposits possible. The company, known as the Sullivan Group Mining and Smelting Company, was incorporated in the State of Washington in 1895 and registered in British Columbia in 1897.



In 1903, work began on a small smelter at Marysville five miles (8 km) from Kimberley. The smelter was "blown in" early in 1905. Initially a small profit was made but the process did not solve the problems encountered with the Kimberley ores. The difficulties in smelting the Kimberley ores continued because of their zinc content and the smelter closed permanently and the mine was shut down for a short time pending financial restructuring.

**Mining Operations at Kimberley and Marysville**

A-00973 Marysville Smelter, c. 1900's, (above)

B-05272 Calciner Sheds at Marysville Smelter, c. 1903



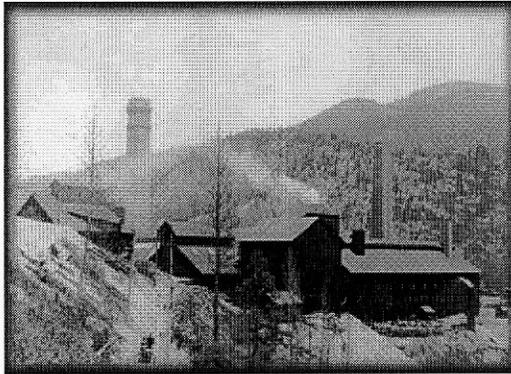
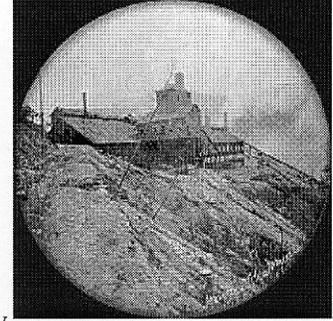
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At the same time as the CPR was opening its Crowsnest Pass Route, it acquired the Columbia & Western Railway and the smelter at Trail which were both controlled by F. Augustus Heinze. Although at first the CPR was not keen on acquiring a smelter, it soon realized the importance of this facility as a key to the development of the mining industry throughout the Southern Interior. Moreover, the smelter and mines generated enormous amounts of traffic for the railway.



The smelter and the mines that were soon acquired became the key to the development of the Consolidated Mining and Smelting Company of Canada, controlled by the Canadian Pacific Railway. This company, later officially renamed Cominco, was incorporated in 1904. Resources were made available for research and development and new processes for purifying the lead-zinc ores (including the Betts electrolytic process) were installed at the Trail smelter. Originally, the smelter was built to handle copper and silver ores. However, the addition of lead-zinc smelting

greatly expanded the operation and eventually its profitability and importance to the mining industry in southern British Columbia.

### Archival Photos

- B-06598 Trail Smelter (by Chapman), 1895
- G-07601 Construction of the O'Hara Furnace Building at the Trail Smelter, Maxwell Photo, c. 1895
- B-05046 Trail Smelter, 1895
- G-02221 Trail Smelter, 1896
- E-00279 The Trail Smelter, 1896
- E-00280 Interior of Trail Smelter, 1896
- B-05042 Trail Smelter, 1897
- B-04919 Trail Smelter, 1929
- B-04922 Trail Smelter Showing Gate House, 1929
- B-04921 Trail Smelter, 1932
- B-05054 Trail Smelter from Warfield Road, July 14, 1939



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In 1909 the Kimberley mining company was reorganized as the Fort Steele Mining and Smelting Company controlled by the Federal Mining and Smelting Company. In December of that year the Consolidated Mining and Smelting Company leased the operations and soon after acquired control of the holdings.

By 1914, the Sullivan Mine at Kimberley had become the most important producer of lead in Canada. At the same time, zinc had become a critical material during the First World War. The problems of dealing with the mixed lead-zinc ores were not easily solved. At first only ores rich in one or the other metal could be handled but by

1920 a successful process had been developed to fully utilize the ores. At that time ore prices were very low and the company was in serious financial trouble. However, prices recovered and the facilities at Trail were expanded to handle more ore with a resulting increase in traffic on the Crowsnest Pass Route.

The Sullivan Mine continued to be developed and expanded as the extent of the huge ore body was realized. An extensive underground railway system was built to move the ore and waste rock, and milling facilities were expanded to keep pace with production demands. By the late 1920s, the mill could handle 4,000 tons [3630 tonnes] a day.

A 1930 study of the lead-zinc industry in Canada published by the federal Department of Mines described the Sullivan Mine workings:

'The lens [the ore body] is mined from two adits [tunnels driven into the side of an ore body in a more or less horizontal manner], an upper known as the 4,600-foot level and a lower, called the 3,900-foot [1188-m] level, these figures approximately representing their respective elevations above sea-level. There are two connexions [sic] between the upper and lower workings. In both levels there are two ore-shoots, known respectively as the north ore-body and the south ore-body.

In the upper workings, stoping [a technique for mining pockets of ore] in the south ore-body is being carried on over a length of 2,000 feet [600 m]. The ore is lead and zinc in a gangue of pyrite. In the north ore-body stoping on the same level is being carried on over a length of 1,200 feet [365 m]. This zone contains more zinc than lead. Between these two zones is a barren zone of massive pyrite 700 feet [215 m] long. Work is being carried out on the 4,500-foot [1370-m] and 4,400-foot [1340 m] levels, but the ore from these is sent down to the 3,900-foot [1190-m] level to be hauled to the surface.

The lower, or 3,900-foot [1190-m] tunnel, had a length in 1926 of over 13,000 feet. At a distance of 7,100 feet [2165 m] from the portal, the ore lens is reached. The south ore-body of this level consists of sphalerite in a gangue of pyrrhotite.

Canadian Pacific's Consolidated Mining and Smelting Company became one of the railways best investments and continues to be a major source of traffic for the Crowsnest Pass railway. The

CPR, through its acquisitions and developments, controlled, and as a result could coordinate, the production of ore, its transport and its refining. In response to many complaints about air pollution, particularly in Washington downwind of the Trail smelter, recovery systems were installed and the materials were used, beginning in 1931, to produce fertilizer at a plant near Trail at Warfield. This proved to be an unforeseen bonus for the company and a profitable byproduct that also contributed traffic to the railway.

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### Archival Photos

<u>16880</u>	Kimberley. Cominco Sullivan Mine, n.d.
<u>B-05285</u>	Kimberley. Cominco Sullivan Mine, 1926
<u>B-05345</u>	Kimberley. Cominco Sullivan Mine, 1926
<u>B-05326</u>	Kimberley. Cominco, Man Train at Tunnel Entrance, Sullivan Mine, 1930
<u>B-05275</u>	Kimberley. Cominco Sullivan Mine. Surface Buildings, 1930
<u>I-28264</u>	Bagging Fertilizer, Warfield, BC Government Photo, 1953

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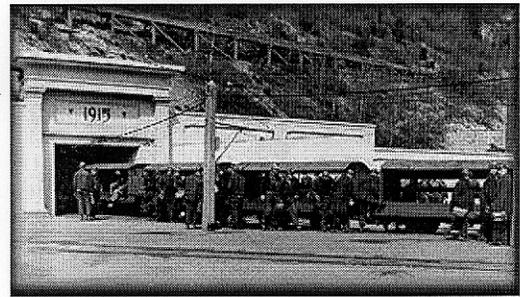
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The growing traffic between Kimberley and Trail was one of the major reasons for the construction of the railway along Kootenay Lake in the late 1920s. This was the missing section of the original Crowsnest Pass Route and it eliminated the steamer service between Kootenay Landing, Procter and Nelson. A fertilizer plant was also built near Kimberley at Marysville in 1953 to make use of products derived from the ore concentration processes.

The story of the City of Kimberley has been inseparably linked with the development and operation of the Sullivan Mine. The prominence of the Sullivan Mine overshadowed other mines such as the North Star and logging and sawmilling have also been important. In the early 1900 the Otis Staples Lumber Company operated in the area. More recently tourism and winter sports have become important as the community works to broaden its economic base as the mine nears closure.



Cominco acquired many other mining properties in British Columbia including the Bluebell Mine at Roundel on Kootenay Lake and properties in the Slocan Mining district between Kaslo and New Denver. It also developed mines in other parts of Canada and internationally. After 100 years the Sullivan Mine is still in production although the ore deposits that can be recovered economically at this time are nearly exhausted. The mine is scheduled for closure in a few years.

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### Archival Photos

B-05327 Kimberley. Cominco, Man Train at Tunnel Entrance, Sullivan Mine, 1938

B-05347 Kimberley. Cominco, Men at Tunnel Entrance of Sullivan Mine, 1938

B-05319 Kimberley. Cominco Sullivan Mine. Shift Change, 1945

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