

# Granby Company Coal Mine at Cassidy Landing

**In Establishing Coke Plant First Object Is To Secure Satisfactory Coal Mine—Description of Plant by Resident Manager.**

The successful operation of the by-product coking plant of the Granby Consolidated Company at its smelter at Anyox is a very important event in British Columbia industrial development. A permanent solution of the serious coking question by this important company, involving a large expenditure of capital, settles many problems incidental to mining operations and metallurgical treatment of ore. In connection with this operation two Granby officials, Messrs. R. R. Wilson, resident manager of the coal mine of the company at Cassidy, Vancouver Island, and Mr. W. A. Williams, resident manager of the smelter at Anyox, each contributed a paper on this question before the Convention of the Canadian Mining Institute held in Vancouver last autumn. We beg in this issue to present the paper of Mr. Wilson on the coal mine and in our next issue will take up Mr. Williams paper on the by-product plant at Anyox.

The Granby Consolidated Mining, Smelting and Power Company has been one of the most enterprising organizations operating in Canada. The Company has provided the two largest copper smelters and the second largest copper mine in the British Empire, and has now provided the province with its first modern by-product coking plant and a coal mine which represents the last word in what has been called the industrial betterment movement.

The Colliery is situated at Cassidy about eight miles south of Nanaimo on Vancouver Island. It was acquired and opened mainly to ensure a supply of coke for the copper smelter at Anyox. At Cassidy a seam of coal about ten feet in thickness outcrops in the bed of the Nanaimo River, the seam being known as the "Upper Douglas," from which the first coal was mined on Vancouver Island in 1852 by the Hudsons Bay Company.

Following the satisfactory prospecting of the area by diamond drilling a saw mill was erected having a capacity of about 20,000 feet of lumber per day, and as the timber was felled on the townsite it was cut into lumber and used in the construction of various buildings or stored for use in connection with mining operations.

The townsite having been cleared, a start was made in opening the mine and the first coal was hoisted from the main slope in June, 1918. The main slope was sunk through gravel and quicksand, necessitating the use of tongued and grooved spiling. A railroad spur was then constructed for  $\frac{3}{4}$  of a mile, connecting with the Esquimalt & Nanaimo Railway at Cassidy and a temporary loading plant installed so that coal could be shipped as development work progressed until the permanent tippie and washery could be constructed.

This done, plans were prepared for the setting aside of residential sections, mine and plant section and streets, water works, sewerage, and electric lighting system, recreation ground, flower gardens. Sites for various buildings were laid out to meet as fully as possible the requirements of the industry and its community of employees.

The area set apart for a residence district comprises about 80 acres of bench land overlooking the Nanaimo River to the north, Haslam Creek to the south, and is sheltered by a forested ridge to the east and west, which is being preserved as a park.

The homes are neat and commodious, the architecture varied and each house is equipped with every modern convenience. The streets are boulevarded, lined with shade trees and lighted with electric lights.

A change house is provided where the miners may turn in their working clothes, if they are wet, and have them placed in drying rooms by the attendant so that they will be perfectly dry and comfortable when ready to go to work in the morning.

The rooming house for the accommodation of single employees is a gunite structure built in the form of a double L. It contains about 80 rooms, all of which open to an outside verandah or balcony. The rooms are steam-heated, electric-lighted and each room is provided with running hot and cold water.

The mess house or dining-room is a gunite structure and is equipped with every modern convenience. The dining hall is bright and comfortable, cool in summer and steam-heated in winter. Each table accommodates six men. The kitchen is equipped with every labor-saving and modern device.

A modern temporary hospital and first aid station has been established, in charge of a skilled matron and trained nurse.

Between the change house and the manway portal are the powder house, in which the stock of explosives is limited to one day's supply—the larger magazine being on the opposite side of a hill from the town—the timekeeper's office, lamp house and mine rescue station. The lamp house is equipped with 300 Edison storage battery electric lamps. The mine rescue station is equipped with Gibbs apparatus, lungmotor, smoke chamber, etc., and a large lecture room for holding first aid or mining classes.

The above buildings are all heated with exhaust steam from the power house.

The tippie is equipped with Fairbanks scale, rotary dump, Marcus screen and loading booms. The railroad cars are handled with Fairmont car retarders. The track scale is a Fairbanks Standard all steel and concrete, and has a capacity of 100 tons. The rock cars are handled with a special Wilson rotary dump.

The washery is equipped with two, two compartment, jigs having a capacity of 40 tons per hour each. The tippie and washery were designed by Roberts & Schaefer, of Chicago. The washery is equipped with sludge recovery and uses the same water over and over again.

The washed slack is used in the new by-product plant at Anyox in making coke for the copper smelter and the lump, nut and some pea coal are sold. The bone coal is burned under the colliery boilers.

The boiler plant at present consists of two Badenhausen water tube boilers, 260 h.p. each, fired by type E mechanical stokers. The ashes are removed by washing and fluming to the dump. The feedwater is heated with Webster feedwater heater and forced draft is used. The brick stack is eight feet in diameter and 125 feet high. The boilers and steam pipes are all insulated with asbestos and magnesia to prevent loss of heat. Venturi meters are used to check quantity of water at pump station and at the boilers.

The compressor is a Rand cross compound condensing capacity 2,000 cu. feet of air per minute. The air is used for running the underground drills, pump and hoists.

Electric power is supplied by an Allis-Chalmers 450 K.W. generator (2,300 V. 3 phase, 60 cycles, 360 rpm.) and also an auxiliary unit 250 K.W. (2,300 V. 3 phase, 60 cycles, 450 rpm.), both direct connected to vertical high speed engines (Goldie & McCollough). The remainder of the electric equipment is of Westinghouse make. The power house is equipped with the Bowser oil handling system. A Worthington fire pump, capacity 1,000 gallons per minute, size 18x10x12 inches, is ever in readiness for an emergency.

The entire plant is equipped with an exhaust steam heating system, the condensation being returned to the boilers.

The shops are all thoroughly equipped, well lighted, and will be connected with the mine tracks. The carpenter shop is fitted with rip saw, band saw, planer, boring and mortising machine.

The machine shop is equipped with a large lathe, small lathe, planer and shaper, pipe threading machine, drill