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PRELIMINARY REMARKS

ON

DIAMOND VALE COLLIERY,

MERRITT, B.C.

by

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GEOLOGICAL BRANCH
ASSESSMENT REPORT

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DIAMOND VALE COLLIERIES.

MERRITT, B.C.

The following remarks are the result of a study of the various reports, governmental and otherwise, that have been issued from time to time during the past thirty years regarding the property of the Diamond Vale Collieries.

The mines have been dormant since the end of the war, no production worth mentioning having taken place since that time.

No useful purpose will be served by repeating the very detailed reports of examinations made, a partial list of which follows:

Early Reports

B.P. Little, M.E., C.E., Manager, etc.	1909
Messrs. Morrison and Forster-Brown, Con.	
Mining Engineers, Newcastle-on-Tyne, England	1910
J. Morrison, Newcastle-on-Tyne, England	1911
Jas. Ashworth, Con. Engineer, London	1912
Frank C. Green, Coal Mining Engineer,	
Seattle, Washington	1915
The Barrett Company, Philadelphia	1917
Professor J.M. Turnbull, University of B.C.	1918
The Koppers Company	1919
The Foundation Research Laboratories	1920
B.C. Electric Railway (Gas Co.)	1938
N.E. Nelson, Consulting Engineer (Granby	
Mining and Smelting Co.)	1938

The Minister of Mines Annual Reports as follows:
 1905 - p.200; 1906 - p.p.179; 221; 1907 - p.p.140, 142, 193;
 1908 - p.p.133, 199, 200; 1909 - p.p.142, 249; 1910 - p.p.
 200; 1911 - p.242; 1912 - p.p.216, 285; 1913 - p.p.231, 376;
 1916 - p.487; 1917 - p.420.

To anyone in any way interested in the possibilities of the Diamond Vale Collieries, I fully commend a careful study of these various reports which touch on almost every phase of the subject -- physical and economic.

The present writers summing up of the evidence in as concise a manner as is practical is:

Area

- (a) The area is sufficiently large after the elimination of broken and dubious ground proved by diamond drilling.

Transportation

- (b) Transportation facilities to and from the property are excellent with comparatively low freight rates.

Coal Reserves

- (c) There undoubtedly exists many millions of tons of coal that computed on the "Dowling Split Volatile Ratio" formula grade "Bituminous" with an average low ash--sulphur content and a heat value of an approximate average of 13,000 B.T.U.

Coking Qualities

- (d) The coking quality of the coal is excellent. Coke produced was low in ash and sulphur, sufficiently strong for transportation and a heating value of approximately 13,000 B.T.U.'s (vide B.C. Electric Railway--The Koppers Company--The Foundation Laboratories' reports which also cover the by-products' value of the coal.

Depth of Coal

- (e) The underlying seams of coal are to be found through a vertical distance of not more than 1,000 feet, which depth appears to be the bottom of the coal. Up to present, the seam known as the No. 2 seam is the most important that has been developed. This seam lies at a depth of some 100 feet and consists of over six feet of coal with a parting of 5" to 6" sand rock which is easily removed. The seams dip from 30° to 25°.

Markets

- (f) There is a sure local market for the grade of coal that exists at Diamond Vale. Two fields are available:-
- (1) Local fuel market (domestic and commercial).
 - (2) The Vancouver Gas Company which can absorb 100 tons per day of the grade of coal sent them for testing. This phase is increasingly important on account of--
 - (a) The early closing down of Coalmont Collieries.
 - (b) The increasing cost and decreasing quality of Vancouver Island Coal caused to a large extent on the increasing sulphur content--a bad feature in both coke and gas.

Timbering

- (g) The quantity of necessary timbering is at present an unknown quantity. In November, 1938, N.E. Nelson, considered approximately \$1,500.00 would be required to pump out and timber the mine, preparatory to making a full examination as to its physical condition.

Plant

- (h) There is no machinery on the property that can be considered of value. Any equipment that may have been installed has been either sold, stolen or rusted away. Some plant which will probably be sufficient to start operations and produce a small tonnage is available on a nearby property and which is in good condition.

By-Products

- (i) The by-product qualities of this coal are excellent--vide Barretts and Foundation and Koppers Reports mentioned above. A new patent process is being demonstrated in England which will have far-reaching influence on the question of the by-product industry. Gasoline of a much higher octane content can be produced which will be greatly sought after by the aviation authorities.

Domestic

- (j) The coal is on the "friable" side but the finer size will have a ready market in the domestic automatic stokers such as the "Iron Fireman", etc. The Diamond Vale Coal is well suited for this field.

Mining Cost

- (k) The cost of mining when in full production should be under \$2.00 per ton.

Market Value

- (l) A good grade of coal should command an average of approximately \$3.00 per ton at the pithead.

Estimate of
Cost of Re-
opening Mine.

Mr. N.N. Nelson estimates an expenditure of \$1,500.00 necessary to open up the mine for examination. This amount will probably be found to cover this work. The exact amount would be impossible to compute.

The initial equipment necessary and its approximate cost is as follows:

- | | |
|----------------------------------------------------------------------------|------------|
| (a) Pumping out mine with necessary supplies and cost of cleaning up | \$1,500.00 |
| (b) Ventilation | 500.00 |
| (c) Small screening plant; its installation and housing | 3,000.00 |
| (d) Hoisting and Compressor equipment pumps; rails; cars | 2,000.00 |
| (e) Mining equipment and supplies | 2,000.00 |
| | <hr/> |
| | \$9,000.00 |

Domestic

- (f) Working Capital -- 3 months @ \$2,500.00
per month (until production).....\$7,500.00
- (g) Organization and Administration Expenses 2,500.00
- \$19,000.00

This amount progressively spent should reopen the Diamond Vale Collieries and put the property in shape to produce a limited quantity of excellent bituminous coal sufficient to supply a readily available market which can be built up and increased contemporaneously with the opening up of the mine itself to a stage where it would be capable of producing 1,000 tons per day.

The domestic market is absorbing large quantities of Alberta lignites, high in moisture and ash content and low in fixed carbon. Consequently, an expensive fuel when long freight haul is entailed in putting it on our local market. Diamond Vale Coal would have the very distinct advantage of--

- (a) short freight haul
- (b) Low moisture
- (c) Low Ash
- (d) High combined fixed carbon and Volatiles
- (e) Consequently, high B.T.U. value, which combine to make promise of a very profitable undertaking, especially when considered with the statement of the Vancouver Gas Company that that organization is open for long contract on this coal, provided they are assured of continuous production.

Respectfully submitted,

Alfred J. Gaul,

M.A.I.M.E.
Reg. Prof. Engineer, B.C.

Vancouver, B.C.
August 16th, 1939.

C O P Y

18

Laboratory,
Gas Works,
April 7, 1938.

RE - SAMPLE OF DIAMOND VALE COAL AS RECEIVED

FROM MR. J. KRILLOR - April 6, 1938.

APPROXIMATE ANALYSIS

	<u>Dry Basis</u>	<u>As Received</u>
Moisture	Nil	1.82%
Ash	3.33%	3.27%
Volatile	37.67%	36.99%
Fixed Carbon	59.00%	57.92%
Sulphur	0.81%	0.80%
B.T.U.'s lbs.	14,446 B.T.U.'s	14,184 B.T.U.'s

REMARKS

This coal received was of a soft nature having a black glossy surface and left on ignition a pink colored ash.

Coking Tests.

Three coke buttons were prepared (1) 100% Diamond Vale unground. (2) 100% Diamond Vale ground. (3) a mixture 50% Diamond Vale and 50% Comox from scow M. 12, received 31/3/38. The three resulting buttons showed good coking properties though they had a tendency to splinter.

M. Brown

Chemist.

LOCALITY	SAMPLED BY	MOISTURE	VOLATILE	FIXED CARBON	ASH	QUALITY OF COAL
D.V.#3 Across seam	F. Keffer	3.0%	35.3	52.2	12.3	good
-do- Lump from Ry. cars	-do-	2.4	37.5	48.3	14.2	good
-do- Slack Pile	-do-	2.7	34.0	51.3	14.7	good
Nicola Co., #2 Seam	-do-	2.9	40.15	51.00	8.85	good

Nicola Co. #2 Seam Lump Coal	Prof. Roberts, University of Washington School of Mines	3.31	40.71	50.30	5.68	good
DIAMOND VALE #3 Seam Lump Coal	-do-	2.66	37.84	55.14	4.36	good
DIAMOND VALE #3 Slack	-do-	2.69	34.67	47.18	15.46	good

Nicola Co. #2 Seam	Dr. R.W. Ellis, Can. Geol. Survey	3.17	35.73	55.45	5.85	good
DIAMOND VALE Top Section #3 Seam	B.P. Little Engineer of Diamond Vale Coal Co.	1.00	43.7	50.7	4.0	not stated
-do- Bottom Section #3 Seam	-do-	1.5	38.1	55.6	4.0	not stated

OPERATIVE COSTS On an output of 600 tons per day, the cost of mining, loading and incidental expenses, including Superintendence will be about \$1.47 per short ton, with a first-class up-to-date plant.