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1035/4 & 1036/13

BLACK SANDS

QUEEN CHARLOTTE ISLAND, B.C.

May 6, 1955

PROPERTY FILE

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BLACK SANDS, QUEEN CHARLOTTE ISLAND, B.C.

OTTAWA, Canada,
May 6, 1955.

Quebec Metallurgical
Industries Ltd.

BLACK SANDS, QUEEN CHARLOTTE ISLAND, B.C.

On February 15, 1955, five small samples of beach sands from Queen Charlotte Island, B.C., were received from Alex Smith. These were given our Sample No. 1023. The weights of the samples were as follows:

No. 1	4300 grams
No. 2	560 "
No. 3	600 "
No. 4	500 "
No. 5	700 "

Mr. Smith reported that a semi-quantitative spectrographic analysis of a panned concentrate made from combined Samples 1 - 5 was as follows:

Silicon	20%
Boron	0.01
Manganese	0.50
Aluminium	2.5
Magnesium	1.25
Tin	0.01
Vanadium	0.40
Calcium	1.0
Chromium	0.06
Copper	0.003
Sodium	0.20
Titanium	15.0
Zirconium	1.0
Nickel	0.01
Strontium	0.02
Barium	0.003
Iron	Balance

Concentration tests were made to determine the composition and possible value of a magnetic concentrate consisting mainly of magnetite, and a non-magnetic or weakly magnetic gravity concentrate containing ilmenite, gold, and other heavy minerals.

Tests were made by tabling the sands and then passing the table concentrate through a low-intensity magnetic separator to give a highly magnetic concentrate and a non-magnetic fraction, called for convenience an ilmenite concentrate. Details of the five tests are attached. They show that the magnetic

concentrate contains about 70% iron, which is a very high grade iron ore. The ilmenite concentrate contains 90% or more of the gold with assays from 0.12 to 0.74 ounces per ton, and 15 to 18% TiO_2 .

If the five samples represented a large amount of sand in a locality where low operating costs were possible, this would be an attractive prospect. Mr. Smith's report shows, however, that the bands of black sand are narrow and are interspersed with much thicker bands of barren sand, which reduces the average to an uneconomic level.

Ottawa, Canada,
May 6, 1955.

Quebec Metallurgical
Industries Ltd.

Object - To make a concentrate containing gold from Queen Charlotte Island black sand No. 1, our sample No. 1023.

Procedure

1. Fed 4000 grams of Queen Charlotte Island black sand No. 1 to a laboratory Wilfley table to give a table concentrate and a tailing.
2. Dried the table concentrate and fed it to a Ball-Norton magnetic separator to give a magnetite concentrate and a non-magnetic tailing which was called an ilmenite concentrate.
3. Dried, weighed, and analyzed the products.

Results

<u>Product</u>	<u>Percent Weight</u>	<u>oz./ton Au</u>	<u>Analysis %</u>			
			<u>Fe</u>	<u>TiO₂</u>	<u>Cb</u>	<u>U₃O₈</u>
Magnetite concentrate	14.32	0.010	70.0	2.00	--	--
Ilmenite concentrate	46.89	0.745	51.40	15.20	0.075	0.0007
Tailing	38.79	0.050	13.40	2.92	0.047	0.0008
Heads (calc.)	100.00	0.360	39.32	8.55		

Percent Distribution

<u>Au</u>	<u>Fe</u>	<u>TiO₂</u>
0.39	25.50	3.35
94.37	61.29	83.40
5.24	13.21	13.25
100.00	100.00	100.00

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Lab. Test 219-2

February 16, 1955.

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a jeep. @ Simbalost*

Object - To make a concentrate containing gold from Queen Charlotte Island black sand No. 2, our sample No. 1023.

Procedure

1. Fed 560 grams of Queen Charlotte Island black sand No. 2 to a laboratory Wilfley table to give a table concentrate and a tailing.
2. Dried, weighed, and analyzed the products.

Results

<u>Product</u>	<u>Percent Weight</u>	<u>oz./ton Au</u>	<u>Analysis %</u>			
			<u>Fe</u>	<u>TiO₂</u>	<u>Cb</u>	<u>U₃O₈</u>
Table concentrate	17.86	0.335	35.40	8.50	0.075	0.0009
Tailing	<u>82.14</u>	<u>0.010</u>	<u>3.00</u>	<u>0.64</u>	--	--
Heads (calc.)	<u>100.00</u>	<u>0.07</u>	<u>8.79</u>	<u>2.04</u>	--	--

Percent Distribution

<u>Au</u>	<u>Fe</u>	<u>TiO₂</u>
87.93	71.95	74.28
<u>12.07</u>	<u>28.05</u>	<u>25.72</u>
<u>100.00</u>	<u>100.00</u>	<u>100.00</u>

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Alexander*

Lab. Test 219-3

February 16, 1955.

Object - To make a concentrate containing gold from Queen Charlotte Island black sand No.3, our sample No. 1023.

Procedure

1. Fed 600 grams of Queen Charlotte Island black sand No. 3 to a laboratory Wilfley table to give a table concentrate and a tailing.
2. Dried the table concentrate and fed it to a Ball-Norton magnetic separator to give a magnetite concentrate and a non-magnetic fraction which was called an ilmenite concentrate.
3. Dried, weighed, and analyzed the products.

Results

<u>Product</u>	<u>Percent Weight</u>	<u>oz./ton Au</u>	<u>Analysis %</u>			
			<u>Fe</u>	<u>TiO₂</u>	<u>Cb</u>	<u>U₃O₈</u>
Magnetite concentrate	8.33	Trace	70.00	1.88	--	0.0003
Ilmenite concentrate	30.00	0.528	48.20	16.80	0.065	0.0022
Tailing	<u>61.67</u>	<u>0.035</u>	<u>8.70</u>	<u>1.86</u>	--	<u>0.0009</u>
Heads (calc.)	<u>100.00</u>	<u>0.179</u>	<u>25.66</u>	<u>6.34</u>	--	<u>0.001</u>

Percent Distribution

<u>Au</u>	<u>Fe</u>	<u>TiO₂</u>	<u>U₃O₈</u>
Nil	22.73	2.47	2.03
88.00	56.36	79.45	53.22
12.00	20.91	18.08	44.75
<u>100.00</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>

Object - To make a concentrate containing gold from Queen Charlotte Island black sand No. 4, our sample No. 1023.

Procedure

1. Fed 500 grams of Queen Charlotte Island black sand No. 4 to a laboratory Wilfley table to give a table concentrate and a tailing.

2. Dried the table concentrate and fed it to a Ball-Norton magnetic separator to give a magnetite concentrate and a non-magnetic fraction which was called an ilmenite concentrate.

3. Dried, weighed, and analyzed the products.

Results

<u>Product</u>	<u>Percent Weight</u>	<u>oz./ton Au</u>	<u>Analysis %</u>		
			<u>Fe</u>	<u>TiO₂</u>	<u>Cb</u>
Magnetite concentrate	31.63	Nil	69.30	1.70	--
Ilmenite concentrate	56.12	0.120	50.30	18.00	0.075
Tailing	<u>12.25</u>	<u>0.020</u>	<u>25.30</u>	<u>6.40</u>	--
Heads (calc.)	<u>100.00</u>	<u>0.069</u>	<u>53.25</u>	<u>11.42</u>	--

Percent Distribution

<u>Au</u>	<u>Fe</u>	<u>TiO₂</u>
Nil	41.17	4.71
96.49	53.01	88.43
<u>3.51</u>	<u>5.82</u>	<u>6.86</u>
<u>100.00</u>	<u>100.00</u>	<u>100.00</u>

Object - To make a concentrate containing gold from Queen Charlotte Island black sand No. 5, our sample No. 1023.

Procedure

1. Fed 700 grams of Queen Charlotte Island black sand No. 5 to a laboratory Wilfley table to give a table concentrate and a tailing.

2. Dried the table concentrate and fed it to a Ball-Norton magnetic separator to give a magnetite concentrate and a tailing which was called an ilmenite concentrate.

3. Dried, weighed, and analyzed the products.

Results

<u>Product</u>	<u>Percent Weight</u>	<u>oz./ton Au</u>	<u>Analysis %</u>		
			<u>Fe</u>	<u>TiO₂</u>	<u>Cb</u>
Magnetite concentrate	23.57	Trace	68.10	1.53	--
Ilmenite concentrate	59.30	0.665	54.80	18.50	0.043
Tailing	<u>17.13</u>	<u>0.150</u>	<u>34.70</u>	<u>7.40</u>	--
Heads (calc.)	<u>100.00</u>	<u>0.420</u>	<u>54.04</u>	<u>12.60</u>	--

Percent Distribution

<u>Au</u>	<u>Fe</u>	<u>TiO₂</u>
Nil	29.70	2.86
93.88	60.13	87.07
<u>6.12</u>	<u>10.17</u>	<u>10.07</u>
<u>100.00</u>	<u>100.00</u>	<u>100.00</u>