

NOTES AND NEWS

THE ANALYSIS OF TWO SAMPLES OF PITCHBLENDE ORE FROM GREAT BEAR LAKE, CANADA

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In connection with the coöperative program of scientific study on the pitchblende ore from Great Bear Lake, complete analyses have been made of the two samples from which have been derived the material used in all previously described experiments. As these analyses have been requested by several workers, it was thought possibly worth while to put them on record.

In both cases the material came from the workings of the Eldorado Gold Mines, Ltd., at LaBine Point, Great Bear Lake, N.W.T., Canada. Sample 1 came from Pit No. 1, Vein No. 1, from near the surface in the early days of the workings. Sample 2 came from the 800-foot section of No. 2 Vein, at more than 100 feet below ground. Both samples were supplied by H. S. Spence of the Canadian Department of Mines, from material personally obtained by him at the mines. For his kindness we are deeply grateful.

Sample 1 is the identical material used by Lindgren (1932), Newhouse (1932), von Grosse (1933), Piggot (1933), Aston (1933), Marble (1934), Marble (1936), and Nier (1939) in various studies. Sample 2 is the material described by Marble (1937), and on which further work is now in progress.

It should be made clear that these are analyses of the ore samples as received, and do not represent the pure mineral species. A considerable amount of silica, some sulfides, and a few small fragments of country rock are present. The low density is to be accounted for by the silica and silicates. The silver reported is present as metallic silver, which accompanies the pitchblende. The percentages of lead, uranium, and thorium are the mean of the previously published values. Nearly all the other figures are the mean of two or more closely agreeing determinations.

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PITCHBLLENDE ORE FROM GREAT BEAR LAKE, N. W. T., CANADA

	Sample 1	Sample 2
U ₃ O ₈	61.56%	34.66%
Pb	10.51	5.88
ThO ₂	<0.01	<0.01
SiO ₂	15.26	44.07
CaO	1.44	1.90
MgO	0.26	0.87
ZrO ₂	0.00	n.d.
CuO	1.11	1.21
Ag	0.01	0.04
MnO	<0.01	0.00
Ce ₂ O ₃	0.18	0.58
Y ₂ O ₃ , etc.	0.53	0.35
La ₂ O ₃ , etc.	0.39	0.31
Other rare earths	0.31	0.00
Fe ₂ O ₃	1.52	6.35
Al ₂ O ₃	0.27	0.45
TiO ₂	0.05	tr.
BaO	0.01	0.01
K ₂ O+Na ₂ O	1.36	tr.
V ₂ O ₅ +MoO ₃	1.14	0.32
NiO+CoO	2.42	0.62
S	0.75	1.32
H ₂ O (-110°)	0.66	0.80
H ₂ O (+110°)	0.87	1.59
Ignition loss	gain	gain
	100.63	101.34
Less O≈S	0.38	0.66
	100.25%	100.68%
Total		
Density = 5.95		Density = 3.70

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REFERENCES

- F. W. ASTON: *Proc. Roy. Soc. (London)*, **A140**, 535, (1933).
W. LINDGREN: *Rept. Comm. on Measurement of Geol. Time, Washington*, (1932).
J. P. MARBLE: *J. Am. Chem. Soc.*, **56**, 854, (1934).
J. P. MARBLE: *J. Am. Chem. Soc.*, **58**, 434, (1936).
J. P. MARBLE: *Am. Mineral.*, **22**, 564, (1937).
W. H. NEWHOUSE: *Rept. Comm. on Measurement of Geol. Time, Washington*, (1932).
A. O. NIER: *Phys. Rev.*, **55**, 153, (1939).
C. S. PIGGOT: *Phys. Rev.*, **43**, 51, (1933).
A. VON GROSSE: *J. Phys. Chem.*, **38**, 487, (1934).