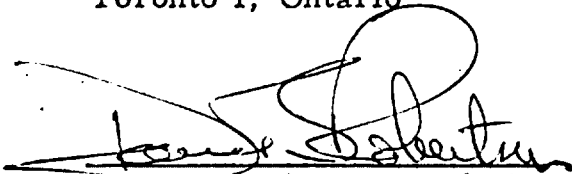


ORE RESERVES

CONSOLIDATED REXSPAR MINERALS & CHEMICALS LIMITED

David S. Robertson & Associates Limited  
Consulting Geologists & Mining Engineers  
80 Richmond Street West  
Toronto 1, Ontario



David S. Robertson, Ph. D.

15 November 1967.

mainly of a schistose light colored rock of which the chief mineral appears to be sericite. These rocks contain occasional argillaceous bands and lenses varying in thickness from 1 foot to 50 feet. At the top of the schists are several dark argillaceous layers, one of which is 50 feet thick.

Overlying the schists and the argillaceous beds is a thick bed of trachyte and grey to blue fragmental trachyte varying in thickness from 50 feet to 400 feet. This bed contains a dark phase consisting of trachyte fragments in an argillaceous matrix which is locally known as the "ore type" formation. All the uranium and fluorite deposits are contained in this formation as replacement lenses of various sizes and shapes. These replacement ore deposits are thought to have been localized due to shearing and fracturing of the argillaceous matrix. The chief uranium mineral is uraniferous thorite but uraninite and meta-torbernite also occur. It is also reported that monazite and allanite are associated with the ore.

Capping the trachyte and outcropping on the slopes of Foghorn Creek is a green-grey rock of andesitic composition, the schistose parts of which are called chlorite schists. Associated with the green-grey rocks are some whitish sericitic-carbonaceous rocks, possibly sediments.

The beds strike approximately North 30° East with flat dips northwesterly and northeasterly with the hill. They have been gently folded

and faulted in normal fashion.

### U<sub>3</sub>O<sub>8</sub> ORE RESERVES

To date U<sub>3</sub>O<sub>8</sub> ore reserves have been found in three separate and distinct pods. They are designated the A, BD and B zones. A fourth zone has been extensively drilled and found to contain U<sub>3</sub>O<sub>8</sub> in quantities less than commercial when considered for their U<sub>3</sub>O<sub>8</sub> values alone.

This zone is the Fluorite Zone. The areal configuration of these pods is shown in Map 1.

A technique for estimating the ore reserve at all possible cut-offs has been applied to these pods. The results are given in Appendix I. Lacking sufficient data to do so, no attempt has been made to evaluate the rare earth values contained in the U<sub>3</sub>O<sub>8</sub> pods. However, it is important to note that evidence exists that the rare earths may be sufficiently rich to be commercial and, assuming it is technically feasible to recover them, the value of the ore could be significantly enhanced.

The reserves are estimated entirely from chemical assays of -  
a) surface diamond drill holes, b) diamond drill holes from underground workings, and c) channel samples along these underground workings. All these data were taken from cross-sections carefully prepared by Company personnel in the past. We have checked the assay slips against the drill logs and sections and consider the data to be accurate and

reliable.

Each reserve has been subjected to economic appraisal by us at cut-offs both lower and higher than the cut-off listed in order to establish the optimum economic reserve. In so doing it was established that, with costs based on previous cost estimates, a cut-off of 0.8 lbs per ton yielded optimum economics. Economic calculations are given in Appendix II.

SUMMARY OF OPTIMUM ECONOMIC RESERVES

<u>Ore Pod</u>	<u>Tons of Ore</u>	<u>Grade (lbs/ton)</u>	<u>Pounds U3O8</u>
A Zone	526,400	1.86	980,100
BD Zone	638,600	1.81	1,156,800
B Zone	<u>396,100</u>	<u>1.55</u>	<u>613,900</u>
Total	1,561,100	1.76	2,750,800

POTENTIAL RESERVE

The "ore type" trachyte is known to occur in lenticular bodies as shown by drilling done to date. Large areas west of Foghorn Creek are underlain by trachyte, and due to heavy vegetation cover, have not been prospected. An adit driven 20 feet into "ore type" float west of Foghorn Creek in an area designated as the F Zone yielded an assay of 1.8 lbs U3O8 per ton. Later diamond drilling has failed to evaluate the significance of this occurrence because of poor core recovery. However, the strong mineralization coupled with the occurrence of "ore type" float suggests the strong possibility of another ore pod in place to the west of the F Zone. This occurrence, together with the large unprospected

APPENDIX I

ORE RESERVE ESTIMATE

REXSPAR - A ZONE

<u>Cut Off (lbs/ton)</u>	<u>Thickness @ Cut Off</u>	<u>Tons</u>	<u>Pounds</u>	<u>Accum. Tons</u>	<u>Accum. Lbs.</u>	<u>Av. Gr. (Lbs/ton)</u>
.10	8.0	1,658	166	829,160	1,124,615	1.36
.20	46.5	9,639	1,928	806,980	1,121,495	1.39
.30	60.0	12,437	3,731	761,894	1,110,384	1.46
.40	18.0	3,731	1,492	720,955	1,097,082	1.52
.50	42.0	8,706	4,353	670,998	1,074,834	1.60
.60	43.0	8,913	5,348	636,898	1,056,514	1.66
.70	98.0	20,314	14,220	586,734	1,024,133	1.75
.80	98.5	20,418	16,334	526,413	980,098	1.86
.90	27.0	5,597	5,037	474,694	937,084	1.97
1.00	81.5	16,894	16,894	450,234	914,261	2.03
1.10	46.0	9,535	10,489	410,123	872,873	2.13
1.20	25.5	5,286	6,343	377,890	836,274	2.21
1.30	29.5	6,115	7,950	343,480	793,593	2.31
1.40	35.5	7,359	10,302	311,142	750,259	2.41
1.50	21.0	4,353	6,530	282,640	709,355	2.51
1.60	75.5	15,650	25,041	268,026	687,088	2.56
1.70	10.0	2,073	3,524	232,372	629,067	2.71
1.80	22.5	4,664	8,395	221,697	610,583	2.75
1.90	13.5	2,798	5,317	206,150	581,874	2.82
2.00	167.5	34,721	69,442	192,676	555,900	2.89
2.10	4.5	933	1,959	157,955	486,458	3.08
2.20	141.0	29,228	64,301	157,022	484,499	3.09
2.30	14.0	2,902	6,675	127,794	420,197	3.28
2.40	139.0	28,813	69,152	124,892	413,523	3.31
2.60	63.5	13,163	34,224	96,079	344,371	3.58
2.80	29.5	6,115	17,122	82,916	310,147	3.74
3.00	76.5	15,858	47,573	76,801	293,025	3.82
3.20	50.5	10,468	33,498	60,943	245,452	4.03
3.40	53.5	11,090	37,706	50,475	211,954	4.20
3.60	24.0	4,975	17,910	39,385	174,248	4.42
3.80	14.5	3,006	11,422	34,410	156,338	4.54
4.00	31.5	6,530	26,119	31,404	144,916	4.61
4.20	36.0	7,462	31,342	24,875	118,798	4.78
4.40	16.0	3,317	14,593	17,412	87,456	5.02
4.60	9.5	1,969	9,059	14,096	72,862	5.17
4.80	8.0	1,658	7,960	12,126	63,804	5.26
5.00	30.0	6,219	31,093	10,468	55,844	5.33
5.20	4.5	933	4,851	4,249	24,750	5.82
5.40	10.0	2,073	11,194	3,317	19,900	6.00
7.00	6.0	1,244	8,706	1,244	8,706	7.00

ORE RESERVE ESTIMATE  
REXSPAR - BD ZONE

<u>Cut Off</u> <u>(lbs/ton)</u>	<u>Thickness</u> <u>@ Cut Off</u>	<u>Tons</u>	<u>Pounds</u>	<u>Accum.</u> <u>Tons</u>	<u>Accum.</u> <u>Lbs.</u>	<u>Av. Gr.</u> <u>(Lbs/ton)</u>
.10	48.0	14,945	1,495	825,733	1,249,563	1.51
.20	43.0	13,389	2,678	804,561	1,247,321	1.55
.30	3.5	1,090	327	789,615	1,244,208	1.57
.40	59.5	18,526	7,410	788,525	1,243,881	1.58
.50	10.0	3,114	1,557	745,869	1,225,560	1.64
.60	36.5	11,365	6,819	717,846	1,210,310	1.71
.70	30.5	9,497	6,648	670,986	1,180,615	1.76
.80	62.5	19,460	15,568	638,604	1,156,789	1.81
.90	23.0	7,161	6,445	584,272	1,111,346	1.90
1.00	28.0	8,718	8,718	551,734	1,080,745	1.96
1.10	10.0	3,114	3,425	500,204	1,027,602	2.05
1.20	66.0	20,550	24,660	473,427	996,942	2.11
1.30	41.0	12,766	16,596	439,332	955,132	2.17
1.40	41.5	12,922	18,090	409,597	915,733	2.24
1.50	10.0	3,114	4,670	359,312	843,325	2.35
1.60	74.5	23,197	37,114	329,733	797,328	2.42
1.70	10.0	3,114	5,293	294,082	739,632	2.52
1.80	35.0	10,898	19,616	275,556	707,372	2.57
1.90	19.5	6,072	11,536	232,588	628,102	2.70
2.00	42.5	13,233	26,466	200,517	565,994	2.82
2.20	125.5	39,076	85,967	187,285	539,529	2.88
2.40	101.0	31,448	75,474	148,209	453,562	3.06
2.60	97.0	30,202	78,526	116,761	378,087	3.24
2.80	74.0	23,041	64,514	86,559	299,562	3.46
3.00	50.0	15,568	46,704	63,518	235,048	3.70
3.20	15.5	4,826	15,444	47,950	188,343	3.93
3.40	37.5	11,676	39,699	43,124	172,900	4.01
3.60	32.5	10,119	36,429	31,448	133,201	4.24
3.80	5.5	1,712	6,507	21,328	96,771	4.54
4.00	10.0	3,114	12,454	19,616	90,264	4.60
4.20	16.0	4,982	20,924	16,502	77,809	4.72
4.40	21.5	6,694	29,455	11,520	56,886	4.94
5.60	10.0	3,114	16,191	4,826	27,431	5.68
6.20	3.0	934	5,791	1,712	11,240	6.57
7.00	2.5	778	5,449	778	5,449	7.00

ORE RESERVE ESTIMATE

REXSPAR - B ZONE

<u>Cut Off</u> <u>(lbs/ton)</u>	<u>Thickness</u> <u>@ Cut Off</u>	<u>Tons</u>	<u>Pounds</u>	<u>Accum.</u> <u>Tons</u>	<u>Accum.</u> <u>Lbs.</u>	<u>Av. Gr.</u> <u>(lbs/ton)</u>
.10	3.0	1,573	157	849,080	815,817	.91
.20	24.0	12,582	2,516	840,084	807,031	.96
.30	27.0	14,154	4,246	751,751	785,275	1.04
.40	55.0	28,833	11,533	634,584	745,664	1.18
.50	16.0	8,388	4,194	539,436	704,596	1.31
.60	38.0	19,921	11,953	499,594	683,102	1.37
.70	10.0	5,242	3,670	426,988	637,106	1.49
.80	9.0	4,718	3,774	396,058	613,919	1.55
.90	34.0	17,824	16,042	346,780	572,426	1.65
1.00	5.0	2,621	2,621	293,833	522,928	1.78
1.10	20.0	10,485	11,533	266,573	494,452	1.85
1.20	29.5	15,465	18,558	256,088	482,919	1.89
1.40	19.0	9,960	13,945	201,043	414,422	2.06
1.50	17.0	8,912	13,368	170,114	370,481	2.18
1.60	14.0	7,339	11,743	153,076	344,395	2.25
1.70	22.0	11,533	19,606	115,593	282,819	2.45
1.80	12.0	6,291	11,323	100,915	257,739	2.55
2.00	10.5	5,504	11,009	71,296	202,448	2.83
2.20	11.0	5,767	12,686	65,792	191,441	2.90
2.40	32.0	16,775	40,261	60,025	178,755	2.98
2.60	8.0	4,194	10,317	43,250	138,494	3.19
2.70	7.0	3,670	9,910	39,056	128,177	3.27
2.80	21.0	11,009	30,825	35,386	118,267	3.33
3.00	10.0	5,242	15,727	24,377	87,442	3.59
3.20	16.5	8,650	27,680	19,135	71,715	3.76
4.20	20.0	10,484	44,036	10,484	44,036	4.20

APPENDIX II

ESTIMATED COSTS

Costs relating to various aspects of a proposed operation have been produced by a variety of people through a number of years. For our purposes we have utilized these costs without escalation and without analysis of their make-up.

OPERATING COSTS

L. B. Logan Construction Company Limited of Kamloops, British Columbia submitted a bid for stripping at \$0.35 per cubic yard and for breaking, loading and hauling waste rock at \$1.20 per cubic yard. J. W. Scott, former Mine Manager at the property, estimated the following mining costs:

Pit Mining	\$ 0.85 per ton
Engineering, Supervision, Sampling, etc.	0.10 per ton
Overhead	0.16 per ton
Royalty	<u>0.10 per ton</u>
Total Operating Mining Cost	\$ 1.21 per ton

Overburden to be stripped was estimated by us using a 3/4:1 back slope ratio and waste to be removed was estimated by subtracting the total yardage of mineralized rock in each pod from the yards of ore at cut-off grade.

A. H. Ross & Associates estimated milling costs to be \$4.50 per ton and mill recovery at 86%. Whereas the average grade used by A. H. Ross was somewhat lower than the average grade resulting from



current reserve estimates, the mill recovery was raised one percent to 87 percent.

Applying the above estimated mining and milling costs to each ore pod, economics of mining all the ore in the pods through open pit methods are as follows:

A ZONE ECONOMICS

Value of Ore: 980, 100 lbs x 0. 87 mill recovery x \$8/lb      \$    6, 821, 496

Operating Costs

Stripping	270, 600 yd <sup>3</sup> x \$ 0. 35/yd <sup>3</sup>	94, 710
Waste Removal	112, 100 yd <sup>3</sup> x 1. 20/yd <sup>3</sup>	134, 520
Mining and Milling	526, 400 tons x 5. 71/ton	3, 005, 744
Total Operating Cost		3, 234, 974
Total Operating Profit		3, 586, 522
Operating Cost per Ton Ore		\$6. 15
Operating Cost per Recovered Pound		\$3. 79
Operating Profit per Recovered Pound		\$4. 21

BD ZONE ECONOMICS

Value of Ore: 1, 156, 800 lbs x 0. 87 mill recovery x \$8/lb      \$    8, 051, 328

Operating Costs

Stripping	858, 200 yd <sup>3</sup> x \$ 0. 35/yd <sup>3</sup>	300, 370
Waste Removal	69, 300 yd <sup>3</sup> x 1. 20/yd <sup>3</sup>	83, 160
Mining and Milling	638, 600 tons x 5. 71/ton	3, 646, 406
Total Operating Costs		4, 029, 936
Total Operating Profit		4, 021, 392
Operating Cost per Ton Ore		\$6. 31
Operating Cost per Recovered Pound		\$4. 00
Operating Profit per Recovered Pound		\$4. 00

B ZONE ECONOMICS

Value of Ore: 613, 900 lbs x 0. 87 mill recovery x \$8/lb      \$ 4, 272, 744

Operating Costs

Stripping	1, 385, 900 yd <sup>3</sup> x \$ 0. 35/yd <sup>3</sup>	485, 065
Waste Removal	167, 800 yd <sup>3</sup> x 1. 20/yd <sup>3</sup>	201, 360
Mining and Milling	396, 100 tons x 5. 71/ton	2, 261, 731
Total Operating Costs		2, 948, 156
Total Operating Profit		1, 324, 588
Operating Cost per Ton Ore		\$7. 44
Operating Cost per Recovered Pound		\$5. 52
Operating Profit per Recovered Pound		\$2. 48

CAPITAL COSTS

Ball, Craig, Short and Company Limited, Consulting Engineers, have prepared an estimate of the capital cost of the leaching and solvent extraction plant and assay office with buildings and building services.

Wright Engineers Limited, Consulting Metallurgists, have prepared an estimate of the capital cost of the crushing and grinding and compressor plant, the power and process steam plant, power distribution and service buildings and equipment.

Robert McLellan & Company Limited, Consulting Engineers, have prepared an estimate of the capital cost of the aerial tramway.

John W. Scott has prepared an estimate of the capital cost of the mining equipment and of supplying necessary essential services to the proposed trailer town site.

Samuel McIntyre Manning, P. Eng. has prepared a cost of inventory and supplies.

The following is a summary of the estimated funds needed to bring the Company's mine and plant into production:

Mining Equipment	\$ 73,000
Milling, Plant and Equipment	2,045,907
Leaching and Solvent Extraction Plant	2,632,601
Aerial Tramway	183,800
Housing	30,000
Inventory and Supplies	200,000
Working Capital	200,000
Total Capital Costs	<u>\$ 5,365,408</u>

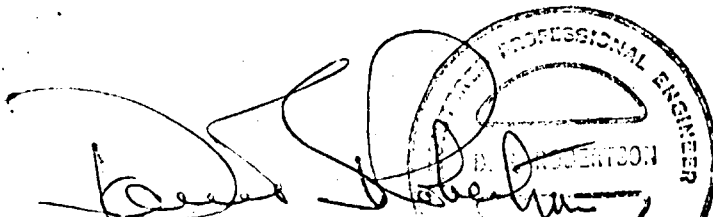
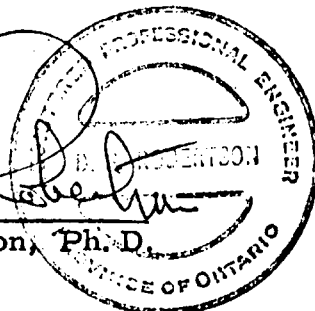
Based on these cost estimates the net profit before taxes, interest charges, depletion and depreciation is as follows:

A Zone Operating Profit	\$ 3,586,522
BD Zone Operating Profit	4,021,392
B Zone Operating Profit	<u>1,324,588</u>
Total Operating Profit	\$ 8,932,502
Capital Charges	<u>5,365,408</u>
Profit	\$ 3,567,094

CERTIFICATE

I, David Struan Robertson, of the City of Toronto, in the Province of Ontario, do hereby certify that,

- 1) I am a Consulting Geologist and Professional Engineer and President of David S. Robertson & Associates Limited, Suite 1402 - 80 Richmond Street West, Toronto 1, Ontario.
- 2) I am a graduate of the University of Manitoba, B. Sc. (Hons.), 1946, and of Columbia University, Ph. D., 1949, and have been practicing my profession continually since then.
- 3) I am a Fellow of the Geological Association of Canada and of the Society of Economic Geologists, and of other technical and scientific societies.
- 4) Our report is the result of an examination of maps, assay sheets, drill records and a variety of technical reports provided by Consolidated Rexspar Minerals & Chemicals Limited, and by an examination of the mineralization currently exposed on the Birch Island property, all carried out by Dr. Frederick Q. Barnes and Mr. Gene K. Ealy of the staff of David S. Robertson & Associates.
- 5) Neither David S. Robertson & Associates nor any of its staff members have any interest whatsoever in the securities of Consolidated Rexspar Minerals & Chemicals Limited or in its properties.

  
David Struan Robertson, Ph. D.  


15 November 1967.