

008622  
PROPERTY FILE

# Cogburn Magnesium Project

## Hope, British Columbia

### EMORY ZONE Mineral Resource Estimate Report

For

Locate @  
AR 26642. ✓  
& COGZ label in  
loc. map.



## Leader Mining International Inc.

Suite 810, 400 - 5<sup>th</sup> Avenue SW Calgary, AB T2P 0L6

By

David K. Makepeace, P.Eng.  
Geospectrum Engineering  
2588 Birch Street  
Abbotsford, British Columbia

July 3, 2002

## Introduction

The Emory Zone is located along the southeastern end of a large (10-kilometer long by 2-kilometer wide) ultramafic body lying in the Talc Creek drainage basin near Hope, British Columbia. Definition core drilling was conducted on 50 meter hole centers over an area of 300 meters by 300 meters, at the northwest corner of the 1500 meter by 700 meter Emory Zone. Numerous surface samples and 38 vertical core holes have tested the magnesium silicate body in programs conducted in late 2001 and early 2002 under the direction of Crest Geological Consultants Ltd. (Payne et al, February 8, 2002, July 2002).

This report documents the mineral resource estimate of the Emory Zone. This resource estimate will be followed shortly by a mineral reserve estimate which will become a part of the feasibility study being undertaken by Leader Mining International Inc. on the Cogburn claims.

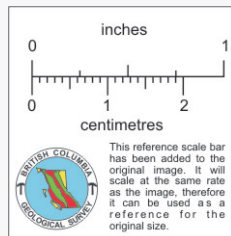
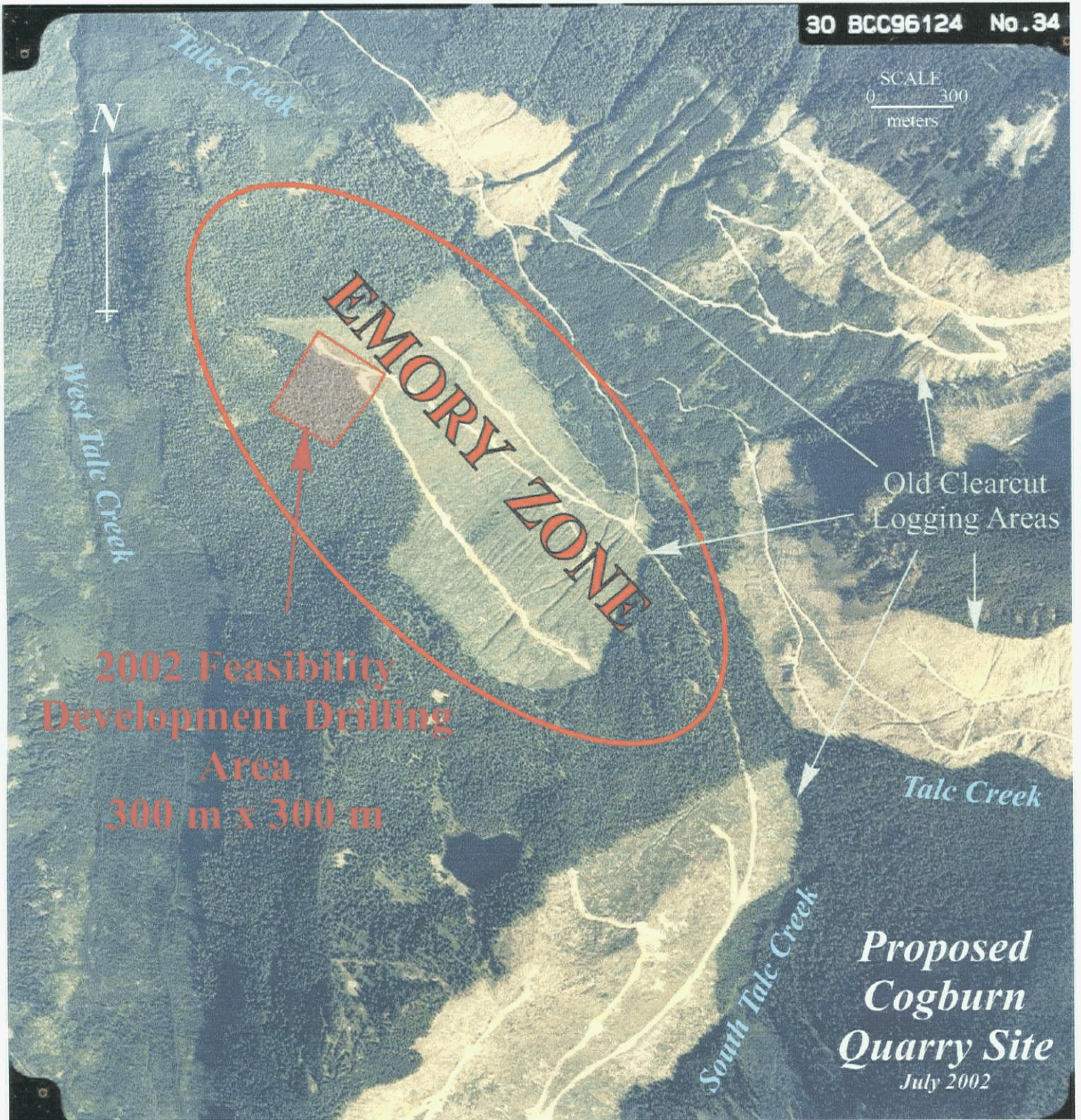
## Methodology

It can be assumed that the ultramafic body in this area is essentially homogeneous in lithology and mineralization, due to the detailed geological and mineralogical work that has been completed to-date. Due to the consistent high grade (18 to 30 % Mg) no cut-off grade was assigned. Therefore the composite value of each of the holes was the weighted average of the entire hole. Table 1 illustrates the data used for this report. Detailed geological and geochemical analysis of each hole is available from the Crest Geological Consultants Ltd.'s reports.

Golden Software Inc.'s SURFER (32) V7.0 was utilized for developing the grid, geostatistics, volume calculations and mapping of the data. Within the program, each drill hole was assigned a "Thickness Grade" value (composite interval x composite grade [meters x % Mg]) and a "Thickness" value (composite interval [meters]). Areas of influence (grid intersection values) were calculated by interpolating the area between the drill holes with respect to the search radius. A minimum equi-distant horizontal search radius of 40 meters was established so that all internal grid points had values (i.e. no null values). An extra 25 meters was added to the "Thickness" value of each hole to simulate the search radius in the third dimension (see Table 1). The interpolation method used was Inverse Distance squared using no anisotropy. Volumes were calculated between two surfaces ( $Z = 0$  and  $Z = \text{"thickness"}$  or  $Z = \text{composite interval} \times \text{composite grade}$ ) by SURFER for each grid intersection.

The grade for the deposit [% Mg] was derived by dividing the volume of the "Thickness Grade" value (composite interval x composite grade [ $\text{m}^3 \text{ \% Mg}$ ]) by the volume of "Thickness" value (composite interval [ $\text{m}^3$ ]). The tonnage of the deposit [tonnes] was derived by multiplying the volume of the "Thickness" value (composite interval [ $\text{m}^3$ ]) by the tonnage factor [ $\text{tonnes}/\text{m}^3$ ](2.85 - comm. Mr. J. A. Chapman).







**Table 1**  
**COGBURN MAGNESIUM PROJECT**  
**Emory Zone**  
 Mineral Resource Estimate  
 Diamond Drill Data and Calculations

DRILL HOLE NO.	Easting	Northing	Elev.	LENGTH		Mg		Fe		Ca		TOT/S		B		Ni		LOI	
				Thickness		Grade (%)	T*G (m*%)	Grade (%)	T*G (m*%)	Grade (%)	T*G (m*%)	Grade (%)	T*G (m*%)	Grade (ppm)	T*G (m*ppm)	Grade (ppm)	T*G (m*ppm)	Grade (%)	T*G (m*%)
				(m in rock)	(+ 25 m)														
CR01-08	595455	5483801	990	144.47	169.47	26.10	4423.17	5.04	854.13	0.12	20.34	1.52	257.59	10	1695	2110	357582	4.2	711.774
CR01-09	595370	5483753	1018	45.43	70.43	26.10	1838.14	5.05	355.72	0.15	10.74	1.11	77.95	12	816	1940	136666	4.9	341.8238
CR01-22	595151	5483954	1005	47.55	72.55	25.45	1846.25	4.70	341.05	0.44	31.76	0.07	5.18	5	376	1847	134005	8.0	579.7058
CR01-23	595288	5483863	998	46.03	71.03	24.91	1769.23	5.37	381.14	0.06	4.59	1.88	133.29	12	823	2178	154677	6.9	493.105
CR02-27	595306	5483815	1007	47.85	72.85	25.16	1832.97	6.28	457.56	0.24	17.16	0.57	41.21	11	803	2145	156247	6.7	485.4413
CR02-28	595286	5483780	1027	49.99	74.99	25.35	1900.96	5.90	442.34	0.25	18.83	0.52	38.92	16	1194	2049	153636	6.9	516.3989
CR02-29	595259	5483738	1035	46.94	71.94	25.26	1817.46	6.08	437.17	0.20	14.09	0.23	16.62	16	1126	2193	157786	6.2	449.1392
CR02-30	595229	5483701	1050	61.27	86.27	26.21	2280.97	5.73	493.99	0.07	6.47	0.49	42.30	26	2273	2463	212488	7.1	616.8087
CR02-31	595202	5483662	1061	71.93	96.93	22.17	2148.71	6.41	621.54	0.05	5.28	1.66	161.10	46	4430	2181	211444	7.7	743.8963
CR02-32	595247	5483806	1025	49.08	74.08	24.32	1801.97	6.33	469.20	0.18	13.15	0.45	33.21	20	1515	1996	147859	8.5	629.8128
CR02-33	595219	5483769	1037	49.08	74.08	25.86	1915.34	5.98	442.85	0.19	14.44	0.24	17.63	20	1500	2333	172801	7.1	524.1628
CR02-34	595188	5483732	1051	55.17	80.17	25.68	2058.41	5.75	460.96	0.15	11.70	0.23	18.05	17	1373	2095	167958	7.9	632.615
CR02-35	595161	5483889	1065	71.63	96.63	22.87	2209.79	5.49	530.35	0.30	28.83	0.75	72.27	15	1414	1777	171752	11.6	1119.912
CR02-36	595238	5483878	1002	47.99	72.99	24.89	1816.38	5.99	436.91	0.30	22.02	0.26	19.02	7	546	2051	149729	7.6	553.3399
CR02-37	595206	5483831	1026	48.47	73.47	26.23	1927.06	5.40	396.99	0.49	35.74	0.09	6.57	8	578	2088	153406	6.8	500.9875
CR02-38	595179	5483799	1040	46.16	73.16	26.04	1905.24	6.02	440.56	0.17	12.47	0.13	9.67	14	1016	2367	173143	5.9	428.5025
CR02-39	595147	5483761	1053	57.61	82.61	25.13	2075.60	5.55	458.38	0.34	27.96	0.11	9.00	12	1012	2076	171510	9.0	745.6467
CR02-40	595119	5483720	1062	47.95	72.95	20.23	1475.62	5.44	397.08	0.47	33.93	1.14	82.84	4	319	1312	95687	17.1	1248.487
CR02-41	595199	5483910	1006	47.85	72.85	24.79	1805.61	5.90	429.91	0.49	35.53	0.10	7.04	6	470	1911	139224	8.0	584.1245
CR02-42	595166	5483864	1024	49.08	74.08	24.86	1841.94	5.58	413.66	0.72	53.70	0.08	6.11	10	717	2087	154572	7.7	570.585
CR02-43	595140	5483830	1036	48.47	73.47	23.15	1701.05	5.49	403.35	0.27	19.48	0.68	50.08	9	640	2087	153296	12.4	911.2402
CR02-44	595106	5483790	1050	54.86	79.86	22.76	1817.70	5.46	435.98	0.26	20.75	0.39	30.84	10	776	2000	159733	13.5	1076.244
CR02-45	595080	5483748	1065	79.25	104.25	24.26	2528.97	5.40	563.43	0.53	55.57	0.53	55.55	7	766	1917	199805	12.4	1296.871
CR02-46	595123	5483895	1023	48.47	73.47	23.55	1730.34	5.45	400.15	0.85	62.63	0.18	13.32	9	670	1888	138540	11.2	821.5301
CR02-47	595100	5483860	1033	48.47	73.47	24.66	1811.50	5.53	406.01	0.40	29.49	0.09	6.49	14	1014	2168	159290	9.4	690.2618
CR02-48	595085	5483810	1049	34.75	59.75	21.39	1278.29	5.26	314.46	0.29	17.04	0.27	15.85	4	260	1912	114217	13.6	815.413
CR02-49	595040	5483780	1071	79.25	104.25	22.27	2321.83	5.75	599.02	0.44	45.44	0.36	37.19	5	518	1514	157857	13.5	1406.221
CR02-50	595350	5483865	996	49.38	74.38	25.34	1884.63	5.73	425.94	0.48	36.03	0.91	67.99	15	1096	2274	169104	6.4	474.1371
CR02-51	595307	5483894	995	48.77	73.77	25.07	1849.18	6.32	465.94	0.15	11.29	0.25	18.55	12	849	2573	189788	7.6	560.354
CR02-52	595269	5483924	996	49.66	74.66	23.75	1773.34	6.01	448.67	0.83	61.80	0.14	10.73	12	931	2270	169518	7.8	585.073
CR02-53	595229	5483952	995	49.99	74.99	24.31	1823.38	5.71	428.33	0.59	44.00	0.07	5.53	12	902	2385	177319	8.8	658.9069
CR02-54	595186	5483978	995	49.99	74.99	22.10	1657.18	5.75	431.50	1.51	113.39	0.05	3.99	8	614	2317	173766	8.8	663.5272
CR02-55	595399	5483849	994	48.77	73.77	26.16	1930.08	5.82	429.19	0.29	21.03	0.79	58.46	8	590	2614	192814	3.4	248.2829
CR02-56	595368	5483812	1005	49.99	74.99	24.76	1856.75	5.53	414.45	0.24	18.34	0.54	40.14	7	523	2170	162696	6.6	497.2157
CR02-57	595335	5483775	1018	48.77	73.77	26.19	1932.01	6.11	450.57	0.10	7.37	0.78	57.87	14	1046	2413	177996	5.6	416.5063
CR02-58	595408	5483790	1009	48.77	73.77	26.76	1974.02	6.05	446.17	0.29	21.73	1.12	82.47	9	661	2198	162131	4.3	320.8549
CR02-59	595147	5484007	991	48.77	73.77	24.25	1788.62	5.79	427.12	0.50	37.03	0.05	4.04	13	991	2300	169638	8.6	636.2069
CR02-60	595122	5483969	1003	49.45	74.45	25.40	1891.21	5.58	415.79	0.71	52.90	0.02	1.62	13	1000	2272	169176	6.1	451.6307

The data for the entire drill hole CR01-08 (145 meters) was taken into account as part of this mineral resource estimate. This hole illustrates the continuity of the grade of the Emory Zone and confirms the validity of the 25-meter extrapolation of each of the holes in this area. The upcoming mineral reserve calculations of the Emory Zone will take only the assay values at the top end of the hole.

## Results

Figure 1 illustrates the "Thickness" volume while Figure 2 illustrates the "Thickness Grade" volume of the Emory Zone. The final grade and tonnage of the Emory Zone is shown in Table 2.

**Table 2**  
**Volume Computations**

"Thickness" Volume	8,958,828	m <sup>3</sup>
"Thickness Grade" Volume	220,155,193	m <sup>3</sup> *%Mg
Grade of Emory Zone	24.57	%Mg
Specific Gravity	2.85	tonnes/m <sup>3</sup>
Tonnage	25.5	M tonnes

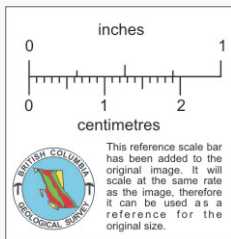
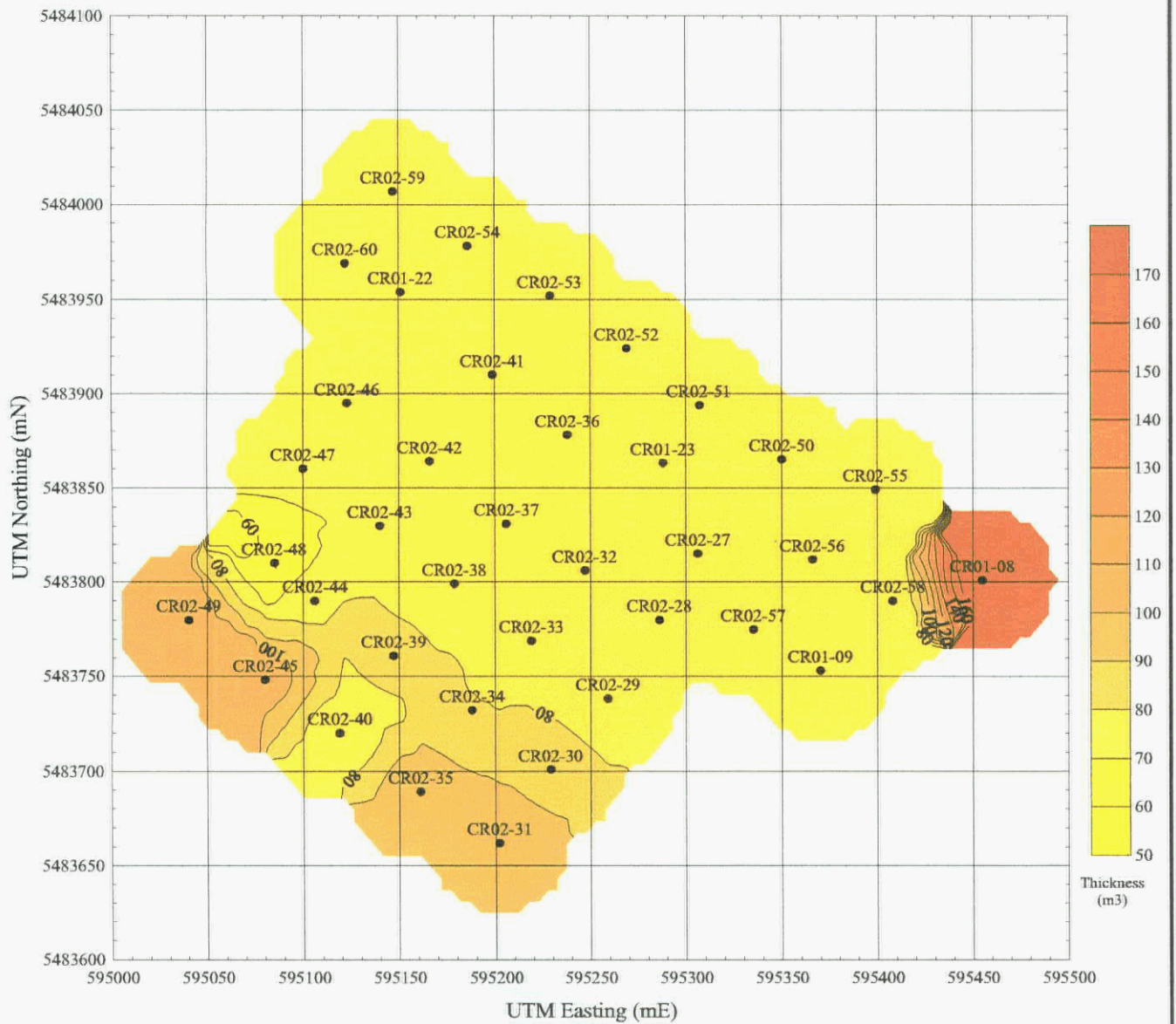
## Discussion

National Instrument 43-101 and CIM definition for an Measured Mineral Resource is:

A 'Measured Mineral Resource' is that part of a Mineral Resource for which quantity and grade or quality, densities, shape, physical characteristics are so well established that they can be estimated with confidence sufficient to allow the appropriate application of technical and economic parameters, to support production planning and evaluation of economic viability of the deposit. The estimate is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough to confirm both geological and grade continuity.

The Emory Zone has been drilled off at a 50-meter square spacing and is uniform enough in grade and geology to comply with the above definition. Therefore the Emory Zone has a Measured Mineral Resource of approximately 25.5 million metric tonnes at 24.57 % magnesium using an SG of 2.85.

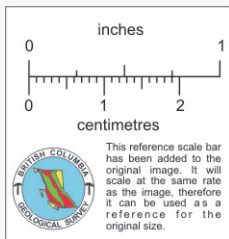
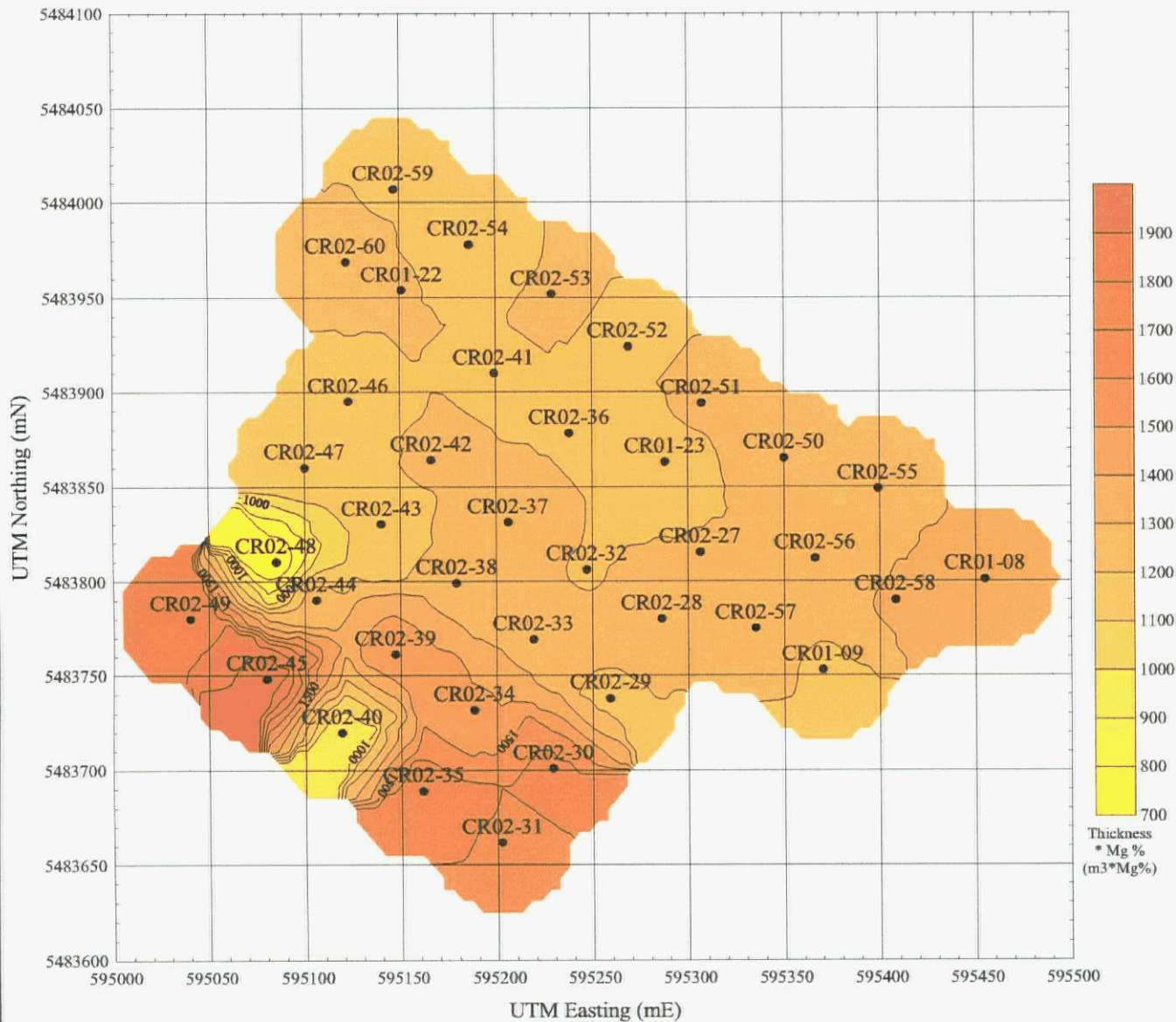
Leader Mining International Inc. is working toward a positive feasibility and environmental assessment approval. A mineral reserve estimate will be generated using Surpac software as soon as all relevant processing, metallurgical, economic, marketing, legal, environmental, socio-economic and governmental factors are determined.



Search Radius : 40 meters horizontally  
 25 meters below the TD of each hole  
 Inverse Distance Squared  
 CR01-08 - total depth 145 meters

<b>LEADER MINING INTERNATIONAL INC.</b>
<b>EMORY ZONE Thickness Map</b>
<b>FIGURE 1</b>
July, 2002 <span style="float: right;">Geospectrum Engineering</span>

Mg40T825.grd



This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

Search Radius 40 meters  
Inverse Distance Squared  
CR01-08 - total depth 50 meters

**LEADER MINING  
INTERNATIONAL INC.**

**EMORY ZONE  
Thickness x Grade Map**

**FIGURE 2**

Mg40TG.grd

July, 2002

Geospectrum Engineering

## References

Payne, C.W. and Macdonald, R.W. 2002a Summary Report on the Cogburn Property,  
New Westminster Mining Division, British Columbia, July, 2002  
(draft)

Payne, C.W. and Macdonald, R.W. 2002b Summary Report on the Cogburn Property,  
New Westminster Mining Division, British Columbia, February 8,  
2002



**Qualified Person Statement**

**David K. Makepeace, M.Eng., P.Eng.**  
2588 Birch Street  
Abbotsford, British Columbia, V2S 4H8  
Phone: 604-853-9226  
Fax: 604-853-9226  
E-mail: dmakepeace@telus.net

I, David Makepeace, M.Eng., P.Eng., am a Professional Engineer and Principal of Geospectrum Engineering of 2588 Birch Street, in the City of Abbotsford, in the Province of British Columbia.

I am:

- A member of the Association of Professional Engineers and Geoscientists of British Columbia;
- A member of the Association of Professional Engineers and Geologists and Geophysicists of Alberta;

I graduated from Queen's University in Kingston, Ontario with a Bachelor of Applied Science honours degree in Geological Engineering in 1976. I subsequently obtained a Master of Engineering degree in Environmental Engineering from the University of Alberta in 1993. I have practiced my profession continuously since 1976.

I have been involved in and/or directed:

- Mineral exploration for gold, silver, copper, lead, zinc, platinum, palladium, uranium, magnesium and industrial minerals in Canada, the USA, and West Africa, between 1974 and 2002;
- Oil exploration in Canada between 1977 and 1979;
- Mineral project development for gold, silver, copper, lead, zinc, uranium, magnesium in Canada and the USA, between 1979 and 2002;
- Operation of producing mines for gold, silver, copper, lead and zinc, both underground and open pit, of more than 100 tonnes per day from 1979 to 1992 in Canada and the USA, where I was Chief Geologist for several mining companies.
- Mineral resource estimates of gold, silver, copper, magnesium, lead and zinc deposits utilizing graphical and computerized geological modeling techniques for numerous mineral deposits between 1979 and 2002.

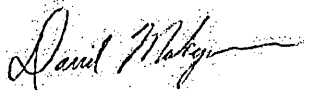
By virtue of my education and experience, I am a Qualified Person as defined in National Instrument 43-101. I am presently a Consulting Geologist and have been so since January, 1996. I am independent of Leader Mining International Inc. in accordance with the application of Section 1.5 of National Instrument 43-101.

I have visited the Emory Zone on numerous occasions. I have reviewed all diamond drill data and other geological data available from Leader Mining International Inc.

I am not aware of any material fact or material change with respect to the subject matter of this technical report which is not reflected in this report.

I have read National Instrument 43-101, Companion Policy 43-101CP, Form 43-101FI. This mineral resource estimation has been prepared in compliance with NI 43-101, Companion Policy 43-101CP, Form 43-101FI and CIM mineral resource definitions (August 20, 2000).

Dated at Abbotsford, British Columbia, this 3 day of July, 2002.



David K. Makepeace, M.Eng., P.Eng.