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Report
on the
Utica Mine
Slocan Mining Division

British Columbia

on behalf of

NTS 82F/14
MINFILE #86

DAVID MINERALS LTD.

of

Vancouver, B. C.

Report by

D. R. Cochrane, P. Eng.,
R. Wolfe, P. Eng.,
September 8, 1980,
Delta, B. C.



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geology
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geochemistry

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1. INTRODUCTION

In August 1980 the authors were engaged by David Minerals Ltd. to study previous work and assess the economic potential of the Utica Mine situated west of Kaslo, B. C. in the Slocan Mining Division of South Central British Columbia. The work was conducted by a review of available information (see bibliography) and inspection of the property by Mr. R. Wolfe, P. Eng.

This report describes the background, results obtained, and contains recommendations as to further action. The authors' certificates are appended.



2. SUMMARY AND CONCLUSIONS

1. The Utica Mine, a former producing silver, lead and zinc mine is located some 30 odd road kilometres northwest of the town of Kaslo, B. C. in the Slocan Mining District, Central Kootenay Region, southern British Columbia.
2. David Minerals Ltd., owns and operates a gold, silver, lead and zinc mill complex at Ainsworth, B. C., some 50 road kilometres south and east of the Utica Mine.
3. The Utica property is situated in a very picturesque portion of B. C., and in the Kokanee Range of the Selkirk Mountains, characterized by a relatively high and steep upland surface, which for the most part is well forested and contains abundant water.



4. Initial production from the Utica was in 1909, and to date, sporadic production during the years has totalled approximately 12,600 tons averaging 68 ounces of silver per ton; 7.8% lead, 3.2% zinc, and small amounts of gold, antimony and cadmium. The estimated total production of silver is over 850,000 ounces, and present day gross value of this production is considerable in view of the recent price range for silver. (Spot London, early September '80, +\$16.00 U.S. per ounce).

5. The Utica Mine has undergone several re-examinations by several companies and consultants, the most recent by Mr. R. Wolfe, P. Eng., in August, 1980 on behalf of David Minerals Ltd.

6. The old underground workings are, by and large, inaccessible and therefore detailed re-sampling work is impossible without rehabilitation. Consequently underground ore



reserves as estimated by earlier workers must be heavily relied upon. This amounts to a (measured) total of 9,590 tons averaging 22.8 ounces of silver, 1.44% lead and 2.54% zinc (Ditto, 1970).

7. Surface ore reserves, in the form of previously mined and easily accessible mine dumps are readily available for sampling. Mr. R. Wolfe concurs with previous estimates on tonnage (specifically on the No. 4 level dump) of approximately 30,000 tons with an average grade estimated by Mr. D. Griffith (1979) of close to 5 ounces of silver per ton, to that by Mr. Stevenson, (1979) of just over 7 ounces per ton.

8. The easily accessible, inexpensive, possible mill feed available on the Utica No. 4 level dump, in addition to the other dumps, back-fill material and underground "in situ" reserves




represent a considerable asset and viable mill feed at current market prices for silver.

9. It is herein recommended that David Minerals rapidly proceed with the negotiations for acquisition of the Utica Mine and mine dumps, and if outright purchase costs are reasonable to ship, treat, and recover metals from the Utica dumps at the David Minerals Mill in Ainsworth, B. C.

10. Contingent on the current price of silver, and the possible escalation of the price during the "shipping" period, it is also recommended to re-evaluate in situ reserves at the old Utica Mine, and to explore for possible along strike and down dip potential in addition to possible new structures which may be found with modern exploration techniques.




Respectfully submitted,



A circular professional seal for R. Wolfe, P. Eng., of the Province of British Columbia. The seal contains the text "PROFESSIONAL PROVINCE OF R. WOLFE BRITISH COLUMBIA ENGINEER". A large, stylized signature in black ink is written over the seal.

R. Wolfe, P. Eng.,



A circular professional seal for D. R. Cochrane, P. Eng., of the Province of British Columbia. The seal contains the text "PROFESSIONAL PROVINCE OF D. R. COCHRANE BRITISH COLUMBIA ENGINEER". A large, stylized signature in black ink is written over the seal.

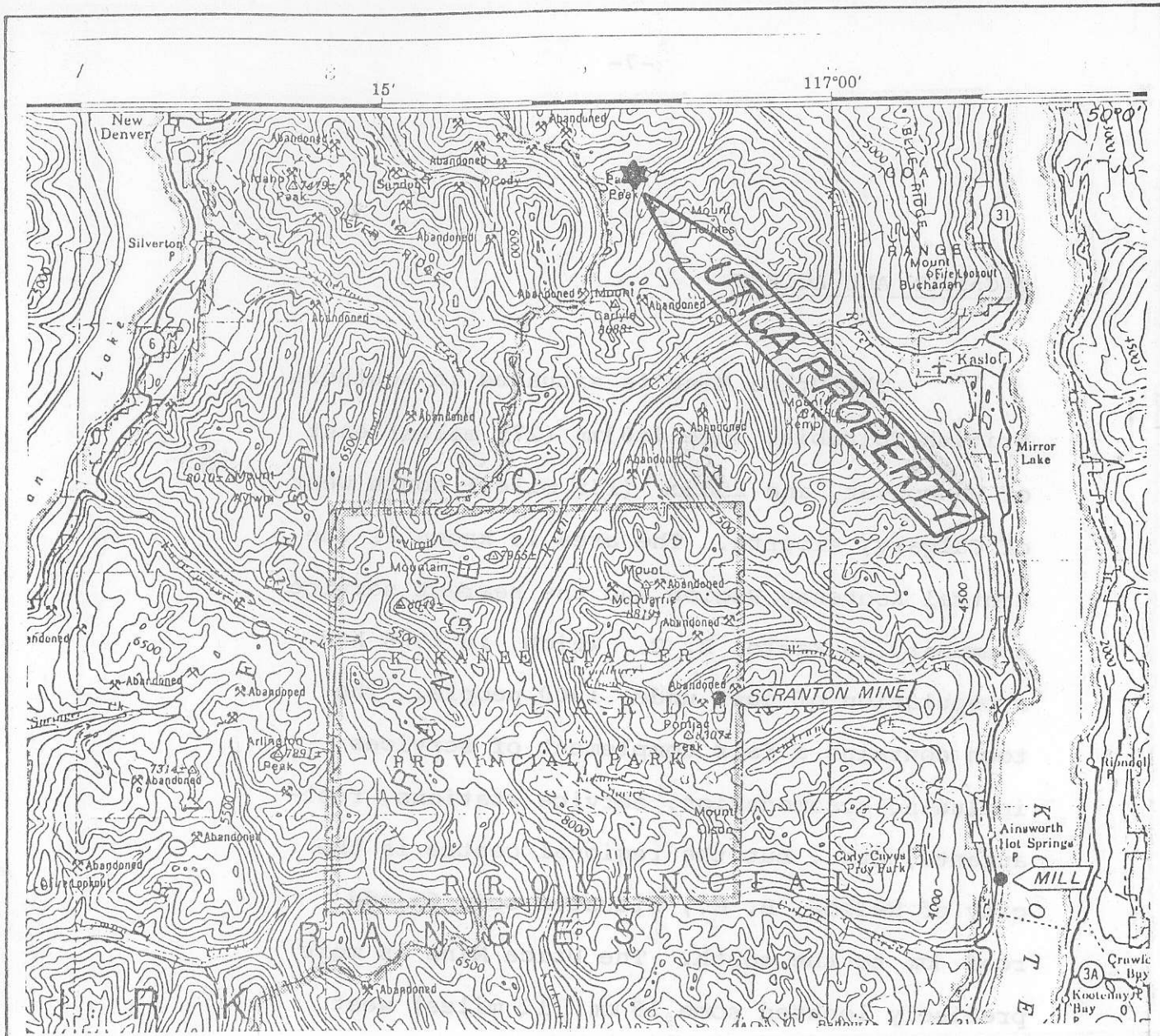
D. R. Cochrane, P. Eng.,
September 8, 1980,
Delta, B. C.



3. LOCATION AND ACCESS

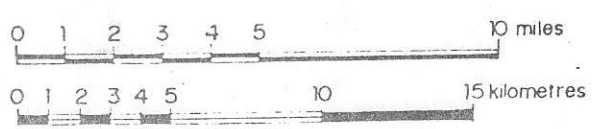
The Utica Mine is situated in southern British Columbia, some 440 km (275 miles) east of Vancouver, and 250 km (155 miles) south west of Calgary, Alberta. The area is known as the Central Kootenay Region and the nearest service community is Kaslo, B. C., which, in 1966 had a population of just under 1000 people. The town contains a fair complement of services including accomodation, service stations, restaurants, etc., but the regional centre is the city of Nelson, B. C., situated some 65 odd road km to the south. The Utica Mine is more precisely located some 19 km (12 miles) west from Kaslo, B. C. on highway 31A, then 12 km (7 1/2 miles) south west up the Twelve Mile Creek road. The property is located at latitude 49° 58' N., 117° 07' W., in N.T.S. code area 82F/14.





D DAVID MINERALS LTD. (N.P.L.)
Utica Property near Kaslo, B.C.
Slocan Mining Division N.T.S. 82F/14E
 Figure 7
 Location Map

Scale : 1 to 250,000 or 1 inch equals approx. 4 miles.



British Columbia

PKC Sept 80


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4. CLAIMS INFORMATION

The Utica Mine, Slocan Mining Division, consists of a total of seventeen (17) contiguous claims and fractions and owned by Martin and Lilly Ltd.

Pertinent claims information is set out in the following table:



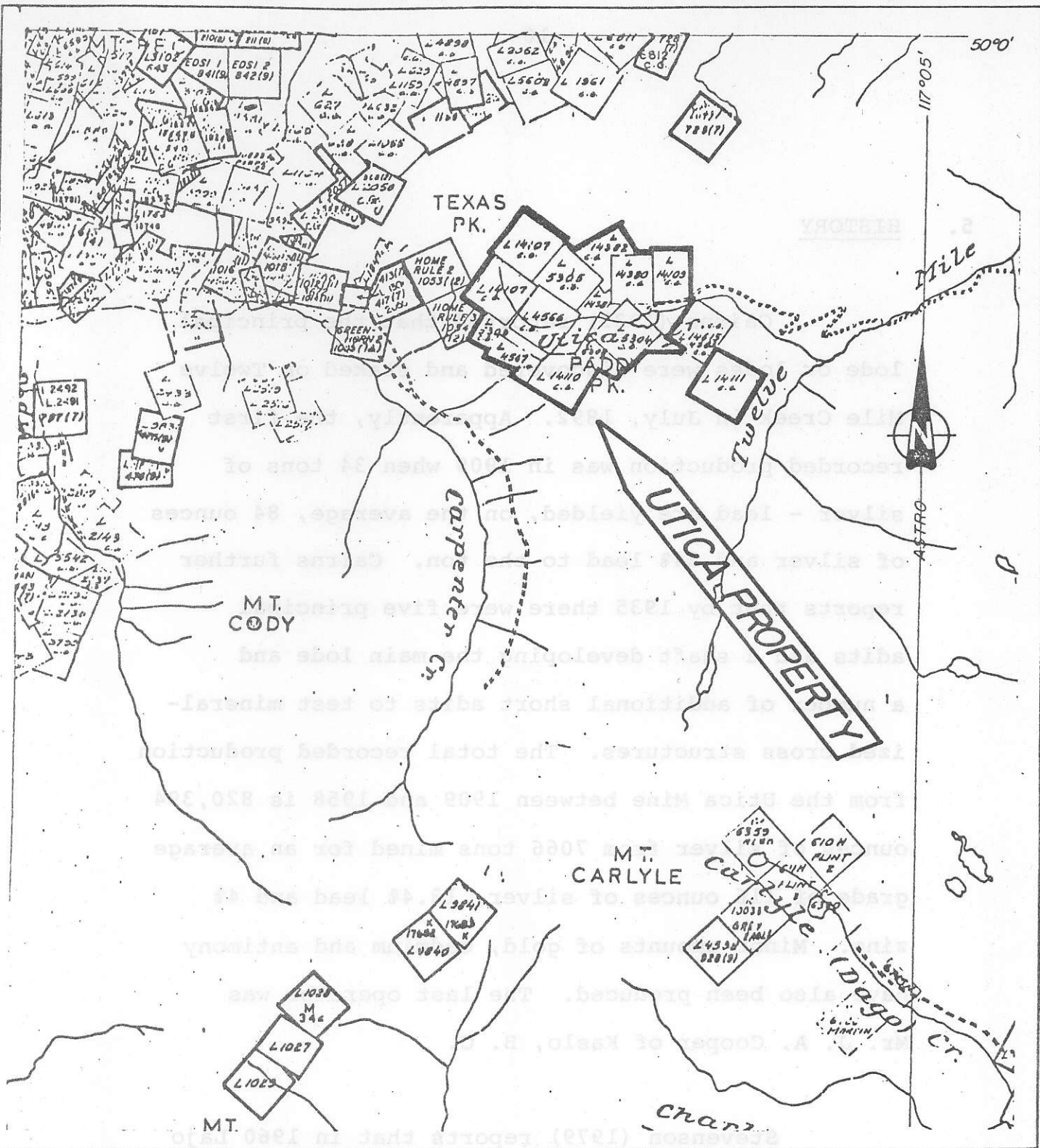
TABLE A

<u>CLAIM NAME</u>	<u>LOT NO.</u>	<u>ACREAGE</u>
Minerva Fraction	14109	34.44
Time and Tide	14111	51.56
May V	14380	40.47
May V Fraction	14383	24.04
Utica	4566	51.65
Alice No. 5	4567	24.66
Rock Boulder	5305	47.14
Andrew Jay	5304	51.65
Colorado	5308	27.13
Pay Cre	5309	25.69
Hercules	14110	46.14
Overlooked Fraction	14381	30.34
Frances C.	14382	29.24
Crown Paint	13474	51.65
Kootenay Belle	13475	49.91
Sol	14107	51.65
Sol No. 1	14108	51.15
Total Seventeen (17)		688.51 acres

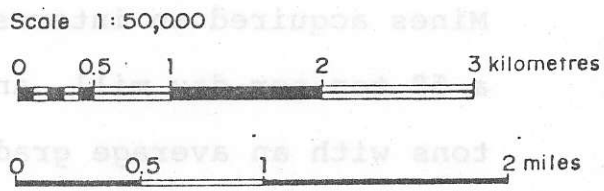
The claims are shown on B. C. Mineral Titles map 82F/14E, a copy of which accompanies this report.

The author has not checked title to the claims under consideration.






D DAVID MINERALS LTD. (N.P.L.)
 Utica Property near Kaslo, B. C.
 Slocan Mining Division 82F/14E
 figure 2
 Claims Map



P.K.C. Sept. 80


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5. HISTORY

Cairns (1935) reported that the principal lode or lodes were discovered and staked on Twelve Mile Creek in July, 1892. Apparently, the first recorded production was in 1909 when 34 tons of silver - lead ore yielded, on the average, 84 ounces of silver and 24% lead to the ton. Cairns further reports that by 1935 there were five principal adits and a shaft developing the main lode and a number of additional short adits to test mineralized cross structures. The total recorded production from the Utica Mine between 1909 and 1958 is 820,394 ounces of silver from 7066 tons mined for an average grade of 116 ounces of silver, 13.4% lead and 4% zinc. Minor amounts of gold, cadmium and antimony have also been produced. The last operator was Mr. J. A. Cooper of Kaslo, B. C.

Stevenson (1979) reports that in 1960 Lajo Mines acquired an interest in the property, erected a 50 ton per day mill, and apparently processed 4000 tons with an average grade of 8.7 ounces of silver, 0.8% lead and 1.5% zinc per ton.



In 1964 Lamint Mining Corporation acquired a lease on the property and treated 1590 tons, 1000 tons of which was old backfill and dump rock. Production for 1964 averaged 7.6 ounces of silver, 0.9% lead and 4.2% zinc.

A number of mining companies and consultants have examined and reported on the Utica during the last few years including:

1968,	Mr. R. W. Pender, P. Eng.,	Silver Peak Mines
1970,	Mr. A. H. Ditto, P. Eng.	
1978,	Mr. T. Tough, P. Eng.,	Turismo Industries
1979,	Mr. J. C. Snell, P. Eng.,	General Energy Corp.
1979,	Mr. D. Griffith,	David Minerals

and finally, Mr. R. Wolfe examined the property earlier this year, also on behalf of David Minerals.



6. GEOLOGY

The Twelve Mile Creek area is underlain by Triassic-Jurassic Slocan Group sediments which consist of slate, argillite, quartzite, limestone, conglomerate and tuff. Locally these rocks have been highly deformed and metamorphosed with much of the argillite now being an andalusite schist. (Little, 1960). The metasediments have been intruded by three, small irregular stocks of medium grained granite and a number of dikes of acidic composition.

Two veins have been partially developed, and early production was predominantly from the East Vein which is subparallel to the West Vein and approximately 100 feet distant. The veins strike northeasterly and dip between 60° and 70° S.E. The East Vein varies in width from a few cm to just over 2 metres and the West Vein from one to 6 metres. The veins contain galena



sphalerite in a calcite, siderite quartz gangue Little (1960) reports the East Vein has been stoped on the 4th level for a length of just over 200 metres, and was continuous for 80 metres above the level. The West Vein is reported to contain an ore shoot some 180 metres long but in somewhat lower grade than the East Vein.

The two veins have been developed by workings on the 3, 4, 5 and 7 levels with the principal early production from the No. 3 and No. 4 levels. As a result of previous mining operations two large dumps remain on the property, No. 7 dump and No. 4 level dump. The No. 7 level is at an elevation of about 100 metres below No. 4 and approximately 800 metres to the southeast.



7. ORE RESERVES

Ore reserves at the Utica Mine are of several categories, and in two classes: namely

- (a) remaining underground reserves (in situ);
- (b) reserves already mined and currently on existing mine dumps.

Mr. R. Wolfe inspected portions of accessible underground workings, and, in general found them in relatively poor condition. On the 7th level, West Vein workings, there are several caves, some up to 10 tons, and the water in places is about one metre deep. The timber is described as "completely rotten", and ladders in "poor repair". There is no access on the 4th level. There is possible access via the main raise from the East Vein level to the 5th level, however due to considerable water, special equipment would be required. Consequently there is only limited access and only a few places available to check sample underground, and one must rely heavily on



work by earlier workers. Table B summarizes the underground reserve estimates.

Mr. R. Wolfe check sampled accessible areas of the 7th level with the following results:

<u>NO.</u>	<u>LOCATION</u>	<u>WIDTH</u>	<u>Ag (oz/ ton)</u>	<u>Pb%</u>	<u>Zn%</u>
28	West Vein, 54' from X cut	5"	24.50	1.22	0.88
29	West Vein, 62' from X cut		2.98	0.13	0.49
30	East Vein, at face	3'	0.33	0.02	0.03
31	East Vein, 10' back from face	3'	3.38	0.40	0.05



TABLE B

UNDERGROUND ORE RESERVE ESTIMATES, UTICA MINE

AUTHOR	DATE	TYPE	LOCATION	GRADE			TONS
				Ag (oz/ton)	Pb%	Zn%	
Phendler, R.W.	1968	probable	West Vein; between 4th and 5th				10,000
Ditto, A.H.	1970	measured	East and West Veins	22.8	1.44	2.54	9,690
		indicated	" " " "	13.5	1.44	2.54	22,340

An unknown amount of reserves are possible in the form of old backfill in the Utica Mine.

8. SURFACE RESERVES

There are several dumps at the Utica Mine, the largest of which is No. 4 level dump, followed by No. 7 level dump. These reserves represent a readily available, easily accessible, previously mined asset. Mr. W. G. Stevenson (1979) conducted a comprehensive investigation of the dumps, and from 10 randomly selected samples the average of No. 4 dump was 7.2 ounces of silver per ton. Mr. Stevenson reported that this grade is representative of 25% of the 40,000 tons estimated to be contained in the dumps.

Mr. A. H. Ditto estimates the No. 4 level dump to contain 30,000 tons averaging 7.5 ounces silver per ton, with 0.58% lead and 2.15% zinc.

Mr. D. Griffith (B. Sc. Geology), of David Minerals, extensively sampled No. 4 level dump from a recent backhoe trench excavated late



in 1979. Mr. Griffith collected and assayed 53 samples along the trench and to a depth of two metres. The arithmetic average of the 53 samples is 4.92 ounces of silver per ton.



9. DISCUSSION

The Utica Mine has been a relatively small, sporadic, but high grade producer of silver, lead and zinc (with minor gold, antimony and cadmium) since 1909. Currently, much of the underground workings are inaccessible, but a few sections of the veins were recently check sampled by Mr. R. Wolfe, P. Eng. The assay results of the vein material vary from a low of 0.33 ounces of silver to a high of 24.50 ounces per ton. Considerable rehabilitation of the old underground workings would have to be conducted in order to mine reserves as reported by earlier workers, however there are possible reserves available in backfill in old stopes. If there is an increase in the price of silver, a re-evaluation of the underground reserves should be made.

Meanwhile, the previously mined dumps, principally the No. 4 level dump, represents an inexpensive, easily accessible asset, that is



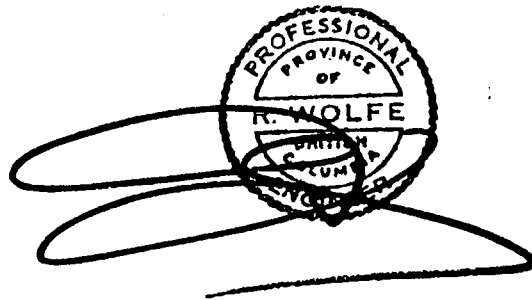
amenable to be treated at the David Minerals Mill in Ainsworth, B. C., a distance of some 51 road kilometres (32 miles). Previous estimates of the size of the existing dump range to 30,000 tons and with "average" estimates of grade from close to 5 ounces of silver (Griffith 1979) with additional values in lead and zinc and minor gold.

Mr. R. Wolfe concurs with the estimate of possible tonnage available on No. 4 dump, and, in addition, there is additional tonnage available on No. 7 level and on other smaller dumps.

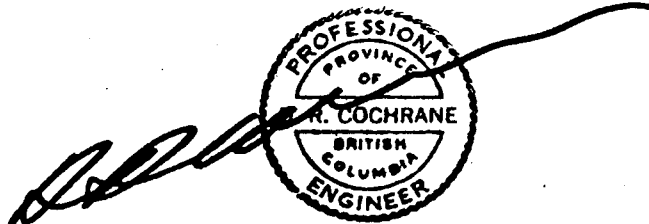
Since David Minerals Ltd. is equipped with a mill to handle a similar type of ore, it is strongly recommended to negotiate for acquisition of the Utica Mine and dump material.



Respectfully submitted,

A circular professional seal for R. Wolfe, a Professional Engineer in the Province of British Columbia. The seal contains the text "PROFESSIONAL ENGINEER", "PROVINCE OF BRITISH COLUMBIA", and "R. WOLFE". A large, loopy signature scribble is drawn over the seal.

R. Wolfe, P. Eng.,

A circular professional seal for R. Cochrane, a Professional Engineer in the Province of British Columbia. The seal contains the text "PROFESSIONAL ENGINEER", "PROVINCE OF BRITISH COLUMBIA", and "R. COCHRANE". A large, loopy signature scribble is drawn over the seal.

D. R. Cochrane, P. Eng.,
September 8, 1980,
Delta, B. C.



APPENDIX I - A

CERTIFICATE

I, Donald Robert Cochrane, of the Municipality of Delta, British Columbia, do hereby certify that:

1. I am a consulting geological engineer with an office at 4882 Delta Street, Delta, B. C.
2. I am a graduate of the University of Toronto (1962) with a degree in Applied Geology (B.A.Sc.) and a graduate of Queen's University (1965) with a Master of Science Degree in Geological Sciences (Engineering).
3. I have practiced my profession continuously since graduation while being employed by such companies as Noranda Exploration Co. Ltd., Quebec Cartier Mines, and Meridian Explorations Syndicate. I have been in private independent practice since 1969.
4. I have no interest, either direct or indirect in the properties or securities of David Minerals Ltd., nor do I expect to acquire any such interest.
5. I am a member in good standing of the Association of Professional Engineers (A.P.E.) of the Province of British Columbia, and also a member of the A.P.E. in the Province of Ontario, Saskatchewan, Alberta and the Yukon Territories.



D. R. Cochrane, P. Eng.,
September 8, 1980,
Delta, B. C.

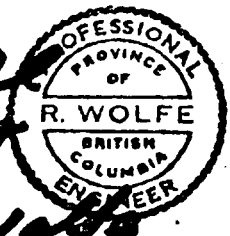


APPENDIX I - B

CERTIFICATE

I, Robert Wolfe, of the Municipality of Maple Ridge, British Columbia, do hereby certify that:

1. I am a consulting geological engineer with an office at 4882 Delta St., Delta, B. C.
2. I am a graduate of the University of Alberta, (1963) with a degree in Geology and Physics (B.Sc.). I also took an extra year of Geology at the University of British Columbia, in 1963-64.
3. I have practiced my profession since 1964 while being employed by such companies as KennCo (Western) Exploration, Meridian Exploration Syndicate, (Canex Aerial Exploration Ltd., Noranda Mines Ltd., Home Oil Co.) Orequest Syndicate (Granby Mining Co., Home Oil Co. Homestake Silver Mines.) I have been in private independent practice since 1968.
4. I have no interest, either direct or indirect in the properties or securities of David Minerals Ltd., nor do I expect to receive or acquire any such interest.
5. I have been a member in good standing of the Association of Professional Engineers of the Province of British Columbia since 1967.

R. Wolfe
R. Wolfe
A circular seal for a Professional Engineer in the Province of British Columbia. The seal contains the text: "PROFESSIONAL ENGINEER", "PROVINCE OF BRITISH COLUMBIA", and "R. WOLFE".

R. Wolfe, P. Eng.,
September 8, 1980,
Delta, B. C.



APPENDIX II

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