

D. L. COOKE AND ASSOCIATES LTD.
MINERAL EXPLORATION CONSULTANTS

001461

PROPERTY FILE

82-ESW007
STEMWINDER

TABLE OF CONTENTS

REPORT ON THE

STEMWINDER MINE PROPERTY

N.T.S. 82E/4E

Osoyoos M.D.

Lat. 49° 12' N / Long. 119° 38' W

for

HIGHLAND VALLEY RESOURCES LTD.

814 - 837 West Hastings Street

Vancouver, B.C.

V6C 1B6

by

DAVID L. COOKE, Ph.D., P.Eng.

D.L. COOKE AND ASSOCIATES LTD.

808 - 675 West Hastings Street

Vancouver, B.C.

V6B 1N2

July 7, 1987



100000

TABLE OF CONTENTS

	Page
Summary	1
Introduction	2
Location and Access	2
Property and Ownership	3
History and Past Production	4
Regional Geology	5
Property Geology	6
Mineralization	7
Tonnage and Grade Potential	8
Fairview Extension Zone	8
Stemwinder Zone	9
Brown Bear Zone	9
Conclusions	11
Recommendations and Estimated Costs	11
References	14

APPENDICES

- Appendix I Statement of Qualifications
Appendix II Stemwinder Drill Summary

LIST OF ILLUSTRATIONS

- Plate 1: Location Map, Stemwinder Property
Plate 2: Property Map, Stemwinder Property; 1:7200
Plate 3A: Plan - Wynn M, Stemwinder Property; 1:2640
Plate 3B: Plan - Stemwinder, Stemwinder Property; 1:2640
Plate 3C: Plan - Brown Bear, Stemwinder Property; 1:2640
Plate 4: Longitudinal Section at Az 130°, Stemwinder
 Property; 1:3600
Plate 5: Assay Plan - Brown Bear - Centre Adit - North Drift
 Stemwinder Property; 1:1200

SUMMARY

The Stemwinder property consists of five Crown Granted mineral claims which cover the old Stemwinder gold - silver mine of Asarco Inc. This property includes some 5,000 feet strike length of gold mineralized quartz vein system, which is known to extend at least 2.5 miles across the district. The quartz veins are hosted by a narrow northwest trending belt of Palaeozoic metasedimentary rocks between two granite masses. The property is located approximately four miles northwest of Oliver, B.C. and is accessible by paved and gravel roads.

Gold and silver has been mined intermittently from the district since the 1890's. The total recorded production is 521,300 tons containing 0.122 oz/T Au and 1.42 oz/T Ag. The three main centers of production were the Fairview, Stemwinder and Morning-Star mines. The Stemwinder mine produced 28,000 tons of 0.17 oz/T Au and 1.9 oz/T Ag in the early 1900's. Cominco Ltd. drilled 27 diamond drill holes for a total of 13,635 feet on the Stemwinder property between 1982 and 1984 under a joint venture agreement with Asarco Inc. The Stemwinder property is presently under option to Highland Valley Resources Ltd. who in 1986 and 1987 carried out an underground exploration program consisting of 1,150 feet of drifting. This work essentially fulfills the Stage I program recommended by D.M. Fletcher, P.Eng. in his report of June 28, 1986 on the Stemwinder property.

It is concluded that the quartz vein system on the Stemwinder property has potential for the development of 1,000,000 to 2,000,000 tons of precious metal mineralization with a grade of better than 0.1 oz/T Au and 1.0 oz/T Ag. Three areas have already been identified, which may contain better gold and silver grades. A program of underground exploration and surface diamond drilling is proposed to evaluate the potential of the Stemwinder portion of the vein system. This program may be done in two stages at an estimated cost of \$1,065,000.

INTRODUCTION

This report is based on a visit to the Stemwinder property on June 25 and 26, 1987 in the company of David Mehner, the geologist, who is overseeing exploration and development work on the Fairview and Stemwinder properties. The pertinent data which was reviewed in conjunction with this examination includes available government publications and the results of the drilling done by Cominco Ltd. in 1982, 1983 and 1984. Mapping and assay results from the sampling of the north drift on the Stemwinder was also reviewed.

The purpose of this examination and review was to advise the present operators of the Stemwinder property on a program to further explore and develop the precious metal mineralization associated with the quartz vein system.

LOCATION AND ACCESS

The Stemwinder property is located on the west side of the Okanagan Valley, five miles north of Oliver, B.C. The topography is rolling to moderately steep. Elevations range from 2,000 feet in the south to about 3,500 feet at the center of the property. Vegetation over the areas consist of open stands of pine, birch and alder.

The area is a recreational one used for hunting and fishing. Summer cattle grazing is an important usage for farmers who hold surface rights in the area.

Electric power lines run across the property. There appears to be little permanent creeks draining the property. However, water supply, subject to other rights, are available from nearby Reed Creek and Okanagan River. Permanent housing and supplies for exploration and development are readily available in the nearby towns of Oliver and Penticton, B.C.

The property is easily accessible, partly by paved road and partly by all-weather gravel road, approximately five miles northwest of Oliver, B.C. (Figure 1). This access is by way of the secondary road from Oliver to Cawston and Keremeos, B.C.

PROPERTY AND OWNERSHIP

The Stemwinder property consists of the following five contiguous Crown Granted mineral claims:

<u>Claim</u>	<u>Lot No.</u>
Stemwinder	384
Brown Bear	385
Wynn M	554
Itemset Fr.	21(S)
Gunsite	25(S)

The Stemwinder claims are held by Highland Valley Resources Ltd. under an option agreement with the Fairview Mining Company, which is owned by Asarco Incorporated. Under the terms of the agreement Highland Valley Resources Ltd. can earn a 100% interest in the property by expending \$50,000 per year until production, and making royalty payments of \$30,000 per year after production start-up or 3½% gross proceeds of production.

HISTORY AND PAST PRODUCTION

Gold was discovered in the Fairview gold camp in the 1890's and there was active mining in the area until 1908. Early production prior to 1908 is estimated at 30,000 tons, with a grade of 0.17 oz. gold per ton and 1.9 oz. silver per ton. Production came mainly from the Fairview, Stemwinder and Morning-Star mines. There was intermittent mining activity between 1934 and 1946, but the greater part of the district production came between 1946 and 1961 when the Fairview mine was reactivated by Cominco Ltd. The Fairview mine was operated mainly as a silica source for Cominco's smelter at Trail, B.C. The total district production may be summarized as follows:

Fairview Mine:

Pre-Cominco Ltd.	120,000	tons	@ 0.17	oz. Au/ton
Cominco Ltd.	<u>365,000</u>	tons	@ <u>0.093</u>	oz. Au/ton; 1.4 oz. Ag/ton
	485,000	tons	@ 0.112	oz. Au/ton; 1.4 oz. Ag/ton

Stemwinder Mine 28,000 tons @ 0.17 oz. Au/ton; 1.9 oz. Ag/ton

Morning-Star Mine 8,300 tons @ 0.56 oz. Au/ton; 1.27 oz. Ag/ton

521,300 tons @ 0.12 oz. Au/ton; 1.42 oz. Ag/ton

Cominco Ltd. carried out exploration work on the Stemwinder and adjacent Morning-Star properties in 1960 and 1961. This work consisted of surface and underground mapping at the Morning-Star and the drilling of six diamond drill holes on each property.

In 1981, Cominco Ltd. obtained an option on the Stemwinder property from the Fairview Mining Co. Ltd. which is owned by Asarco Inc. During 1982, 1983 and 1984 twenty seven (27) diamond drill holes were drilled for a total of 13,635 feet to explore the auriferous quartz vein system over a strike distance of some 4,400 feet. In total, there are 33 exploratory holes for approximately 14,000 feet drilled on the Stemwinder property since 1960. A list of the significant gold intersections are presented in Appendix I. The hole locations are shown on Figures 3A, 3B and 3C.

Highland Valley Resources Ltd. took an option on the Stemwinder property in March 1985 and conducted an exploration program which consisted of 1,150 feet of drifting from the Center Adit on the Brown Bear claim. The drift followed the vein system to the northwest. A plan of this drift and the assay results of the underground sampling is shown in Figure 5.

REGIONAL GEOLOGY

The Fairview gold camp occurs within a narrow northwesterly trending belt of Palaeozoic metasedimentary rocks which lie between two Mesozoic granitic masses. The Oliver granite borders the metasediments to the northeast and the Fairview granodiorite to the southwest. The Oliver granite is radiometrically dated by White as 144 million years old, and the Fairview granodiorite by Okulitch as 110 million years old (Wiley, 1982).

The metasedimentary rocks belong to the Kobau Group of probable Mississippian age. The Kobau Group consists of schists, quartzites, marble and greenstones. These rocks have gone through two periods of deformation, followed by the crystallization of the Oliver and the Fairview intrusions. The auriferous quartz vein system appears to have been emplaced after the intrusive activity, but prior to a later period of regional folding and subsequent faulting.

The metasedimentary rocks of the Kobau Group extend northwesterly for approximately 3 miles through the Fairview gold camp. The belt varies from 1/3 to 1 mile in width and dips 50°-60° to the northeast. Quartz veins occur conformable with the metasedimentary rocks along some 2½ miles of the belt. Gold mineralization occurs mainly in four areas centered on the Fairview, Stemwinder, Silver Crown and Morning-Star workings.

PROPERTY GEOLOGY

The metasedimentary group on the Stemwinder property consists of three broad lithologic units, generally referred to as an Upper Argillite, Quartzitic Member and Lower Argillite. The upper unit is sometimes referred to as a green argillite, and is essentially a chloritic schist which contains variable amounts of biotite and narrow quartzite laminations.

The middle quartzitic unit exhibit variations from relatively pure cherty quartzite to banded quartzite, laminated with fine biotite or with coarse biotite with a crinkly appearance. The auriferous quartz veins of the Fairview camp occur conformably within the middle quartzitic unit. Vein intersections in the drill holes usually occur within a grey laminated quartzite. An examination of the quartz vein system within the north drift (Brown Bear claim) reveals the presence of abundant graphite and chlorite within the laminated quartzite host. The veins vary in width over short distances, and appear to form a complex system on the Stemwinder property. From drilling data this vein system consists of the Main Vein, the HW Vein (North Vein) and the FW (South Vein) (Fletcher, 1986). The vein system occurs in close proximity to the contact of the Fairview granodiorite.

The footwall unit is essentially a dark, massive to foliated greenstone. In drill core it is strongly chloritized and may represent an altered volcanic package. A variety of dykes and sills, ranging from felsic to mafic in composition occur within the metasedimentary package of rocks.

MINERALIZATION

Gold and silver mineralization is associated with a complex system of quartz veining within the middle quartzitic unit of the Kobau Group. In general, the quartz veins are conformable with the sedimentary rocks. Vein thickness is very variable, from 1 to 30 feet, and may change rapidly along short strike distances. In areas of multiple veins, one vein may widen while the other thins. Sometimes bands of wallrock are included. Although individual veins may pinch out entirely, the zone of veining persists for at least $2\frac{1}{2}$ miles strike length. The quartz is a white variety, which is either massive or fractured and ribbony in appearance.

Gold and silver mineralization appears to be associated with sulphides such as pyrite, galena, sphalerite and chalcopyrite, which occur along ribbony fractures or as disseminations within the quartz veins. The precious metal values show little preference for hangingwall or footwall.

Over the years, the main zones of gold mineralization on the Fairview, Stemwinder and Morning-Star properties have been referred to as "shoots" and it has been suggested that these zones plunge to the east at 20° to 30° on the Fairview, 60° on the Stemwinder and 20° on the Morning-Star. The concept presently is in question, but more exploratory drilling and development will be required to prove or disprove it.

Preliminary metallurgical testing of the Fairview gold ore shows 88.4% recovery of gold by flotation and 96.0% recovery by cyanidation methods. Silver recovery was 74% by cyanidation during a 24-hour test period. (Hawthorn, 1987).

TONNAGE AND GRADE POTENTIAL

Recent surface diamond drilling and drifting on the Stemwinder property has demonstrated the presence of gold values, ranging from 0.01 to 0.10 oz. gold per ton, throughout the entire length of the quartz vein system. There are also higher grade zones or shoots, with gold values in excess of 0.10 oz. per ton and up to several ounces per ton within this complex system of veins. Three such zones have been identified by wide-spaced diamond drilling on the Stemwinder property. These zones occur at (a) the common property boundary between the Fairview and the Stemwinder property (Wynn M claim), (b) the east edge of the Stemwinder workings (Stemwinder claim), and (c), the north drift near the centre adit on the Brown Bear claim.

Fairview Extension Zone

Four drill holes put down by Cominco Ltd. on the western portion of the Stemwinder property adjacent to two holes on the Fairview suggest the eastward extension and downward continuation of the Fairview ore zone onto the Stemwinder property (Figure 3A). The significant gold and silver intersections in these holes are tabulated below (from west to east):

<u>Hole</u>	<u>From</u>	<u>To (ft.)</u>	<u>Vein</u>	<u>Width (ft.)</u>	<u>oz.Au</u>	<u>oz.Ag.</u>
Fairview						
82-1	363.0	399.5	Main	36.5	0.065	0.99
incl.	382.0	390.0		8.0	0.153	2.73
82-2	421.5	425.0	HW	3.5	0.048	0.73
	592.0	596.5	Main	4.5	0.14	1.29
Stemwinder						
83-8	559.2	585.6	Main	26.4	0.097	1.02
incl.	571.0	583.0		12.0	0.295	2.09
83-12	641.5	653.5	Main	12.0	0.031	0.63
84-1	543.0	556.5	Main	13.5	0.062	0.54
incl.	543.0	546.5		3.5	0.154	1.98
84-2	771.0	802.0	Main	31.0	0.066	0.83
incl.	776.0	789.0		<u>13.0</u>	<u>0.130</u>	<u>1.65</u>
Average				20.5	0.065	0.77

The zone appears to be getting deeper to the east, and this is consistent with a 20° - 30° plunge in that direction. These drill holes extend over a strike distance of 1,400 feet. This extension of the Fairview one onto the Stemwinder property may contain a possible 700,000 tons of 0.1 oz. gold per ton according to Cominco Ltd. (Wiley, 1984). Another interesting observation is that the majority of drill intersections include sections of better grade gold mineralization ranging from 0.13 to 0.29 oz. gold per ton.

Stemwinder Zone

The second gold zone of interest is represented by drill intersections to the east of the 200 level of the Stemwinder workings (Figure 3B). The significant intersections are as follows:

<u>Hole</u>	<u>From</u>	<u>To (ft.)</u>	<u>Vein</u>	<u>Width (ft.)</u>	<u>oz.Au</u>	<u>oz.Ag.</u>
SW-2	60.0	67.0	HW	7.0	0.22	2.7
	197.0	213.0	Main	16.0	0.09	2.0
SW-3	164.0	175.5	Main	11.5	0.08	1.5
82-8	88.0	96.5	HW	8.5	0.12	2.04
82-9	249.0	260.0	HW	11.0	0.268	0.55
82-10	42.5	55.0	HW	12.5	0.083	0.11
	228.5	245.5	Main	<u>17.0</u>	<u>0.056</u>	<u>1.29</u>
Average				11.9	0.118	1.33

The attitude of the Stemwinder zone is ill-defined. It may be further complicated by faulting. The zone has been intersected in drilling over a strike length of 500 to 600 feet. The possible tonnage within the confines of the drilled area is 200,000 tons of 0.12 oz gold per ton.

Brown Bear Zone

<u>Hole</u>	<u>From</u>	<u>To (ft.)</u>	<u>Vein</u>	<u>Width (ft.)</u>	<u>oz.Au</u>	<u>oz.Ag.</u>
83-4	112.5	115.0	HW	2.5	0.455	0.42
83-5	58.0	89.0	HW	31.1	0.051	0.23
83-5	116.0	118.5	HW	<u>2.5</u>	<u>0.318</u>	<u>0.86</u>
Average				12.0	0.097	0.86

The Brown Bear (centre adit) zone is represented by three drill intersections from two holes, approximately 200 feet apart (Figure 3C). Drifting from the centre adit has confirmed the continuity of this zone between the two drill holes (Figure 5). However, there is insufficient data to make a reasonable estimate of possible tonnage in this zone.

The possible tonnage in the three zones so far indicated is in the order of 1 million tons. The overall potential over the Stemwinder property could be some 2 million tons. The drilling to date has also demonstrated the presence of smaller tonnages of better grade gold (+0.2 oz) and silver mineralization within the zones of 0.1 oz gold mineralization.

CONCLUSIONS

The Stemwinder property has the potential for the development of 1.0 to 2.0 million tons of precious metals mineralization with a grade of 0.1 oz gold or better and 1.0 oz silver/ton. Three zones have been indicated within which there is also the possibility of defining 200,000 to 500,000 tons of higher grade gold mineralization running 0.2 oz gold per ton or better. In order of potential the three zones are the Fairview Extension, the Stemwinder zone and the Brown Bear zone.

Drilling from surface to date has been on an average of about 200 ft drill centres. More detailed diamond drilling on 100 ft or closer drill centres will be required to fully define the three gold zones indicated to date. It is felt that a combination of surface and underground exploration will best serve to delineate these zones at this time. Extension of the north drift on the Brown Bear claim to the 200 level of the Stemwinder workings will provide access to confirm the drill results on the Stemwinder zone. Such underground access will also be an exploration drive testing for other zones within the quartz vein system.

RECOMMENDATIONS AND ESTIMATED COSTS

A two-phased exploration program is proposed to further evaluate the Stemwinder mine property. Phase I consists of surface and underground drilling in conjunction with exploration drifting. Detailed mapping and sampling of the underground workings should be included. The cost of this first phase is estimated at \$550,000. The objectives are two-fold. Surface diamond drilling is intended to define each zone and to expand possible gold and silver reserves in the deeper sections of the Fairview Extension zone, the intermediate levels of the Stemwinder zone and the shallow levels of the Brown Bear zone.

The following tabulation is an estimate of the cost of the Phase I exploration program.

Phase I

Geology: Salaries

Geologist, 5 months @ \$5,000/mth	25,000	
Assistant, 5 months @ \$2,500/mth	<u>12,500</u>	\$ 37,500

Surface Diamond Drilling:

Fairview Extension	6,000'		
Stemwinder	3,000'		
Brown Bear	<u>1,000'</u>		
	10,000' @	\$23.00/ft.	230,000

Underground Exploration: Stemwinder

Drifting: 450 ft. @ \$300/ft.			135,000
Cross-cuts and Drill stations: 100 ft. @	\$ 325/ft.		32,500
U/G DD: 3,000' @ \$20.00/ft.			60,000

Assays:

500 samples @ \$25.00 ea.			12,500
---------------------------	--	--	--------

Room and Board:

10 man months @ \$1,000/mth			10,000
-----------------------------	--	--	--------

Transportation:

Equipment Rental and Fuel -			
5 months @ \$1,500/mth			7,500

Organization, supervision, reports

25,000

Estimated Cost Phase I

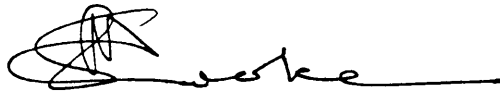
\$550,000

Subject to satisfactory results being obtained from the first phase of exploration, a Phase II program of underground drifting and drilling is recommended to firm up tonnage and grade. The estimated cost of Phase II exploration work is as follows:

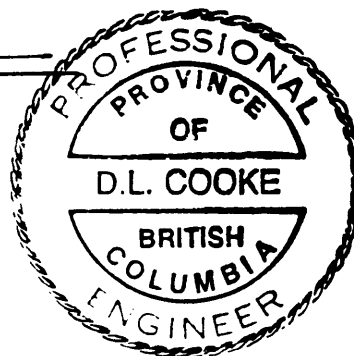
Phase II

Geology: Salaries			
Geologist 5 months @ \$5,000/mth	\$25,000		
Assistant 5 months @ 2,500/mth	<u>12,500</u>	\$	37,500
Underground Explorations:			
Drifting: 1,000 ft @ \$300/ft			300,000
Cross-cuts and Drill stations: 100 ft. @	\$ 325/ft.		32,500
U/G Drilling 5,000' @ \$20.00/ft.			100,000
Assays:			
200 samples @ \$25.00 ea.			5,000
Room and Board:			
10 man months @ \$1,000/mth			10,000
Transportation:			
5 months @ \$1,500/mth			7,500
Organization, supervision, reports			<u>22,500</u>
Estimated Cost Phase II		\$	515,000
Total Estimated Cost Phase I and II			<u>\$1,065,000</u>

Report by
D.L. COOKE AND ASSOCIATES LTD.



David L. Cooke, Ph.D., P.Eng.
July, 6, 1987



REFERENCES

- Bostock, H.S., 1940: Keremess, Geol. Survey Canada, Map 341A.
- Cockfield, W.E., 1935: Lode Gold Deposits of the Fairview Camp, Camp McKinney, and Vidette Lake Area, and the Dividend-Lakeview Property near Osoyoos, B.C. Can. Dept. of Mines, Memoir 179 pp.
- Hawthorn, G., 1987: Progress Report #1 - Metallurgical Testing, Fairview Deposit, Valhalla Energy Corp.
- Okulitch, A.V., 1973: Age and Correlation of the Kobau Group, Mount Kobau, British Columbia. Can. Jour. Earth Sciences, p. 1508-1518.
- Pauwels, A.M., 1983: 1983 Year End Report - Diamond Drilling on the Fairview / Stemwinder Property, Cominco Ltd.
- Wiley, W.E., 1982: 1982 Year End Report - Diamond Drilling on the Fairview / Stemwinder Property, Cominco Ltd.
- _____, 1984: 1984 Year End Report, Fairview, Cominco Ltd.

APPENDIX I

STATEMENT OF QUALIFICATIONS

I, DAVID LAWRENCE COOKE, of the Municipality of Surrey in the Province of British Columbia, hereby certify:

1. That I am a Consulting Geologist, residing at 16331 Bell Road, Surrey, B.C., V3S 1J9, with a business office at 808 - 675 West Hastings Street, Vancouver, B.C., V6B 1N2.
2. That I graduated with a B.Sc. degree in Geology from the University of New Brunswick in 1959, and with a M.A. degree and Ph.D. degree in Geology from the University of Toronto in 1961 and 1966 respectively.
3. That I have practised my profession as an exploration geologist from 1959 to the present time in Canada, the U.S.A., Mexico, the Caribbean and South America.
4. That I am a Registered Member of the Association of Professional Engineers of the Province of British Columbia.
5. That I have no material interest in the Stemwinder Mine property, nor the shares of Highland Valley Resources Ltd., nor do I expect to receive any interest.
6. That I consent to the use of this report in a Prospectus or Statement of Material Facts for the purpose of raising public or private funds.





DAVID L. COOKE, Ph.D., P.Eng.

APPENDIX II

STEMWINDER - DRILL SUMMARY

GOLD MINERALIZATION

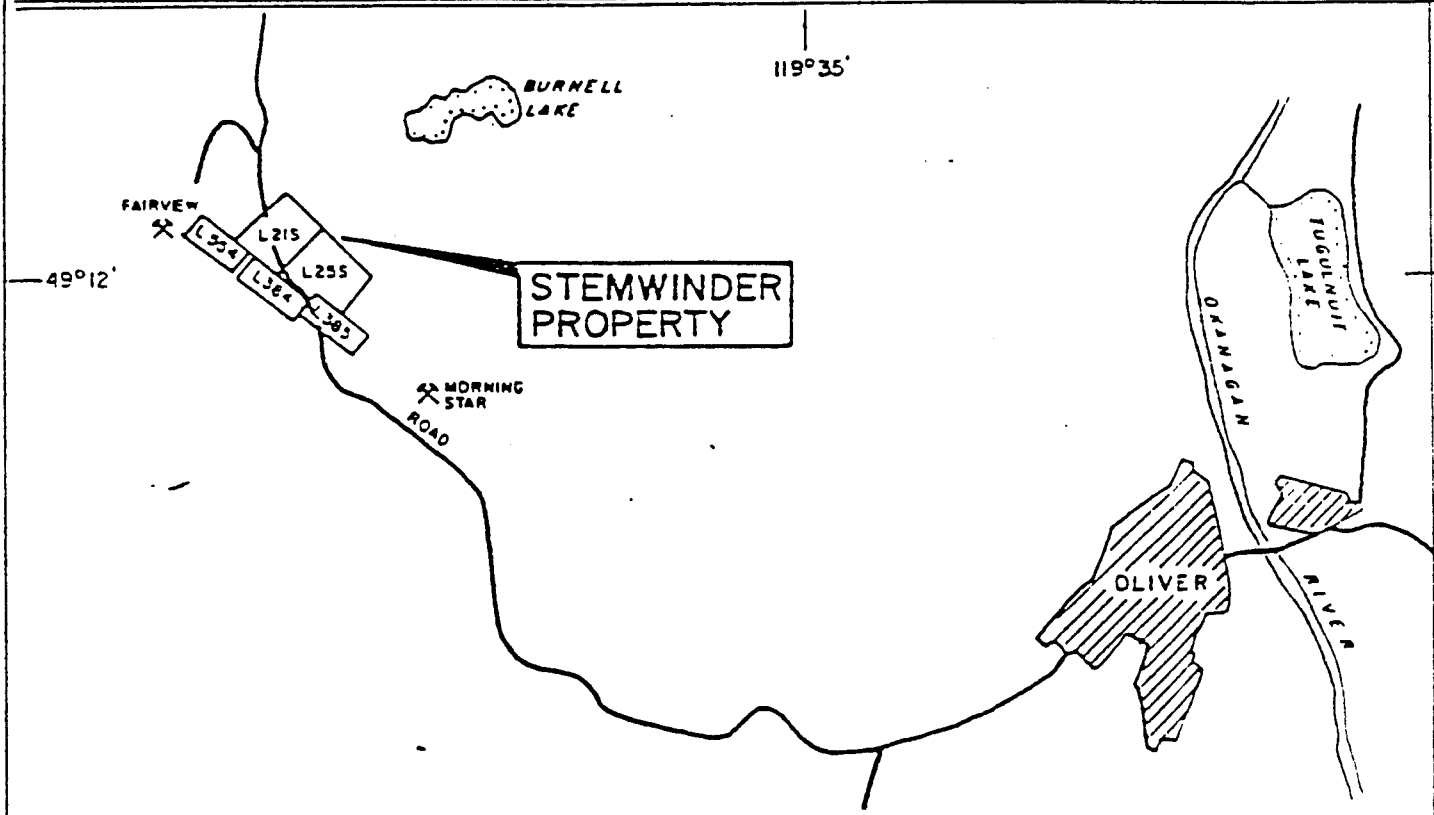
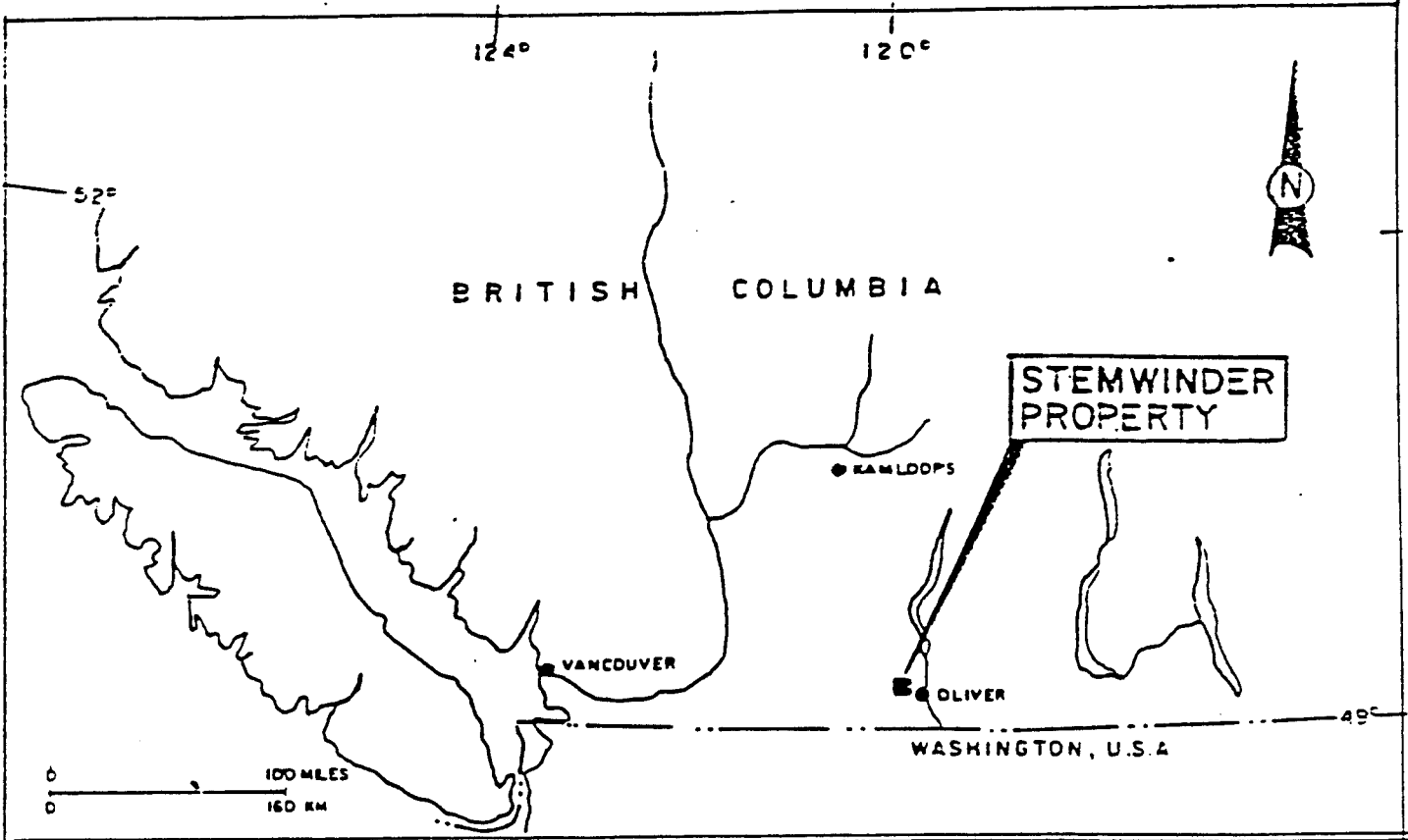
Hole No.	Feet		Vein	Width	Fire Assay	
	From	To			Au oz.	Ag oz.
SW-1	53.0	62.0	HW	9.0	0.04	1.7
	200.0	217.0	Main	17.0	0.04	1.3
SW-2	60.0	67.0	HW	7.0	0.22	2.7
	197.0	213.0	Main	16.0	0.09	2.0
SW-3	14.0	27.0	HW	13.0	0.01	0.2
	164.0	175.5	Main	11.5	0.08	1.5
SW-4	224.0	240.0	Main	16.0	0.02	0.5
SW-5	104.0	118.0	HW	14.0	0.01	0.6
	258.0	273.0	Main	15.0	0.03	0.2
SW-6	220.0	227.0	Main	5.0	0.02	0.8
82-3	246.0	248.5	Main	2.5	0.009	0.06
	319.0	322.5	FW	3.5	0.10	1.32
82-4	191.0	208.5	Main	17.5	0.075	1.35
	199.5	202.5	Main	3.0	0.34	6.35
	398.0	399.5	FW	1.5	0.004	0.05
82-5	146.0	147.5	HW	1.5	0.003	0.02
	383.0	384.00		1.0	0.003	0.05
82-6	264.0	272.0	Main	8.0	0.05	0.61
82-7	143.0	143.5		0.5	0.144	0.56
	189.0	193.0	HW	4.0	0.012	0.27
	324.5	329.5	Main	5.0	0.003	0.06
82-8	88.0	96.5	HW	8.5	0.12	2.04
	95.0	96.5	HW	1.5	0.518	9.64
	102.0	103.0	HW	1.0	0.298	4.22
	202.0	212.5	Main	10.5	0.02	0.86
82-9	249.0	250.5	HW	1.5	0.973	0.46
	249.0	260.0	HW	11.0	0.268	0.547
	254.0	255.5	HW	1.5	0.706	0.49
82-10	42.5	45.0	HW	2.5	0.400	0.48
	42.5	55.0	HW	12.5	0.083	0.11
	232.0	236.0	Main	4.0	0.182	4.48

APPENDIX II CONT'D

Hole No.	Feet		Vein	Width	Fire Assay	
	From	To			Au oz.	Ag oz.
82-11	179.5	181.5	HW	2.0	0.033	0.25
	359.0	365.0	Main	6.0	0.011	0.38
82-12	142.5	162.0	Main	19.5	0.017*	0.333*
	205.0	208.0	FW	3.0	0.043*	0.58*
82-13	200.0	206.0	Main	6.0	0.010*	0.258*
	267.5	270.0	FW	2.5	0.078*	1.13*
83-1	55.0	62.0	HW	7.1	0.041	0.32
	214.5	222.7	Main	8.2	0.033	0.35
83-2	64.7	67.5	HW	2.8	0.038	0.51
83-3	97.7	100.0	HW	2.3	0.012*	0.18*
	110.0	114.5	Main	4.5	0.012	0.08
83-4	112.5	115.0	HW	2.5	0.445	0.42
	248.7	250.7	Main	2.0	0.003	0.12
83-5	58.0	89.1	HW	31.1	0.051	0.23
	85.0	89.1	HW	4.1	0.082	0.19
	116.0	118.5	HW	2.5	0.318	3.68
	270.43	272.0	Main	1.6	0.01	0.13
83-6	87.0	90.2	HW	3.2	0.04	0.18
	233.8	235.4	Main	1.6	0.014	0.10
83-7	410.6	415.0	HW	4.4	0.023	0.24
	514.5	524.0	Main	9.5	0.004	0.10
83-8	559.2	585.6	Main	26.4	0.097	1.02
83-9	59.6	65.0	HW	5.4	0.084	0.45
	327.1	332.6	Main	5.5	0.017	0.17
83-10	123.4	127.3	HW	3.9	0.050	0.43
	357.3	366.9	Main	9.4	0.010	0.20
83-11	622.3	625.5	Main	3.2	0.078	0.20
83-12	641.5	653.5	Main	12.0	0.031	0.63
84-1	543.0	546.0	HW	3.5	0.154	1.98
	567.0	580.5	Main	13.5	0.034	0.43
84-2	471.0	485.5	HW	14.5	0.013	0.28
	776.0	779.0	Main	3.0	0.104	1.18
	786.0	789.0	Main	3.0	0.356	4.51
	771.0	802.0	Main	31.0	0.066	0.83
84-3	1171.0	1172.0	Main	1.0	0.16	14.92
84-4	227.5	228.5	Main	1.0	0.166	0.52

* Geochemical analysis converted to ounces per short ton.

D. L. COOKE AND ASSOCIATES LTD.

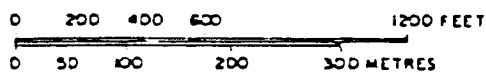
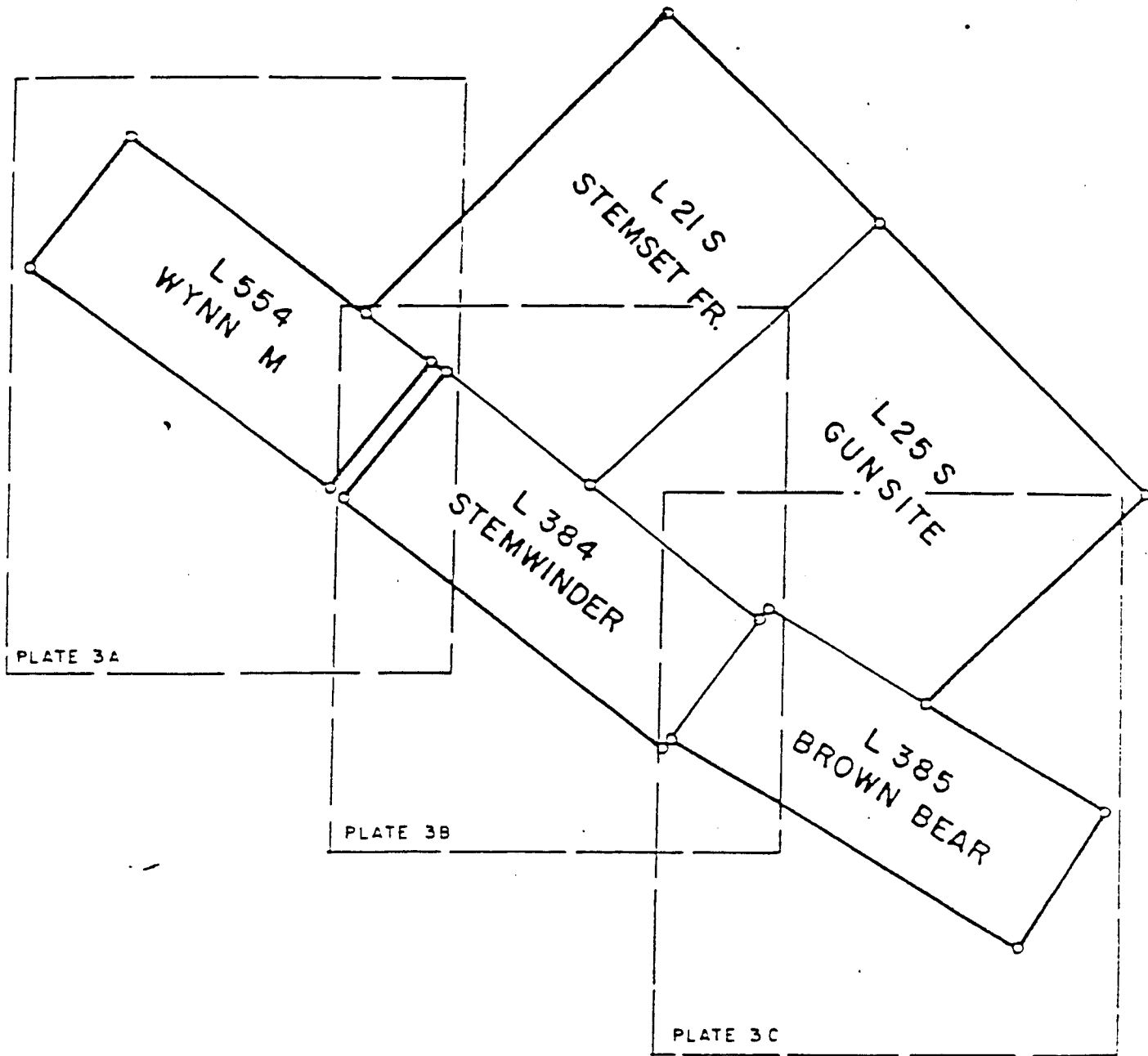


HIGHLAND VALLEY RESOURCES LTD

STEMWINDER PROPERTY
LOCATION MAP

NTS. B2E-4E OSOYOOS M.D., B.C.

DRAWN BY	DATE	SCALE	DRAWING NO.	PLATE NO.
D.M.F.	JUNE 1966	AS SHOWN	B5-001	1



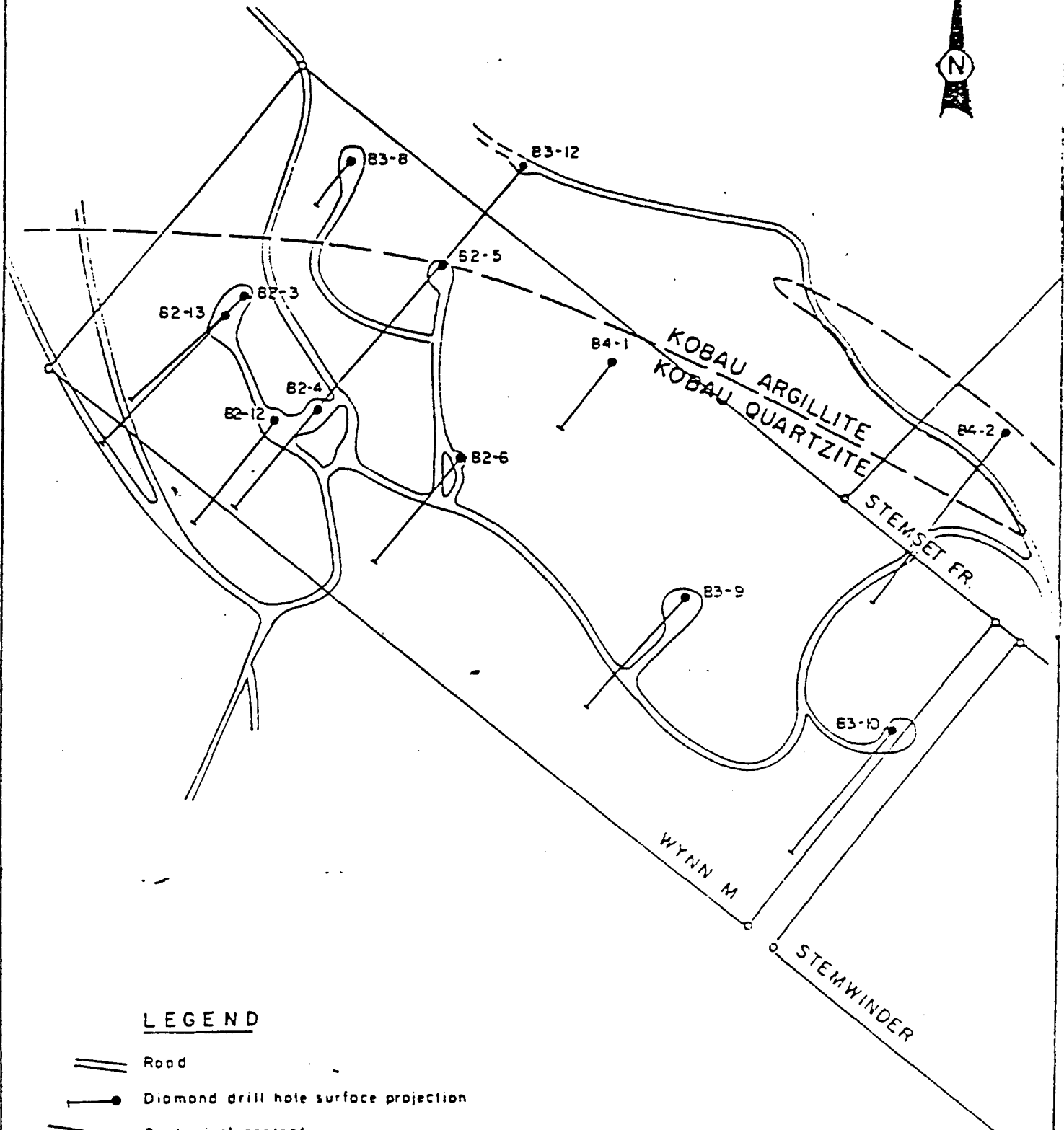
HIGHLAND VALLEY RESOURCES LTD.

STEMWINDER PROPERTY
PROPERTY MAP
(INDEX PLATES 3A-C)




N.T.S. B2E-4E

OSOYDOS M.D., B.C.

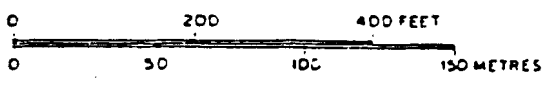
DRAWN BY	DATE	SCALE	DRAWING NO.	PLATE NO.
D.M.F.	JUNE 1966	1:7200	B6-002	2



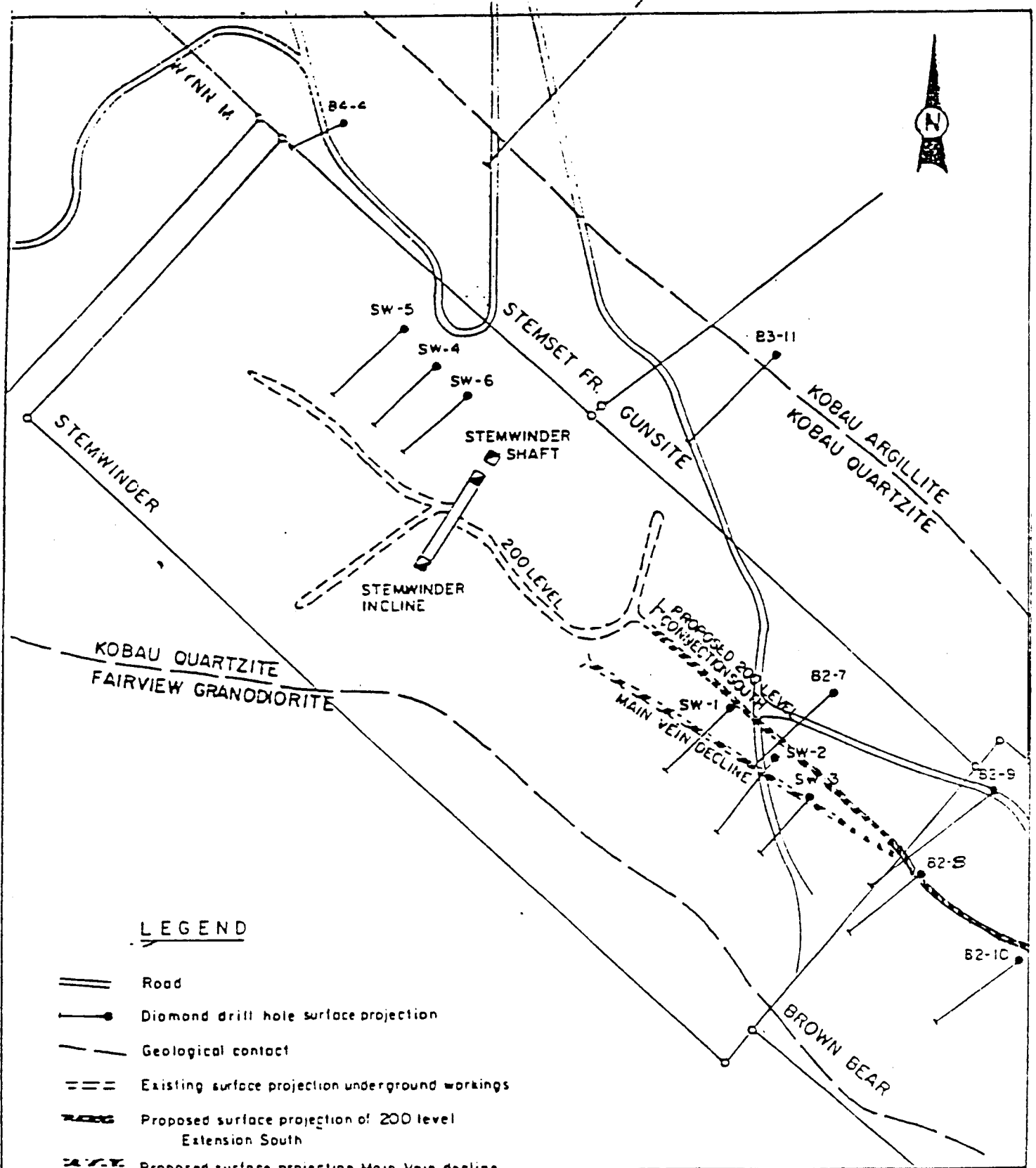
LEGEND

-  Road
-  Diamond drill hole surface projection
-  Geological contact







(After Cominco/Asarco 1984)



HIGHLAND VALLEY RESOURCES LTD.				
STEMWINDER PROPERTY				
PLAN - WYNN M				
N.T.S B2E-4E		OSYOOS M.D., B.C.		
DRAWN BY	DATE	SCALE	DRAWING NO.	PLATE NO.
D.M.F.	JUNE 1986	1:2540	B6-003	3A



LEGEND

-  Road
-  Diamond drill hole surface projection
-  Geological contact
-  Existing surface projection underground workings
-  Proposed surface projection of 200 level Extension South
-  Proposed surface projection Main Vein decline

(After Cominco / Asarco 1984)

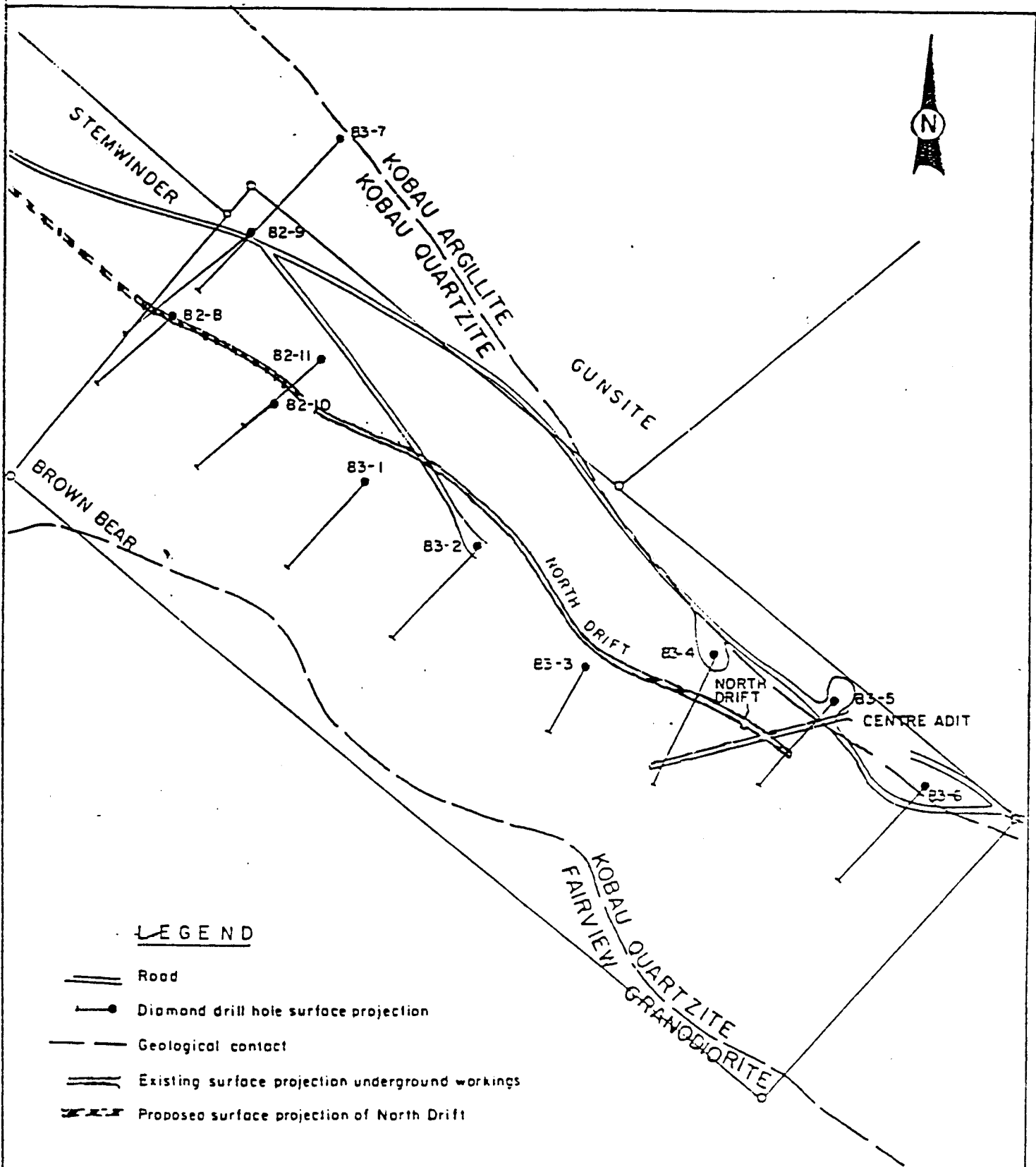


HIGHLAND VALLEY RESOURCES LTD

STEMWINDER PROPERTY
PLAN - STEMWINDER

N.T.S B2E-4E OSOYDOS M.D. B.C

DRAWN BY	DATE	SCALE	DRAWING NO	PLATE NO
D.M.F.	JUNE 1993	1:2640	B6-004	35



LEGEND

- Road
- Diamond drill hole surface projection
- Geological contact
- Existing surface projection underground workings
- Proposed surface projection of North Drift

(After Cominco / Asarco 1984)



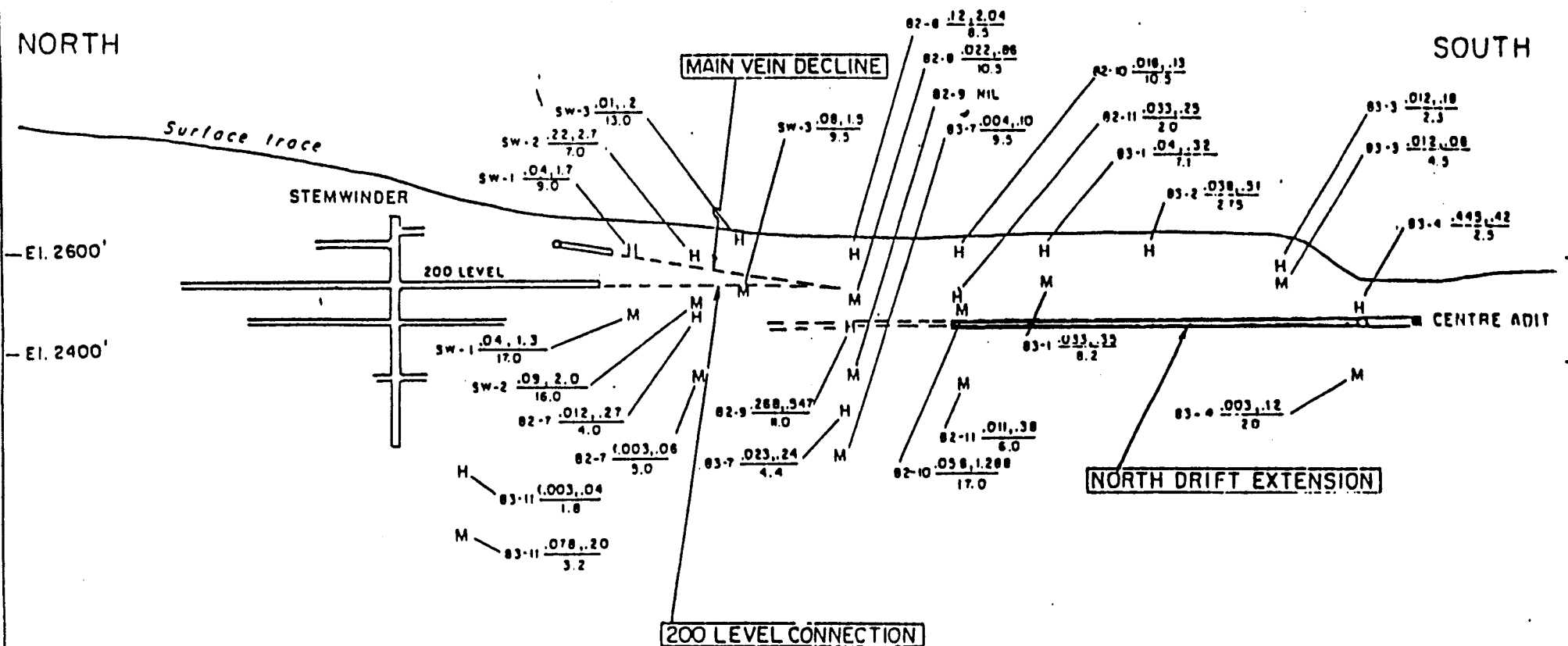
HIGHLAND VALLEY RESOURCES LTD.

STEMWINDER PROPERTY
 PLAN - BROWN BEAR

N.T.S B2E-4E		OSDYDOS M.D. B.C.		
DRAWN BY	DATE	SCALE	DRAWING NO	PLATE NO
D.M.F.	JUNE 1985	1:2540	B6-005	3C

CHONG

NORTH SOUTH



LEGEND

- Existing underground development
- Proposed " "
- H Intersection HW vein (North Vein)
- M " Main Vein

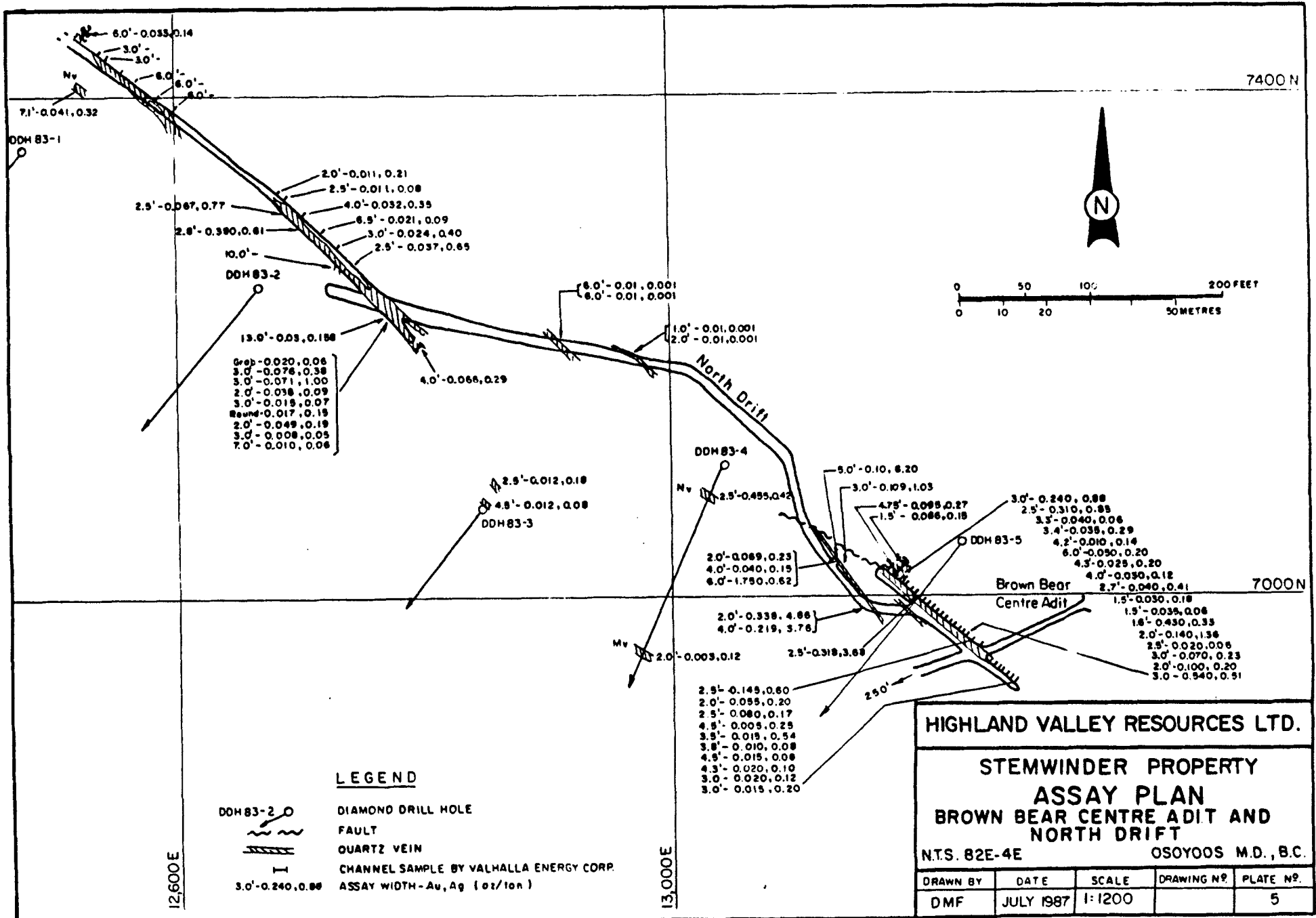
02-11 $\frac{.011, .38}{6.0}$ Drill hole no. $\frac{\text{Au, Ag (oz/ton)}}{\text{Width (feet)}}$

NOTE: Vein Intersection projected to vertical section of 320° azimuth, looking NE



(After Cominco/Atarco 1984)

HIGHLAND VALLEY RESOURCES LTD				
STEMWINDER PROPERTY				
LONGITUDINAL SECTION AT (17. 130° - CENTRE ADIT				
NTS 82E-4E			OSOYOOS M.D., B.C.	
DRAWN BY	DATE	SCALE	DRAWING NO	PLATE NO
D M F	JUL 1987	1:3600	HC 2710	4



LEGEND

	DIAMOND DRILL HOLE
	FAULT
	QUARTZ VEIN
	CHANNEL SAMPLE BY VALHALLA ENERGY CORP.
	ASSAY WIDTH - Au, Ag (oz/ton)

HIGHLAND VALLEY RESOURCES LTD.

**STEMWINDER PROPERTY
BROWN BEAR CENTRE ADIT AND
NORTH DRIFT**

N.T.S. 82E-4E OSOYOOS M.D., B.C.

DRAWN BY	DATE	SCALE	DRAWING NO.	PLATE NO.
DMF	JULY 1987	1:1200		5