

SUMMARY REPORT  
ON THE  
SURFACE GEOLOGY AND EXPLORATION POTENTIAL  
OF  
NORTHAIR MINES LTD.'S  
BRANDYWINE MINE  
( NTS 92J / 3E)  
AND  
AN EXPLORATION PROPOSAL  
FOR  
NORTHAIR MINES LTD.  
1450, 625 Howe St.  
Vancouver, B. C.

BY:

G. A. NOEL AND ASSOCIATES, INC.

B. TAYLOR, P. ENG.

VANCOUVER, B. C.

JULY 26, 1983

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↑  
Missing

- trying to locate  
- have substituted an  
earlier geol. map for  
now.

2/12/75

SUMMARY

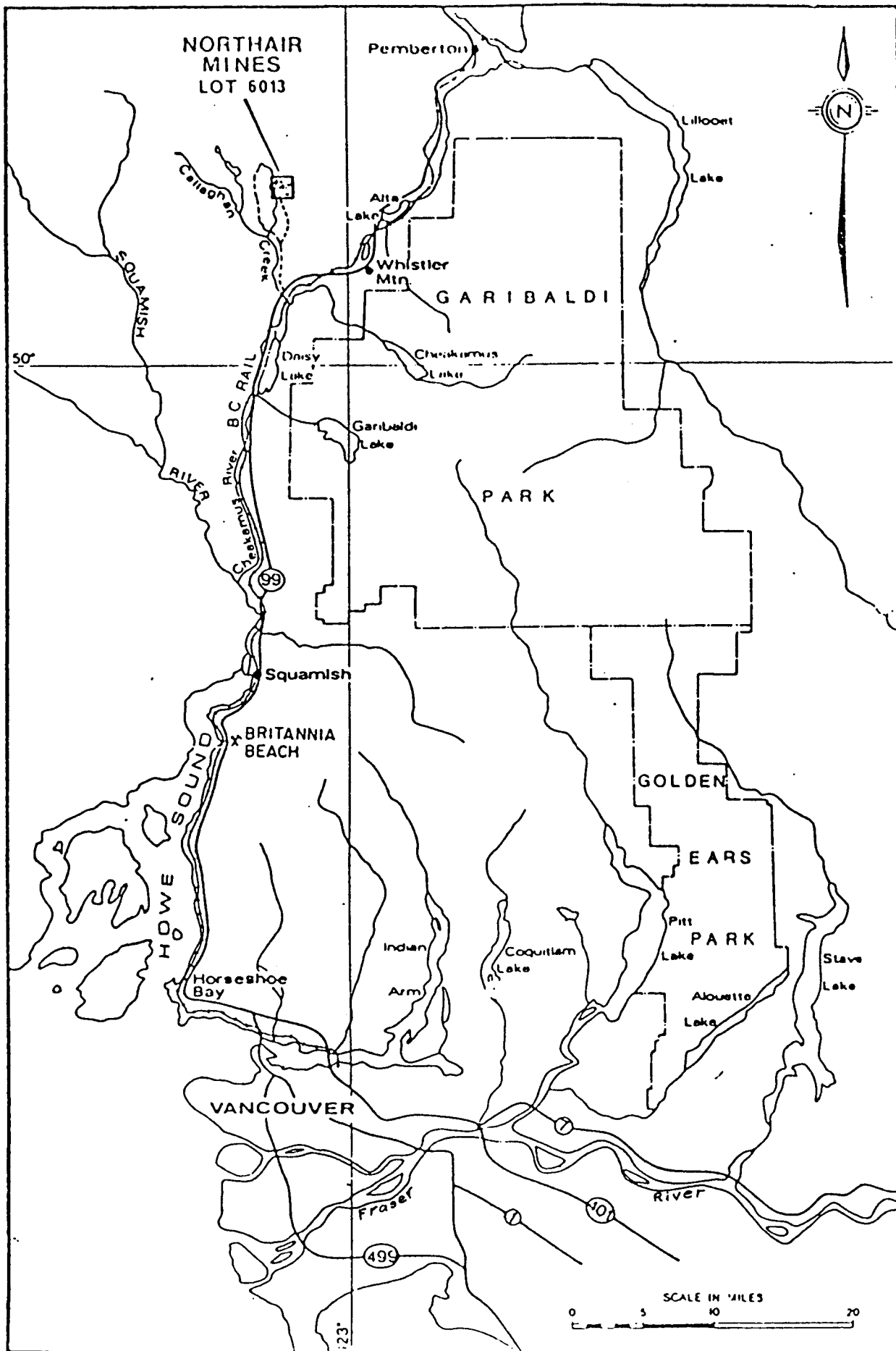
The writer was assigned the task of reviewing and evaluating existing data on the surface geological work that has accumulated to date. In the process of review, the records and maps were to be brought up to date, and filed. If necessary, some field work to check on added data was envisaged.

Because of the volume of data and its completeness, the reviewing has been a heavier chore than anticipated. The logs of surface drill holes are far from complete, and the plotting of them has been delayed in favor of underground holes and workings. The surface and underground work is interconnected to a large degree.

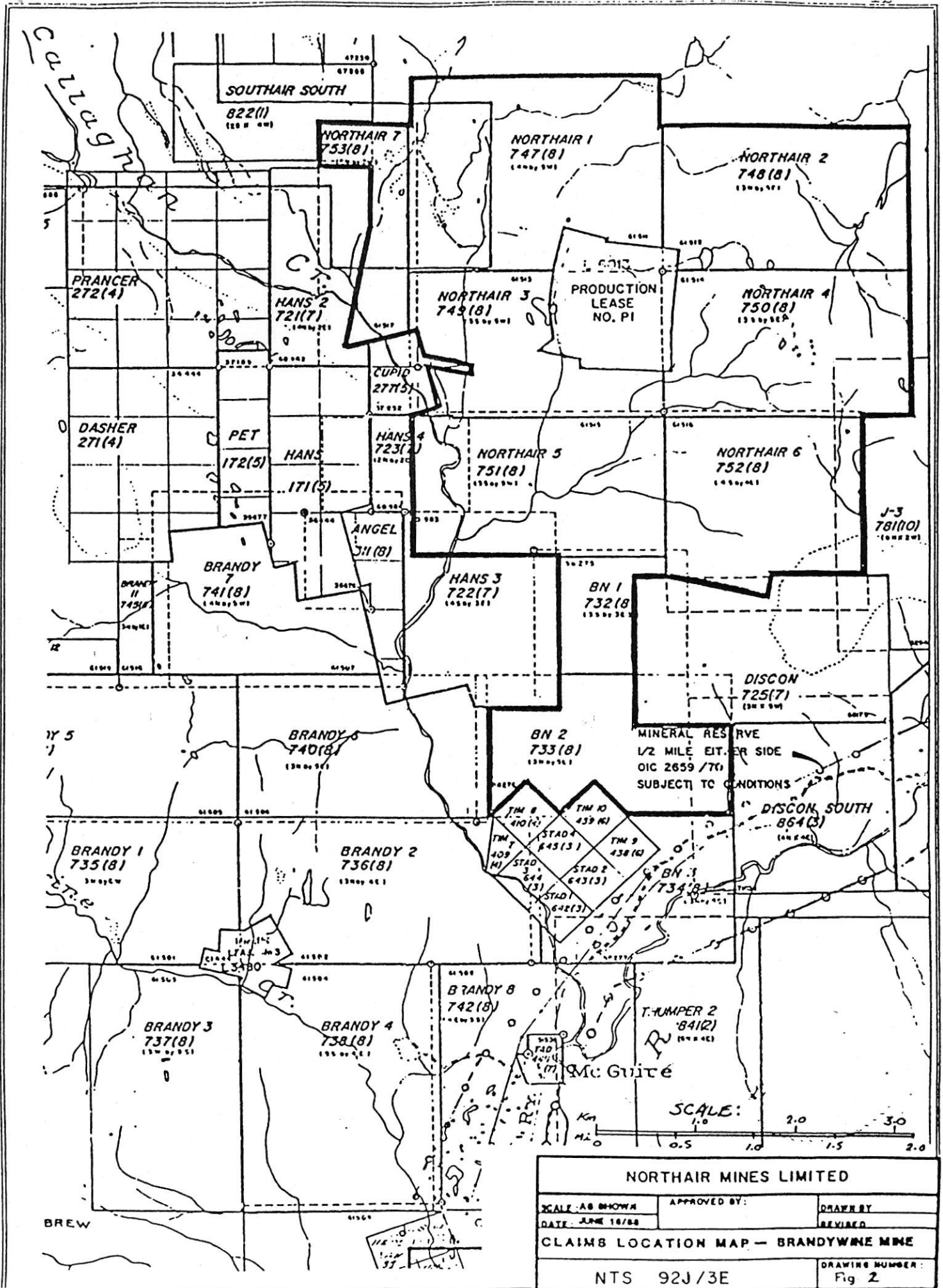
The geophysical and geochemical records were reviewed and correlation with geology and work done subsequently is more or less completed.

Four areas worthy of further drill exploration were identified. A proposal for down-the-hole geophysics has been made in a bid to target sulfide bearing conductors. The complete program is estimated to cost about \$160,000.00.

Figure 1



PROPERTY LOCATION



## INTRODUCTION:

In early June, 1983, the writer was engaged for an exploration project on the Northair property. The basic parameters of the project were outlined as follows.

### Northair Mine - Surface

1. Review all existing field data, reports, exploration programs, surface plans etc. and prepare a comprehensive report summarizing above work, and outline in priority the remaining surface exploration targets for the Northair property.
2. Layout a surface exploration program including plans, layouts etc. required.

### Acknowledgements

This report and the companion report, Underground Geology, Brandywine Mine is a synthesis of information gained from the observations, writings of and discussions with a number of geologists and geophysicists who have worked on the Northair property. They have all had first hand experience and thus are better able to appreciate the nature of the deposit. The writer is indebted to them all, having been on the property on only one occasion.

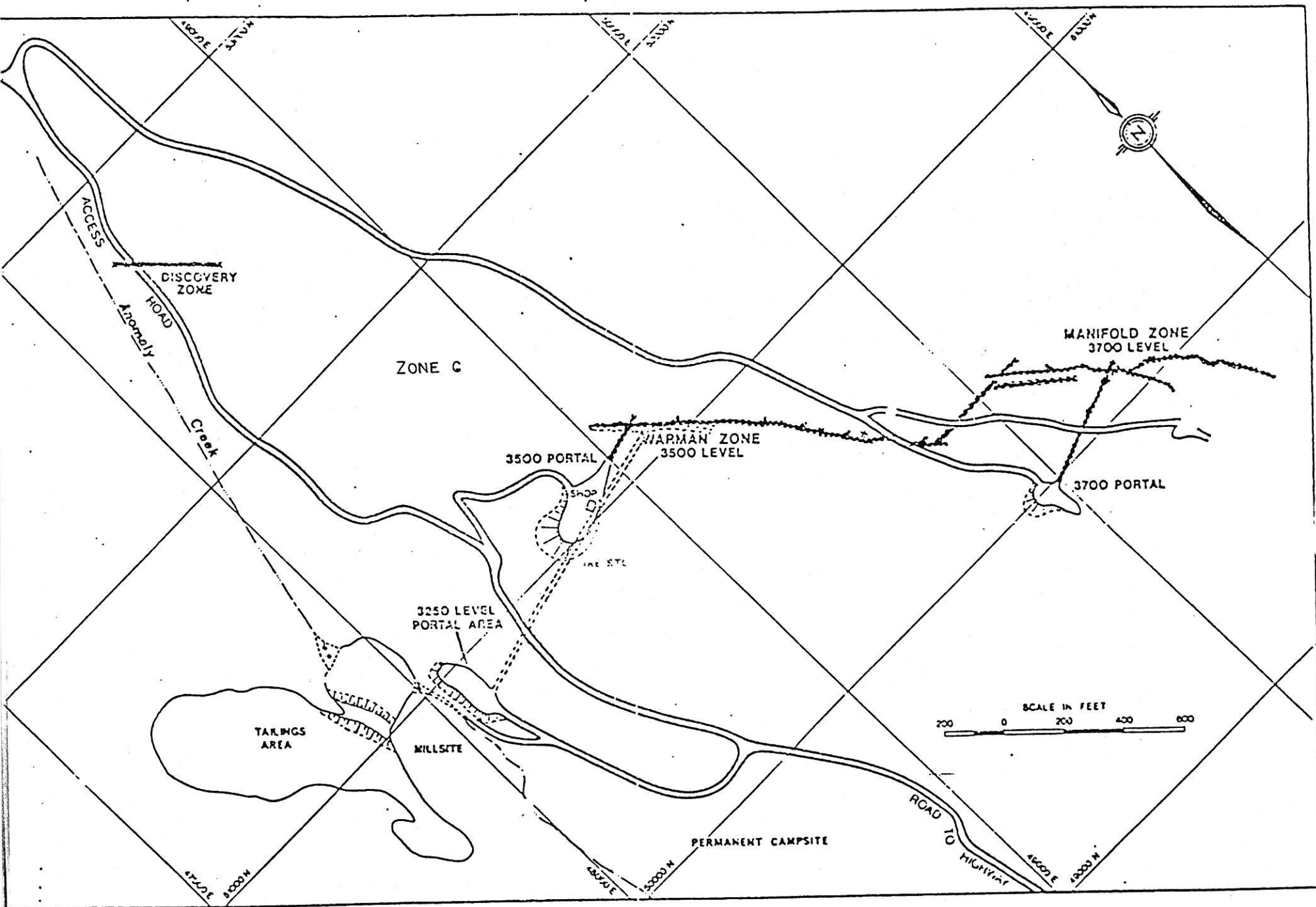
They are Plen Dickson, A.H. Manifold, Dave Brace, Roy Hogarth, Glen White, Roy Wares, Wilson Gewargis, Wayne Ash, Fred Hewett, Lou Straith, Al Boon.

### LOCATION AND ACCESS:

The Northair Brandywine property is located 70 miles by road north of Vancouver and 35 miles from Squamish, a seaport at the head of Howe Sound. About 5 miles of gravel road connect the property to the paved Highway 99 to Pemberton. It is centered at 50°07' north latitude and 123°07' west longitude (NTS map no. 92J/3E)

### TOPOGRAPHY AND VEGETATION:

The claims cover an area some 7.5 by 5 kilometres to the east of Callahagn Creek. They range in elevation from 670 metres to 1700 metres above mean sea level. Numerous north-south depressions and cliff faces mark the area. The terrain is moderately steep.



NEAR SURFACE DEVELOPMENT

Figure 5



TOPOGRAPHY AND VEGETATION CONT'D:

The climate is coastal. Variations in temperature are from -5°C in January to 17°C in July. Annual precipitation averages over 200 cms per year, much of it as snow. Vegetation varies with elevation. Economic stands of douglas fir and red cedar are logged at lower elevations while alpine vegetation exists at the top.

PROPERTY:

The property consists of the following wholly owned mineral claims.

<u>GROUP</u>	<u>CLAIM</u>	<u>UNITS</u>	<u>RECORD NO.</u>	<u>EXPIRY DATE</u>
--	Northair 1	20	747	Aug. 11, 1986
--	Northair 2	15	748	Aug. 11, 1986
--	Northair 3	15	749	Aug. 11, 1985
--	Northair 4	15	750	Aug. 11, 1987
--	Northair 5	15	751	Aug. 11, 1985
--	Northair 6	16	752	Aug. 11, 1986
--	Northair 7	10	753	Aug. 11, 1984
--	BN 1	12	732	Aug. 11, 1983
--	BN 2	9	733	Aug. 11, 1983
--	Production Lease #P-1		6013	Jan. 17, 1984

(Mineral Tax No. Notice)

HISTORY AND PRODUCTION:

The discovery of Brandywine gold-silver deposit was the result of systematic scientific prospecting by Dr. M. Warshawski and A. Manifold. First indications were obtained by the use of a field test for heavy metals in stream samples in 1969.

By 1972 two mineralized zones, the Discovery and Manifold, had been located. Northair acquired the property in late 1972. In 1976 a milling plant was commissioned. The plant was shut down in June 1982 during a period of relatively depressed gold prices. The mine workings extend from the 3900 elevation to the 2800 elevation with ore intersections below that.

To date, the combined ore mined and present total reserve stand at:

	<u>Tons</u>	<u>Au.oz/ton</u>	<u>Ag.oz/ton</u>	<u>%Pb</u>	<u>%Zn</u>
Mined	543,181	0.338	1.838	1.22	1.77
1983 Reserves	<u>51,968</u>	<u>0.259</u>	<u>0.72</u>	<u>.37</u>	<u>1.16</u>
Deposit Total	595,149	0.331	1.74	1.14	1.72

SURFACE GEOLOGY OF BRANDYWINE CLAIMS.

The surface of the Brandywine claims cover some 6290 acres of ground. Of this approximately 40% has been geologically mapped by Roy Wares, centering roughly on the Warman vein system. The following is a summation of his views on the area.

Regionally, the Callaghan Creek valley forms a crude anticlinal structure. The core of the structure is occupied by agglomeratic rocks, overlain and interfingering with a sequence of mainly volcanic derived sediments and pyroclastic debris. The eastern limb of the structure, in the Northair area is steeply dipping to the east, the western limb is exposed in the Brandy area. The rock units are not identical.

Several sets of faults complicate the structure by juxtaposing contrasting lithologic facies. There are several SE trending sets which are offset by the strongly developed regional set of NS faults which are developed on both sides of the valley.

There appears to be four recognizable lithofacies developed in the Northair area.

1. The lower unit is an agglomeritic unit with subordinate tuffaceous units and rarely, crystal tuffs.
2. Volcanic arkose of variable texture with an interbedded ferruginous arkose which displays cross bedding. These may grade laterally into argillites often cross-bedded siltstones and arenaceous units.
3. A pyroclastic unit at least 300 metres thick, which exhibits rapid lateral variations.
4. An upper pyroclastic assemblage characterized by giant breccias, welded textures, the presence of magnetite, and the transition into volcanic arenites.

The above units are cut by dykes of basalt and rhyodacite. The latter is often accompanied by a pervasive buff colored alteration (bleaching).

The most recent rocks are the valley basalts.

The ore zones strike north-west and dip steeply to the south-west. The Warman and Manifold zones consist of quartz-carbonate filled fissures mineralized with variable amounts of pyrite, lead, zinc, gold and silver. They cross cut at a low angle, the host formation. The Discovery zone, at some distance along strike is probably conformable with the host rocks and contains considerably more sulphide. It is possibly strata bound and of syngenetic origin.

### GEOPHYSICS:

Glen E. White Geophysical & Consulting Service has covered approximately 60% of the property with helicopter-borne VLF electromagnetic and magnetometric surveys, as well as ground-based readings.

The filtered electromagnetic data shows a number of conductors which appear to correlate with graphite bearing tuffaceous members as in the J zone and heavily sheared sedimentary rocks where the shears have formed conductive material. The conductors show a slight warp in their trend as they swing more easterly in the southern quarter of the survey area. None of the conductors correlated with the known ore zones.

The vertical magnetic data shows tight narrow magnetic highs to the north-east of the mine area. Again there is nothing in the magnetic contours that correlate with the ore zones. A strong anomaly in the western portion of the grid is due to the Garibaldi Valley basalt. A similar small high along the 3000 North baseline is attributed to a zone of magnetite mineralization in the volcanic derived sediments. The tightly patterned magnetic highs suggest complex contorting of the original volcanic pile. A strong magnetic zone encompasses area C. Pronounced magnetic and electromagnetic features are said to indicate that the Discovery zone is faulted northward.

Six areas of interest were outlined. All of these have been tested by trenching or diamond drilling.

### GEOCHEMISTRY:

The area covered by geochemical soil sampling is roughly the same as that covered by the geophysics. Figure 3 outlines the various areas. Not all the samples were analyzed for the four elements, silver, zinc, lead and copper.

The copper geochemical data does not show any strong anomalies, despite its presence in various parts of the ore zones. Lead and zinc give pronounced geochemical patterns over and below the Discovery and Warman zones, and little if any over the Manifold zone. Zinc also shows up strongly in areas designated by White as C,D, E and F. Moderate lead anomalies occur in C,D, and F.

Silver is the most definitive geochemical element, showing clearly the Manifold zone, and less clearly the Discovery zone.

The six areas of interest mentioned under geophysics are based largely on geochemical evidence and supported by the geophysical responses.

#### TRENCHING AND SAMPLING:

The areas showing geochemical anomalies have been checked out by ground inspection and in many cases trenching by bulldozer in 1979. It was found that nearly all trenches uncovered narrow shears mineralized at times with pyrite. The conclusion was reached that the material above them was often organic and were selective collections of metallic ions derived from the shears. Sampling most often returned trace values for gold and silver. In only one case was a positive value obtained. This sample was within a hundred feet of the Manifold zone.

#### DRILLING:

Exploration drilling outside of the immediate mine area, since 1979 has totalled over 9500 feet in at least 21 holes. Records for the latest holes are spotty. Coordinates are missing and logs as well. Both must have existed because the holes are plotted on the surface geological map (1"=400'). Hole surveys may be recovered from mine survey notes; hole logs may be misfiled or otherwise misplaced.

No areas of promising mineralization have yet been intersected. At least two areas should have additional holes.

#### CONCLUSIONS AND RECOMMENDATIONS:

In general, with the benefit of hindsight, the information coverage is good, with some records better than others.

1. Many of the drill logs are not well done. A number of holes have had only cursory examination. Drill hole numbers are confusing. Assays are missing. Coordinates are missing. Date of drilling seldom recorded. The core itself should be protected from the weather to prevent deterioration of boxes and the spillage of core.

2. Surface geological mapping (as recorded on the 1":400' scale map) covers the most important part of the property. However, reconnaissance mapping should be done to extend coverage to the property limits.

3. Geochemical coverage of an even greater area than for geology appears to be adequate. Because of the difference in dates of soil sampling, depth of overburden, the different densities of soil sample sites, and crews involved, the reliability of various surveys is questionable. Contamination of and from mine and mill yards and even along roads is inevitable.

4. Geophysical coverage of the same area as for geochemistry has been confined to magnetometer and VLF EM survey. Neither have added much to targeting. Their greatest asset, especially the magnetic survey, is in interpreting geology. The valley basalt was shown up very well by the survey, even to the extent of questioning some geological observations.

CONCLUSIONS AND RECOMMENDATIONS CONT'D:

5. Trenching in 1979 pointed out that certain areas were not amenable to bulldozer trenching, because of cliffy terrain or deep and soupy overburden. It was also noted that back hoes are able to do a better job of trenching in deep overburden. It has the advantage also of being less destructive of the natural environment. No new zones of mineral have been uncovered, and numerous geochemical anomalies have been explained.

6. Diamond drilling is the main stay of target testing. The bulk of the surface drilling has been done to detail the ore zone prior to mining.

The following holes are proposed:

- a) The silver geochemical anomaly east of 2800 level adit - 2 holes.
- b) On dip and strike extension to the south-east of the Manifold zone, two holes.
- c) Extension of Discovery zone to the north-west. This would be in the nature of a cross-section. Two or three holes would be required.
- d) Two holes to section ground in the vicinity of the quartz vein in the 2800 level adit.

7. It is also suggested that holes be kept open so that down the hole geophysics may be performed. Electromagnetic, induced polarization and resistivity surveys to detect sulphides, are available as well as some of the induced radioactivity sources which might have application. Other holes such as those in the vicinity of 50,000 N, 44,000 E and 52,000 N, 51,500 E might be still available for survey.

COST AND TIME ESTIMATE:

1. <u>Drafting</u> to record holes and compile and file information - Ten days	\$1,000.00
2. <u>Diamond drilling</u> a minimum of eight holes @ 600 feet all inclusive cost, including assaying Six weeks or less	130,000.00
3. <u>Geologist</u> Core logging, hole spotting and surveying Reconnaissance geology - Two months	7,000.00
4. <u>Caterpillar</u> - to prepare drill sites and access roads, 40 hours	2,000.00
5. <u>Geophysical</u> - down-the-hole surveys and report Eight days	5,000.00
	<hr/>
	145,000.00
Contingency @ 10%	<u>15,000.00</u>
TOTAL	<u>\$160,000.00</u>

Respectfully Submitted,

*B. Taylor*  
B. Taylor, P. Eng.

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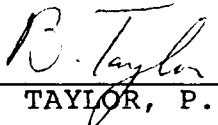
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CERTIFICATE

I, BERT TAYLOR DO HEREBY CERTIFY THAT:

1. I am a practicing geological engineer, with G. A. Noel & Associates Inc., 721-602 West Hastings St., Vancouver, B. C.
2. I am a graduate of the University of Saskatchewan and have been granted the degree of Bachelor of Science in Geological Engineering.
3. I have been practicing my profession as a geological engineer for over 25 years with underground experience in Val D'or and Noranda, Quebec, as well as Newfoundland and British Columbia.
4. I am a member of the Association of Professional Engineers of British Columbia, Registration No. 7879.
5. I have no interest, nor expect to receive any interest, direct or indirect, in the properties or securities of Northair Mines Ltd.
6. The information in this report is from a study of records in the Northair office and reports as listed in the bibliography. One visit was made to the property.

DATED THIS 26th DAY OF July, 1983.

  
\_\_\_\_\_  
B. TAYLOR, P. ENG.



APPENDIX

APPENDIX A - GEOLOGY-ORIENTED MAPS

Drawing #	Title	By	Date
ONE INCH = 1000 FEET			
-	Northair Location Map -soil sampling-lead, zinc, silver copper		
-	Northair Location Map -surface geology mapped	R.W.	
ONE INCH = 400 FEET			
-	Northair Mines Geology Property Map		
-	Surface Geology	R. W.	
ONE INCH = 200 FEET			
S-4027	Surface Contours	R.P.D.	Aug./78
ONE INCH = 100 FEET			
2A	Proposed Mill, Camp + Surface layout showing existing road- ways etc.	A.B.H.	Sept./74
-	Drill Data Inferred Geology Proposed Drill holes	R.W.	Apr./81
-	Section D.D.H. #5-30-79	R.W.	Mar./79
-	Composite D.D.H. Plan with location & general geology		Dec./79
UG-6003	Mine Plan and Section	H.M.	Aug./82

APPENDIX B

GEOCHEMICAL MAPS:

Fig. No. 1	Geochemical Copper	1" = 400'	G. White Consulting
Fig. No. 2	Geochemical Lead	1" = 400'	G. White Consulting
Fig. No. 3	Geochemical Silver	1" = 400'	" " "
Fig. No. 4	Geochemical Zinc	1" = 400'	" " "
Fig. No. 7	Geochemical Interpretation Map	1" = 400'	" " "

GEOPHYSICAL MAPS:

Fig. No. 5	Geophysical Electromagnetometer-Filtered	1" = 400'	G. White Consulting
Fig. No. 6	Geophysical Vertical Magnetic Intensity	1" = 400'	"

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## APPENDIX C

SURFACE DIAMOND DRILL HOLES  
NORTHAIR MINE - BRANDYWINE

D.D.H.#	DEPTH FT.	DIP ° '	AZIMUTH ° '	NORTH	EAST	ELEVATION	SECTION NO.	40 Scale		PLAN	400 Scale	COMMENTS
								LONGITUDINAL PROJECTION	VERTICAL X-SECTION		SURFACE PLAN	
S-1-80	626	-35°03'	40°29'	50,895	49,573	3,690.09	18W				x	S-1-80 to S-17-80 drilled in 1980
S-2-80	1139	-35°05'	48°33'	51,459.99	48,889.44	3,474.29	2650W				x	
S-3-80	801	-33 21	44 09	52,413.35	48,903.73	3,558.42					x	734-783 diss.pyrite samples taken, but no assay
S-4-80	926	-32 38	44 37	50,381.80	50,163.56	3,813.93			58'N of BL @ 10W		x	47.6-48.3(.6ft.) .14 Au/ 16.27 Ag, small amounts in walls 1000 W section (top of Manifold)
S-5-80	873	-35 55	46 28	15,006.62	49,985.50	3,842.77					x	
S-6-80	200	-28 41	69 29	51,946.76	51,504.98	4,387.94					x	
S-7-80	312	-51 35	73 50	51,944.30	51,498.90	4,389.20					x	Samples only trace
S-8-80	310	-33 32	59 15	51,869.94	51,509.83	4,392.33					x	Samples 48-58 trace Cu only
S-9-80	224	-36 57	50 51	52,045.89	51,484.79	4,375.33					x	
S-10-80	300	-30 01	55 49	52,016.20	51,414.33	4,361.90					x	
S-11-80	1300	-35 18	41 38	51,400.45	50,895.46	4,150.62					x	Sample of pyrite zone 538-549 not taken, no results for samples 60449-450.
S-12-80	998	-32 49	43 15	52,009.32	49,819.07	3,782.51					x	
S-13-80	230	-36	76°56'26"	53,120.20	48,811.68	3,501.53					x	
S-14-80	600	-37 48	26 16	56,174.05	48,530.43	3,390.21					x	No assay on lightly min. zone 208-219.5
S-15-80	664	-36 09	76 56	53,120.20	48,811.68	3,501.53					x	
S-16-80											x	
S-17-80											x	plotted 400 scale plan but no logs or coords.
S-3-81			205	50,300	44,600						x	Plotted on 400 scale
S-4-81			190	49,950	44,700						x	surf. plan. Coords.
S-5-81			225	50,400	43,400	2,500					x	measured.
S-6-81			100	50,400	43,400	2,500					x	

## APPENDIX C

SURFACE DIAMOND DRILL HOLES  
NORTHAIR MINE - BRANDYWINE

40 Scale

400 Scale

D.D.H. #	DEPTH FT.	DIP °	AZIMUTH °	NORTH	EAST	ELEVATION	SECTION NO.	LONGITUDINAL PROJECTION	VERTICAL X-SECTION	PLAN	SURFACE PLAN	COMMENTS
WM-1-72	105	flat	N49E	7' @ 242° from 4A-6		3859						"WM" conotation later called "S" (for surface) 72 means drilled in 72 S-1 is same as W -1-72
WM-2-72	124	-32°	N49E	" " " "		3843.5						
WM-3-72	129	flat	3° S of E	" " " "		3859		x	x			
WM-4-72	156	-34°	S 3° E	" " " "		3856		x	x			
WM-5-72	182	-34°	N 7° E	" " " "		3856						
WM-6-72	204	-55°	N49E	" " " "		3856						
WM-7-72	151	-33°	N61E	5' @ 241 from 27		3816						
WM-8-72	149	-65°	N61E	8' @ 241 from 27		3816						
WM-9-72	136	-15°	N87E	10' @ 156° from 27-3		3824		x	x			
WM-10-72	157	-43°	N87E	10' @ 156 from 27-3		3824		x	x			
WM-11-72	126	-45°	N34E	10' @ 156 from 27-3		3824		x	x			
WM-12-72	107	-8°	N49E	20' SE of 1A-11		3859	400W	x	x	x		
WM-13-72	157	-40°	N49E	" " " "		3857	400W	x	x	x		
WM-14-72	145	-14	N53E	95' @ 105 from 26		3852	300W	x	x			
WM-15-72	167	-38	N53E	" " " "		3852	300W	x	x			
WM-16-72	187	-40°	N50E	84' @ 140° from 25-1		3855	175W	x	x	x		
WM-17-72	152	-21°	N52E	30' @ 213° from 25-1		3847	250W	x	x	x		
WM-18-72	172	-43°	N52E	" " " "		3847	250W	x	x	x		
WM-19-72	217	-55°	N52E	" " " "		3847	250W	x	x	x		
WM-20-72	205	-45°	N54E	105' @ 305 from 27-3		3812		x	x			
WM-21-72	244	-32°	N54E	105' @ 306 from 27		3795						
WM-22-72	172	-39°	N54E	82' @ 327 from 6A-7		3800						
WM-23-72	295	-34°	N53E	112' @ 321 from 17		3896	125E			x		

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SURFACE DIAMOND DRILL HOLES  
NORTHAIR MINE - BRANDYWINE

40 Scale

400 Scale

D.D.H. #	DEPTH FT.	DIP ° '	AZIMUTH ° '	NORTH	EAST	ELEVATION	SECTION NO.	LONGITUDINAL PROJECTION	VERTICAL X-SECTION	PLAN	SURFACE PLAN	COMMENTS
WM-24-72	206	-35°	N53E	15 N.W. of 19		3858	125E					
WM-25-72	247	-41	N53E	81' @ 131° from 26		3834	300W	x	x			
WM-26-72	237	-32	N53E	45' @ 240 from 6A-7		3790		x	x			
WM-27-72	240	-46	N52E	45' @ 12° from 21-5		3834	175W	x	x	x		
WM-28-72	316	-51°	N52E	95' @ N62E from 21-1		3824	200W	x	x	x		
S-29-73	469	-30°	N55-26E	50,406	49,871.69	13713.5				x	x	S-29-73 to S-83-73 later named S-29 to S-82
S-30-73	525	-37°30'	N61-0E	49,970.91	49,963.85	13657.73		x			ok	
S-31-73	508	-43°	N53-58E	49,970.30	49,961.73	13658.13		x		x	ok	Plotting not completely checked
S-32-73	253	-42°	N54-59E	49,621.50	50,649	13778.41	100W	x	x	x	ok	
S-33-73	327	-59°	N54-09E	49,620.12	50,646	13779.83	100W	x	x	x	ok	
S-34-73	205	-20°	N52-43E	49,622.77	50,649.59	13780.76	100W				ok	
S-35-73	177	-5°	N58E	52,573	48,336	13332					ok	
S-36-73	247	-18°29'	N58-03E	49,618.6	50,740.8	13805.2	50W		x	x	ok	
S-37-73	194	-30°	N58E	52,573	48,336	13329		x		x	ok	
S-38-73	331	-36°	N58-03E	49,618	50,0	13804	50W		x		ok	
S-39-73	227	-40°	N58E	52,573	48,336	13328		x			ok	
S-40-73	253	-30°	N54-34E	49,494	50,695	13781	000		x		ok	
S-41-73	236	-30°	S89E	52,565	48,333	13330		x		x	ok	
S-42-73	379	-23°30'	N52-21E	49,211	50,886	13775	350E				ok	
S-43-73	18	0	S89E	52,565	48,333	13333		x			ok	
S-44-73	267	-50°	N91E	52,565	48,333	13327		x			ok	

## APPENDIX C

SURFACE DIAMOND DRILL HOLES  
NORTHAIR MINE - BRANDYWINE

D.D.H.#	DEPTH FT.	DIP °	AZIMUTH °	NORTH	EAST	ELEVATION	SECTION NO.	40 Scale			400 Scale	COMMENTS
								LONGITUDINAL PROJECTION	VERTICAL X-SECTION	PLAN	SURFACE PLAN	
S-45-73	282	0	N70E	52,442	48,324	13332		x			ok	
S-46-73	316	-20	N70E	52,412	48,324	13330		x			ok	
S-47-73	363	-45	N70E	52,412	48,324	13327		x			ok	
S-48-73	384	-3°	N88E	52,412	48,324	13332		x			ok	
S-49-73	212	-18°	N52-24E	49,317	51,012	13848	350E			x	x	
S-50-73	321	-66°	N70E	52,412	48,324	13325		x			ok	
S-51-73	308	-55°	N40E	52,412	48,324	13326		x			ok	
S-52-73	149	-20°	N45E	52,632	48,342	13327		x			ok	
S-53-73	151	-45	N45E	52,627	48,337	13325		x			ok	
S-54-73	185	-67	N45E	52,625	48,335	13322					ok	
S-55-73	140	-12	N50E	52,752	48,309	13294		x			ok	
S-56-73	104	-20	N50E	52,752	48,309	13292		x			ok	
S-57-73	100	-20	N50E	52,752	48,304	13290		x			ok	
S-58-73	410	-45	N43-21E	52,843	48,191	132.2		x			ok	
S-59-73	551	-55	N69E	49,973	49,962	13659		x			ok	
S-60-73	707	-69	N69E	49,972	49,960	13659					x	
S-61-73	286	-50	N90E	53,223	48,218	13325					x	
S-62-73	900	-60	N46-35E	49,371	50,250	13649	200W	x	x	x	x	
S-63-73	831	-40	N49-51E	49,514	49,935	13592		x	x		x	
S-64-73	785	-45	N46-35E	49,371	50,250	13649	200W	x	x	x	x	
S-65-73	383	-15	N45E	51,091	49,038	13489					ok	
S-66-73	101	-50	S57W	50,414	50,061.87	13783					ok	
S-67-73	100	-40	N58E	50,347	50,057	13764					ok	



## APPENDIX C

SURFACE DIAMOND DRILL HOLES  
NORTHAIR MINE - BRANDYWINE

D.D.H.#	DEPTH FT.	DIP ° '	AZIMUTH ° '	NORTH	EAST	ELEVATION	SECTION NO.	40 Scale		400 Scale	COMMENTS	
								LONGITUDINAL PROJECTION	VERTICAL X-SECTION	PLAN		SURFACE PLAN
S-68-73	214'	-53 <sup>0</sup>	N45E	51,091	49,038	13,489					ok	
S-69-73	325	-70	N45E	51,091	49,038	13,489					ok	
S-70-73	245	-30	N43E	51,448	48,795	13,435					ok	
S-71-73	301	-52	N43E	51,448	48,795	13,435					ok	
S-72-73	343	-17	N45E	51,857	48,635	13,432					ok	
S-73-73	308	-60	N45E	51,857	48,635	13,432		x			ok	
S-74-73	406	-4	N45E	50,727	49,015	13,503					ok	
S-75-73	340	-15	N45E	50,891.57	49,016.91	13,486.21					ok	
S-76-73	288	-15	N45E	50,195	49,632	13,627					ok	
S-77-73	400	-13	N41E	50,377	49,338	13,602					ok	
S-78-73	298	-50	N42E	50,360	49,615	13,656					ok	
S-79-73	196	-25	N42E	50,360	49,615	13,656					ok	
S-80-73	275	-46 <sup>0</sup> 30'	N47E	50,707	49,284	13,615					ok	
S-81-73	251	-26	N47E	50,707	49,284	13,615					ok	
S-82-73	248	-55	N45E	50,552	49,454	13,645					ok	
S-83-74	462	-45	N45E	50,377	49,338	13,602					ok	
S-84-74	514	-55	N45E	50,377	49,338	13,602					ok	
S-85-74	583	-65	N45E	50,568.77	49,269.63	13,595.34					ok	
S-86-74	509	-60	N45E	50,269.74	49,447.66	13,611.26					ok	
S-87-74	522	-70	N30E	50,187.69	49,620.76	13,624.06					ok	
S-88-74	618	-55	N45E	50,584.51	49,057.95	13,504					ok	
S-89-74	468	-52	N45E	50,799	48,990	13,486					ok	
S-90-74	444	-55	N45E	51,480.47	48,630.64	13,403.50		x			ok	

S-83 to S-99 were  
drilled in 1974

APPENDIX C  
SURFACE DIAMOND DRILL HOLES  
NORTHAIR MINE - BRANDYWINE

D.D.H.#	DEPTH FT.	DIP ° '	AZIMUTH ° '	NORTH	EAST	ELEVATION	SECTION NO.	LONGITUDINAL PROJECTION	40 Scale		400 Scale		COMMENTS	
									VERTICAL X-SECTION	PLAN	SURFACE PLAN			
S-91-74	268	-20°	N45E	50,486.26	48,635.90	13,404.05						ok		
S-92-74	318.5	-50	N45E	51,094.0	48,860	13,437						ok		
S-93-74	275	-30	N45E	51,099.94	48,867.02	13,437.18						ok		
S-94-74	410	-35	N45E	50,772.76	49,002.62	13,487.71						ok		
S-95-74	376	-70	N45E	50,798.85	49,250.79	13,605.69						ok		
S-96-74	196	-60	N45E	50,663.60	49,354.17	13,621.63						ok		
S-97-74	357	-70	N45E	50,663.60	49,354.17	13,621.63						ok		
S-98-74	351	-70	N45E	50,233	49,800	13,658						ok		
S-99-74	651	-70	N45E	50,362.41	49,329.97	13,594.17						ok		
S-100-75	573	-10	N45E	48,713.2	50,631.9	3,693.8						x	S-100 to S-102 drilled in 1975	
S-101-75	518	-60	N60E	50,143.2	49,897.7	13,653.7						x		
S-102-75	480	-40	N60E	50,144.8	49,900	13,653.7						x		

## APPENDIX C

SURFACE DIAMOND DRILL HOLES  
NORTHAIR MINE - BRANDYWINE

D.D.H.#	DEPTH FT.	DIP °	AZIMUTH °	NORTH	EAST	ELEVATION	SECTION NO.	40 Scale		PLAN	400 Scale		COMMENTS
								LONGITUDINAL PROJECTION	VERTICAL X-SECTION		SURFACE PLAN		
C-1-40-77	257	-40°	043°	51,466	48,912	3,471.9		x			ok	1) Holes beginning w/ C,I,G,H,Q,K, were drilled in 1977 on anomalies away from main mine area. "C" holes are shown on 40 scale long section because the vein inter- sected was the faulted section to the west of the Warman zone. No ore was found there	
C-2-20-77	225	+20°	043°			3,471.9		x			ok		
C-3-60-77	250	+60	043			3,471.9		x			ok		
C-4-20-77	225	-20	045	51,466	48,912	3,467		x			ok		
C-5-45-77	225	40	045	51,588	48,885	3,467.3		x			ok		
C-6-60-77	227	-60	045	51,488	48,885	3,467.3		x			ok		
C-7-60-77	155	20	045	51,543	48,872	3,468		x			ok		
C-8-20-77	155	20	045	51,594	48,857	3,467.7		x			ok		
I-9-23-77	248	-23	072	50,286.45	50,027.47	3,741					ok		
I-10-23-77	205	-23	00	50,294.67	50,016.17	3,741.18		x			ok		
G-11-23-77	280	-23	045	49,454.2	51,229.8	3,941.62					x		
G-12-23-77	200	23	045	49,577.28	51,119.9	3,943.87					x		
H-13-35-77	155	-35	045	49,968.48	50,370.49	3,778.64					ok		
H-14-60-77	252	60	045	49,964.99	50,381.09	3,778.15					ok		
H-15-20-77	155	20	094	49,967.73	50,366.58	3,778.26					ok		
I-18-30-77	127	-30	045	6'@N60E of	I-19-60	3,638.80							
I-19-60-77	154	60	045	50,263	49,800	3,638.80					ok		
Q-20-30-77	216.5	-30	061	52,318	48,491	3,409.33		x			ok		
Q-21-30-77	292	-30	061	52,228	48,539	3,421.9		x			ok		
Q-22-30-77	248	55	061	52,264	48,614	3,432.6		x			ok		
Q-23-30-77	294	30	061	52,166	48,654	3,442.8		x			ok		
Q-24-30-77	249	30	061	52,023	48,594	3,420.2		x			ok		
Q-25-30-77	202	30	061	51,539	48,646	3,435.6		x			ok		

APPENDIX C  
SURFACE DIAMOND DRILL HOLES  
NORTHAIR MINE - BRANDYWINE

D.D.H. #	DEPTH FT.	DIP °	AZIMUTH °	NORTH	EAST	ELEVATION	SECTION NO.	40 Scale		PLAN	400 Scale	COMMENTS
								LONGITUDINAL PROJECTION	VERTICAL X-SECTION		SURFACE PLAN	
Q-26-30-77	202	30 °	061 °	51,772	48,716	3,445		x			ok	
C-27-25-77	205	25	061	51,433	48,921.89	3,472.59					ok	
K-16-20-77	227	-20	045	49,265	50,541	3,707					ok	
I-17-23-77	125	23	045	50,313.97	49,765.65	3,651.45					ok	
C-28-60-77	202	60	061	51,433	48,921.88	3,472.59					ok	
G-29-25-77	393	25	045	49,879.7	50,825	3,887.10	200W		x	x	x	
G-30-30-77	335	30	045	49,937.6	50,696.5	3,896.33			x		ok	
I-31-30-77	203	30	045	50,202.2	49,861.4	3,648.6					ok	
I-32-77	597	70	045	50,872.45	48,871.18	3,492.44		x			ok	
33-77	786	80	045	50,527.75	49,188.72	3,558						Holes such as 33-77 means 33rd hole drilled in 1977 on Discovery, Warman or Manifold zones. Beginning w/ hole 37-77-60 the dip of the hole was also indicated (-60°)
34-77	786	80	045	50,294.70	49,358.0	3,600.3						
35-77	746	80	045	51,293.0	48,717.9	3,398.7						
36-77	867	80	059	52,580.90	48,218.4	3,299.45		x			ok	
37-77-60	567	60	045	50,675	48,981	3,496.8		x			ok	
38-77-60	470	60	045	51,293	48,717.9	3,398.7					ok	
34-77-60	594	60	045	50,294.7	49,358.0	3,600.3					ok	
40-77	685	75	040	50,409.3	49,287.5	3,590		x			ok	
41-77	675	80	045	49,812	50,102	3,717					x	
I-42-20-77	92	20	045	50,289	49,783	3,630		x				
I-43-20-77	120	20		50,335	49,750	3,639		x				
I-44-20-77	113	20	045	50,247	49,820	3,634		x				
I-45-20-77	120	20	045	50,225	49,838	3,638		x				
I-46-20-77		20	045	50,209	49,853	3,641		x				

## APPENDIX C

SURFACE DIAMOND DRILL HOLES  
NORTHAIR MINE - BRANDYWINE

D.D.H.#	DEPTH FT.	DIP ° '	AZIMUTH ° '	NORTH	EAST	ELEVATION	SECTION NO.	40 Scale			400 Scale	COMMENTS
								LONGITUDINAL PROJECTION	VERTICAL X-SECTION	PLAN	SURFACE PLAN	
47-77-25	722	75	045	50,276.85	49,331.71	3,599.7		x				
48-77-60	676	60	045	50,468.48	49,081.17	3,501.52		x				
49-77-80	799	80	045	50,213.10	49,182.72	3,527.80						
50-77-80	867	80	045	50,514.9	49,008.9	3,503						
51-77-80	785	80	045	50,715.2	48,916.40	3,485.0		x				

D.D.H.#	DEPTH FT.	DIP ° '	AZIMUTH ° '
S-1-79	180	-15°	56° 11'
S-2-79	220	-25°	56° 11' 79 all from
S-3-79	400	-48° 27'	77° 45'
S-4-79	600	-65	77 49
S-5-79	100	-45	242
S-6-79	200	-55	243
S-7-79	31	-35	250
S-8-79	400	-48° 54'	251°
S-9-79	375	-52	242
S-10-79	300	-37	242
S-11-79	150	-28 43	245
S-12-79	155	-24	222
S-13-79	100	-55	227 58
S-14-79	150	-60	227 58
S-15-79	300	-37 7	49 39
S-16-79	340	-48	49 39
S-17-79	330	-35 08	25 47
S-18-79	330	-48	25 47
S-19-79	375	-39	68 24
S-20-79	375	-48	68 24
S-21-79	650	-56 14	34 12
S-22-79	480	-40	45 33
S-23-79	600	-57	45 33
S-24-79	530	-65	43

LONGITUDINAL SECTION	40 Scale		400 Scale	COMMENTS
	VERTICAL X-SECTION	PLAN	SURFACE PLAN	
			x	
	x	x	x	
			x	
			x	
			ok	
			x	
			x	
			x	
			x	
			x	
			ok	
			ok	
			ok	
			x	
			x	
			x	
			ok	
			ok	
			ok	
			ok	

APPENDIX C

SURFACE DIAMOND DRILL HOLES  
NORTHAIR MINE - BRANDYWINE

D.D.H. #	DEPTH FT.	DIP ° '	AZIMUTH ° '	NORTH	EAST	ELEVATION	SECTION NO.	40 Scale		400 Scale		COMMENTS
								LONGITUDINAL PROJECTION	VERTICAL X-SECTION	PLAN	SURFACE PLAN	
S-48-79	650	-70°	45°35'	52,373.42	48,135.64	3,278.60		x			x	
S-49-79	596	-53°45'	48°30'	52,374.76	48,136.46	3,278.92		x			x	
S-50-79	455	-53 58	67 18	52,371.03	48,134.77	3,282.80		x			x	
S-51-79	747	-66 07	57 02	51,247.98	48,689.25	3,395.69		x			x	
S-52-79	735	-67 19	52 49	51,335.75	48,621.79	3,389.79		x			x	
S-53-79	676	-58 13	19 22	51,588.43	48,530.86	3,420.27		x			x	
S-54-79	750	-71 44	35 13	51,588.19	48,531.01	3,419.99		x			x	
S-55-79	654	-47 59	14 37	51,950.07	48,545.48	3,427.61		x			x	
S-56-79	726	-75	36	51,950.07	48,545.48	3,427.61		x			x	
S-57-79	300	-45	59	52,568.86	48,244.16	3,294.03		x			x	
S-58-79	455	-61 22	81 38	52,568.86	48,244.16	3,294.03		x			x	
S-59-79	589	-43 05	81 34	52,369.88	48,167.14	3,278.90		x			x	
S-60-79	546	-61 55	90 53	52,366.99	48,163.24	3,278.79		x			x	
S-61-79	601	-46 10	31 19	52,455.36	48,082.39	3,271.55		x			x	
S-62-79	600	44	5 19	52,455.05	48,079.46	3,272.25		x			x	