ASSESSMENT REPORT

ON

WHITEHORSE COPPER MINES PROPERTY

MAC 8 (76394)

PIT 2 (85095)

PIT 9 (85836)

ACE 1 (85428)

ACE 44 (85464)

DRILLING PROGRAMS

WHITEHORSE MINING DISTRICT

YUKON TERRITORY

MAY - DECEMBER 1985

G. BIDWELL

JANUARY 1986

091789

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1. INTRODUCTION

The Whitehorse copperbelt is a 30 km long zone of over 30 copper-bearing skarn occurrences located to the west of Whitehorse, Yukon Territory. In the period 1967 to Dec. 1982 Whitehorse Copper Mines milled 10,247,000 tonnes of ore from six open pits and an underground operation at the Little Chief deposit. The bulk of the tonnage (7.25 millon) came from the Little Chief deposit. The recovered grades were 1.20% Cu, 0.69 gm/tonne gold and 8.7 gm/tonne silver.

Since production stopped in 1982 exploration on the property has been limited to necessary expenditures required to keep the bulk of the claims in good standing.

2. LOCATION AND ACCESS

The Whitehorse copperbelt is located in the Whitehorse Mining District predominantly within the city limits of Whitehorse. The copper-gold occurrences are localized in skarnified carbonate along a Cretaceous intrusive contact. The linear trend of the occurrences parallels the Alaska Highway 3 km to the west of the road (see Fig. 1).

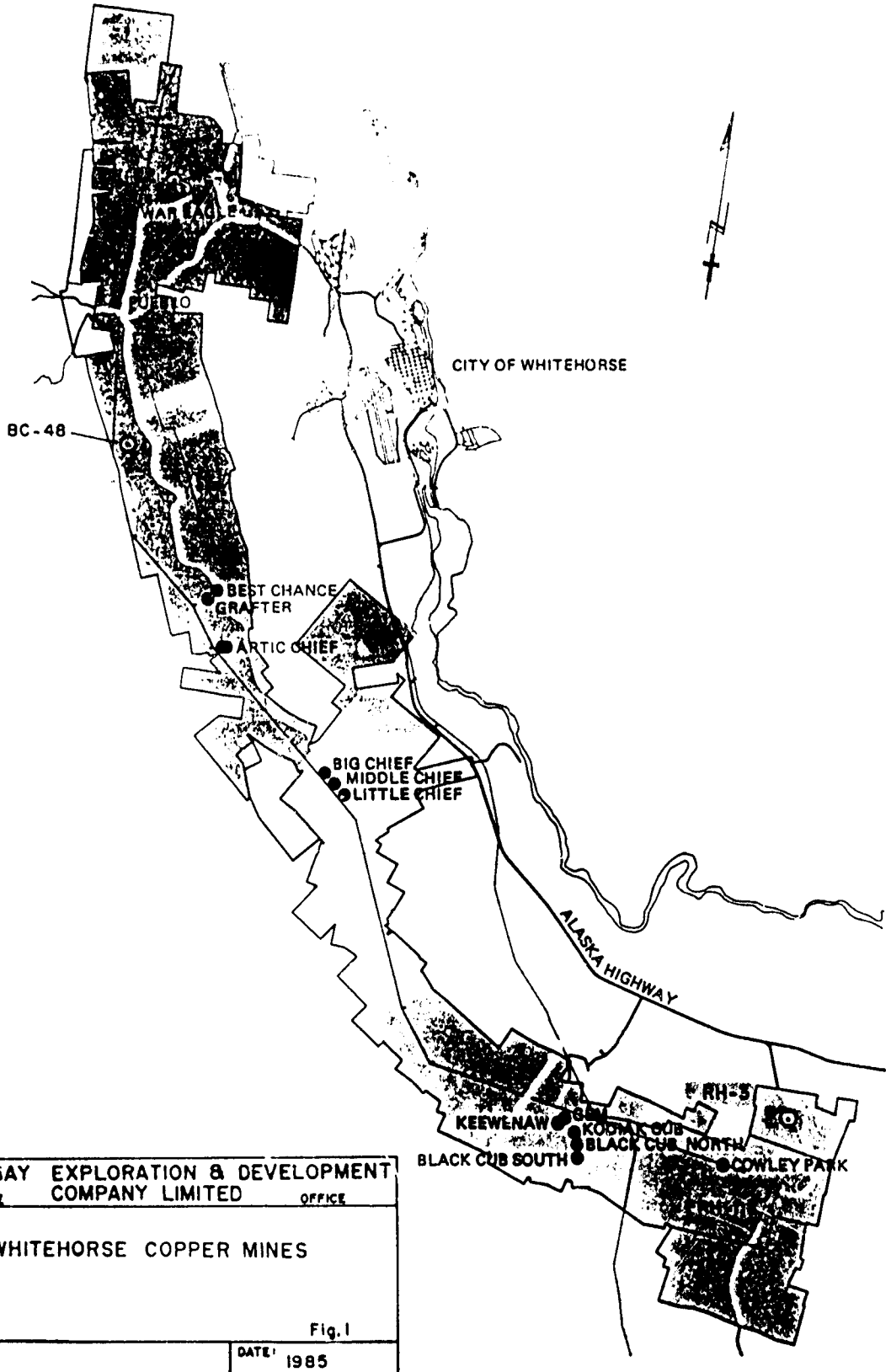
Access to the copperbelt is available at several points along the Alaska Highway. The main entry points are the Fish Lake road in the northern section, WCM plant site access road in the central portion and the Carcross Road in the southern section. A mine haulage road runs the length of the copperbelt.

3. PERSONNEL

Drill contractor - E. Caron Diamond Drilling Limited
Supervisor - G. Bidwell

4. CLAIM OWNERSHIP

The holdings of Whitehorse Copper Mines, a wholly owned subsidiary of Hudson Bay Mining and Smelting Co. Ltd. consist of 674 quartz claims, 27 crown grants, 9 Mineral leases and 5 surface leases in the Copperbelt area. The claims are located on claim maps 105 D/10, 11 and 14 centered at 60°37'N and 135°05'W.



HUDSON BAY EXPLORATION & DEVELOPMENT COMPANY LIMITED	
WHITEHORSE OFFICE	
WHITEHORSE COPPER MINES	
Fig. 1	
SCALE: 1 inch = 2 miles (approx.)	DATE: 1985
	DRAWN BY:

5. DIAMOND DRILLING

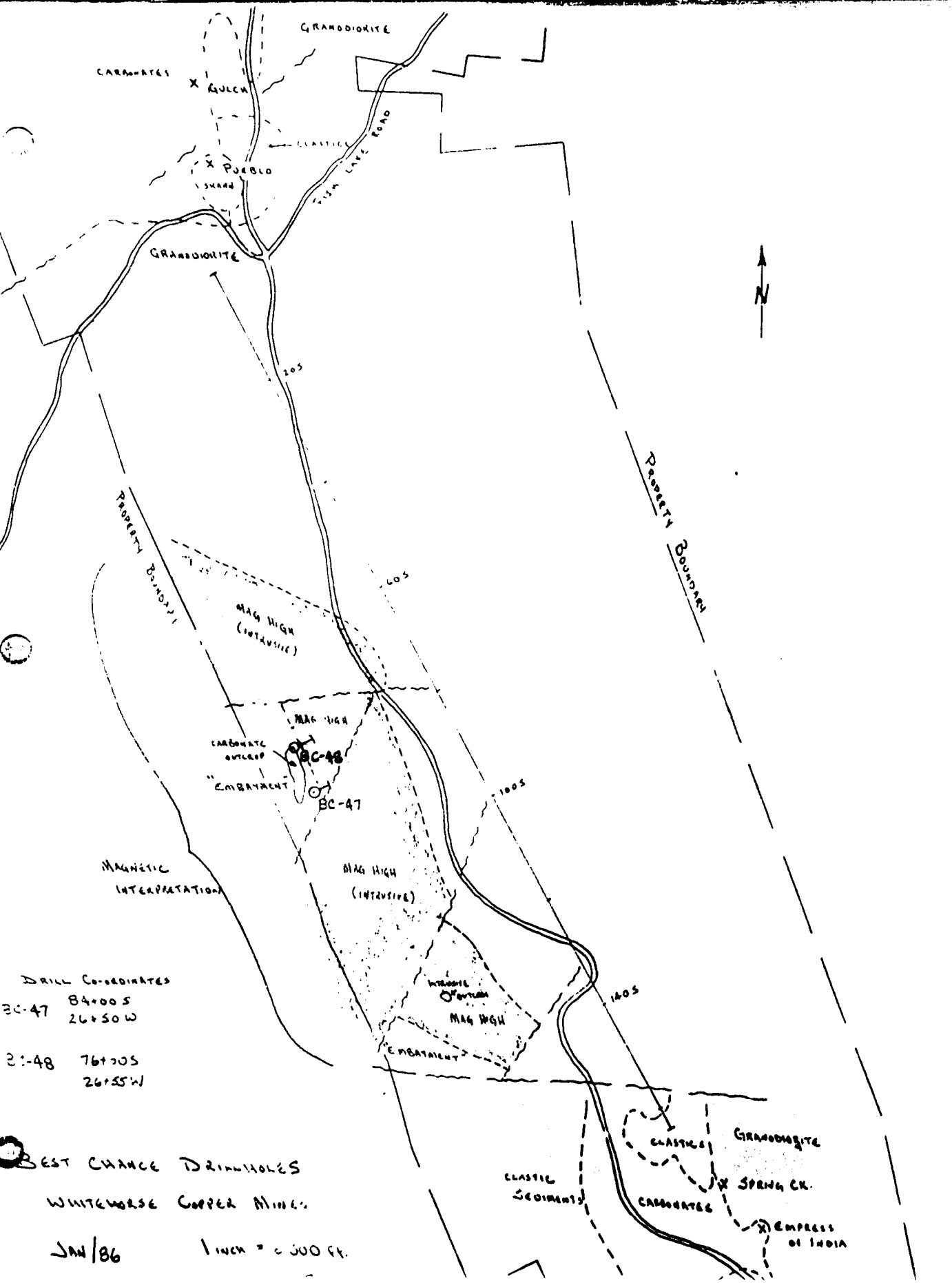
Two periods of diamond drilling were carried out in 1985. In May drilling was reactivated on a hole which had been shut down in December 1984, due to lack of water. The hole, BC-48, is located on the Best Chance grid (see figures 1 and 2). A magnetic survey carried out earlier in 1984 indicated the sediment/intrusive contact passed through the area. The drill hole began in limestone, intersected 38.0 feet of garnet diopside skarn at the contact and bottomed in the quartz diorite intrusive. A 2.5 foot intersection of specular hematite and quartz in the skarn assayed 0.42% Cu, trace Au and 0.3 oz/ton Ag.

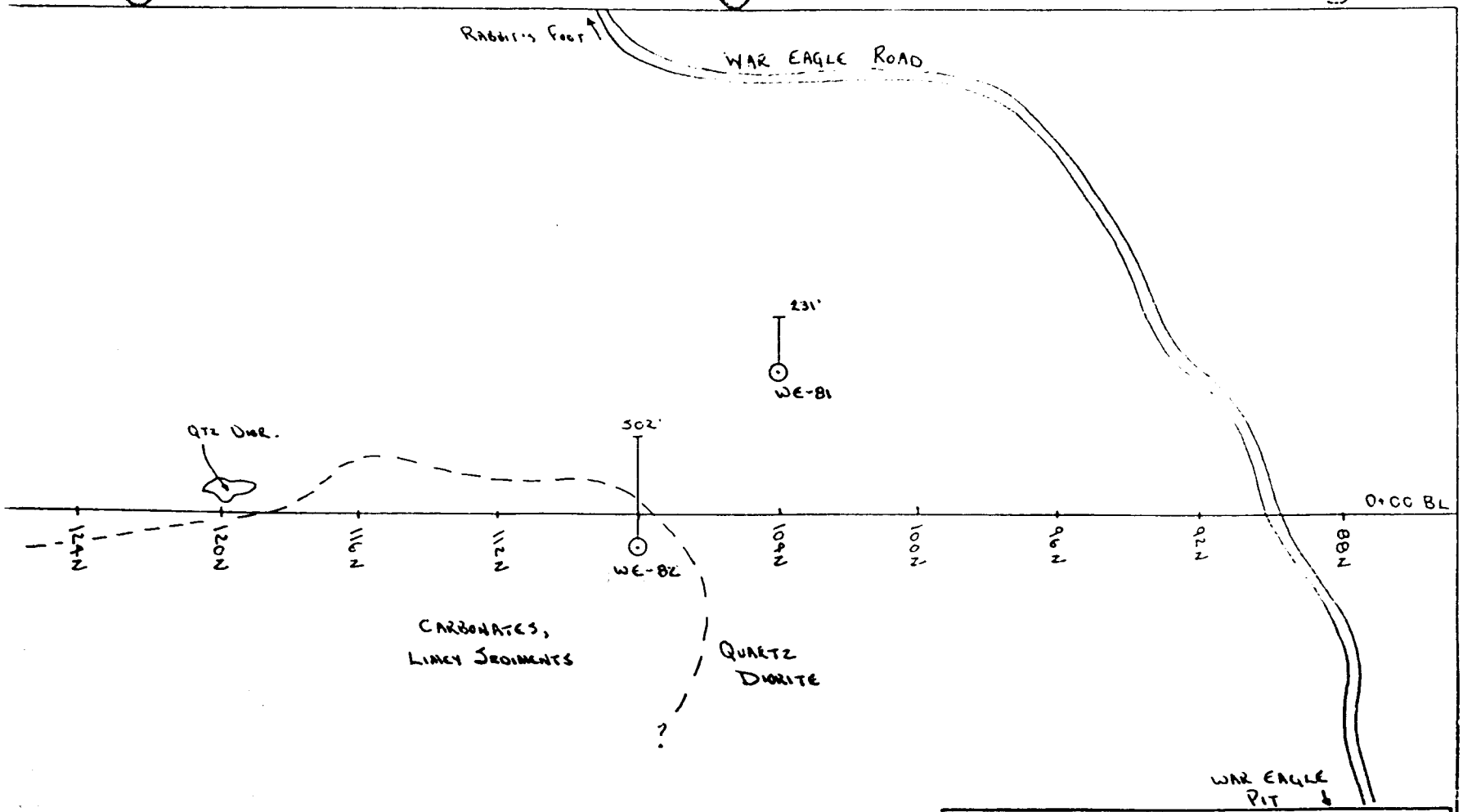
Two diamond drill holes totalling 733 feet were completed in November 1985, in the War Eagle area of the Copperbelt (see figures 1 and 3). The area of the drilling lies 3500 feet northeast of the War Eagle pit and 2000 feet west of the Rabbit's Foot showing.

Overburden is extensive in the area with a few subdued outcrops indicating the quartz diorite-sediment contact passes through the vicin ity with no clear definition. Early prospecting and trenching located copper-bearing skarn float sporadically mainly to the north of the present drill holes. Both IP and magnetic surveys were completed in the area by WCM in the early 70's.

Drill hole WE-81 was drilled at -50° to the east at 104N/4E on the War Eagle grid for 231 feet. Bedrock at 23.8 feet was quartz diorite and it remained in the intrusive throughout. The only sulphide was minor disseminated pyrite. Shearing from 83.0 to 148 feet was probably responsible for an EM anomaly in the area.

Drill hole WE-82 was drilled at -50° to the east at 108N/1W on the War Eagle grid. Bedrock was intersected at 42.0 feet. To 165.0 feet the hole is predominantly garnet diopside skarn and siliceous sediments with 15% quartz diorite and felsite dikes. From 165.0 to 502.0 (end of hole) quartz diorite dominates with 25% garnet diopside skarn and skarnified sediments. Only minor dissemianted pyrite was present.


GRANODIORITE
CARBONATES
X GULCH
CLASTICS
X PUEBLO
SHARD
FISH LAKE ROAD
GRANODIORITE
N
205
PROPERTY BOUNDARY
PROPERTY BOUNDARY
MAG HIGH (INTRUSIVE)
105
MAG HIGH
CARBONATE OUTCROP
BC-48
"EMBAYMENT"
BC-47
MAGNETIC INTERPRETATION
MAG HIGH (INTRUSIVE)
INTRUSIVE CONTACT
MAG HIGH
EMBAYMENT
100S
CLASTICS
GRANODIORITE
SPRING CK.
CLASTIC SEDIMENTS
CARBONATES
EMPRESS OF INDIA
DRILL CO-ORDINATES
BC-47 84+00S 26+50W
BC-48 76+00S 26+55W
BEST CHANCE DRILLHOLES
WHITEHORSE COPPER MINES
JAN/86
1 INCH = 600 FT.



HUDSON BAY EXPLORATION & DEVELOPMENT COMPANY LIMITED
WHITEHORSE OFFICE

WHITEHORSE COPPER MINES
WAR EAGLE AREA
FIG. 3

SCALE: 1" = 400 ft.

DATE: Jan 1986

DRAWN BY: JB

6. ROTARY DRILLING

Three rotary holes were drilled in the Cowley Park area of the copperbelt in December 1985, (Figures 1 and 4). The holes were drilled on two magnetic anomalies 3500 feet southwest and 5800 feet northeast of the Cowley Park zone in an area of extensive overburden cover. Co-ordinates of the three holes on the Cowley grid are as follows:

RH #1	6+00E	13+00S	-60° to East
RH #2	7+00E	13+00S	vertical
RH #3	12+00E	35+50N	vertical

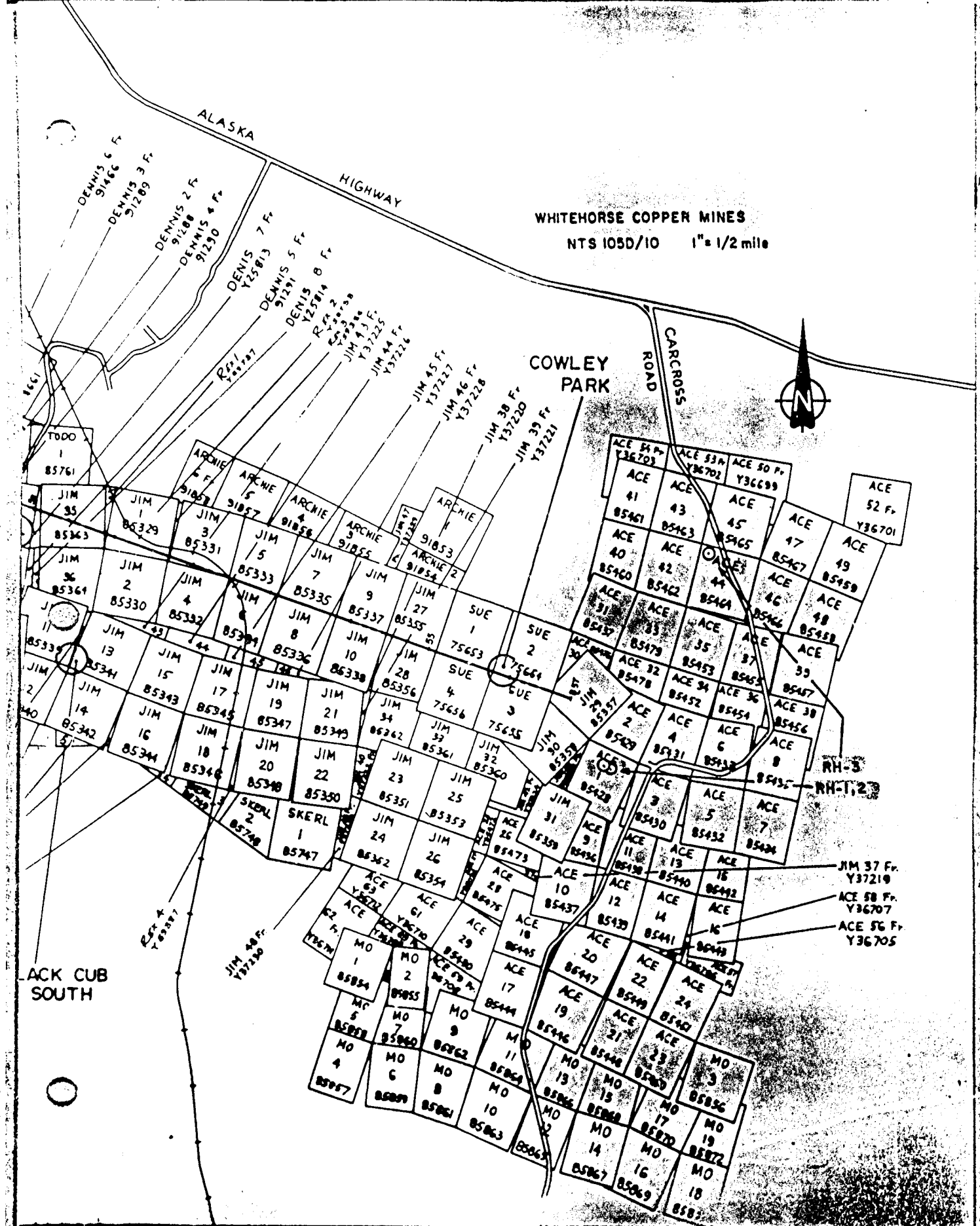
None of the three holes reached bedrock. All were abandoned at approximately 150 feet due to excessive cave and inability to keep the holes open because of water, sand and clay.

7. CONCLUSIONS

Drill hole BC-48 on the Best Chance grid located a skarnififed intrusive/ sediment contact, the first such intersection between the Pueblo and Empress of India occurrences, a distance of 6 kilometers. Further short hole drilling should be carried out to define and evaluate the contact.

No further work is recommended in the War Eagle and Cowley areas for the time being.

G. E. Bidwell


WHITEHORSE COPPER MINES
NTS 105D/10 1" = 1/2 mile
ALASKA HIGHWAY
CARCROSS ROAD
COWLEY PARK
N
DENNIS 6 Fr 91466
DENNIS 3 Fr 91289
DENNIS 2 Fr 91288
DENNIS 4 Fr 91290
DENIS 7 Fr Y25813
DENNIS 5 Fr 91291
DENIS 8 Fr Y25814
JIM 43 Fr Y37225
JIM 44 Fr Y37226
JIM 45 Fr Y37227
JIM 46 Fr Y37228
JIM 38 Fr Y37220
JIM 39 Fr Y37221
ACE 54 Fr Y36703
ACE 53 Fr Y36702
ACE 50 Fr Y36699
ACE 52 Fr Y36701
JIM 37 Fr Y37219
ACE 58 Fr Y36707
ACE 56 Fr Y36705
RH-5
RH-1,2,3
LACK CUB SOUTH

APPENDIX II

GERALD E. BIDWELL

ADDRESS: 62 Klondike Road,
Whitehorse, Yukon Territory.
Y1A 3M1

EDUCATION: B. A. (Geology)
University of Saskatchewan, 1967.

EMPLOYMENT: 1967 - 1985 - Hudson Bay Exploration and Development Co. Ltd.

1967-70 - mine geology, surface exploration.
Snow Lake, Manitoba.

1970-76 - Supervisor of exploration programs
B. C. and Yukon

1976-86 - District Manager, Whitehorse, Y. T.

APPENDIX III

DIAMOND DRILL LOGS

FORM Nº 630

HUDSON BAY EXPLORATION AND DEVELOPMENT COMPANY LIMITED

DIAMOND DRILL LOG

Claim: MAC 7 (76393) Location: Whitehorse Copper Mines

Mining Division: Whitehorse

Hole Nº: BC-48 Angle: 0'-50° / 627'-51° Direction: Grid EAST

Depth: 627 ft. Grid Nº: Best Chance Co-Ordinates: 76 + 00S / 26 + 50W

Date Started: Dec. 6, 1984 / May 16, 1985 Finished: Dec. 8, 1984 / May 25, 1985 Logged By: G. Bidwell

Drilled By: E. Caron Diamond Drilling

DEPTH From	DEPTH To	DESCRIPTION OF CORE Page 1 of 2
0.0	124.0	Overburden - cored from about 78 feet on - 78 to 124 - mud with diorite, limestone and volcanic boulders
124.0	447.0	Limestone - 124 to 142 white to grey coarsely banded, core recovery 95% - vugs infilled with mud, no water return - core angle consistently 60° - no skarnification 144-152 - 25% recovery - white coarsely crystalline limestone 154-172 - 50% recovery - grey banded limestone core angle=42° 172-212 - 95% recovery - white coarse crystalline limestone 212-254 - 75% recovery - white coarse crystalline limestone 254-273 - 50% recovery - grey banded limestone core angle=45° 273-281 - 15% recovery - vugy white crystalline limestone 281-283 -100% recovery - grey banded limestone core angle=53° 283-293 - 40% recovery - white-grey massive limestone 293-332 - 90% recovery - white-grey massive limestone 332-362 -100% recovery - mottled & coarsely banded limestone (graphite?) 362-447 -100% recovery - white to grey coarse massive limestone
447.0	456.0	Quartz diorite dike - no skarnification at either contact except for minor epidote @ 447 and garnet near lower contact - dike in fractures with calcite infilling
456.0	567.0	Limestone - white to grey coarse crystalline 100% recovery
567.0	569.5	Specular hematite - quartz vein, minor magnetite Sample #74851 567.0-569.5 Au Ag Cu Pb Zn
569.5	571.0	Garnet dipside skarn, minor magnetite
571.0	572.5	Limestone sample #74852: 569.5-572.5 Au Cu

DEPTH		DESCRIPTION OF CORE	Page 2 of 2
From	To		
572.5	607.5	Garnet diopside skarn, magnetite clots and zoned around calcite calcite infilling 600.0 - minor malachite stain 605.0 - specks chalcopyrite associated with magnetite 595.0-607.5 - veinlets of specular hematite Au Cu 572.5 - 577.0 - Sample # 74853 577.0 - 582.0 - Sample # 74854 582.0 - 587.0 - Sample # 74855 587.0 - 592.0 - Sample # 74856 592.0 - 597.0 - Sample # 74857 597.0 - 602.0 - Sample # 74858 602.0 - 607.5 - Sample # 74859	
607.5	627.0	Quartz diorite intrusive	

FORM Nº 630

HUDSON BAY EXPLORATION AND DEVELOPMENT COMPANY LIMITED

DIAMOND DRILL LOG

Claim PIT 2 (85095) Location: Whitehorse Copper Mines

Mining Division Whitehorse

Hole Nº. WE-81 Angle -50° Direction: East

Depth: 231.0 ft. Grid Nº. War Eagle Co-Ordinates: 104+00N 4+00E

Date Started: Nov. 1, 1985 Finished: Nov. 5, 1985 Logged By: G. Bidwell

Drilled By: E. Caron Diamond Drilling

DEPTH From	DEPTH To	DESCRIPTION OF CORE Page 1 of 1
0.0	23.8	Overburden
23.8	211.3	Quartz diorite - very fresh, medium to coarse grained mottled - generally 20% mafics (hornblende, minor biotite) - minor bleaching (propylitic alteration) along fractures - trace sulphides 83.0 - 90.5 intermittent pyrite (now Fe oxide) and bleaching shearing at 90.0 134 - 137.0 - minor shear parallels core, bleaching of diorite (silicification) 148.0-0.8 ft. section of shearing, core angle of 20°, propylitic alteration. 206.0 - 211.3 - bleaching of intrusive
211.3	213.9	Andesite dike, massive, fine grained, dense
213.9	231.0	Quartz diorite - bleached as above, probably related to andesite dike - no sulphide
	231.0	End of hole

FORM Nº 630

HUDSON BAY EXPLORATION AND DEVELOPMENT COMPANY LIMITED

DIAMOND DRILL LOG

Claim: PIT 9 (85836) Location: Whitehorse Copper Mines

Mining Division: Whitehorse

Hole Nº: WE-82 Angle: -50° Direction: East

Depth: 502.0 ft. Grid Nº: War Eagle Co-Ordinates: 108 + 00N
1 + 00W

Date Started: Nov. 5, 1985 Finished: Nov. 9, 1985 Logged By: G. Bidwell

Drilled By: E. Caron Diamond Drilling

DEPTH From	DEPTH To	DESCRIPTION OF CORE Page 1 of 3
0.0	42.0	Overburden
42.0	48.5	Garnet skarn, minor remnant limestone, occasional tremolite @ 45.0 - 2" quartz diorite dike - calcite filled fractures, vuggy
48.5	49.0	Quartz diorite dike 85-90° contact - minor fractures
49.0	70.0	Garnet diopside skarn, 20% garnet from 49-57 - bleached section - some remnant limestone and dolomite - few bleached quartz diorite fragment - vuggy in section - calcite in fractures
70.0	76.5	Quartz diorite - 15% hornblende - bleached sections - minor disseminated pyrite associated with chlorite 74.0-75.0 - dike gragments in diorite - minor rusty fractures
76.5	79.4	Light gray fine grained felsite dike - massive, very fine grained disseminated pyrite
79.4	82.2	Quartz diorite with abundant felsite dike fragments
82.2	86.6	Light green skarnified sediments intruded by dikes of quartz diorite and felsite - disseminated pyrite throughout
86.6	92.0	Quartz diorite, minor bleaching
92.0	117.0	Silicified sediments, some skarnification minor epidote, minor quartz diorite dikes - relict bedding 30° core angle @ 100.5 - disseminated pyrite up to 5% - calcite fractures 109 - core angle (bedding) 30°
117.0	125.0	Garnet skarn - light brown garnets up to 60% of volume - calcite fractures

DEPTH		DESCRIPTION OF CORE	
From	To		
125.0	127.5	Quartz diorite with fine grained dike fragments	
127.5	156.0	Garnet tremolite skarn, massive - quartz infilling - 149.5 - 150.0 - quartz diorite dike - 80° core angle contact 153.5 - 154.0 - quartz diorite dike - bleached, diffuse contact	
156.0	160.5	Siliceous metasediments 158.8 - 159.2 - quartz diorite dike 160.2 - 160.5 - quartz diorite dike - quartz and epidote fractures	
160.5	164.5	Garnet tremolite skarn - same as above	
164.5	169.0	Quartz diorite - upper contact core angle - 45° - lower contact core angle - 25° 20% mafics mainly hornblende	
169.0	172.0	Garnet tremolite skarn - massive	
172.0	174.5	Acid dike (called felsite previously) - fine to medium grained - disseminated and small clots of pyrite	
174.5	187.5	Quartz diorite - upper contact core angle -60° - parts up to 50% mafic (hornblende) - sections bleached - inclusion of epidote skarn and coarse acid dike - calcite veins	
187.5	191.4	Banded epidote garnet diopside skarn - minor diorite dike - banding core angle 45°	
191.4	197.0	Quartz diorite - some bleaching and chlorite alteration - lower contact core angle 60°	
197.0	200.8	Siliceous skarnified sediments - light gray to tan colour - some acid dike (coarse grained)	
200.8	255.2	Quartz diorite - some cross-cutting coarse acidic dikes - chlorite alteration intense in sections 222.0 - 222.8 - mafic dike parallels core axis 224.0 - 224.2 - mafic dike - core angle 70° 229.0 - 229.6 - mafic dike - core angle 60° black fine grained (basaltic) - pervasive chlorite, epidote, bleached fractures infilled with calcite 242.0 - 246.0 - extensive calcite veining (stockwork) - vuggy - some garnet clots 247.0 - 251.0 - same as 242-246 - poor core recovery (60%) - calcite veining	
255.2	266.3	Andesite dike - minor quartz diorite dike cross-cutting - quartz and calcite filled fractures, propylitic alteration - pyrite associated with quartz diorite	