

7658

NO. \_\_\_\_\_

ASSESSMENT REPORT

ON

GEOLOGICAL AND GEOCHEMICAL SURVEY

AND

DIAMOND DRILLING

<u>Group</u>	<u>Claims</u>	<u>Record No.</u>	<u>Total</u>	<u>NTS</u>	<u>Mining District</u>
1	P22	71775	2	94K/4W	Liard
	P24	71777		"	"
2	P20	71773	6	"	"
	P37	71790		"	"
	P39	71792		"	"
	P41	71794		"	"
	Goof 1	71862		"	"
	Goof 4	71865		"	"
3	D2	71809	3	"	"
	D19	71826		"	"
	D21	71828		"	"
4	P19	71772	5	"	"
	P21	71774		"	"
	P23	71776		"	"
	Goof 2	71863		"	"
	D39	71846		"	"
5	D20	71827	3	"	"
	D22	71829		"	"
	D24	71831		"	"
6	D41	71848	1	"	"

Location - 58°04'N Latitude; 125°55'E Longitude

Claims owned by Placer Development Ltd.  
Survey operated by Welcome North Mines Ltd. (NPL)  
for Gataga Joint Venture (optionee)

Survey performed from May 10 to August 11, 1979 by Archer, Cathro & Associates Ltd.  
Report by R.C. Carne, B.Sc. and R.J. Cathro, B.A.Sc., P. Eng.  
January 30, 1980

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GATAGA JOINT VENTURE  
DRIFTPILE CREEK PROGRAM  
ITEMIZED EXPENSES

During 1979, the Gataga Joint Venture performed work on its optioned Driftpile Creek property consisting of a drill program and detailed geological and geochemical surveys. This work was a continuation of exploration initiated during 1978.

This cost statement itemizes those expenditures incurred on the property during 1979. The amount of work performed prior to August 12, 1979, the anniversary of the claims concerned, was estimated at \$400,000 in a preliminary report filed August 10, 1979. Final expenditures submitted for assessment credit on the claims total \$377,321.33.

Itemized Statement of Expenditures

<u>A. Wages</u>		<u>Days</u>	<u>Rate</u>	
R.C. Carne (Geologist)	April 16-20	5		
	May 10-31	22		
	June 1-30	30		
	July 1-31	31		
	August 1-11	11		
		<u>99</u>		\$165/day
R.F. Gish (Manager)	April 16-20	5		
	May 10-31	22		
	June 1-30	30		
	July 1-31	31		
	August 1-11	11		
		<u>99</u>		\$ 90/day
C. Jackisch (Field Assistant)	May 10-31	22		
	June 1-3	30		
	July 1-13	13		
	July 20-22	3		
	July 23-28	7		
	July 30-31	2		
	August 1-5	6		
		<u>83</u>		\$ 57/day
C. Norris (Field Assistant)	May 10-31	22		
	June 1-30	30		
	July 1-6	6		
		<u>56</u>		\$ 51/day
R. Matthews (Field Assistant)	May 10-31	22		
	June 1-30	30		
	July 1-6	6		
	July 8-14	7		
	July 17-24	8		
	July 27-28	2		
	July 30	1		
	August 1-5	5		
		<u>81</u>		\$ 57/day
J. Ogilvy (Field Assistant)	June 21-30	10		
	July 1-13	13		
	July 16	1		
	July 18-23	6		
	July 25-31	7		
	August 1-4	4		
	August 9	1		
	August 11	1		
		<u>43</u>		\$ 51/day

A. Wages (cont)

D. Wickham (Field Assistant)	July 6	1		
	July 8-13	7		
	July 18-21	4		
	July 23	1		
	July 27-31	5		
	August 1-11	<u>11</u>		
		29	\$81/day	\$ 2,349.00
J. Dennett (Warehouseman)	May 5-8	4		
	August 10	<u>1</u>		
		5	\$63/day	<u>315.00</u>
				<u>\$42,306.00</u>

B. Food and Accommodation

Whitehorse - Archer, Cathro Staff House (\$30/day)

R. Carne:	1 day			
R. Gish:	7 days			
C. Jackisch:	3 days			
D. Wickham:	3 days			
J. Dennett:	1 day			
		15 days @ \$30		\$ 450.00

Watson Lake - Belvedere Hotel & Cedar Lodge Motel 1,150.70

Muncho Lake - J & H Wilderness Lodge 440.49

Field Accommodation (including 6-man drill crew)

May 10-31	182 mandays			
June 1-30	340 mandays			
July 1-31	348 mandays			
August 1-11	<u>50 mandays</u>			
	920 mandays			
Groceries				10,252.05*
Field hardware, camp supplies (including rental), field clothing and lumber				<u>5,590.62*</u>
				<u>\$17,883.86</u>

\* Related expenses are split 70/30 for work on the Driftpile Creek claim group and nearby Bob 1 claims, respectively, during July and August.

C. Transportation

1. <u>C.P. Air</u> R. Cathro, R. Carne, R. Gish, C. Jackisch, C. Norris, R. Matthews, J. Ogilvy and D. Wickham flights Vancouver to Whitehorse (return) and misc. flight Whitehorse to Watson Lake	\$ 2,340.73
2. <u>B.C. Yukon Air Services Ltd.</u> (Cessna 185, DeHavilland Otter and Beaver)	17,783.99
3. <u>Trans North Turbo Air Ltd.</u> Hughes 500C helicopter (on contract)	
<u>Dates</u> <u>Hours</u>	
May 10-May 31, 1979	60.0
June 1-June 30, 1979	91.2
July 1-July 31, 1979	112.0
August 1-August 11, 1979	<u>11.2</u>
274.4 @ \$287/hr (incl. fuel)	78,752.80
4. <u>Freight</u> (C.P. Air, Canadian Freightways, Loisel Transport) (includes shipment of samples to lab, mobilization of camp gear, etc.)	3,093.77
5. <u>Car and Truck Rental</u>	<u>3,387.94</u>
	<u>\$105,359.23</u>

D. Instrument Rental

SBX 11 single sideband, radio transceiver	
May 10-May 31, 1979	
June 1-June 30, 1979	
July 1-July 31, 1979	
August 1-August 11, 1979 @ \$250/month	<u>\$ 648.39*</u>

\* Related expenses are split 70/30 for work on the Driftpile Creek claim group and nearby Bob 1 claims, respectively, during July and August.

E.(i) Geochemical Survey

4,890 soil samples assayed for Cu, Pb and Zn @ \$2.56/sample \$ 12,518.40

E.(ii) Diamond Drilling

1. Direct costs per D.J. Drilling Ltd. invoices for 2,416.1 m of diamond drilling in 21 BQ size drill holes (a) labour (drill moves, mobilization, etc.) R. Gibson, M. MacDonald, M. Maxwell, J. Fink, H. Schieweck, W. Gamp - 1039 hrs. @ 16.00/hour	16,624.00
---	-----------

(b) BQ size core drilling		
71.6 m @ \$52.32/m =	\$ 3,745.82	
2192.1 m @ \$47.57/m =	104,288.96	
BW size casing drilling		
152.4 m @ \$55.78/m =	<u>8,500.42</u>	
		\$116,534.30
(c) 25 hrs. cementing time @ \$45.00/hour		1,125.00
(d) 38 acid tests @ \$25.00		950.00
(e) Materials consumed		292.76
(f) Drill crew airfares and travel expenses		3,578.58
2. Core boxes and core box lids		2,150.88
3. Diamond saw and saw blades for core splitting		1,820.87
4. Fuel, grease, solvent, naptha		8,742.07
5. Assay of diamond drill core		
(a) 196 samples assayed for Zn @ \$5.50	= \$1,078.00	
(b) 36 samples assayed for Pb @ \$5.50	= 198.00	
(c) 57 samples assayed for Pb & Zn @ \$11.00	= 627.00	
(d) 43 samples analyzed for Cu, Pb, Ag		
@ \$3.65 =	156.95	
(e) 43 samples analyzed for Pb (Hcl digest)		
@ \$1.50 =	64.50	
(f) 81 samples analyzed for Cu, Pb, Ag		
@ \$2.75 =	222.75	
(g) 28 samples analyzed for Cu, Zn, Ag		
@ \$2.75 =	77.00	
(h) 88 samples analyzed for Cu & Ag @ \$2.15 =	189.20	
(i) 84 samples analyzed for Cu, Pb, Zn, Ag		
@ \$3.30 =	277.20	
(j) 45 samples analyzed for Cu, Pb, Zn, Ag		
@ \$4.25 =	191.25	
(k) 298 samples prepared for analysis		
@ \$1.75 =	<u>521.50</u>	
		<u>3,603.35</u>
		<u>\$155,421.81</u>



F. Office costs to support program (includes final report preparation)

1. Management:	(a) Legal expenses - \$ 3,560.07	
	(b) Administration - 4,907.94	
	(Welcome North)	
	(c) Management Fee - <u>21,500.00</u>	
	(Archer, Cathro & Assoc. Ltd.)	
		\$ 29,968.01
2. Postage, Telephone, Petty Cash, Office Supplies		2,539.62
3. Drafting - 198.5 hours @ \$16.00/hour		3,176.00
4. Blueprinting and Xeroxing		2,176.86
5. Expediting:	(a) Archer, Cathro @ \$700/month	
	May 16-31 \$350.00	
	June 1-30 700.00	
	July 1-31 490.00*	
	August 1-11 <u>189.68*</u>	
		1,729.68
	(b) Yukon Expediting	
	May 10-31 \$226.22	
	June 1-30 498.99	
	July 1-31 382.61*	
	August 1-11 <u>85.65*</u>	
		1,193.47
6. Accounting - Archer, Cathro @ \$200/month		
	January - December, 1979	<u>2,400.00</u>
		<u>\$ 43,183.64</u>
	Grand Total	<u>\$377,321.33</u>

\* Related expenses are split 70/30 for work on the Driftpile Creek property and nearby Bob claims, respectively, during July and August.

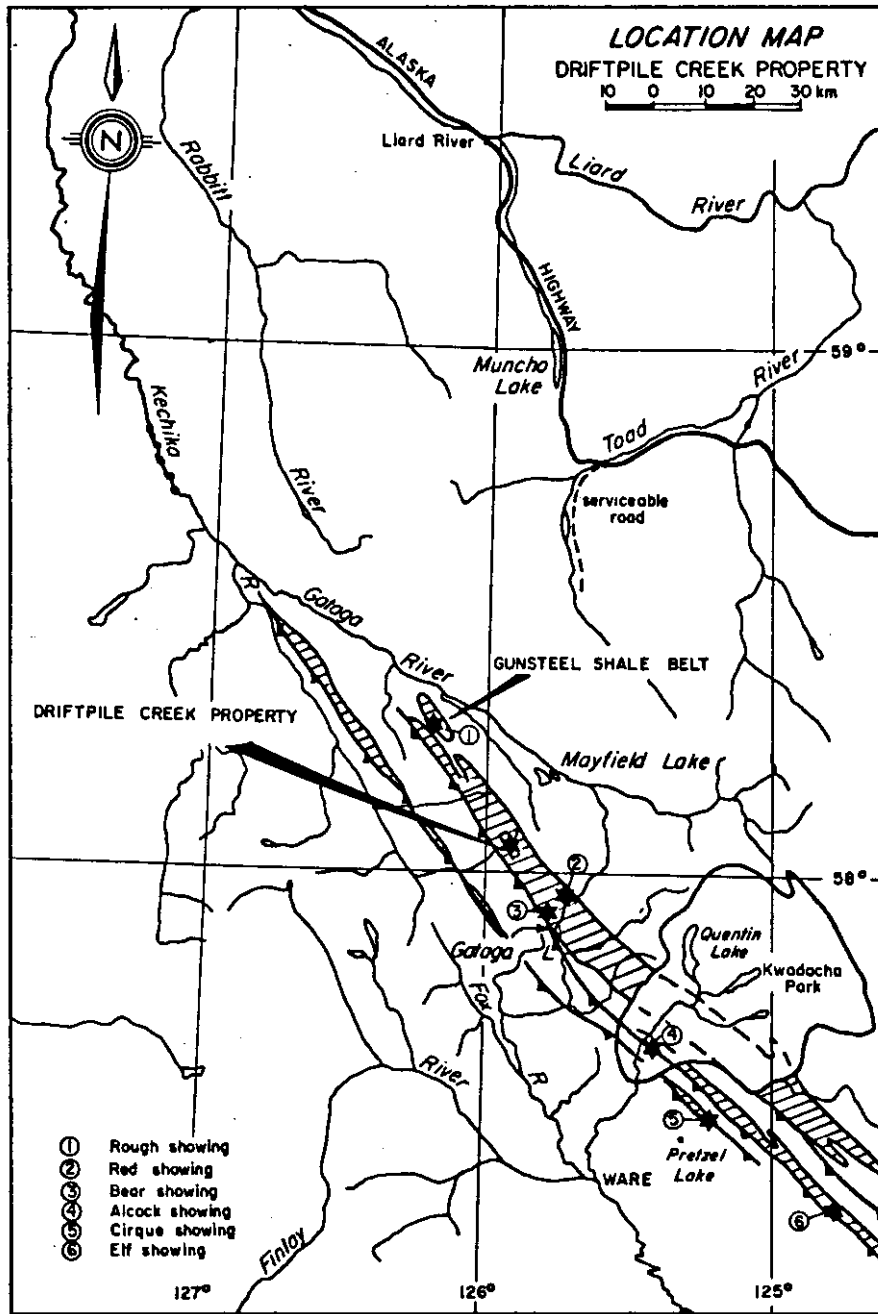


Figure 1: Location map, Driftpile Creek Property

## INTRODUCTION

This report summarizes the results of an exploration program during the 1979 field season in the Driftpile Creek area by Gataga Joint Venture (GJV), a syndicate composed of Aquitaine Company of Canada Ltd., Chevron Canada Limited, Getty Mining Pacific Ltd., Welcome North Mines Ltd. and Castlemaine Exploration Ltd. The program was managed by Archer, Cathro and Associates Ltd. and was directed in the field for the third successive season by R.C. Carne. The bulk of the program was performed on claims optioned from a syndicate composed of Placer Development Ltd., Pembina Pipeline Ltd. and General Crude Oil Northern Ltd. This report summarizes work performed on the property between May 10 to August 11, 1979.

## LOCATION AND ACCESS

The Driftpile property, located at 58°04'N and 125°55'E, straddles Driftpile Creek about 22 km from its confluence with the Kechika River (Figure 1). Elevations locally range from 1100 m to 2000 m above sea level. Access is by float-equipped, fixed-wing aircraft from Watson Lake, Yukon Territory, about 290 km to the northwest, to Mayfield Lake about 20 km east of the property, and by helicopter from Mayfield Lake to the property. The nearest large town, 210 km to the east, is Fort Nelson which does not have a float plane base. Fuel and camp supplies needed for the 1979 program were trucked 300 km from Watson Lake to Muncho Lake (Km 747 on the Alaska Highway) and ferried 100 km during mid-April, 1979 by ski-equipped, single Otter aircraft to the winter airstrip located 4.5 km east of the property.

### HISTORY AND PREVIOUS WORK

The earliest record of mineral exploration in the Gataga River District dates from 1957, when Frobisher Ltd. (Falconbridge) investigated several exotic gossans developed from springs draining Upper Devonian black shales immediately north of Gataga Lakes.

In 1970, Geophoto Surveys conducted a reconnaissance stream sediment survey in the Driftpile Creek area on behalf of a syndicate. In 1973, three members of the syndicate, Pembina Pipeline Ltd., Sun Oil (Delaware) Ltd. and General Crude Oil Co. Northern Ltd., entered a joint venture with Canex Placer Ltd. (now Placer Development Ltd.) to investigate some of the anomalies. Initial prospecting resulted in the discovery of mineralized float on Driftpile Creek in July, 1974 and the staking of 168 "two-post" mineral claims.

During 1974 and 1975, Canex Placer performed geological mapping at a scale of 1:4800, soil geochemical sampling, an EM survey and hand trenching. This work was concentrated within an area 4 km long by 2 km wide. The geological mapping and economic evaluation were inconclusive due to the poor quality of bedrock exposure and inadequate knowledge of regional stratigraphy and structure.

Soil samples were collected at intervals of about 30.5 m (50 feet) on lines 122 m (400 feet) apart and were analyzed for zinc, lead, silver and barium. Both zinc and lead plots showed the presence of strong broad anomalies but sample spacing was not dense enough to sufficiently delineate mineralized zones or drill targets.

A vertical loop "shootback" (Ronka) electromagnetic survey conducted over much of the grid outlined a number of discrete conductors which were assumed to represent pyritic sulphide horizons. Results of later mapping and diamond drilling by GJV showed that these conductors represent surface traces of graphitic shear and fault

zones rather than sulphide bodies. Hand trenching was only partially successful due to extreme oxidation of mineralization and thick overburden cover.

GJV was formed in April, 1977 to investigate unstaked lead anomalies obtained near the Placer syndicate property by Castlemaine in 1976. Prompted by similarities between the geological setting in the Gataga River shale belt and the Macmillan Pass area, Y.T., GJV carried out an extensive regional sampling and mapping program in 1977. Although this program did not discover any new areas of significant mineralization, economic potential of the Driftpile Creek prospect was confirmed. Accordingly, GJV negotiated an agreement to option the Driftpile Creek property from the Placer Syndicate early in 1978.

The 1978 program consisted of detailed geological mapping, detailed soil geochemical sampling, compass and chain surveys to obtain mapping and topographic control on the previously established grid, limited hand trenching and 1016 m (3334 feet) of diamond drilling in 9 holes. This work documented the existence of massive sulphide mineralization in two stratiform bodies separated by about 100 m of unmineralized black shales. Mineralized intersections were obtained over a strike length greater than 2000 m. True thickness of pyritic sulphide horizons intersected by drilling ranged from 11 m to 40 m. The best intersection (DDH 78-07) consisted of 11.7 m of material grading 7.45% combined lead and zinc.

#### 1979 PROGRAM

Soil geochemical surveys, geological mapping and diamond drilling programs initiated on the Driftpile Creek property during 1978 were continued through the 1979 field season under the supervision of R.C. Carne. Soil sampling, surveying,

core splitting and diamond drill site preparation was performed by camp manager, R.F. Gish and assistants John Ogilvy, Clark Jackisch, Randy Matthews, Clay Norris and Dave Wickham.

The drilling program and field work was supported by a Trans North Turbo Air Ltd. Hughes 500C helicopter based at camp. The machine was crewed by pilot/engineer Neil Aseltine.

Diamond drilling was contracted to D.J. Drilling Co. Ltd. of Vancouver. The drill crew consisted of two 2-man crews, a cook and a first-aid attendant who also assisted with the drill moves and drill site preparation.

A permanent tent frame camp constructed on the property in 1978 was expanded in 1979 to include six sleeping tents, a cook tent, a dry and office tent and a core-logging/supply tent. All but the latter have plywood floors. A large log core rack built in 1978 was enlarged in 1979. Facilities were winterized at the completion of the program so that they can be reoccupied with little effort.

Attempts at obtaining accurate survey control on the property and surrounding areas were hampered during the 1978 and 1979 field seasons by locally high relief and almost total vegetation cover. Existing government airphoto coverage, flown in 1948, is not of sufficient quality to provide mapping control at the scale required for detailed geologic investigation. Aerial photography targets were installed on the property during the 1978 season but poor weather delayed the actual photography until late in the 1979 season. Topographic maps prepared from this photography by McElhanney Surveying and Engineering Ltd. were not completed in time for use during the 1979 field season.

Summary of 1979 Program

- (a) Geochemical survey  
4,890 soil samples analyzed for Cu, Pb and Zn.
- (b) Geological survey  
2.5 sq. km mapped for geology at 1:2000 scale.
- (c) Drilling program  
2,416.1 m of diamond drilling in 21 BQ sized holes.  
397 core samples assayed for Ag, Pb, Zn and Cu.
- (d) Lines established (all chained, none cut)  
baselines - 5.6 km.  
cross lines - 58 km.

Claims upon which work was actually performed (Figure 2):

- (a) Geochemical survey  
P2,4,6,8,23-26,37,39 and 41;  
D2,4,6,8,10,21-28,43 and 45; Goof 2,4 and 5.
- (b) Geological survey P2,4,6,23,24,37,39,41; D2,4,6,8,10 and 19-24; Goof 2,4 and 5.
- (c) Drilling program

Hole 79-10 -P20	79-20 -P37
79-11 -P20	79-21 -P22
79-12 -P20	79-22 -P37
79-13 -P2	79-23 -P22
79-14 -D2	79-24 -P22
79-15 -D37	79-25 -P4
79-16 -D20	79-26 -P4
79-17 -D21	79-27 -P20
79-18 -D21	79-28 -P20
79-19 -D21	79-29 -D4
	79-30 -D39
- (d) Lines established  
P2,4,6,8,23-26,37,39 and 40;  
D2,4,6,8,10,21-28,43 and 45;  
Goof 2,4 and 5

ARCHER, CATHRO & ASSOCIATES LTD

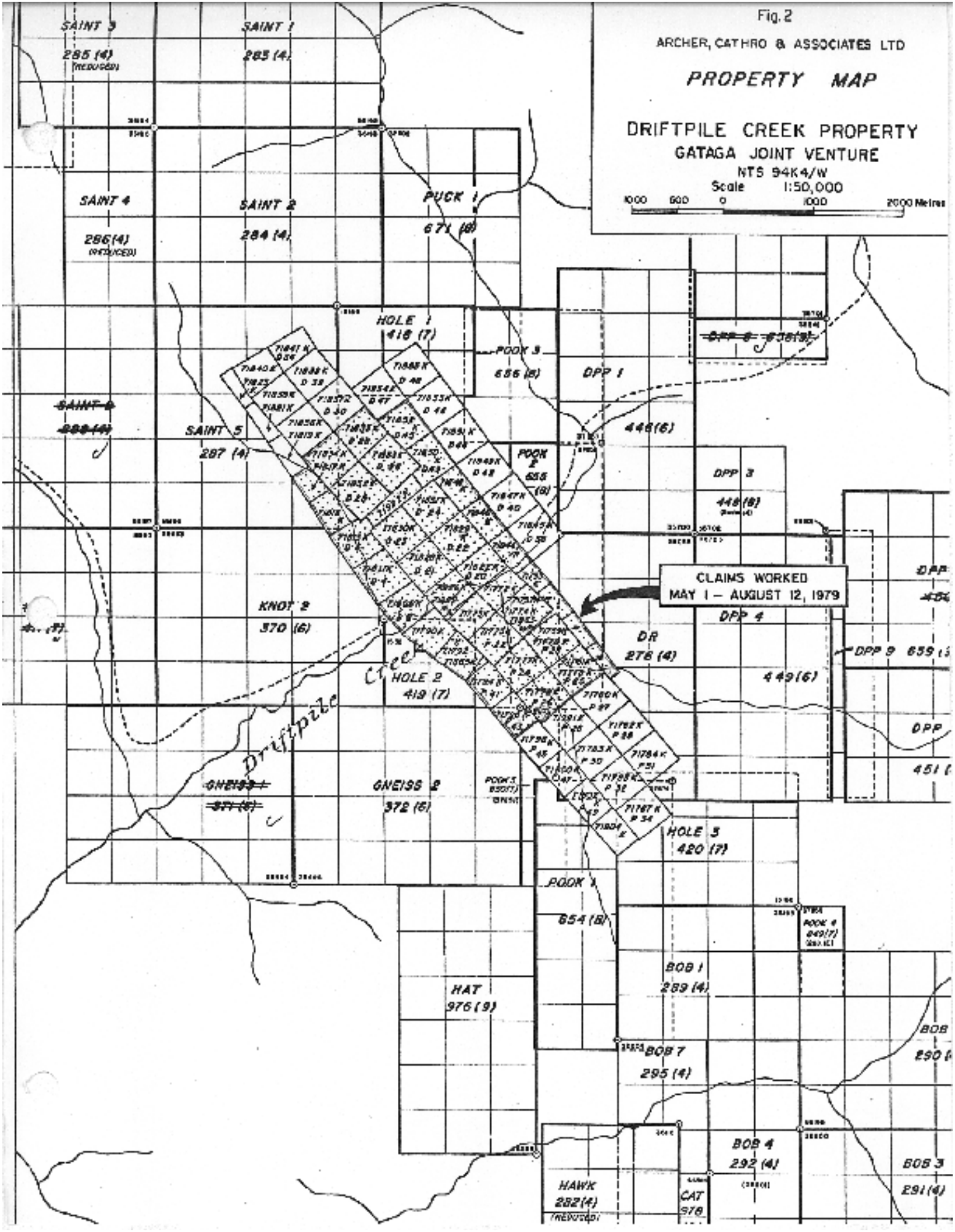
# PROPERTY MAP

## DRIFTPILE CREEK PROPERTY GATAGA JOINT VENTURE

NTS 94K4/W

Scale 1:50,000

1000 600 0 1000 2000 Metres



CLAIMS WORKED  
MAY 1 - AUGUST 12, 1979

Driftpile  
Creek

GNEISS 1  
377 (6)

GNEISS 2  
378 (6)

HOLE 3  
420 (7)

HAT  
976 (9)

BOB 1  
289 (4)

BOB 7  
295 (4)

BOB 4  
292 (4)

HAWK  
282 (4)

CAT  
578

BOB 3  
291 (4)

DPP 9  
659 (6)

DPP  
451 (6)

DPP 3  
448 (6)

DPP 4

DR  
276 (4)

449 (6)

DPP 1  
448 (6)

POCK 3  
656 (8)

POCK 2  
655 (8)

POCK 1  
654 (8)

POCK 4  
649 (7)

PUCK 1  
671 (8)

HOLE 1  
418 (7)

HOLE 2  
419 (7)

SAINT 2  
284 (4)

SAINT 5  
287 (4)

KNOT 2  
370 (6)

SAINT 4  
286 (4)

SAINT 6  
288 (4)

SAINT 3  
285 (4)

SAINT 1  
283 (4)



CLAIM STATUS AS OF DECEMBER 1, 1979

<u>CLAIM NAME</u>	<u>GRANT NUMBER</u>	<u>EXPIRY DATE</u>
D2	71809	12 August, 1990
4	71811	"
6	71813	"
8	71815	"
10	71817	"
12	71819	"
14	71821	"
16	71823	"
19-34	71826-71841	"
37-48	71844-71855	"
P2	71755	"
4	71757	"
6	71759	"
8	71761	"
19-20	71772	"
21-32	71774-71785	"
34	71787	"
37	71790	"
39	71792	"
41	71794	"
43	71796	"
45	71798	"
47	71800	12 August, 1990
49	71802	"
51	71804	"
Goof 1F	71862	6 September 1990
2F	71863	"
4F	71865	"
5F	71992	"
Total	<u>67</u> two-post claims	

GEOLOGICAL SURVEY

Physiography and Geomorphology

The Driftpile Creek area lies within the Muskwa Range of northern Rocky Mountains, flanked by the broad valleys of the Kechika River in Rocky Mountain Trench on the southwest and Gataga River on the northeast. Within the project area, physiography is typified by long, low ridges and valleys that parallel northwest structural strike of underlying sedimentary rocks. These ridges and valleys are cut by the southwest trending valley of Driftpile Creek, which exhibits a broad U-shaped glaciated profile at higher elevations and a narrower U-shaped profile in its lower 125 m.

Tributaries of Driftpile Creek flow in northwest-or southeast-trending valleys resulting in a trellised drainage pattern. Tributary streams are immature, with waterfalls and deeply incised, steep-walled canyons common through their length.

Although elevations in the region range from 1100 m to over 2000 m, relief is locally subdued in areas underlain by shales and clastic sedimentary rocks. Resistant, older carbonate rocks which flank the area to the east form prominent cliffs.

Treeline is at approximately 1500 m on south facing slopes. Vegetation in valleys is predominately arctic black birch and willows with minor black spruce in swampy areas and juniper, poplar and pine and grasses on dry slopes.

The region has been subjected to ice-sheet glaciation but the lack of abundant glacial till or erratics suggests that this glaciation was older than late Pleistocene. The most recent Pleistocene glaciation consisted mainly of alpine and cirque glaciers to the east and west. The main geomorphological effect of the latest glaciation was the narrow westward scouring Driftpile Creek

valley, to a point about 10 km downstream of the property. Infilling of the resulting basin by meltwater in late Pleistocene time resulted in flooding of much of the area for extended periods. Gradual, but somewhat erratic, lowering of the lake level accompanied down-cutting of the outlet creating several generations of strand-lines or wave-cut terraces. Approximate vertical distribution of these features is tabulated in Table II below.

TABLE II  
APPROXIMATE VERTICAL DISTRIBUTION OF WAVE-CUT  
TERRACES AT DRIFTPILE CREEK, B.C.

<u>Elevation (m)</u>	<u>Terrace Level</u>	<u>Relative Degree of Development</u>
-1350	≡≡≡ D, D-1, D-2	≡≡≡
	≡≡≡ C, C-1, C-2, C-3	≡≡≡
-1300		
-1250	— B	—
	— A	—
-1200	Driftpile Creek	

Exposures of pyritic mineralization which lie below the upper lake level are leached and oxidized in excess of 5 m depth. In contrast, relatively fresh exposures of sulphide mineralization above highest lake level occur within 20 cm of the surface. Infusion of cold, oxygenated lake waters under an increased hydraulic gradient and consequent depression of reduced phreatic groundwaters beneath the lake may be responsible for the deep levels of oxidation observed.

#### Regional Stratigraphy

The Driftpile Creek area lies within Kechika Trough, a southeasterly extension of the much larger Selwyn Basin. Sedimentary rocks in the area range in age from Cambrian to lower Mississippian. Prior to Upper Devonian, easterly derived clastic sedimentary assemblages reflect normal sedimentation patterns while the westerly derivation of Upper Devonian to Mississippian sedimentary rocks resulted from block faulting and uplift along the continental margin. Regional stratigraphy and facies relationships were discussed in detail in the GJV 1977 Final Report and are only briefly summarized here.

Cambrian Atan Group consists of a lower, shallow-water to intertidal marine clastic assemblage and an upper, dominantly carbonate assemblage consisting of archeocyathid patch reefs with inter-reef and fore-reef clastic accumulations. The Cambrian succession is capped by a thin bedded, oolitic limestone unit which locally contains abundant trilobite remains.

Lower Ordovician Kechika Group consists mainly of thin bedded, argillaceous limestone and calcareous phyllite. The upper part of the group is in fault contact with older Atan Group rocks where it is seen in the project area. South of Kwadacha Park, exposures of Kechika Group indicate an overall thickness of greater than 3 km.

Platformal to basinal facies of the dominately pelitic Ordovician to middle Devonian Road River Formation unconformably overlies Kechika Group rocks. A basal volcanic unit present south of Kwadacha Park is not seen in the project area. A variable thickness of orange-brown weathering, graptolitic siltstone of lower Silurian age forms a distinctive marker horizon.

Coarse clastic rocks of middle Devonian Besa River Formation mark the abrupt change from lower Paleozoic miogeosynclinal environments along a relatively stable epicontinental trough to middle Paleozoic eugeosynclinal sedimentation which predominated along the western margin of the northern Cordillera. Easterly fining of these clastic rocks in the region reflects an, as yet, undiscovered source terrane west of the Driftpile Creek area. Besa River rocks may have been derived from uplift and subsequent erosion of basinal Road River cherts. A weakly developed unconformity which exists between Besa River and older rocks was probably caused by erosion during deposition of the clastic rocks.

Pyritic and siliceous, fine grained, black shale of the upper Devonian Gunsteel Formation conformably overlies coarser grained shales of Besa River Formation. Although somewhat resembling Besa River lithologies, Gunsteel Formation exhibits marked thickness changes along the length of the Gataga shale belt. It is presently unknown whether this results from differing rates of deposition in individual sub-basins or erosional relief beneath the lower Mississippian unconformity.

In any case, the greatest observed thickness of Gunsteel shale occurs at Driftpile Creek. An important feature of lower Gunsteel Formation is a horizon of very pyritic shale and chert which is typically anomalous in base metals, silver and barium. These chemical sediments are interpreted to reflect a regional geothermal-exhalative event.

Westerly-derived clastic sediments form the basal member of the Warneford Formation. Coarse, polymictic conglomerates deposited as turbidite fan assemblages characterize the package at Driftpile Creek. Erosional remnants composed of interbedded cherts and calcareous sediments which cap the succession may be Triassic in age.

#### Driftpile Creek Property Stratigraphy

Geology of that part of the property mapped to date is shown at 1:2000 scale on Figures 4a and 4b. Road River Formation (including Silurian siltstone), Besa River Formation and Gunsteel Formation are exposed on the Driftpile Creek property. Only lithologies of Gunsteel Formation have been intersected in drill core. Although bedrock exposure is less than one percent, compilation and comparison of diamond drill logs leads to a consistent picture of Gunsteel Formation stratigraphy. Additional diamond drilling in 1979 has enlarged the known stratigraphic column (Figure 3). In addition to mineralized horizons LH and UH, mineralization in units termed TH<sub>1</sub> and TH<sub>2</sub> has been discovered higher in the stratigraphic column. Mineralization discovered immediately beneath LH in one location only is termed BH. High grade mineralization encountered in holes 78-07 and 78-08, which was formerly assigned to unit LH, is now believed to be part of TH<sub>1</sub> following relogging of the core and comparison with intervals drilled during 1979.

The generalized stratigraphic section shown on Figure 3 is fairly representative although concrete structural relationships between various bedrock exposures and diamond drill holes have yet to be resolved. Detailed internal stratigraphy of that part of Gunsteel Formation intersected by diamond drilling is summarized in the following pages (base to top).

Unit  $A_M$  consists of uniform moderately siliceous, thick bedded, black shale which is commonly calcareous at top. Large (up to 40 cm in diameter) septarian carbonate nodules are scattered throughout the unit. Unit  $A_M$  is at least 20 m thick but the base of the unit has not been intersected in drill core.

Unit  $A_C$  consists of low to moderately siliceous, slightly gritty, non-calcareous, thick bedded, black shale with limestone nodules. Cherty argillite interbeds vary between 2 and 6 cm in thickness. Unit  $A_C$  is about 15 m thick.

Unit  $B_A$  consists of interbedded, cherty argillite, chert, blebby barite, pyrite and occasionally calcareous black shale which contains 1 to 6 cm massive and featureless carbonate nodules. Unit  $B_A$  varies from 5.5 m to greater than 11 m in thickness.

Pyritic mineralization of unit LH is discussed in a following section dealing with mineralization on the property.

Unit  $B_B$ , markedly similar in appearance to unit  $B_A$ , consists of interbedded black, cherty argillite, chert, blebby barite, pyrite and occasionally calcareous black shale which contains 1 to 6 cm carbonate nodules.

Unit  $B_C$  consists of gritty, low to moderately siliceous, calcareous, black shale with variable amounts of disseminated pyrite. Argillaceous limestone beds less than 1.5 cm thick are scattered throughout the section.

Unit  $B_S$  may be locally absent. It consists of thin bedded, moderately siliceous, non-pyritic, black shales.

Unit B<sub>p</sub> invariably consists of a monotonous assemblage of thin bedded, non-siliceous to moderately siliceous, frequently gritty black shale with scattered siliceous interbeds and slightly calcareous intervals. The unit is distinguished by thin pyrite laminations which are repeated at one to five mm intervals throughout the unit. Soft sediment deformation is common in unit B<sub>p</sub>, especially near the top. Total thickness of unit B<sub>p</sub> is not known although an average thickness of 45 m can be reliably estimated from diamond drill sections.

Unit UH, the "upper" mineralized horizon, consists of massive pyritic mineralization which laterally changes facies gradually to baritic mineralization. A more complete description is given in a following section dealing with mineralization.

Unit C<sub>s</sub>, which directly overlies massive pyritic mineralization of UH, consists of very carbonaceous, very fine grained, non-siliceous, black shale. Lower part of the unit contains distinctive, large, irregular carbonate nodules which are probably boudined beds. In the upper part of the unit, soft black shale is interbedded with 1 to 2 cm beds of cherty, black argillite which occasionally contain pyrite laminae and minor blebby barite. A distinctive feature of unit C<sub>s</sub> is the invariable presence of minor pyrobitumen occurring in fractures with calcite and chalcedony and with both minerals in elongate masses flattened along bedding. An average thickness of 20 m is indicated for unit C<sub>s</sub> from diamond drill sections.

Unit C<sub>c</sub> consists of interbedded, moderately siliceous, black shale and partly calcareous, non-siliceous, black shale. Scattered large carbonate nodules appear to be boudined beds. Basal and upper contacts of the unit are marked by the abrupt transition to interbedded shale and cherty argillite. The structurally



incompetent nature of unit  $C_C$  does not permit an accurate estimation of thickness although a maximum figure of 12 m is suggested by diamond drill data.

Unit  $C_A$  contains the most resistant lithologies exposed on the Driftpile Creek property. Moderate to very siliceous black shale with rhythmic interbeds of radiolarian cherty argillite form steep slopes and cliff walls. Thickness of the assemblage is greater than 30 metres.

Unit  $C_B$  has only been seen in fault contact with underlying units. Low to moderately siliceous, thick bedded black shale forms the dominant lithology. Conspicuous barite "beads" consisting of barite-silica concretions less than 1 cm in diameter are scattered throughout the unit in roughly stratiform concentrations. Minor large septarian carbonate nodules are also seen throughout the unit. Thick bedded black shale near the top of the section is often calcareous. Thickness of unit  $C_B$  is greater than 50 m.

Unit  $TH_1$  pyritic mineralization is discussed in a following section devoted to mineralization.

Unit  $D_B$  consists of distinctive low to moderately siliceous, medium bedded (2-3 cm), alternating grey and black shales. Grey shales are generally dolomitic or ankeritic while black shales are non-calcareous and often slightly pyritic. The unit appears to consistently range between 20 and 25 metres thick.

Unit  $TH_2$  is described in a following section dealing with mineralization.

Unit  $D_S$  consists of low to moderately siliceous, medium bedded black shale with minor scattered calcareous shale interbeds. The unit is distinguished by the presence of cyclic thin pyrite laminations. Thickness of the unit, encountered only in diamond drill holes 79-20 and 79-22, is estimated to be about 20 metres.

Unit D<sub>C</sub> represents the highest part of the Gunsteel Formation encountered by diamond drilling on the Driftpile property. Lithologies consist of thin bedded, moderate to very siliceous black shale, in part calcareous, with interbedded, thin ( 2 cm), black, conchoidal fracturing chert. Pyrobitumen-chalcedony-calcite masses occur as "platelets" flattened along bedding. Only the lower 12 metres of unit D<sub>C</sub> has been intersected by diamond drilling.

### Structural Geology

Within the Driftpile Creek area, rocks of the Gunsteel Formation form a four to six km wide, linear belt that strikes northwest. Although they are essentially unmetamorphosed, these rocks are structurally complex. On a gross regional scale, they occupy a broad synclinorium compressed against an anticlinorium of more resistant older carbonate rocks to the east.

In many areas of the property, bedding is difficult to distinguish from cleavage due to the uniformly featureless nature of most lithologies, especially on weathered surfaces. Where bedding is distinguishable, the absence of geopetal features makes distinction between overturned and upright bedding almost impossible. Problems with structural interpretation are further complicated by the generally recessive nature of the rocks and the enhancement of fissility by the action of frost wedging.

Tectonic shortening in carbonate rocks is regionally reflected in normal faults and large-scale, broad, open folds while the more incompetent shales are often isoclinally folded. On the Driftpile property, tectonic shortening appears to have been taken up in broad, open and upright folds which are cut by northwest-trending, steeply-dipping faults. In detail (see diamond drill sections, Appendix A),

these fault zones consist of several conjugate sets of diverging and converging fault and shear zones. The west side of faults is invariably displaced upward although dip-slip and oblique-slip movement probably occurs along some fault zones. Cleavage surfaces strike  $120^{\circ}$  to  $145^{\circ}$  and are nearly always coated with graphite. Sense of micro-slip along cleavage planes, like most faults, appears to be west side up. Cleavage dip, like that of major fault zones, varies from vertical to about  $60^{\circ}$  west.

Cleavage-bedding relationships indicate that most megascopic fold structures plunge at low angles ( $10^{\circ}$  to  $20^{\circ}$ ) although the direction of plunge can be either northwest or southeast and does not appear to be consistent from fold to fold. Modification of major structures by smaller isoclinal folds appears to be confined to easterly-dipping fold limbs.

Ordovician and Silurian rocks are exposed along the western edge of the property across a complex, but apparently vertical, fault zone.

## Mineralization

Assay values for surface exposures of mineralization on the Driftpile Creek property are summarized in Table III. Schematic diamond drill sections, with accompanying lead and zinc assay values for holes 78-01 to 78-09 and 79-10 to 79-30, are given in Appendix A. An overall summary of mineralization intersected by diamond drilling to date on the property is shown on Table V.

Four distinct mineralized horizons (LH, UH, TH<sub>1</sub> and TH<sub>2</sub>) have been discovered to date on the Driftpile Creek property. Stratigraphic relationships between these horizons are shown on Figure 3. Distribution of surface exposures and extrapolated exposures of mineralization is shown on the geology maps (Figures 4a and 4b).

Horizon LH - The lowest mineralized horizon (LH) is interpreted to include outcroppings along Driftpile Creek and Geophoto Creek, the lower intersection of drill hole 78-09, as well as outcroppings and diamond drill hole intersections which form a 1.5 km long continuous belt along the southeast edge of the property (Figures 4a and 4b). Mineralization typically consists of interbedded pyrite and siliceous to cherty black argillite. Pyrite beds, typically less than 0.5 cm thick, contain the bulk of lead and zinc values while irregular carbonate nodules within argillite beds commonly contain some coarser grained galena and sphalerite along cleavage planes. Although pyrite rarely reaches massive proportions, some one to two metre thick sections of LH contain greater than 50% pyrite. Barite occurs throughout LH as stratiform concentrations of flattened nodules or "blebs" with maximum diameters less than 0.3 cm. Thin interbeds of barite (less than 0.5 cm) occur with pyrite, argillite and blebby barite in concentrations near the top of the horizon.

TABLE III ASSAY VALUES FOR SURFACE GRAB SAMPLES; DRIFTPILE CREEK PROPERTY, 1978 and 1979

<u>Sample No.</u>	<u>Cu(%)</u>	<u>Pb(%)</u>	<u>Zn(%)</u>	<u>Ba(%)</u>	<u>Ag (oz/ton)</u>	<u>Type of Mineralization</u>	<u>Location</u>	<u>Type of Sample</u>
12551	0.01	0.01	0.71	46.6	0.01	Barite	4+25S,4+50E	float
12552	0.01	0.02	1.66	36.4	0.01	Barite	5+20S,2+50E	outcrop
12553	0.01	0.76	3.42	46.2	0.01	Barite	5+20S,2+50E	outcrop
12554	0.01	0.25	3.91	0.07	0.01	Pyrite	15+70S,1+80E	float
12555	0.01	8.52	3.26	0.05	0.01	Pyrite	15+50S,1+80E	float
12556	0.01	0.19	1.09	0.06	0.01	Pyrite	21+90S,1+00W	outcrop
12557	0.01	3.59	1.98	0.09	0.01	Pyrite	15+50S,1+80E	float
12558	0.01	16.70	0.02	0.05	0.01	Pyrite	16+00S,2+20E	float
12559	0.01	0.44	2.70	0.05	0.01	Pyrite	15+50S,1+80E	float
12560	0.01	0.10	3.00	3.93	0.01	Pyrite	20+40S,0+85E	outcrop
12561	0.01	11.20	0.11	0.07	0.01	Pyrite	18+10S,1+50E	float
12562	0.01	22.10	11.84	0.06	0.02	Pyrite	24+00S,6+60E	float
12563	0.01	0.06	3.38	25.05	0.01	Barite	Trench 78-01	outcrop
12564	0.01	7.34	2.13	0.08	0.01	Pyrite	15+50S,1+80E	float
12566	0.01	56.90	0.07	0.34	0.14	Galena	2+00N,12+00W	float
1901	0.06	Tr	0.01	Tr	0.13	Quartz Vein	20+00N, 20+50W	float

TABLE IV

SUMMARY OF ASSAYS FROM DIAMOND DRILL HOLES,  
WHITPILE CREEK PROPERTY, 1978 AND 1979

HOLE	FROM (Ft.)	TO (Ft.)	LENGTH		% PB	% ZN	% PB + ZN
			FEET	METRES			
78-01	271.0	323.5	52.5	16.0	0.29	1.77	2.06
78-02	117.0	162.8	34.3	10.4	0.16	1.74	1.90
78-03	207.5	298.5	91.0	27.7	0.18	1.04	1.22
78-04	53.5	186.8	133.3	40.6	0.35	1.87	2.22
78-05	106.0	148.0	42.0	12.8	0.34	2.91	3.25
	70.5	237.5	167.0	50.9	0.30	1.87	2.17
78-06	20.0	148.0	128.0	39.0	0.38	1.23	1.61
78-07	240.0	261.7	21.7	6.6	9.05	3.53	12.58
	235.3	300.0	64.7	19.7	3.45	1.82	5.27
78-08	420.2	444.3	24.1	7.3	4.96	2.84	7.12
	414.1	493.2	79.1	24.1	1.64	2.33	3.97
78-09	80.0	110.0	30.8	9.4	0.75	3.72	4.50
	127.0	137.0	10.0	3.0	0.87	3.60	4.47
	51.0	137.0	86.0	26.2	0.49	2.51	3.00
79-10	80.0	88.4	8.4	2.6	0.80	7.15	7.95
	130.0	147.6	17.6	5.4	0.84	5.81	6.65
	75.0	196.8	121.8	37.1	0.53	3.26	3.79
79-11	no mineralization encountered						
79-12	no mineralization encountered						
79-13	181.8	200.0	18.2	5.5	0.27	2.49	2.67
79-14	406.5	433.0	26.5	8.1	0.27	2.45	2.72
79-15	23.0	58.5	35.5	10.8	0.06	1.06	1.12
	372.0	409.0	37.0	11.3	0.06	1.47	1.57
79-16	181.0	268.7	87.7	26.7	0.17	1.21	1.38
79-17	no significant mineralization (>1% Pb + Zn) encountered						
79-18	73.8	85.0	11.2	3.4	1.04	6.41	7.45
	112.0	125.1	13.1	4.0	0.10	7.39	7.49
	30.0	125.1	95.1	29.0	0.35	3.38	3.73
79-19	137.0	160.0	23.0	7.0	0.34	0.80	1.14
79-20	126.5	185.0	58.5	17.8	0.30	1.78	2.08
	201.0	246.0	45.0	13.7	0.65	2.52	3.17
	307.5	347.7	40.2	12.3	0.64	1.65	2.29
79-21	no mineralization encountered						
79-22	no mineralization encountered						
79-23	58.0	109.5	51.5	15.7	0.73	2.29	3.02
79-24	no mineralization encountered						
79-25	no significant mineralization (>1% Pb + Zn) encountered						
79-26	130.4	230.9	100.5	30.6	0.32	2.53	2.85
	243.5	255.0	9.7	3.0	0.66	2.90	3.56
79-27	no mineralization encountered						
79-28	70.4	80.9	10.5	3.2	3.77	14.01	17.78
	30.0	80.9	50.9	15.5	0.92	3.95	4.87
79-29	no mineralization encountered						
79-30	303.8	350.4	46.6	14.2	0.04	0.72	0.76
	494.6	533.5	38.9	11.9	0.27	1.98	2.25

TABLE V

CATALOGUE OF MINERALIZED INTERSECTIONS

DIAMOND DRILL HOLE	GRID COORDINATES OF INTERSECTION	MINERALIZED HORIZON	OVERALL METAL RATIOS (Pb/Pb + Zn)	TRUE THICKNESS		OVERALL GRADE (Pb + Zn)%
				(FEET)	(METRE)	
79-20	24+60S, 13+00W	TH <sub>2</sub>	0.14	33	10.0	2.08
79-20	24+60S, 12+70W	TH <sub>2</sub>	0.21	33	10.0	3.17
78-07	40+50N, 20+50E	TH <sub>1</sub>	0.65	64	19.5	5.27
78-08	40+80N, 20+00E	TH <sub>1</sub>	0.41	40	13.0	3.97
79-20	24+60S, 11+90W	TH <sub>1</sub>	0.28	29	9.0	2.29
79-28	00+50S, 4+80W	TH <sub>1</sub>	0.19	30	9.5	4.91
78-01	20+00S, 0+50E	UH	0.14	51	15.5	2.06
78-02	16+00S, 0+00E	UH	0.09	45	14.0	1.46
78-03	16+00S, 0+80W	UH	0.15	50	15.0	1.25
78-04	4+80S, 0+20E	UH	0.16	112	34.0	2.22
78-05	4+80S, 0+90E	UH	0.14	108	33.0	2.17
78-06	4+00S, 3+50E	UH	0.24	*123	*37.5	1.61
78-09	24+00S, 2+50E	UH	0.15	*77	*23.5	3.47
79-10	12+00S, 0+40E	UH	0.14	*90	*27.0	3.79
79-16	4+00N, 1+50E	UH	0.09	*90	*27.0	1.38
79-18	14+00N, 15+90W	UH	0.09	*103	*31.5	3.73
79-23	30+00S, 0+50W	UH	0.24	51	15.5	3.02
78-09	24+00S, 5+20E	LH	0.06	52	16.0	3.16
79-13	4+00S, 15+80E	LH	0.10	22	7.0	0.20
79-13	4+00S, 16+10E	LH	0.09	*19	*6.0	2.55
79-13	4+00S, 16+80E	LH	0.10	*20	*6.0	2.60
79-14	4+00S, 15+20E	LH	0.09	*49	*15.0	1.53
79-15	4+00N, 15+30E	LH	0.05	*36	*11.0	1.12
79-15	4+00N, 18+00E	LH	0.04	36	11.0	1.51
79-25	16+00S, 15+10E	LH	----	0	0	----
79-26	22+00S, 15+50E	LH	0.11	39	12.0	2.85
79-30	18+00N, 14+70E	LH	0.05	45	14.0	0.76
79-30	18+00N, 15+60E	LH	0.12	27	8.0	2.25
79-26	22+00S, 15+80E	BH	0.19	6	2.0	3.56

\* incomplete intersection, true thickness is estimated

SUMMARY

MINERALIZED HORIZON	NUMBER OF INTERSECTIONS	OVERALL METAL RATIOS (Pb/Pb+Zn)		TRUE THICKNESS (FT.) (METRE)		OVERALL GRADE (Pb+Zn) %			
		X	σ	X	σ	X	σ		
TH <sub>2</sub>	2	0.18	0.05	33	0	10.0	0	2.63	0.77
TH <sub>1</sub>	4	0.38	0.20	41	16.3	13.0	4.8	4.10	1.32
UH	11	0.15	0.05	82	28.6	25.0	8.7	2.38	0.96
LH	11	0.08	0.03	31	15.5	9.5	4.8	1.85	0.98
BH	1	0.19	--	6	--	2.0	--	3.56	--

Such a body, about 10 m in maximum thickness with an inferred original diameter of about 200 m, was intersected by holes 13 and 14 (Appendix A). Rocks forming the footwall and hanging wall of LH, units B<sub>A</sub> and B<sub>B</sub> respectively, contain less pyrite and the footwall and hanging wall contacts of LH are arbitrarily drawn where concentrations of pyrite decreases below 10%. Barite blebs also become less abundant away from the contacts.

Assay values of LH diamond drill intersections vary from 0.20% to 3.16% Pb + Zn with a mean value of 1.85%. Copper values of LH intersections range from 8 ppm to 75 ppm and average 26 ppm. Silver content varies from values below detection limit (less than 0.1 ppm) to 3 ppm and average about 0.3 ppm. LH has the lowest Pb/Pb + Zn ratio (0.08) of the four mineralized horizons at Driftpile Creek. Silver and copper values do not bear any relationship to lead or zinc assays. True thickness of LH varies from areas where it is absent to accumulations about 16.0 m thick. Mean thickness of LH intersections seen to date is 9.5 m.

Horizon BH - Horizon BH is seen in only one drill hole (79-26) approximately 2 m downsection from horizon LH. In this intersection, BH contains 0.66% Pb and 2.90% Zn over a true thickness of 2.0 m.

Horizon UH - The thickest and most continuous zone of mineralization outlined to date on the property is termed "UH". Delineated for a strike length of over 1100 m in the south central part of the property, it can be reliably extrapolated to an average depth of 250 m for this distance. UH was also intersected by diamond drilling in 1979 at an isolated locality at the west central edge of the property (DDH 79-18). Mineralization typically consists of finely laminated pyrite, calcium carbonate and thin shale intervals which are vertically separated by barren shale beds averaging about 0.5 m in thickness. Carbonate minerals in the upper part of the horizon gradually change facies to barite in a northerly



direction towards Driftpile Creek (Figure 5). This is accompanied by a general decrease in overall pyrite content which parallels the isopach trends of the horizon (Figure 5). True thickness varies from about 14.0 m to 37.5 m, averaging 25.0 m. Overall metal grades range from 1.25% to 3.79% combined lead and zinc, averaging 2.38%. Overall metal ratios (Pb/Pb + Zn) vary from 0.09 to 0.24 and average 0.15. Apparent trends in metal contents of UH parallel facies and thickness variation in the horizon (Figure 5). Copper content of UH varies from 8 to 55 ppm, averaging about 19 ppm. Silver values range from trace amounts to 0.5 ppm and average about 0.2 ppm. Both copper and silver variation appear to bear no relationship to overall grade, thickness or base metal ratios of the horizon. Both footwall and hanging wall contacts of UH are abrupt.

Horizons TH<sub>1</sub> and TH<sub>2</sub> - Mineralized horizons TH<sub>1</sub> and TH<sub>2</sub> occur at the top of the known stratigraphic column at Driftpile Creek, some 115 and 140 metres above UH, respectively. TH<sub>1</sub> was intersected in diamond drill holes 78-07, 78-08, 79-20, and 79-28. In holes 78-07 and 78-08, this zone consists of interlaminated pyrite, carbonate gangue and shale, very similar to UH mineralization. Barite, encountered near the top of the intersection in hole 78-07, is massive, grey in colour and distinctly granular in nature. Galena and sphalerite within this barite consists of lamellar concentrations of interstitial disseminations. This style of mineralization is non-pyritic. True thickness of TH<sub>1</sub> in this location varies from a 19.5 m intersection in DDH 78-07 to approximately 13.0 m in DDH 78-08, 85 m down dip. Grade over this width in hole 78-07 was 5.27% combined lead-zinc with a Pb/Pb + Zn ratio of 0.65. Mineralization encountered in 78-08 averaged 3.79% combined lead-zinc with a Pb/Pb + Zn ratio of 0.41. Copper content of

both intersections varies from 5 to 35 ppm, averaging 20 ppm. Silver values range from trace amounts to 4 ppm and average about 2 ppm. High-grade baritic mineralization in hole 78-07 averages 12.58% combined lead and zinc over a true thickness of 6.0 m while stratigraphically equivalent pyritic mineralization in 78-08 grades 7.12% lead plus zinc over 3.5 m.

An intersection of TH<sub>1</sub> in hole 79-20 consists of bedded pyritic, carbonate-rich mineralization similar to UH. Here, a true thickness of 9.0 m assayed 2.29% combined lead and zinc. Copper values ranged from 20 to 40 ppm, averaging 25 ppm while silver ranged from trace amounts to 3 ppm, averaging 1 ppm.

Diamond drill hole 79-28 intersected a 9.5 m true thickness of pyritic mineralization which averages 4.91% lead plus zinc with a 0.19 Pb/Pb + Zn ratio. At this location, TH<sub>1</sub> contained between 8 and 35 ppm Cu and trace amounts of silver.

Mineralized horizon TH<sub>2</sub> resembles TH<sub>1</sub> and occurs 20 m stratigraphically above it in an unfaulted intersection cut by DDH 79-20. A fault repetition of TH<sub>2</sub> was also seen in the hole. Here, the 10 m thick section of pyritic mineralization averages 2.08% lead plus zinc in the upper intersection and 3.17% lead plus zinc in the lower intersection while Pb/Pb + Zn ratios are 0.14 and 0.21 respectively. Copper values range between 10 and 30 ppm and average 20 ppm, while silver assays range from trace amounts to 1.5 ppm.

## GEOCHEMICAL SURVEY

### Introduction

Much of the Driftpile Creek property was sampled by Placer in 1974 and 1975 at roughly 100 foot (30.5 m) intervals on east-west lines spaced approximately 400 feet (122 m) apart. The 1978 GJV sampling program increased sampling density on the property to 50 foot (15.2 m) intervals on east-west lines spaced 100 feet (30.5 m) apart to provide more detail on the size and continuity of anomalous trends. A few areas with geomorphological complications required line spacing of 50 feet (15.2 m). The 1978 soil survey covers an area approximately 10,000 feet (3060 m) long and 6000 feet (1830 m) wide and comprised about 6,400 samples. The 1979 soil survey extended the grid approximately 2800 feet (850 m) south on 200 foot (60 m) line spacing with 50 foot (15.2 m) sample spacing. The 1978 grid was also extended on west and east sides (Figure 6) to ensure that all lead anomalies were closed. About 4900 soil samples were taken on the property in 1979.

### Field and Laboratory Technique

Samples were collected in kraft paper bags which were numbered in the field with their individual grid designation. The sample locations were established by hip chain and compass survey and marked with one metre lath pickets. All samples were shipped air freight to Chemex Labs Ltd., North Vancouver, B.C. where they were dried, screened to a minus 80 mesh fraction and analyzed routinely for copper, lead and zinc using a nitric-perchloric acid extraction and atomic absorption spectrometry. Samples which contained a high barium content required redigestion due to barium interference with lead analysis. A portion of the minus 80 mesh fraction from each sample was stored at the lab. Samples from the 1974 and 1975 surveys had undergone the same analytical procedure at Placer's Research Lab in Vancouver for lead, zinc, silver and barium.

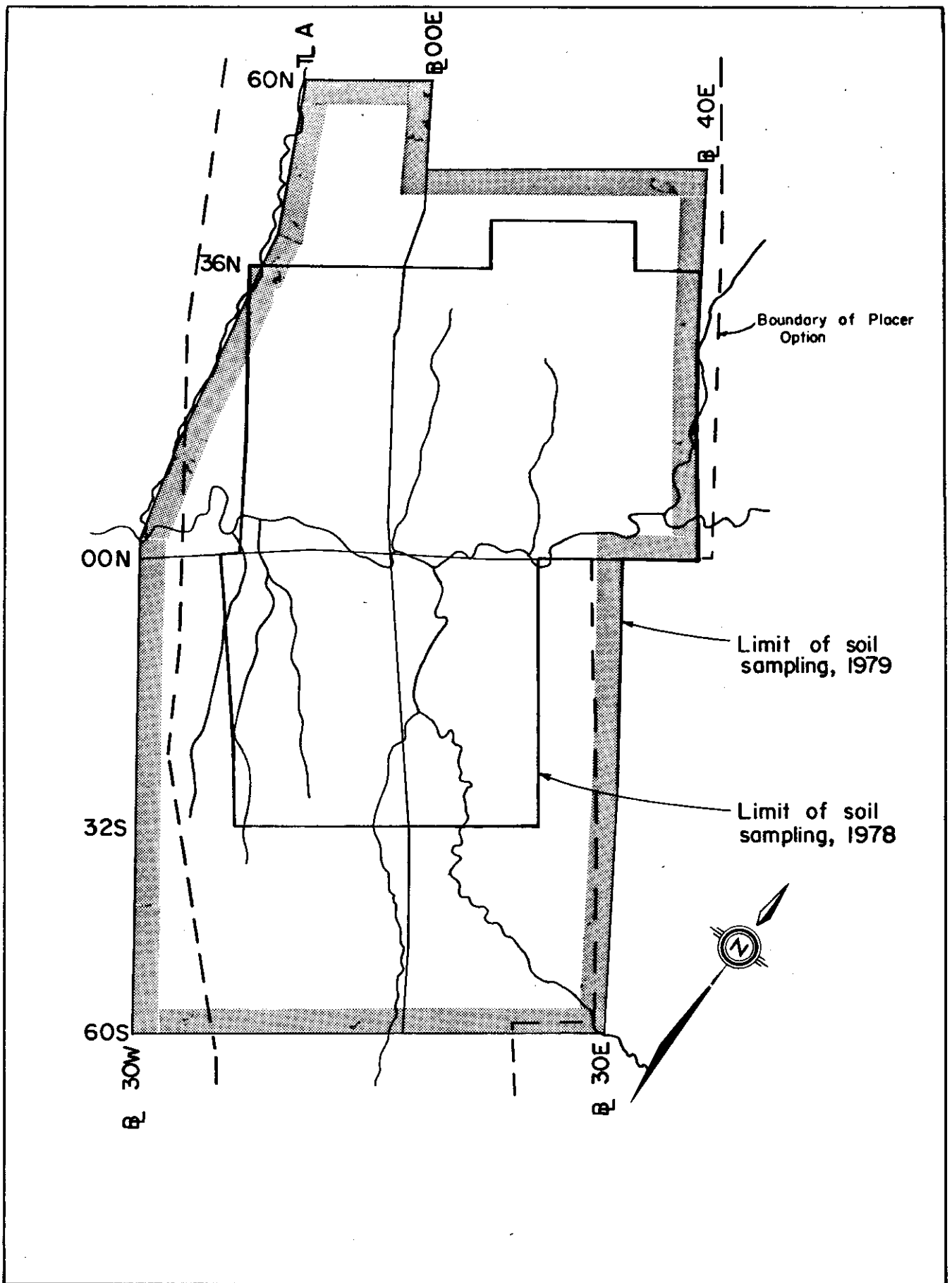


Figure 6: Extent of soil sampling program, 1978 and 1979

## RESULTS

Copper, zinc and lead soil geochemical values are plotted on Figures 10a, 10b, 11a, 11b, 12a and 12b. Due to time constraints, rigorous statistical treatment of geochemical data from the 1974, 1975, 1978 and 1979 programs was not performed for copper and zinc values. Lognormal plots of sample population vs metal content for copper and zinc values over a representative area on the property were prepared in 1978 and are reproduced on Figures 7 and 8 respectively. Cumulative frequency plots for lead concentration in soil have been calculated for all samples taken to date on the property (Figure 9).

Copper soil values are erratic but their ranges reflect lognormal background distributions (Figure 7) indicating that copper is derived from rock backgrounds and that no copper is associated with the zinc-lead mineralization on the property. Indeed, surface and subsurface mineralization assayed to date shows only trace amounts of copper. No significant copper values are associated with other stratiform barite-lead-zinc showings in the area or with the Cyprus Anvil-HBOG Cirque barite-lead-zinc deposit. Analysis for copper in soil samples will probably only be carried out on a "spot-check" basis in the future.

Lognormal plots on sample population vs zinc content, shown on Figure 8, indicate that respective distributions of the 1974-75 Placer and 1978 GJV surveys differ. Background populations for both distributions are symmetrical with identical means although zinc background values from the earlier survey have a slightly greater range. While anomalous population curves display near identical shapes and ranges in both surveys, mean value of the 1978 GJV zinc values is somewhat lower than that of the 1974-75 results. A threshold value of 500 ppm zinc is indicated for the GJV zinc data while the Placer zinc population yields a threshold value of about 600 ppm. Placer's zinc values, especially those

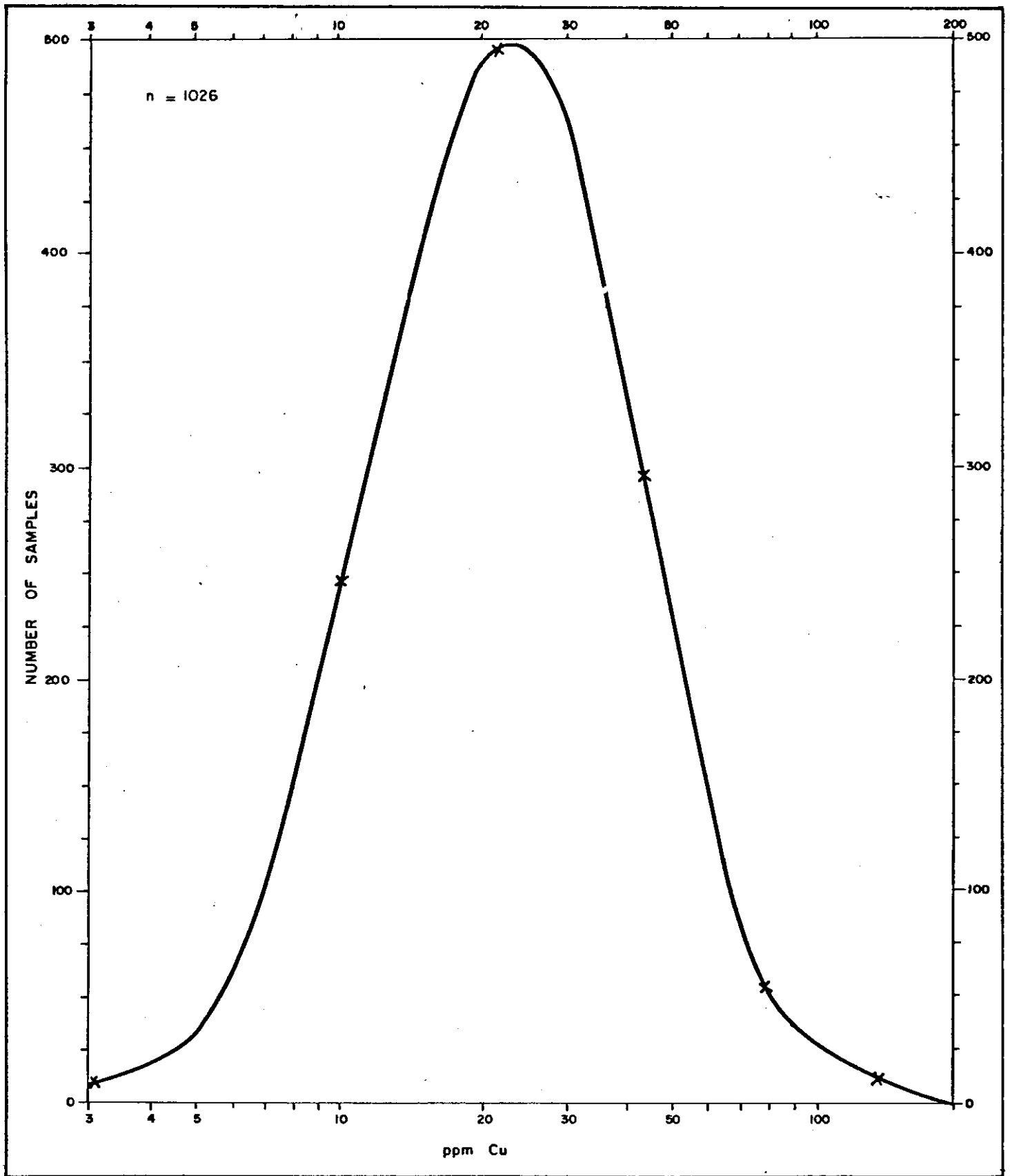


Figure 7 : Lognormal plots for copper, 1978 soil survey; number of samples vs copper values

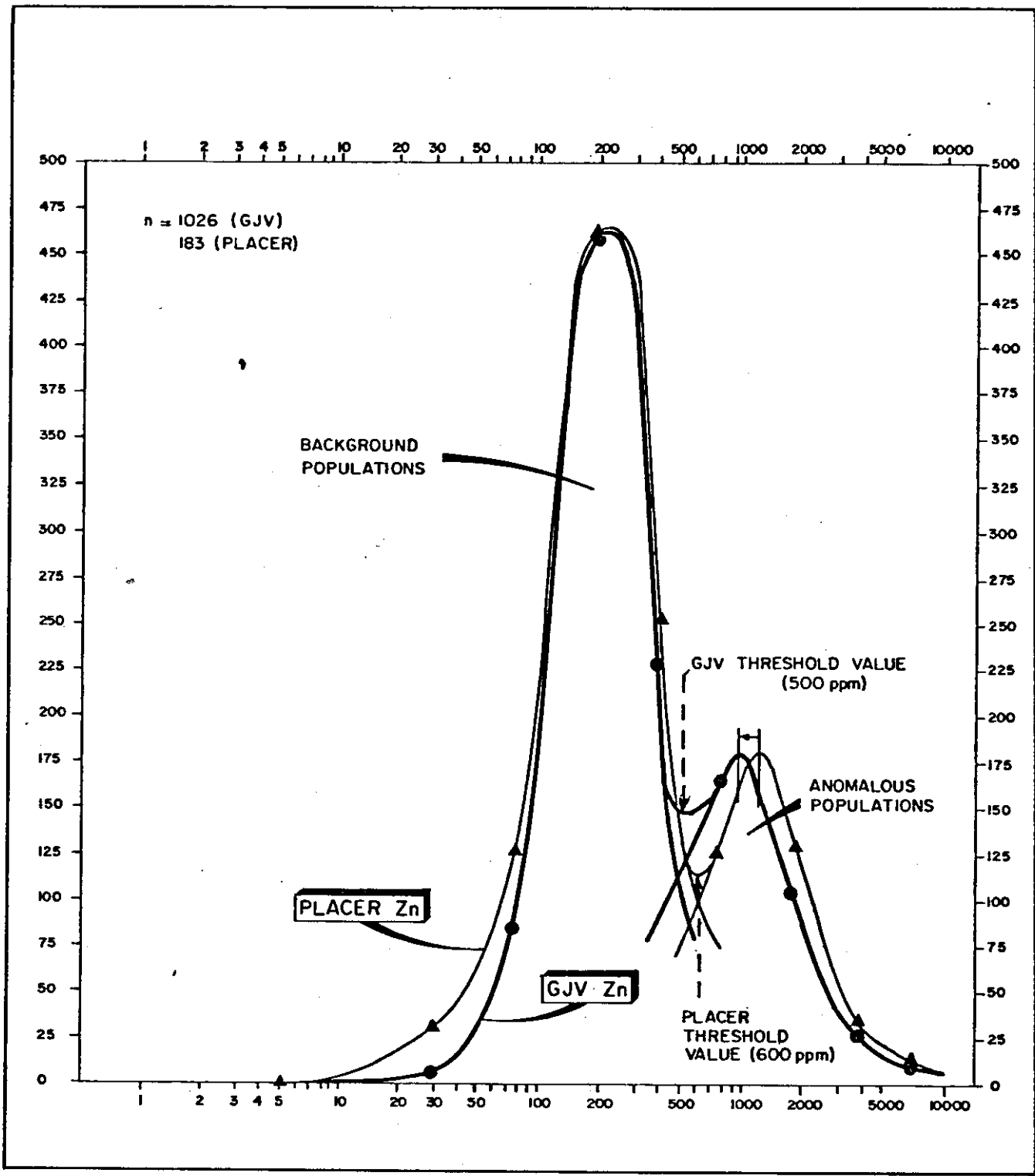


Figure 8 : Lognormal plots for zinc, 1974-75 soil surveys; number of samples vs zinc values (ppm). Lower number of Placer samples is normalized to GJV sample population size

which occur in the lower half of the anomalous population, were logarithmically adjusted to conform with the GJV data before they were plotted on Figures 11a and 11b. Although contoured zinc anomalies are well defined by abrupt margins, they display a more erratic distribution in comparison with lead anomalies. Previous experience in pyritic shale environments suggests that the relatively high degree of hydromorphic zinc dispersion, especially along fault zones, reduces its effectiveness as a tracer of mineralization except in a general or regional sense.

Lead soil assays have proven invaluable for locating and interpreting mineralization, even in areas with overburden complications. Cumulative frequency plots for lead values in soil on the Driftpile Creek property are given on Figure 9. To test the effect of deep oxidation of mineralization below the highest lake terrace level on the surficial distribution of lead, soil geochemical values were divided into two populations: (i) those samples collected above the highest lake level; and, (ii) samples collected below the highest lake level. Curves for both groups show that although they have identical shapes and therefore describe similar populations, soil samples collected above the maximum lake level have an overall lower lead content. Threshold value for samples from the former group is 350 ppm while a 700 ppm threshold value is indicated for samples taken below the lake level. This effect may be the result of a lower initial content of lead in both host rocks and in mineralization above the highest lake level, or an overall higher degree of lead concentration in soil below the highest lake level. The former explanation seems unlikely since the structural complexity of rocks underlying the property decrees that many, if not all, mineralized horizons and host lithologies should be exposed above the highest lake level which is a horizontal feature. The best developed limonitic B horizon occurs in soils below the highest lake level suggesting that deep oxidation of pyrite and other sulphide minerals has occurred here.



Lead released by this increased weathering is probably reconcentrated by iron oxides in the soils. In fact, a large gossan near the junction of base lines OON and OOE commonly contains more lead in surface limonite samples than drill core of the underlying pyritic mineralization from which the gossan was derived. Oxidation at this location extends to a depth of 10 m.

In conclusion, results of detailed soil sampling carried out on the property by GJV in 1978 and 1979 have greatly clarified a previously rather poorly defined target. Elongate, well defined lead anomalies appear to relate directly to underlying mineralization. Zinc soil geochemistry, in part, confirms the lead data however some zinc anomalies may relate to fault zones which cut mineralization at depth. Soil geochemical programs carried out to date appear to have outlined the extent of surface exposures of mineralization on the property except perhaps along the northwest part of the grid. Lead soil anomalies, the best indicator of underlying mineralization, occur almost continuously over an area approximately 3 km long by 2 km wide.

### DIAMOND DRILLING

The 1979 drilling was conducted by the 1978 contractor, D.J. Drilling Co. Ltd. of Vancouver using the same Boyle Brothers 17A model drill equipped with hydraulic feed, wireline and a water-cooled diesel engine. The 1978 program consisted of 3334 feet (1016.2 m) in 9 holes between July 18 and August 16. After the first three holes were drilled using NQ size equipment, the program was converted to BQ when the drilling proved easier than expected.

The 1979 program consisted of 7927 feet (2416.1 m) in 21 BQ holes between May 19 and July 30, for a cumulative total to date of 11,261 feet (3432.3 m) in 30 holes. Core recovery was better than 95 percent in 1979, dropping only in fault zones. A summary of the drilling is given in Table VI on the following page.

Mineralized intersections were sampled by sawing core longitudinally with a diamond blade. In 1978, the complete split portion was shipped to Vancouver for assay but in 1979, a small gas-driven crusher and a Jones splitter were used to reduce the weight of each core sample shipped to less than one kilogram. The crushed portion of each sample split is stored under cover at the property in plastic bags while the uncrushed half of the core is stored in core boxes in the DIAND core library at Whitehorse.

D.J. Drilling's crew, equipment and performance were entirely satisfactory during the 1979 program and equipment failures and down-time were minimal.

TABLE VI

DIAMOND DRILL HOLE SUMMARY

<u>HOLE</u>	<u>LOCATION</u>	<u>DIP</u>	<u>AZIMUTH</u>	<u>SIZE</u>	<u>LENGTH</u>	
					<u>FEET</u>	<u>METRES</u>
1978						
78-01	2000S/170W	-55	055	NQ	450	137.2
78-02	1600S/90W	-55	055	NQ	198	60.4
78-03	1600S/90W	-90	-	NQ	321	97.8
78-04	470S/00E	-45	055	BQ	225	68.6
78-05	470S/00E	-85	235	BQ	256	78.0
78-06	470S/300E	-45	055	BQ	465	141.7
78-07	4100N/1650E	-50	093	BQ	361	110.0
78-08	4100N/1650E	-85	093	BQ	500	152.4
78-09	2400S/200E	-50	055	BQ	558	170.1
1978 TOTAL:					<u>3334</u>	<u>1016.2</u>
1979						
79-10	1200S/060E	-55	055	BQ	342	104.2
79-11	400S/1250W	-60	055	BQ	450	137.2
79-12	400S/1250W	-75	055	BQ	631	192.3
79-13	400S/1550E	-50	055	BQ	299	91.1
79-14	400S/1250E	-50	055	BQ	496	151.2
79-15	420N/1500E	-50	055	BQ	426	129.8
79-16	400N/00E	-50	055	BQ	318	96.9
79-17	1200N/200E	-50	055	BQ	260	79.2
79-18	1400N/1640W	-50	055	BQ	412	125.6
79-19*	1200N/1350W	-50	055	BQ	160	48.8
79-20	2500S/1400W	-55	055	BQ	543	165.5
79-21	2450S/900W	-50	235	BQ	429	130.8
79-22	2450S/1660W	-50	055	BQ	459	139.9
79-23	3000S/100W	-55	055	BQ	622	189.6
79-24	3200S/300W	-50	055	BQ	300	91.4
79-25	1600S/1440E	-50	055	BQ	211	64.3
79-26	2250S/1340E	-50	055	BQ	291	88.7
79-27	050S/600W	-60	055	BQ	272	82.9
79-28	050S/450W	-50	235	BQ	155	47.2
79-29	1400N/2550W	-70	055	BQ	281	85.6
79-30*	1800N/1350E	-75	055	BQ	570	173.7
1979 TOTAL:					<u>7927</u>	<u>2416.1</u>
GRAND TOTAL:					<u>11,261</u>	<u>3432.3</u>

\* Abandoned in badly caving ground

# ARCHER, CATHRO

AND ASSOCIATES LTD.

CONSULTING GEOLOGICAL ENGINEERS

BOX 4127, WHITEHORSE, Y.T. VIA 3S9 667-4415

STANDARD BUILDING, VANCOUVER, B.C. 688-2568

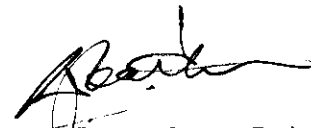
1016 STANDARD BUILDING  
510 WEST HASTINGS STREET  
VANCOUVER, B. C.  
V6B 1L8

## CERTIFICATE

I, Robert J. Cathro, with business addresses in Whitehorse, Yukon Territory, and Vancouver, British Columbia, and residential address in West Vancouver, British Columbia, do hereby declare

1. I am a consulting engineer.
2. I am a 1959 graduate of the University of British Columbia in geological engineering.
3. From 1959 to 1965 I was engaged in mining and exploration geology with United Keno Hill Mines Ltd., Giant Yellowknife Mines Ltd., and Eldorado Mining and Refining Ltd. I entered private practice in January, 1966.
4. I am a registered professional engineer in British Columbia and Yukon Territory.
5. I have supervised the work described in this report.

Respectfully submitted,



R.J. Cathro, B.A.Sc., P. Eng.

**ARCHER, CATHRO**  
AND ASSOCIATES LTD.  
CONSULTING GEOLOGICAL ENGINEERS

Box 4127, WHITEHORSE, Y.T. VIA 3B9 667-4415

STANDARD BUILDING, VANCOUVER, B.C. 688-2568

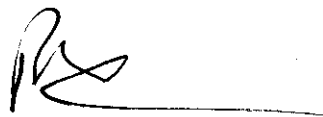
1016 STANDARD BUILDING  
510 WEST HASTINGS STREET  
VANCOUVER, B.C.  
V6B 1L8

STATEMENT OF QUALIFICATIONS

I, Robert C. Carne, residing at 5665 Toronto Road, Vancouver, British Columbia, state that:

1. I have graduated from the University of British Columbia with a B.Sc. degree in Geological Sciences in 1974.
2. I have been employed by Archer, Cathro & Associates Ltd. as a geologist since 1977 and that I have been engaged in mineral exploration in British Columbia, Yukon Territory and Northwest Territories since 1970.
3. I am a member of the Geological Association of Canada.
4. I am a member of the Geological Society of America.
5. I am a member of the Society of Economic Paleontologists and Mineralogists.
6. I personally supervised the exploration program at the Driftpile property during 1979 and logged all drill core.

Respectfully submitted,



Robert C. Carne, B.Sc.

RCC:jm

APPENDIX A - DIAMOND DRILL SECTIONS

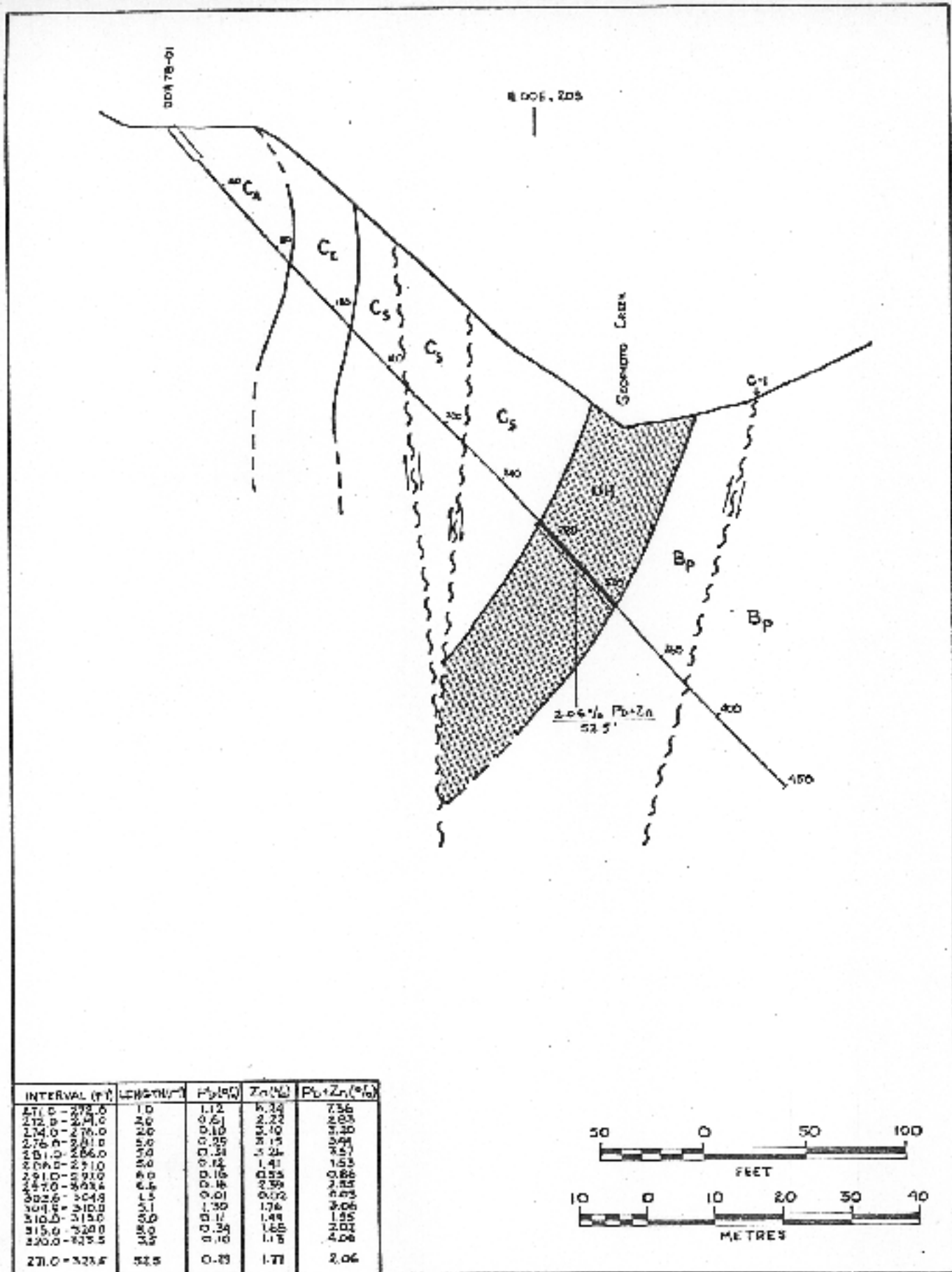


Figure A-1: Generalized cross-section, DDH 78-01

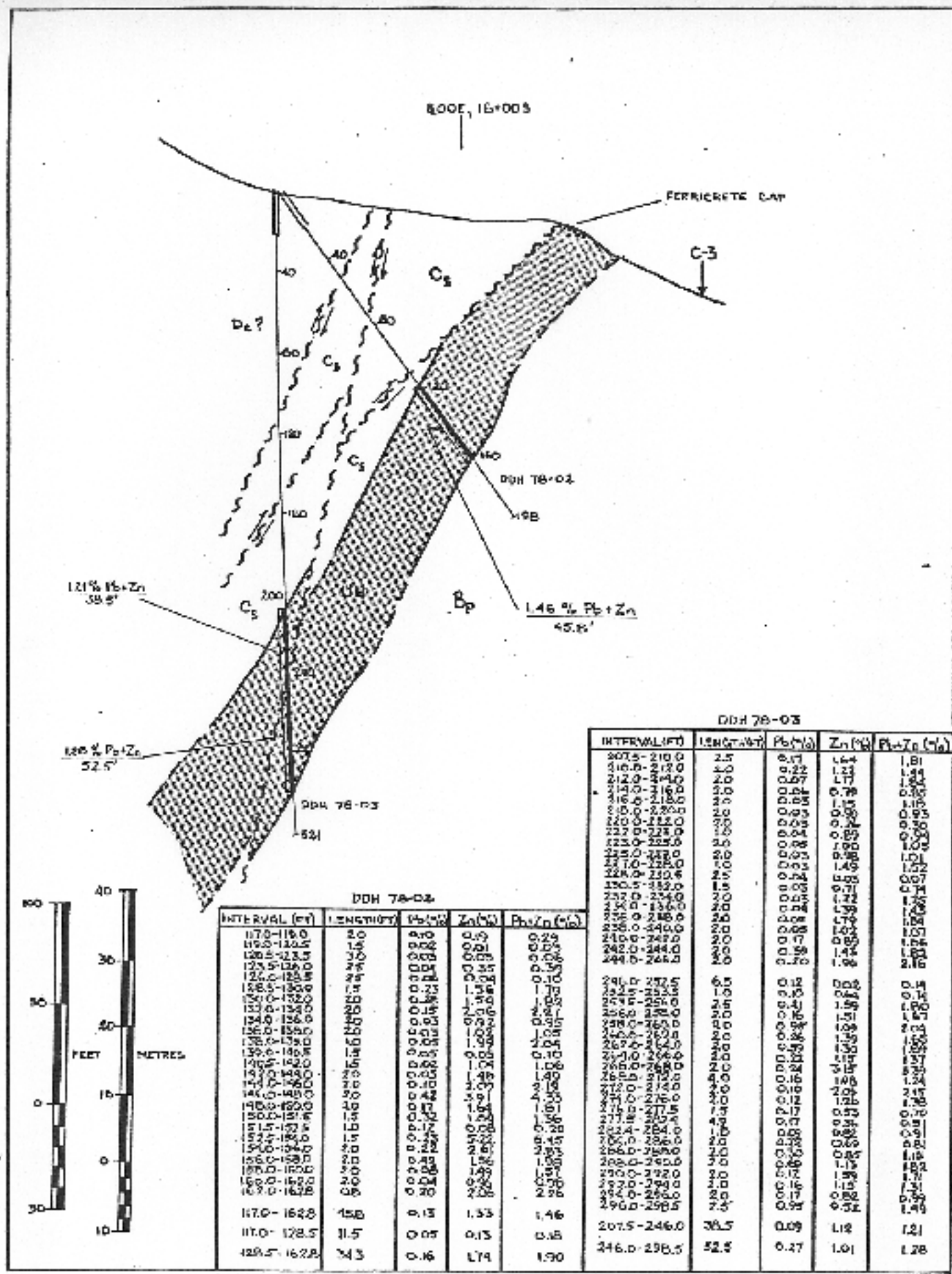


Figure A-2: Generalized cross-section, DDH 78-02 and 78-03



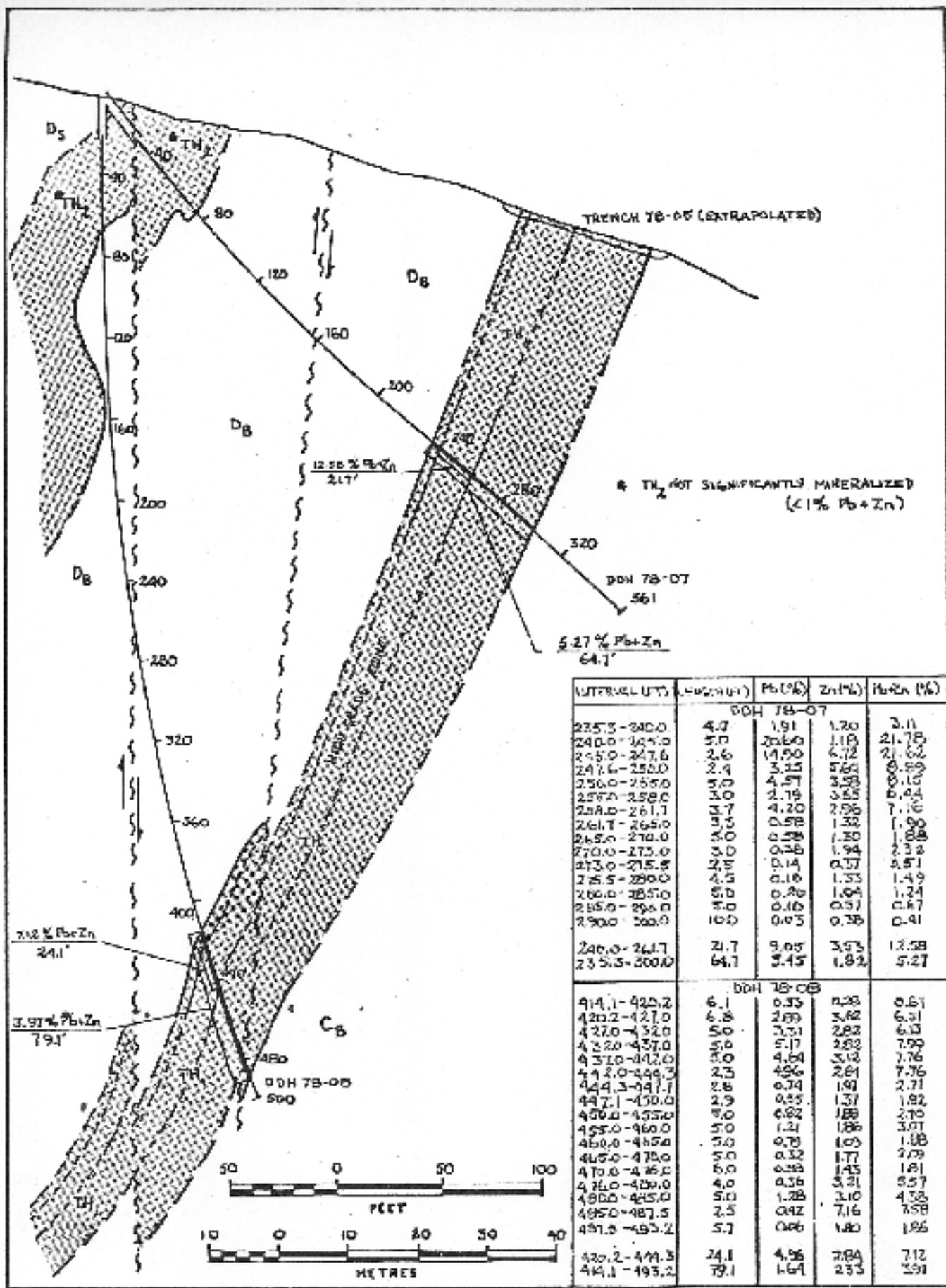
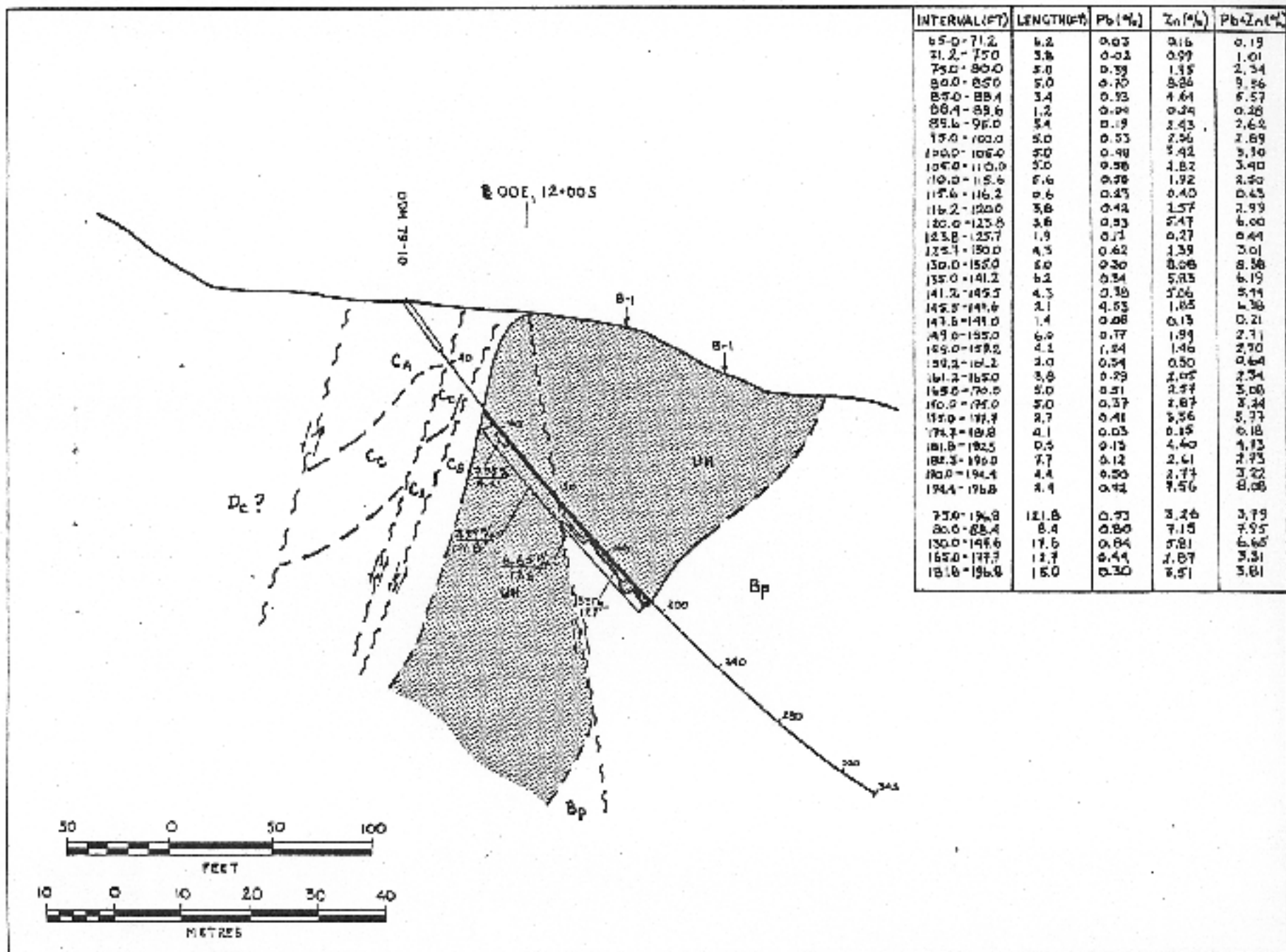


Figure A-4: Generalized cross-section, DDH 78-07 and 78-08

Figure A-6: Generalized cross-section, DDH 79-10



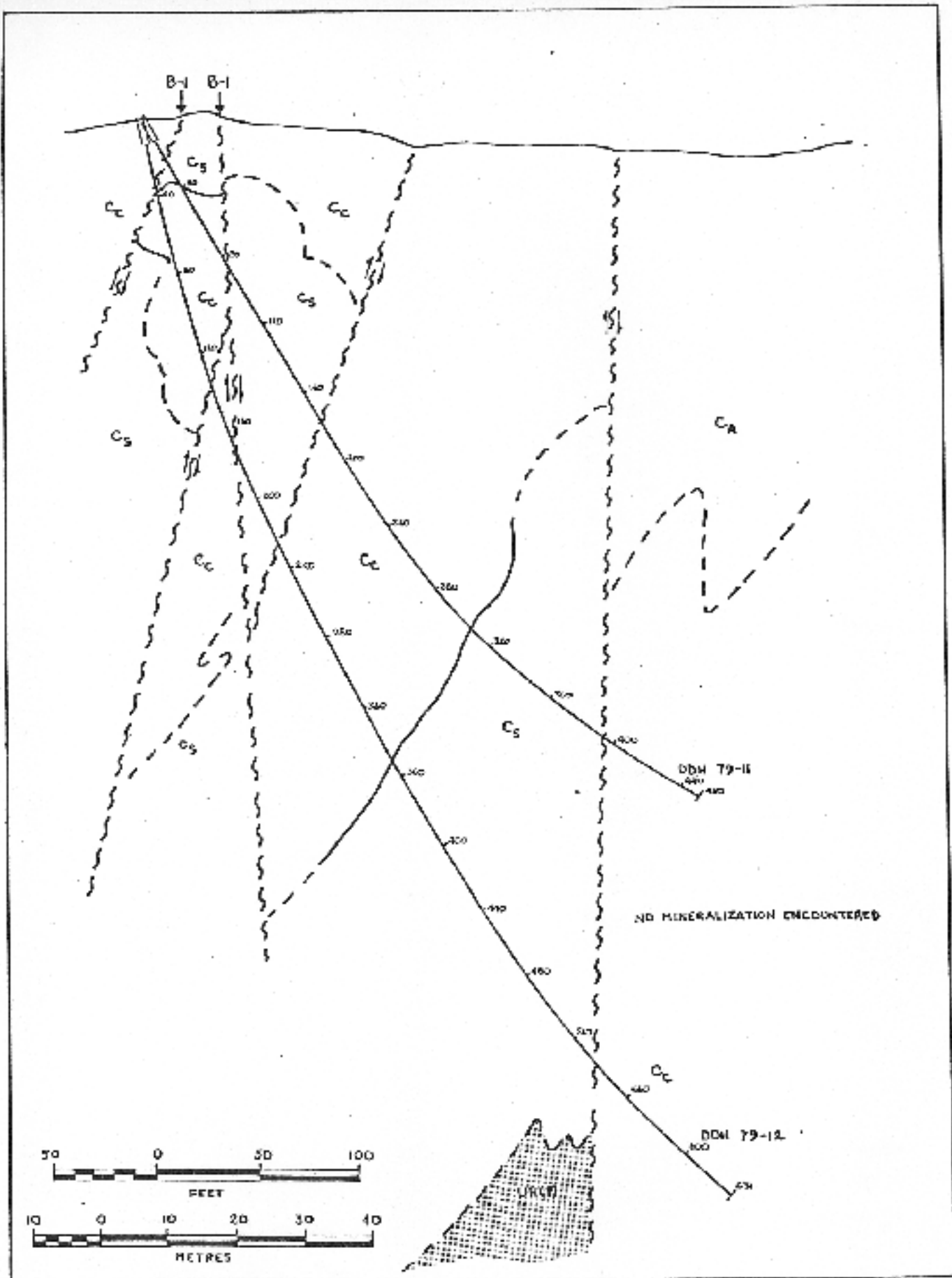
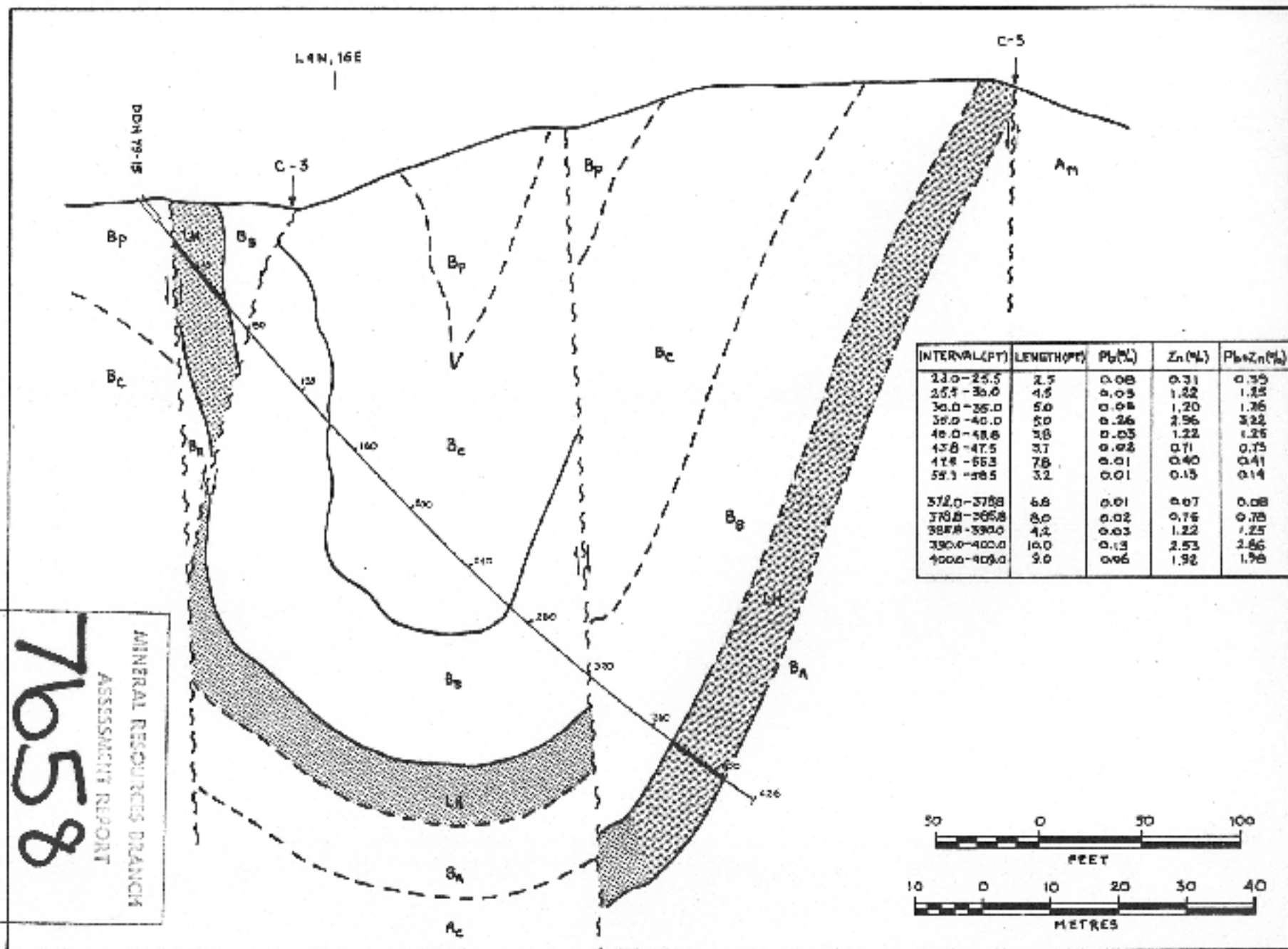


Figure A-7: Generalized cross-section, DBH 79-11 and 79-12

Figure A-9: Generalized cross-section, DDH 79-15



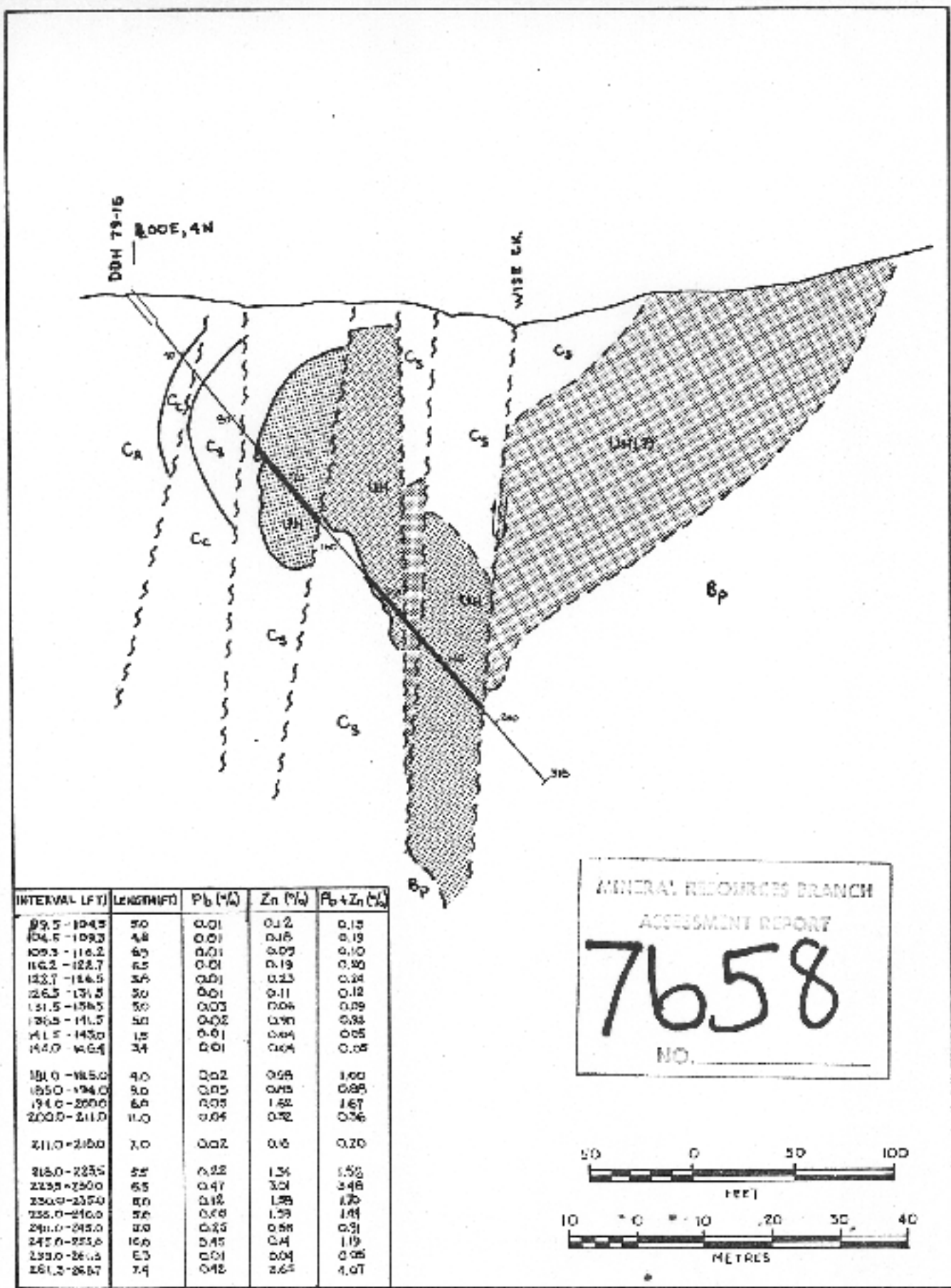
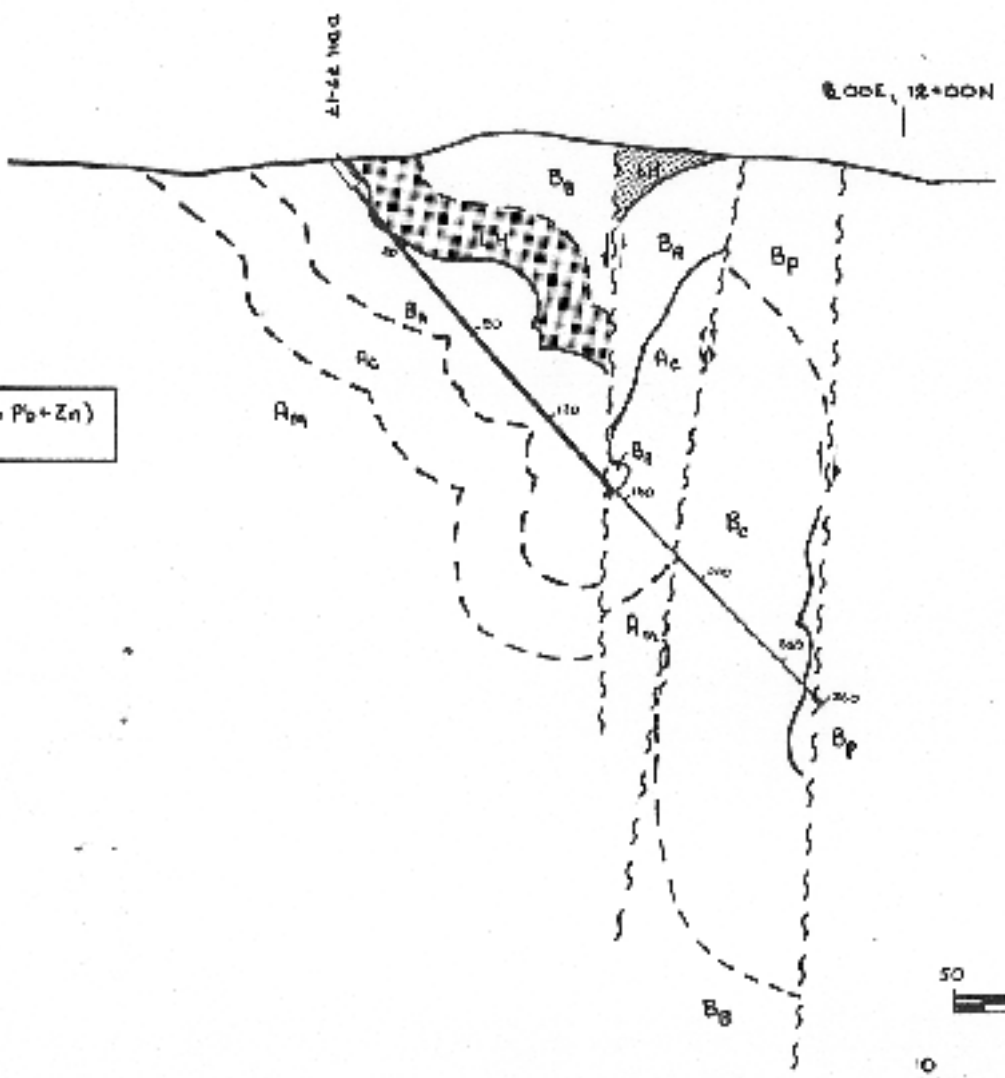
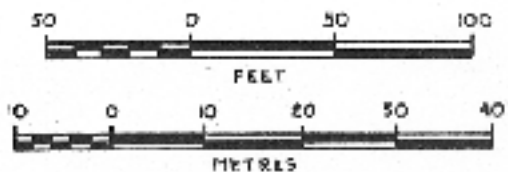


Figure A-10: Generalized cross-section, DDH 79-16

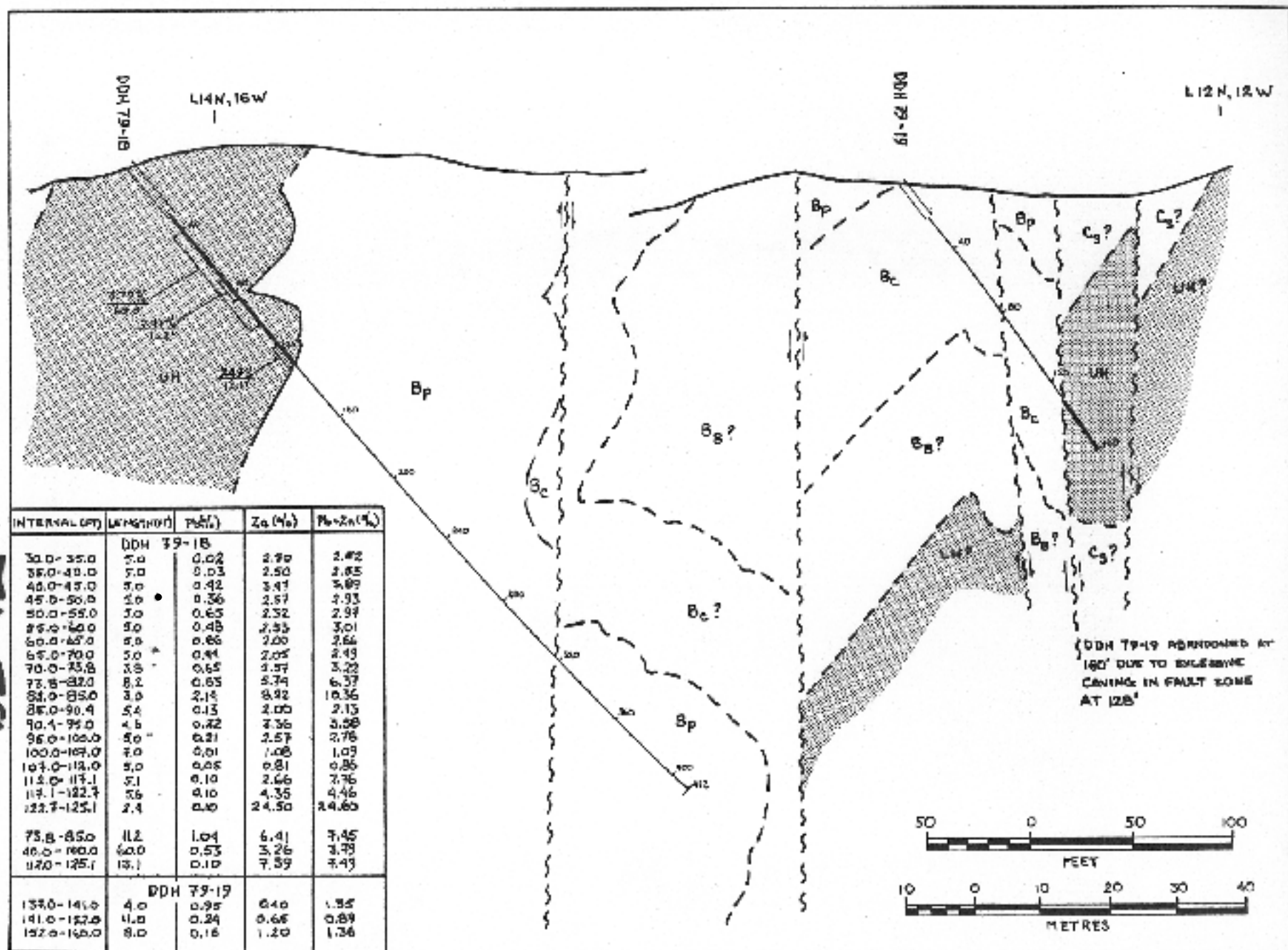


NO SIGNIFICANT ASSAYS (7% Pb+Zn)  
12.0' to 157.0'

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**7658**  
NO. \_\_\_\_\_

Figure A-11: Generalized cross-section, DDH 79-17

Figure A-12: Generalized cross-section, DDH 79-18 and 79-19



71058

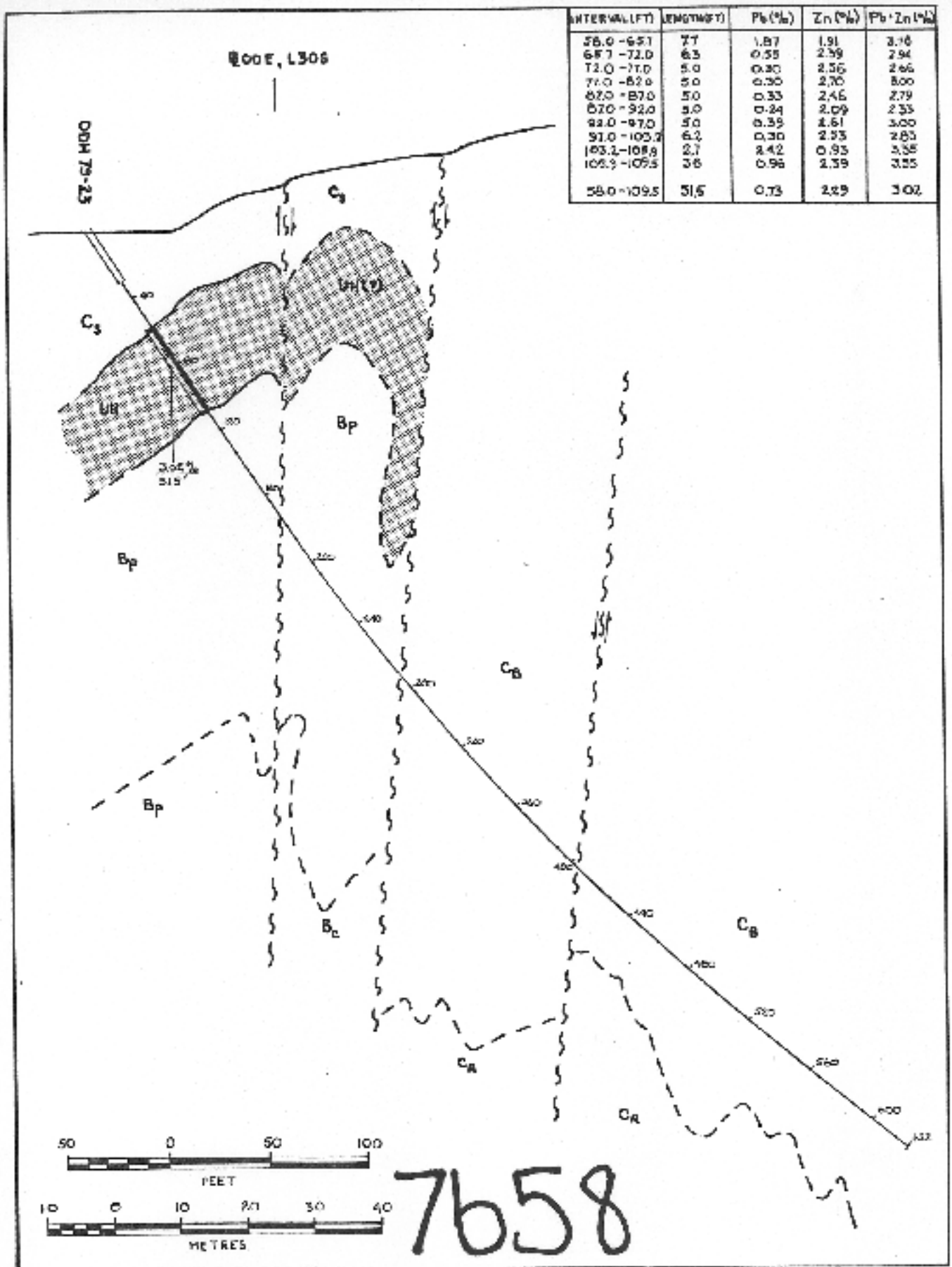


Figure A-14: Generalized cross-section, DDH 79-23



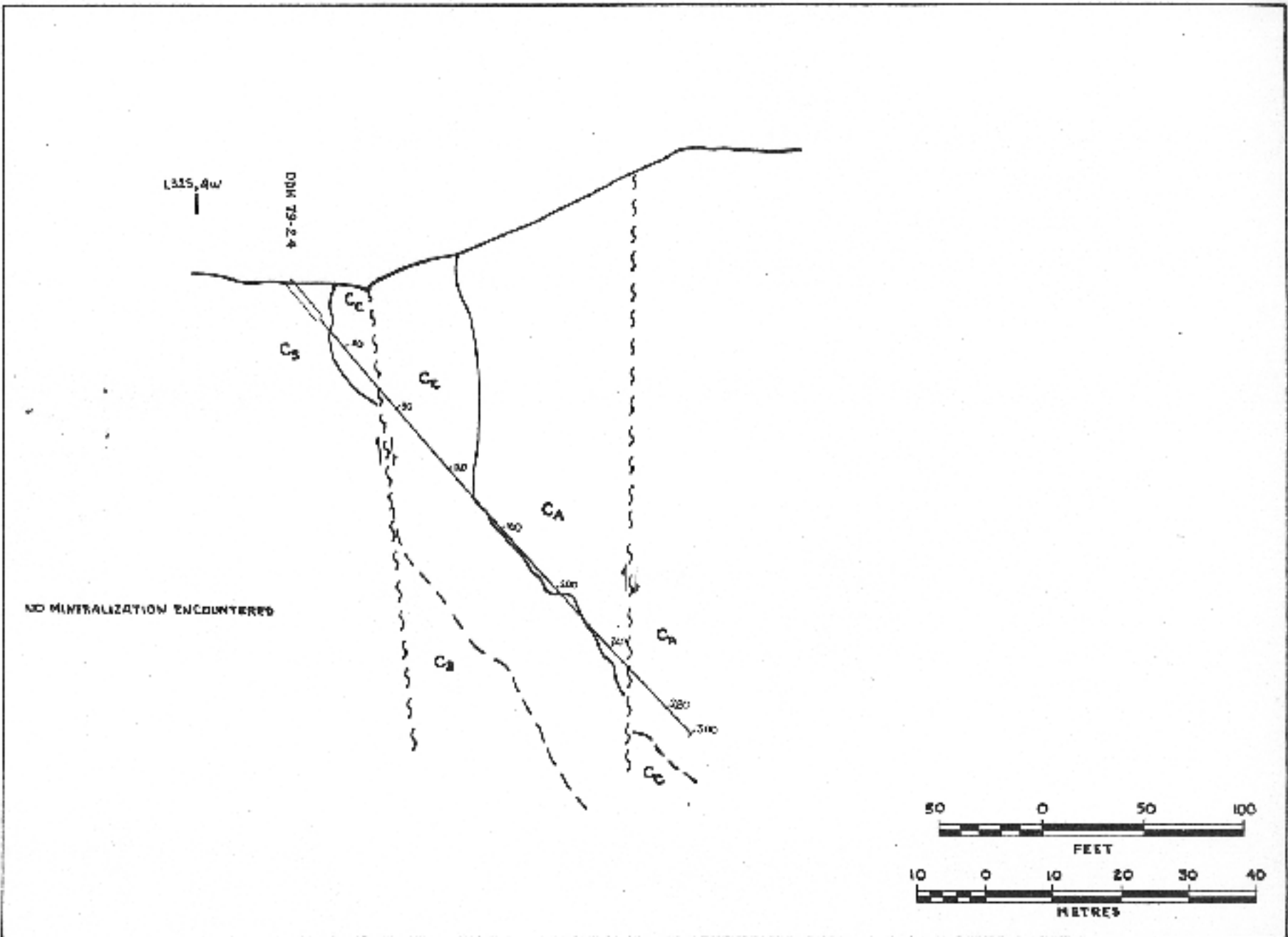
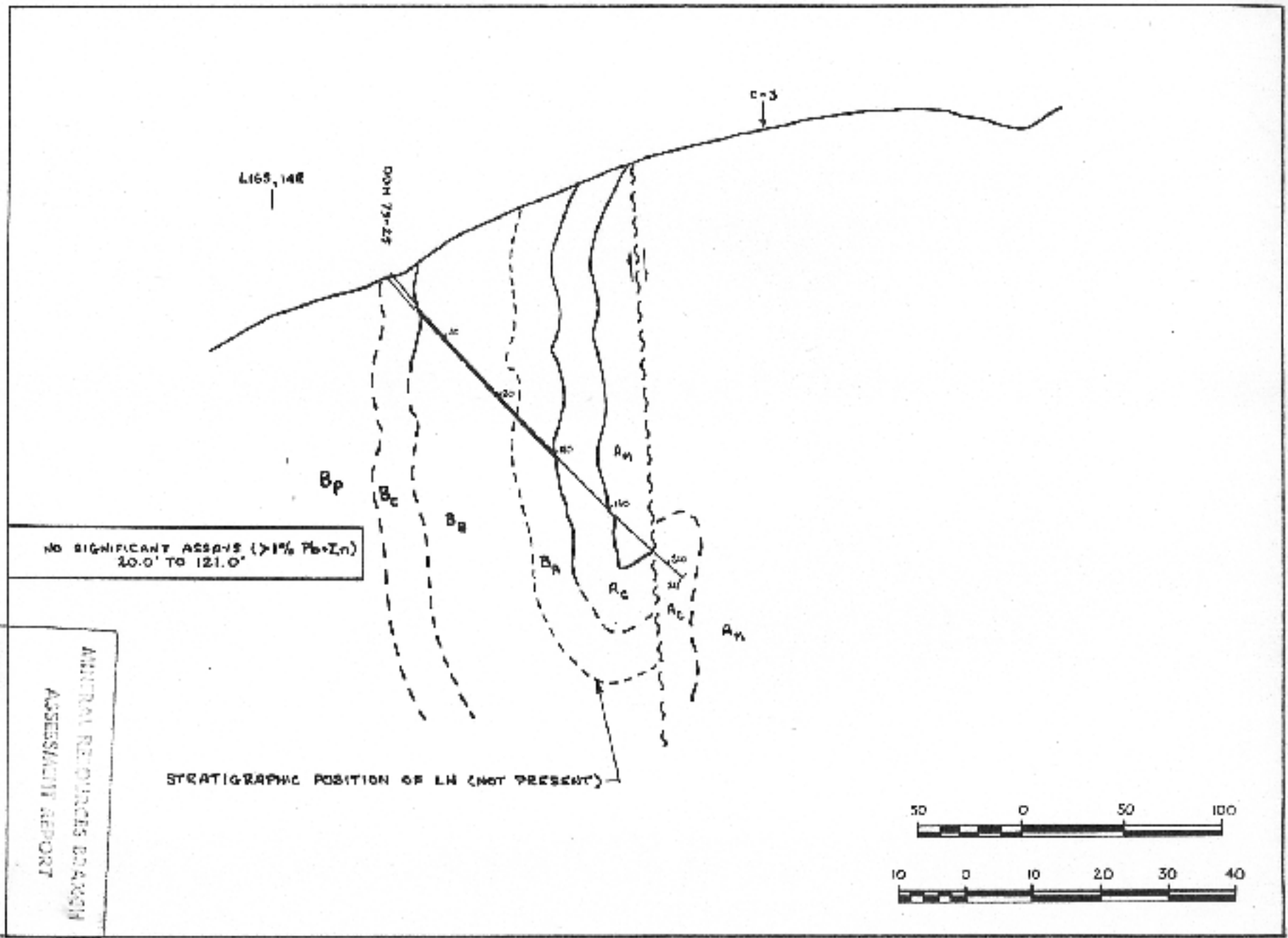


Figure A-15: Generalized cross-section, DDM 79-24

7658

Figure A-10: Generalized cross-section, DDH 79-25



MINERAL RESOURCES BOARD  
ASSESSMENT REPORT  
7658  
NO.

Figure A-17: Generalized cross-section, DDH 79-26

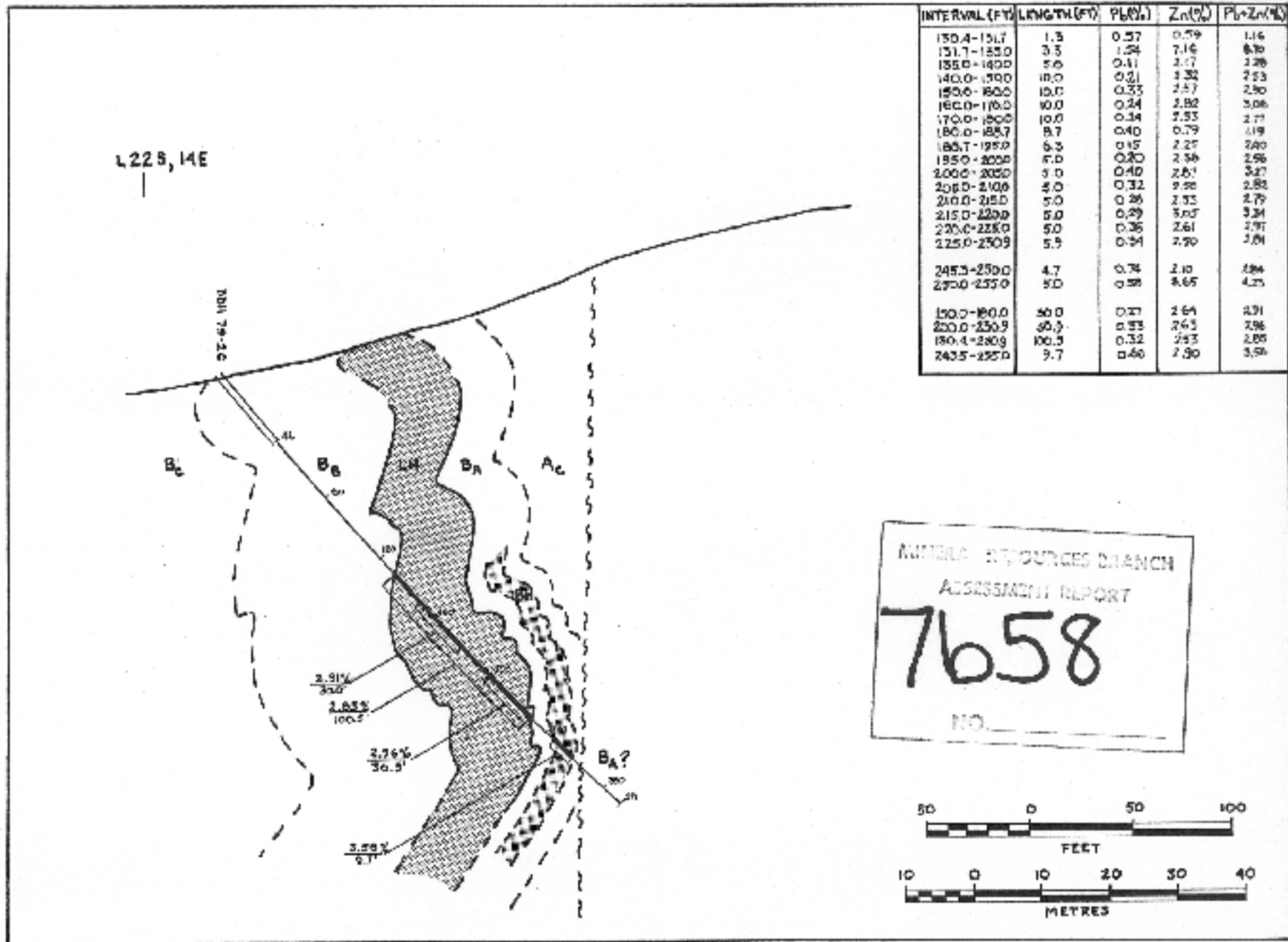
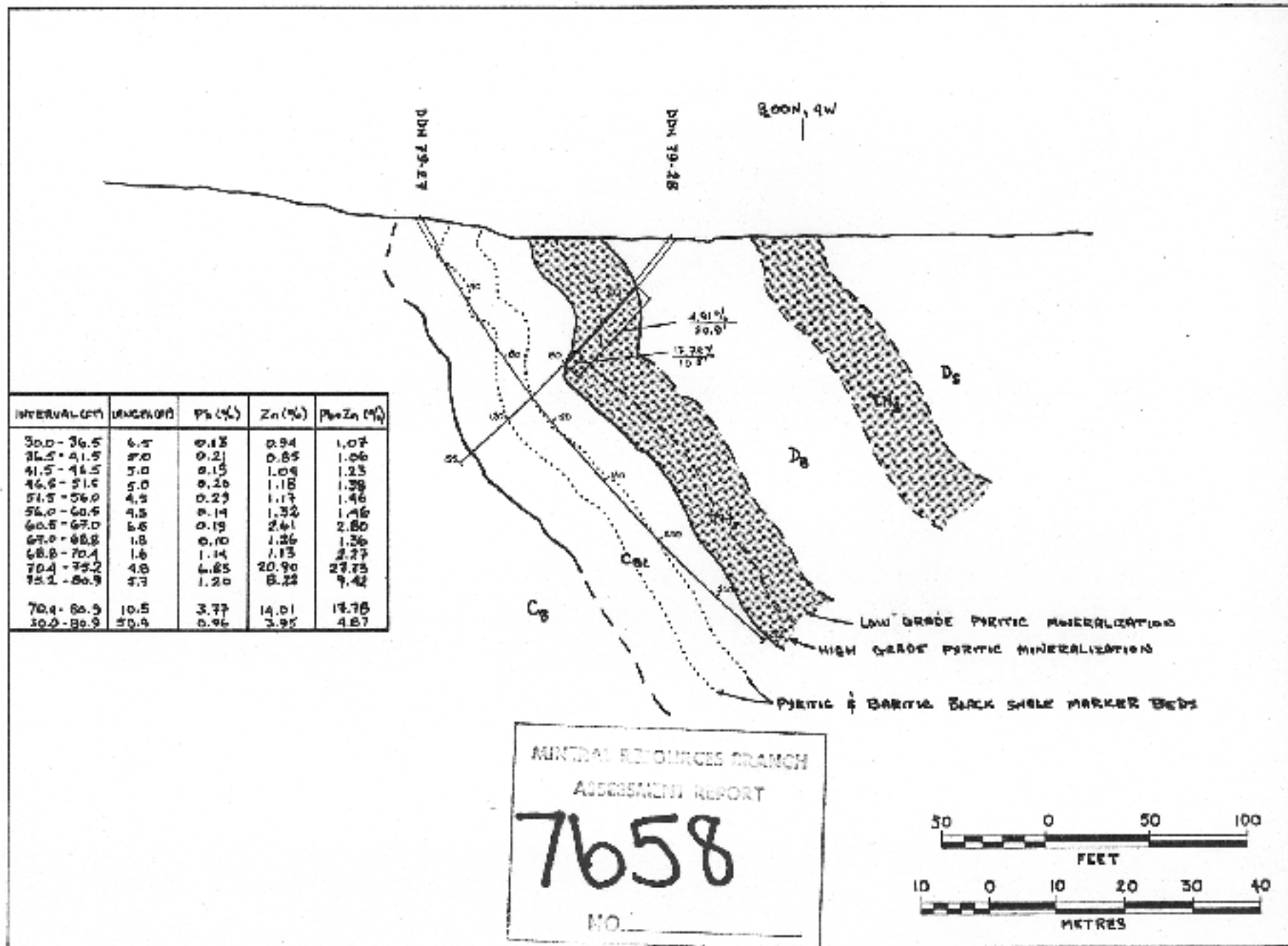


Figure A-18: Generalized cross-section, DDH 79-27 and 79-28



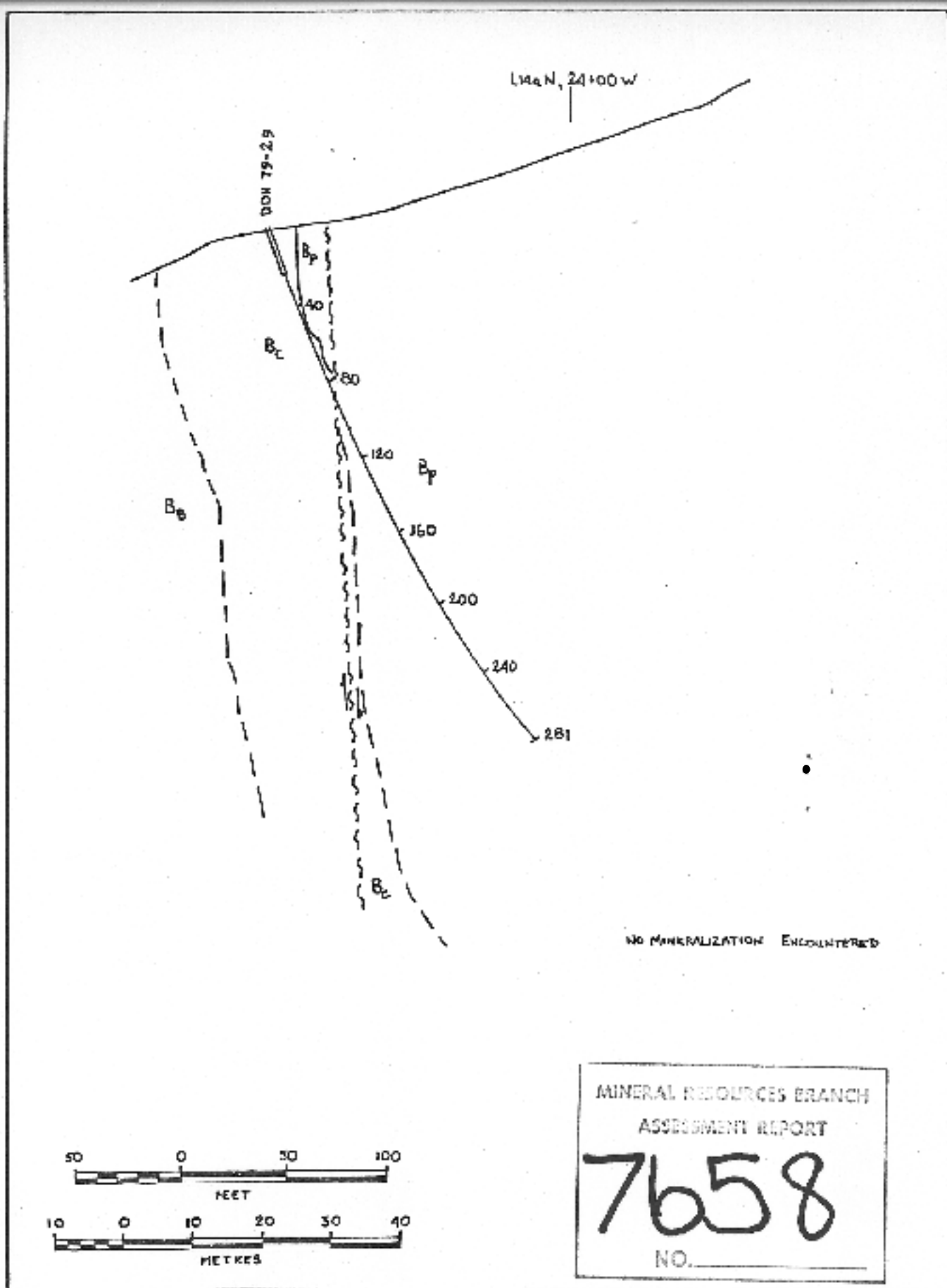


Figure A-19: Generalized cross-section, DDH 79-29

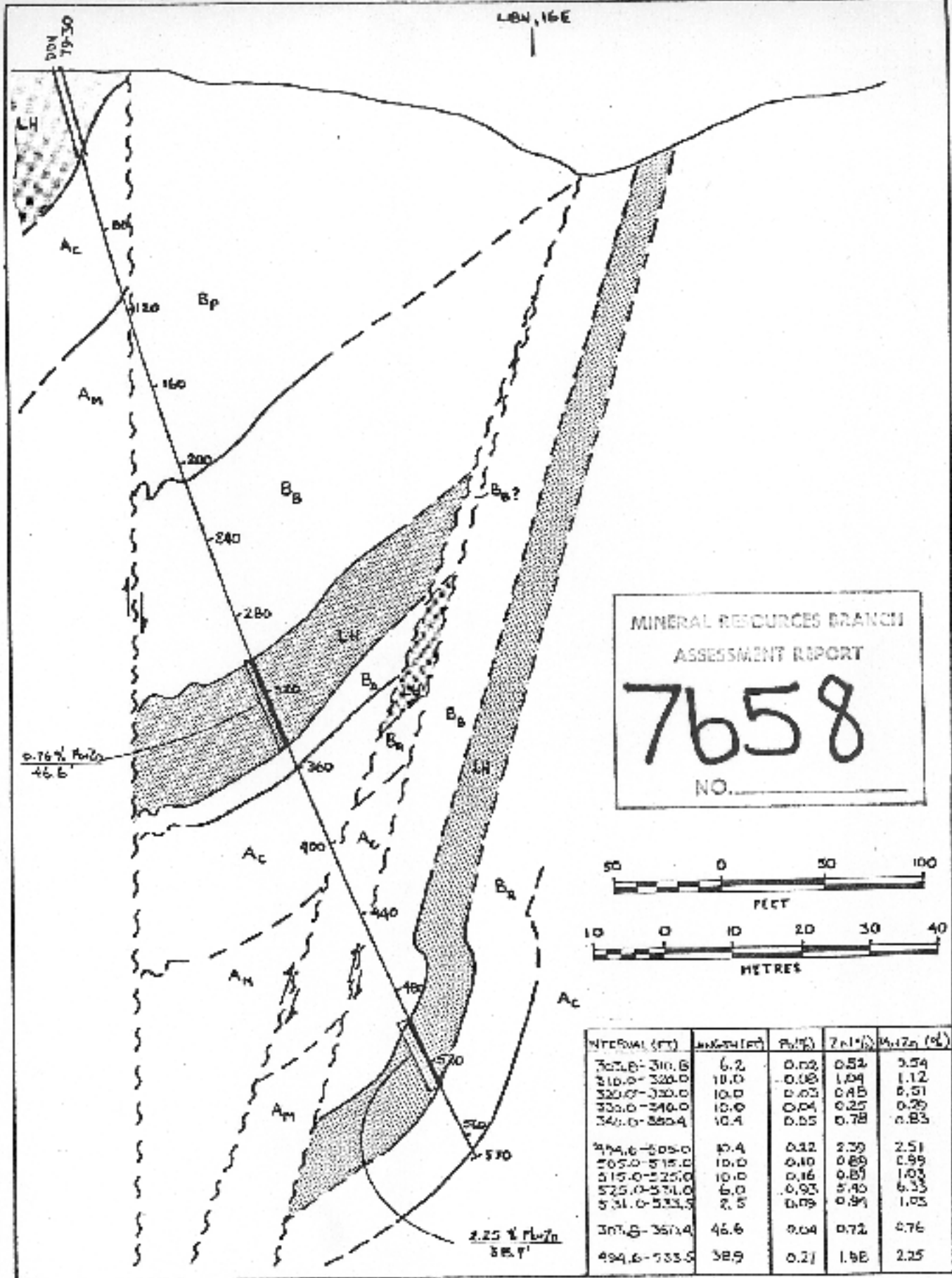


Figure A-20: Generalized cross-section, DDH 79-30

APPENDIX B - DIAMOND DRILL LOGS

ATTITUDE, 100/40 N

SANDSTONE SILTSTONE

CONGLOMERATE

VOLCANIC

CHERT

SHALE

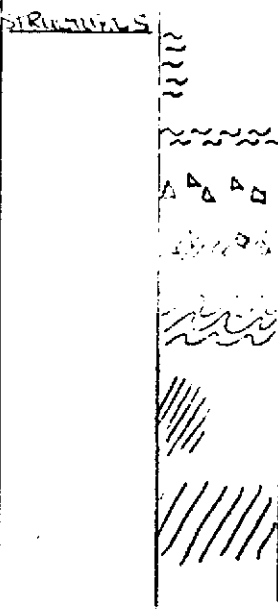
LIMESTONE DOLOMITE

INTRUSIVE

GOSSAN MINERALS

DON'T FORGET CONTOURS, DRAINAGE, NORTH ARROW, LAT/LONG, SAMPLE SITES, WORKINGS, TRAILS, GOSSANS, OBSERVED GEOLOGY: DEFINED - - - INFERRED - - - ASSUMED - - -

Project	NIS	Scale	Page	of	Traverse
Sampler	Location, Target (words)		Sample Nos		
Date	photo no.		Cert. Nos		



MODERATE SHEARING

STRONG SHEARING, FAULT GOUGE

BRECCIATED

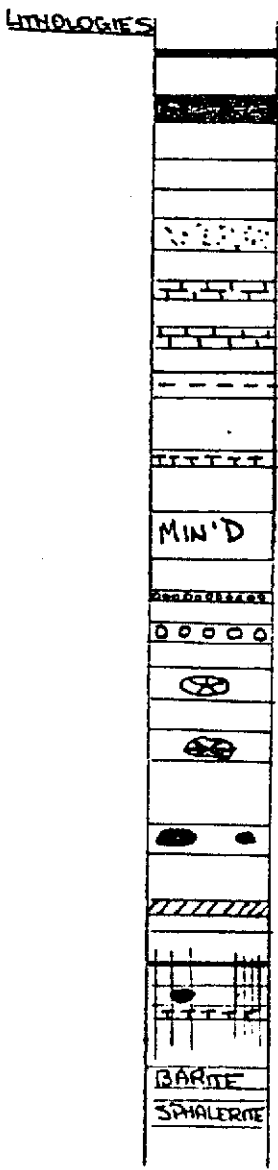
QZ-CO<sub>2</sub> VEIN SWARMS

VERY CONTORTED ROCK

QZ-CO<sub>2</sub> VEIN SWARMS

QZ-CO<sub>2</sub> VEIN INTERSECTION

GJV  
 DRIFTPILE PROJECT  
 DIAMOND DRILL CORE  
 VISUAL LOG (KJ)  
 JULY 19, 1973



THIN (<2CM) RADIOLARIAN CHERT OR CHERTY ARGILLITE BEDS

THICK (>2CM) CHERTY ARGILLITE BEDS

LOW-VERY SILICEOUS BLK SHALE

SLIGHTLY GRITTY BLACK SHALE

CALCAREOUS BLACK SHALE

BLACK LIMESTONE BEDS

BLACK SHALE WITH IRREGULAR PYRITE-CARBONATE-HYDROCARBON MASSES OR "SWEATS"

"TUFF" OR "TUFFACEOUS" SILTSTONE, OFTEN CALCAREOUS

MIN'D MASSIVE SULPHIDE OR BARITIC MINERALIZATION

NODULAR OR "BLEBBY" BARITIC SHALE

BARITE-SILICA CONCRETIONS OR "BEADS"

BARITE-BARIUM(?) CARBONATE-CALCITE SEPTARIAN NODULES

UNIDENTIFIED CARBONATE MINERAL (PROBABLY CaCO<sub>3</sub>) SEPTARIAN NODULES

CaCO<sub>3</sub> NODULES (BOULDINED BEDS?); LARGE (>4CM), SMALL (<4CM)

"BANDED", BLACK AND DARK GREY SHALE

THIN PYRITE LAMINAE (CONFORMABLE TO BEDDING); ~ EVERY 3-6 MM, ~ EVERY 1-3 MM

THIN MINERALIZED BEDS IN OTHERWISE BARREN SECTIONS.

GEOCHEM: Cu Mo Ph Zn W







# GJV-DRIFTPILE CREEK PROJECT: LOG DDH 79-10

COORD \_\_\_\_\_ DIP \_\_\_\_\_ AZIM \_\_\_\_\_ ELEV \_\_\_\_\_ SIZE \_\_\_\_\_ STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_ LOGGED BY \_\_\_\_\_

VISUAL LOG	FOOTAGE		PRIMARY LITHOLOGY	SECONDARY INTERBEDS	CORE ANGLE CH	PYRITE		BARITE		CO <sub>3</sub>		OTHER	ANALYSES					
	Inter-section	True Depth				Bedding W	Structure EW	Lam. % Thickness	Diss. % Size	Bed. % Thickness	Bleb. % Size		Type % Size	Description	%	% ppt	% ppt	% ppt
			NON-SIL MASSIVE BLK SHALE, VFG		55													
MIN'D	181.8			4.5 CM INTERVAL OF GREY CHRT @ TOP	45		X 15				BD 35							
MIN'D	182.3		NON-SIL, VFG BLK SHALE BEDS 2-4 CM		20	55	X 45				BD 45							
MIN'D	190.0		SOS		07	54	X 40				SOS							
MIN'D	194.4		ALMOST MASSIVE PY AT BASE	V. THIN LAM BLK SHALE	04		X 80				X 5							
	196.8		VERY-MOD SIL BLK SHALE SIO <sub>2</sub> & D/S	4-8 CM THICK SECTIONS DK GREY CHERT ESP NR TOP	10	65	X 05				VEN 05							
	205.0		MOD SIL BLK SHALE	THIN RAD CHRT INTERVALS	25	50		X T										
	210.0		V. SIL INTERVALS SOS	SOS	35	55		X T										
	215.0		MOD-V. SIL BLK SHALE	INTERBEDS GREY CHERT	30	53		X T										
	220.0		SOS	NO CHERT	15	55												
	225.0		SOS SILICA CONTENT VARIABLE	OVER 0.5 TO 1.5 M.	04	47												
	230.0		SOS		02	50												
	240.0		NOW SLIGHTLY GRITTY															

2H

Bp



# GJV-DRIFTPILE CREEK PROJECT: LOG DDH 79-11

COORD. 145 12+50 W DIP 60° E AZIM. 255 ELEV. \_\_\_\_\_ SIZE 30 STARTED May 23/79 COMPLETED May 28/78 LOGGED BY R. Courne

VISUAL LOG	FOOTAGE		PRIMARY LITHOLOGY	SECONDARY INTERBEDS	% CORE ANGLE	PYRITE		BARITE		CO <sub>3</sub>		OTHER	ANALYSES						
	Inter-section	True Depth				Bedding W	Structure E	Lam. %	Diss. %	Bed. %	Bleb. %		Type %	Description	% Pb	% Zn	% Cu	oz. Ag	% Ba
								Thickness	Size	Thickness	Size		Size						
	0		OUB CASING																
	12.0		V. SIL. CHERTY BLK ARGL. SCATTERED THICK 1-3 MM PY (FUZZY) BEDS.	LRGE CO <sub>3</sub> NODS THIN (< 1CM) RAD. CHERT BEDS	16/W	145	BED TR				NOD TR								
	20.0		SOS	BRXY'D 23'-24' QZ-CO <sub>3</sub> VEINING	10/W	154	BED TR				78CN								
	30.0		SOS		45/E (34')	155	BED TR				NOD TR								
	39.5		MOD-U. SIL., CARB BLK SHALE BANDED, CALC BLEBS ALONG BX	1. LRGE CO <sub>3</sub> NOD. PY-CO <sub>3</sub> BLABS, MINOR CALC SHALE	55/E	153		X TR			NOD 5								
	50.0		NOW LOW SIL. V. CARB. DECRETE PY LAM & PY-CO <sub>3</sub> BLEBS	BEDDED LISN -SLIGHTLY CALC	38/E-FLAT	451	LAM TR	X TR			BEDS 5								
	60.0		SOS NOW MOD SIL LOW CALC.	SCATTERED RAD. CHERT BEDS < 3CM	37/SE	156	LAM TR	X TR			25CN								
	74.5		V. SIL. CHERTY BLK ARGL.	RAD. CHRT BEDS < 3CM	14/SE-FLAT	155		X TR											
	80.0		SOS	SOS	28/E	156	LAM TR	X TR											
	84.5		MOD. SIL. V. CARB BLK SHALE CHERT INTERBEDS	RAD. CHRT BEDS < 1CM	46/E	155	Scattered												
	90.0		SOS	SOS	32/E	150	LENS TR												
	100																		

S

S

S

S

# GJV-DRIFTPILE CREEK PROJECT: LOG DDH 79-11

COORD \_\_\_\_\_ DIP \_\_\_\_\_ AZIM \_\_\_\_\_ ELEV \_\_\_\_\_ SIZE \_\_\_\_\_ STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_ LOGGED BY \_\_\_\_\_

VISUAL LOG	FOOTAGE		PRIMARY LITHOLOGY	SECONDARY INTERBEDS	% CORE	ANGLE CH			PYRITE		BARITE		CO <sub>3</sub>	OTHER	ANALYSES						
	Inter-section	True Depth				Bedding W	Structure EW	E	Lam. % Thickness	Diss. % Size	Bed. % Thickness	Bleb. % Size			Type % Size	Description	% Pb	% Zn	% Cu	oz. Ag	% Ba
			LOW-MOD. SIL. INTERBEDS	RAD. CHERT BEDS < 3CM	10	88/WSW	158		X Tr	X Tr											
	110.0		SOS	SOS		70/WSW	152		X Tr	X Tr											
	123.0		CONVERTED BRKY'D 117-123'			07/W															
	130.0		LOW-MOD. SIL. U. CARB. BLK SHALE W FUZZY PY LAM	RAD CHRT BEDS < 3CM SCATTERED PY BEDS (~6MM) LENSES		29 E (FLAT)	148		X Tr	X Tr			BLEB Tr								
	140.0		SOS	SOS		10/W	148		X Tr	X Tr			BLEB Tr								
	148.0		SOS	SCATTERED, THICK (2.15CM) VFG-CHERT BEDS		50 E (FLAT)	145		X Tr												
	160.0		INTERBEDDED MOD. SIL. BLK SHALE & BLK CHERTY ARGL	FREQUENT THIN (2.1CM) RAD. CHERT	10	25 W	149		BED Tr	X Tr											
	169.5		SOS	SOS		23 W	155		BED Tr	X Tr											
	181.5		FLT BRXY, GOUGE	PARTIALLY CEMENTED W QZ CO <sub>3</sub> , PY IN MATRIX		21 WSW		SHR R		X											
	190.0		MOD-V. SIL. BLK SHALE W CHERTY INTERBEDS	LIGN BEDS TO 6CM, PY LAM IN LIGN	15	44 W	157		X Tr				BED								
	200.0		LOW-MOD. SIL. SHALE, MINOR CHERTS INTERBEDS	LIGN BEDS ENDOWLES TO 10CM	20	45 W	153		BED OS				BED								
	210.0		POOR CLW DEV'T	SOS		30 SW	140		BED Tr				BED								
	220.0		POOR CLW DEV'T	SOS		15 W (CHERT)	145		BED Tr				BED								









# GJV-DRIFTPILE CREEK PROJECT: LOG DDH 79-12

COORD. 4+05, 12150W DIP -75° AZIM. 55° ELEV. \_\_\_\_\_ SIZE BQ STARTED MAY 28/79 COMPLETED JUNE 4/79 LOGGED BY \_\_\_\_\_

VISUAL LOG	FOOTAGE		PRIMARY LITHOLOGY	SECONDARY INTERBEDS	% CORE ANGLE CH			PYRITE		BARITE		CO <sub>3</sub>		OTHER	ANALYSES					
	Inter-section	True Depth			Bedding W	Structure EW	E	Lam. % Thickness	Diss. % Size	Bed. % Thickness	Bleb. % Size	Type % Size	Description		%	Pb	Zn	Cu	A <sub>1</sub>	B <sub>2</sub>
		0																		
		12.0	CASING OVB																	
			MOD. SIL BLK SHALE	THIN RAD. CHRT BEDS		15/W		16												
		19.0	MOD. SIL BLK SHALE	THIN RAD CHRT BEDS		35/W		162												
		32.0	STRONG SHEARING	CO <sub>2</sub> BEDS AT 20" (10CM) 22.5 (41CM)		08/W														
			V. SIL-CHERTY BLK SHALE	THIN RAD CHERT BEDS		15/SW		175		X										
		10.0	MOD. SIL BLK SHALE	IRREG CO <sub>2</sub> MASSES (RECT BLEBS?) THIN BEDS CO <sub>2</sub>		38/W		70												
		50.0	SOS	PY-CO <sub>2</sub> BLEBS THIN RAD CHRT BEDS		52/W		164												
		60.0	SOS	SOS MINOR CO <sub>2</sub> BEDS RAD CHRT INC.		24/(RAD)		74												
		70.0	SOS	SOS		34/E		168		X										
		80.0				19/W														
		93.4	U. SIL. BLK SHALE, MINOR CALC SHALE PY-CO <sub>2</sub> BLEBS	RAD. CHRT INTERBEDS 2-3 CM		56/W		163		X										
		100.0	MOD. SIL BLK SHALE PY-CO <sub>2</sub> BLEBS	MINOR RAD CHRT BEDS NR BASE ONLY		60/W		160												
			SOS	RAD CHRT INC.		57/W		174												
		110.0	SLIP CW MARKER			45/W														

Cc  
 ~  
 Cs  
 Cc  
 Cc

# GVJ-DRIFTPILE CREEK PROJECT: LOG DDH 79-12

COORD. \_\_\_\_\_ DIP \_\_\_\_\_ AZIM. \_\_\_\_\_ ELEV. \_\_\_\_\_ SIZE \_\_\_\_\_ STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_ LOGGED BY \_\_\_\_\_

VISUAL LOG	FOOTAGE		PRIMARY LITHOLOGY	SECONDARY INTERBEDS	% INTERBEDS	CORE ANGLE $\alpha$			PYRITE		BARITE		CO <sub>3</sub>	OTHER	ANALYSES						
	Inter-section	True Depth				Bedding W	Structure EW	E	Lam. % Thickness	Diss. % Size	Bed. % Thickness	Bleb. % Size			Type % Size	Description %	% Pb	% Zn	% Cu	S	
																				pt	pt
			SOS	RAD CHRT INC. IN THICKNESS	10	N/A	65														
		120.0	SOS	SOS CONTORTED	10	N/A	62														
		130.0	SOS	SOS AT 135.0'	10	N/A	58														
		136.0	SHEAR ZONE QZ-CO <sub>2</sub> HEALED				58														
		140.0	LOW-MOD. SL. MASSIVE BLK SHALE	CO <sub>2</sub> BEDS NR MIDDLE W CHRTY ARGL	05	34	70														
		150.0	SOS	MINOR RAD CHRT BEDS		25	75														
		160.0	SOS	Py-CO <sub>2</sub> BLEBS 20 CM LIGN BED AT 160.5		24	73														
		170.0	SOS	SOS SCATTERED LIGN BEDS			65														
		182.0	LOW-MOD. SIL. SLIGHTLY GRITTY BLK SHALE	RAD CHRT BEDS 2 CM.	05	2	62														
		190.0	SOS	SOS		7	60														
		197.0	SOS	SOS																	
		205.0	SHEARED (BAXY'D)	SOS QZ-CO <sub>2</sub> VEINS																	
		208.0	FLT ZONE	CO <sub>2</sub> NOO BEDS COMMON IN FLT BAXY			55														
		222.0	GOUGE, SHEARED QZ-CO <sub>2</sub> MATRIX																		

Cc

FLT

Cc

~

Cc

# GJV-DRIFTPILE CREEK PROJECT: LOG DDH 79-12

COORD. \_\_\_\_\_ DIP \_\_\_\_\_ AZIM. \_\_\_\_\_ ELEV. \_\_\_\_\_ SIZE \_\_\_\_\_ STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_ LOGGED BY \_\_\_\_\_

VISUAL LOG	FOOTAGE		PRIMARY LITHOLOGY	SECONDARY INTERBEDS	% CORE ANGLE CH	PYRITE		BARITE		CO <sub>3</sub>		OTHER	ANALYSES							
	Inter-section	True Depth				Bedding W	Structure EW	Lam. % Thickness	Diss. % Size	Bed. % Thickness	Bleb. % Size		Type % Size	Description	% Pb	% Zn	% Cu	A		B
																		pt	pt	
			MOD. SIL. BLK SHALE TO SCATTERED RAD. CHERT	NUMEROUS CO <sub>3</sub> NOD & BEDS PRESERVED	30	N/A	68				BED	30								
	230.0		SOS	SOS MINOR RAD CHERT	30	N/A	72				BED									
	238.5		SOS	SOS		N/A	70				BED									
	248.0		QZ-CO <sub>3</sub> VEIN	SOME SHEARING		N/A					VEIN	80	35% CORE REC 248-253							
	254.3		MOD-V. SIL. BANDED BLK SHALE	CHERTY AREL INTERVALS CO <sub>3</sub> NOD & BEDS COMMON (LBCN THK)	20	56 / VERT	58				BED	15								
	260.0		SOS	SOS QZ VEIN @ 265		10 / W					BED									
	270.0		SOS	SOS		50 / W	59													
	280.0		SOS	SOS		16 / W														
	290.0		SOS NOW V. SIL TO CHERTY	SCATTERED CO <sub>3</sub> BEDS < 8CM	05	N/A	58				BED	05								
	300.0		SOS	MINOR CO <sub>3</sub> NOD		23 / W	53				NOD	05								
	310.0		SOS	NOW THIN FIB LAM MINOR CO <sub>3</sub> NOD	05	29 / W	45	X	TR		NOD	05								
	320.0		SOS	V. FEW FIB LAM MINOR CO <sub>3</sub> NOD	10	25 / W	53	X	TR		NOD	10								
	330.0		BANDED BLK SHALE V. SIL. TO CHERTS	THIN CHRT HOR. 20 CM CO <sub>3</sub> BED @ 205		21 / W		X	TR	X	TR									







# GJV-DRIFTPILE CREEK PROJECT: LOG DDH 79-13

COORD. 4S 15+50 E DIP 30 AZIM. -55 ELEV. \_\_\_\_\_ SIZE BQ STARTED June 5/79 COMPLETED June 6/79 LOGGED BY R. Cox

VISUAL LOG	FOOTAGE		PRIMARY LITHOLOGY	SECONDARY INTERBEDS	% CORE ANGLE		PYRITE		BARITE		CO <sub>3</sub>		OTHER Description	ANALYSES						
	Inter-section	True Depth			Bedding W	Structure EW	Lam. % Thickness	Diss. % Size	Bed. % Thickness	Bleb. % Size	Type % Size	%		%	%	%	%	%		
																			Pb	Zn
	0.0		DRB CASING																	
	20.0		MASSIVE, LOW-MOD. SIL. BLK SHALE	MINOR PY CO <sub>3</sub> VEINLETS TRACE SMALL (< 2CM) CO <sub>3</sub> NODS		48						MOD TR								
	25.0		MOD. V. SIL. SLIGHTLY GRITTY BLK SHALE THIN JASPEROID CHRT BEDS	BA-CO <sub>3</sub> BEDS 10CM LENS BED @ 25.8'	20/W 35/W	45		X TR		X 20	MOD 5									
	30.0		SOS NOW V. SIL TO CHERTY		34/W 18/W	44		BED 05 THIN	X TR	X 25	MOD 15									
	37.0		MOD. SIL TO CHERTY, HIGHLY VARIABLE	CO <sub>3</sub> DEC. DIS. MINOR CALC SHALE	34/W 18/W	40		LAM 05 CONC. IN BEDS		X TR	BED 15 TO 30CM NOD TO CH									
	47.5		MOD. SIL. BLK SHALE, MINOR V. SIL TO CHERTY AREOL.	THIN CALC SHALE BEDS	25/W 37/W 24/W	46		BED 05 THIN		X 15	MOD 15									
	55.0		SOS	SOS	23/W 30/W 18/W			BED 05 "		X 15	MOD 20									
	60.0		LOW-MOD SIL. BLK SHALE, MASSIVE SECTIONS GRITTY SECTIONS		37/W 36/W	43		BED 05 THIN		X TR	MOD 15									
	64.8			VARIABLY LOW SIL. TO CHERTY BLK SHALE	35 21/W 37/W 37/W	44		BED 05 "		BED 5 < 0.3CM	X 40 "	MOD 15								
MWD	70.0		FOLD NOD @ 72.6'	SOS THIN CALC. HORIZONS	40 18/W 32/W 21/W			BED 10		X 25	MOD 25									
MWD	75.0			SOS	50 05/W 20/W 26/W	46		BED 10		X 15	MOD 25									
MWD	80.0																			

BC

B3

LH





# GJV-DRIFTPILE CREEK PROJECT: LOG DDH79-13

COORD. \_\_\_\_\_ DIP \_\_\_\_\_ AZIM. \_\_\_\_\_ ELEV. \_\_\_\_\_ SIZE \_\_\_\_\_ STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_ LOGGED BY \_\_\_\_\_

VISUAL LOG	FOOTAGE		PRIMARY LITHOLOGY	SECONDARY INTERBEDS	% CORE ANGLE	PYRITE		BARITE		CO <sub>3</sub>		OTHER	ANALYSES					
	Inter-section	True Depth				Bedding W	Structure EW	Lam. % Thickness	Diss. % Size	Bed. % Thickness	Bleb. % Size		Type % Size	Description	%	ppm	%	ppm
			LOW SIL. TO CHERTY BLK SHALE, VARIABLE	LIGN BED (18CM) @ 135.8	27/W	↘ 50	BED 05	X	TR			NOD 15						
	140.0				35/W			TD 1CM					IN CO <sub>2</sub> BEDS					
			SOS MOD SIL. TO CHERTY	THIN RAD CHERT BEDS < 2CM SCATTERED	39/W	↗ 46												
	145.0				40/W								IN RAD CHRT					
			SOS	SOS	49/W							NOD 15						
	150.8				32/W								IN CO <sub>2</sub> BEDS					
				LOW-MOD. SIL BLK SHALE (CHERTY) INTERWAR	44/W (STEPP)		BED 20					NOD 35						
	154.7				45/W (S)			4-6 MM DEC D/S					DEC D/S					
			MOD-V. SIL. BLK SHALE, VARIABLE		25/W	↘ 50	LAM TR	X		BED TR	X	OS	NOD TR					
	160.0				25/W			THIN CLUMPS			IN CO <sub>2</sub> BEDS		SCATTERED CO <sub>2</sub> -RICH	SMALL				
			MOD-CHERTY BLK ARGL, VARIABLE	MINOR CALC SHALE	22/W		LAM TR					X	OS	NOD TR				
	165.0				19/W			SCATTERED THICK					SCATTERED CO <sub>2</sub> -RICH	SMALL				
			SOS	CLASTIC CO <sub>2</sub> (CHERTY) @ 168-168.7' UFG, UPWARD FINING	18/W	↘ 30	LAM TR					X	OS	NOD OS				
	170.0				12/W			SCATTERED THIN					"	SMALL 5CM BED @ BASE				
			MOD-V. SIL. BLK SHALE		14/W		BED TR						NOD TR					
	175.0							NR BASE						NEAR BASE				
			SOS	0.4' QZ VEIN AT BASE SHEARING FBX'S N.C. TO BASE	16/W	↘ 35							NOD OS					
	181.8																	
				LOW V. SIL. BLK SHALE, < 3CM	18/W		BED 20						NOD 30					
	185.0				25/W			THIN										
				SOS	17/W		BED 30						NOD 40					
	190.0				24/W			"										
				SOS	24/W		BED 30						NOD 40					
	195.0				27/W			"										

Ac

Am

LH

MIN'D

MIN'D

MWD















# GJV-DRIFTPILE CREEK PROJECT: LOG DDH 79-14

COORD _____		DIP _____	AZIM _____	ELEV _____	SIZE _____	STARTED _____	COMPLETED _____	LOGGED BY _____										
VISUAL LOG	FOOTAGE		PRIMARY LITHOLOGY	SECONDARY INTERBEDS DIZ COMMENTS	% CORE ANGLE CH			PYRITE		BARITE		CO <sub>3</sub>	OTHER	ANALYSES				
	Inter-section	True Depth			Bedding W	Structure EW	E	Lam. % Thickness	Diss. % Size	Bed. % Thickness	Bleb. % Size	Type % Size		Description	% Pb	% Zn	% Cu	oz. Ag
				CHERTY BLK ARGL MINOR MOD-SIL SHALE	30	33/W		BED 10			BLEB 30	NOD 30						
	110.0			SOS GRITTY MOD V. SIL BLK SHALE < 3 CM	50	33/W	55	BED 10			BLEB 20	NOD 20						
	115.4			SOS	15	38/W	48	BED 35			BLEB 10	NOD 40						
MWD	120.0					29/W						MED BED 20						
				MINOR V. SIL TO CHERTY ARGL < 2 CM 8 CM MOD-SIL @ 22.7	10	20/W		BED 30			BLEB 15	NOD 45						
MWD	125.0					32/W					MASSIVE SECTION NR BASE	"						
				12' WIDE BRXY & SHR ZONE @ BASE FLY & QUIC. F.	5	26/W		BED 35			BLEB 05	NOD 55						
MWD	132.0					38/W	45				NR TOP							
				BRXY'D SHEARED AT TOP	30	45/W		BED 05			BLEB 35	NOD 30						
	135.0				30	25/W												
				IN MOD SIL. BLK SHALE MASSIVE, BARBYL	40	45/W (STEEP)	48	BED 05			BLEB 30	NOD 25						
	140.0					(65/4)					MASSIVE NR TOP							
				HIGH-GRADE 2N 140'-141.5	10	45/W (STEEP)		BED 20			BLEB 30	NOD 40						
MWD	145					48/W (U)												
				MOD. SHEARED	30	55/W (STEEP)	44	BED 10			BLEB 20	NOD 40						
	150.0					68/W @ 4												
				MOD-STRONG SHEARING INC D/S	65	63/W @ 4	38	BED 05			BLEB 10	NOD 20						
	155.0					40												
				MOD ISHEARING	60	52/W @ 4		BED 05			BLEB 20	NOD 15						
	160.0																	
				"	60	48/W (VERT (40/4))	43	BED 05			BLEB 20	NOD 15						
	166.0										SCATTERED							

# GJV-DRIFTPILE CREEK PROJECT: LOG DDH 79-14

COORD. \_\_\_\_\_ DIP \_\_\_\_\_ AZIM. \_\_\_\_\_ ELEV. \_\_\_\_\_ SIZE \_\_\_\_\_ STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_ LOGGED BY \_\_\_\_\_

VISUAL LOG	FOOTAGE		PRIMARY LITHOLOGY	SECONDARY INTERBEDS DIZ COMMENTS	CORE ANGLE CH			PYRITE		BARITE		CO <sub>3</sub>		OTHER Description	ANALYSES					
	Inter-section	True Depth			Bedding W	Structure EW	E	Lam. Thickness	Diss. Size	Bed. Thickness	Bleb. Size	Type	%		%	%	%	oz.	%	%
			BADLY BROKEN & SHEARED	V. SIL. TO CHERTY BLK ARGL.	75		{ 43	BED 05				NOD 20								
	170.0			SOS TUFF(?) NR BASE LRGE NOD NR MID-SECTION EOPM	70		48/90 of CH (VERY)	BED 05				BLEB 05	NOD 30							
			LOW-MOD SIL BLK SHALE	CHERTY INTERBEDS THIN, TUFF(?) BEDS.			46/VERT					NOD 05								
	175.0						45/VERT					< 5 CM								
			SOS	MINOR TUFF BEDS			46/VERT					BLEB 05	NOD TR							
	180.0											DEL D/S	< 5 CM							
			MOD-U. SIL. BLK SHALE	MINOR TUFF(?) BEDS			55/E					NOD 05								
	185.0						24/SE	38	BED 05				NOD 05							
			MOD. SIL., SLIGHTLY GRITTY BLK SHALE	MINOR TUFF(?) BEDS ELLIPSOIDAL PY-QZ BLEBS			40/VERY					BED TR								
	190.0						65/EOPM	48/45					< 6 CM							
			VERY SIL., VFG BLK SHALE	MINOR TUFF(?) BEDS ELLIPS. PY-QZ BLEBS			60/E					BED TR								
	198.5						60/E w/ 48	56				NR TOP	BED TR							
			LOW-MOD. SIL., VFG BLK SHALE W CHERTY HORIZONS	CONVERTED BDE			15/W					BED TR								
	215.0						45/E w/ 48	39	BED TR				BEDS 10							
			SOS GRADING D/S TO CHERTY ARGILLITE	IRAD CRT BEDS			18/W													
	230.0						21/W						BEDS 15							
MWD			BARITE IS CALCAREOUS	CHERTY ARGL BEDS < 5 MM	10		20/W					NOD 15								
	239.0						30/W		BED 05			BED 70								
MWD				SOS NON-SIL. BLK SHALE BED 8 CM	15		40/W					BED 60								
	245.0						34/W	44	BED 05			"	NOD 20							
MWD			HIGRADE (PB-2)	SOS	20		25/W					BED 55								
	250.0		250'-252'				35/W		BED 05			"	NOD 20							
	255.0								"			"	65' NR BASE							

2.5' LOST CORE @ 239.0







# GJV-DRIFTPILE CREEK PROJECT: LOG DDH 79-15

COORD \_\_\_\_\_ DIP \_\_\_\_\_ AZIM \_\_\_\_\_ ELEV. \_\_\_\_\_ SIZE \_\_\_\_\_ STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_ LOGGED BY \_\_\_\_\_

VISUAL LOG	FOOTAGE		PRIMARY LITHOLOGY	SECONDARY INTERBEDS <small>DIC COMMENTS</small>	% CORE ANGLE $\alpha$		PYRITE		BARITE		CO <sub>3</sub>		OTHER Description	ANALYSES					
	Inter-section	True Depth			Bedding W	Structure E	Lam. % Thickness	Diss. % Size	Bed. % Thickness	Bleb. % Size	Type % Size	%		%	%	%	oz.	yr	yr
			Med-U. sil. blk shale, thin tuff(?) beds some cherty beds	MINOR CALC SHALE <4 CM	48/VERT				BED TR		NOD OS								
	180.0		SOS	MINOR SMALL CALC. NOD ESP. @ TOP	51/VERT	46				BLEB TR	BED TR								
	190.0		SOS		47/VERT					NR BAKE	3 CM @ BASE								
	200.0		SOS		38/W					BLEB TR	NOD OS								
	210.0		SOS		65/W (FLAT)	43				MID-SECTION TO BASE	<4 CM								
	220.0		SOS		69/6 (STEEP)					U. MINOR SCATTERED									
	230.0		SOS SLIGHTLY GRITTY	MASSIVE TO THICK BEDDED CHERTY INTERVALS	48/VERT	48				BLEB TR	NOD OS								
	240.0		SOS AS ABOVE	AS ABOVE	58/W (FLAT)	43					SMALL SCATTERED								
	250.0		SOS	SOS	15/W	47				BLEB TR	NOD TR								
	260.0		SOS	SOS	17/W					SCATTERED	<3 CM								
	270.0		SOS	SOS	23/W					BLEB TR	NOD OS								
	280.0		SLIGHTLY GRITTY Med-U. sil. blk shale.	CHERTY ARGL INTERBEDS	34/W					"	INC DIS								
	290.0		Med-U. sil. blk shale, GRITTY INTERVALS	SL BED 5MM THK @ 275.5	90 37/W	32			BED TR		BLEB OS	NOD OS							
	295.0				24/W				<2 MM		ESP NR TOP	4 BEDS <6 CM							
	298.0			U. SIL TO CHERTY ARGL "FUZZY" PY LAM.	90 35/W				BED OS		BLEB OS	NOD OS							
	300.0				20/W						SCATTERED								



# GJV-DRIFTPILE CREEK PROJECT: LOG DDH 79-15

COORD \_\_\_\_\_ DIP \_\_\_\_\_ AZIM \_\_\_\_\_ ELEV. \_\_\_\_\_ SIZE \_\_\_\_\_ STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_ LOGGED BY \_\_\_\_\_

VISUAL LOG	FOOTAGE		PRIMARY LITHOLOGY	SECONDARY INTERBEDS DIZ COMMENTS	CORE ANGLE (°)			PYRITE		BARITE		CO <sub>3</sub>	OTHER	ANALYSES					
	Inter-section	True Depth			Bedding W	Structure EW	E	Lam. % Thickness	Diss. % Size	Bed. % Thickness	Bleb. % Size	Type % Size		Description	% P	% Zn	% Cu	oz. Ag	% B
MIND				MID-SS. SILTY GRITTY BLK SHALE CHERTY ARGL INTERBEDS, 2-4 CM	60	00/W	28	BED 20				N/D 20							
	390.0		SL IN PYL BASE	SOS	45	08/W		BED 20				N/D 30							
	400.0					14/W		"				SCATTERED 45CM							
	408.0			THIN (2-1.5CM) MIN SIL, SILTY GRITTY BLK SHALE BEDS TO PYLAM	35	20/W		BED 30				N/D 35							
	419.0			LOW SILICED (PYLAM), MOD-S SIL. BLK SHALE CHERTY ARGL 2-4 CM		15/W		BED 10				N/D 20							
	426.0			LOW-MOD SIL, UFG BLK SHALE MINOR CHERTY ARGL MINOR TRUFF(?)		08/W	25	BED 10				N/D 20							
END			END			04/W		"				"							







































# GJV-DRIFTPILE CREEK PROJECT: LOG DDH 79-20

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COORD.		DIP	AZIM.	ELEV.	SIZE	STARTED	COMPLETED	LOGGED BY							
USUAL LOG	FOOTAGE		PRIMARY LITHOLOGY	SECONDARY INTERBEDS OR COMMENTS	% CORE ANGLE	PYRITE		BARITE		CO <sub>3</sub>	OTHER	ANALYSES			
	Inter-section	True Depth				Lam. %	Diss. %	Bed. %	Bleb. %	Type %		%	%	% ppt	% ppt
					Bedding W	Structure E	Thickness	Size	Thickness	Size	Description	Zn	Cu	As	Ba
MIND				MOD-V. SIL. & CHERTY BLK SHALE 4MM.	05	70/E(Low)					NOD 45				
	211.0						BED 50				43cm				
MIND				SOS THIN BND. INC DIS TO BASE	25	51/E(Low)					NOD 40				
	216.0						BED 35			BLEB TR	@ 215.5 THIN				
MIND				SOS DEC D/S	10	75/E(Low)					NOD 50				
	221.0					47	BED 40				INC DIS				
HIND							BED 55				NOD 45				
	226.0														
MIND				U. SIL. TO CHERTY BLK ARG. ESP @ BASE	10	25/W (FLAT)					NOD 40				
	231.0						BED 50								
MIND							BED 60				NOD 40				
	235.0										42cm				
MIND				MOD-V. SIL. & CHERTY BLK SHALE INC DK	20	05/W(Low)					NOD 35				
	239.2										DEC DK				
MIND FLW?			GRADATIONAL CUT	MOD-V. SIL. BANDED BLK SHALE	55	05/W					NOD 30				
	246.0						BED 15				THIN TO MED				
				BANDED MOD-V. SIL. BLK SHALE NON-CALC.		10/W (STEP)									
	256.0					45	LAM TR	DISS TR							
				GOOD PARTING ON BDG.		10/W(Low)									
							COARSE GRAINED SCATTERED	COARSE SAND-SIZE							
				SOS THIN BARITE BED (5MM) ABOVE 2MM SL BED @ 260.0		10/W (STEP)									
	260.0					40	LAM TR	DISS TR							
							"	"							
				SOS GOOD PTG AN BDG		10/W(Low)									
	266.0					41	LAM TR	DISS TR			SOME HIGH SECTIONS				
							"	"							
				SOS VARIABLY SILICEOUS		11/W(Low)									
	266.0					38	LAM TR	DISS TR			SCATTERED COARSE				
							"	"							





# GJV-DRIFTPILE CREEK PROJECT: LOG DDH 79-20

COORD.		DIP	AZIM.	ELEV.	SIZE	STARTED	COMPLETED	LOGGED	ANALYSES											
VISUAL LOG	FOOTAGE		PRIMARY LITHOLOGY	SECONDARY INTERBEDS DIZ COMMENTS	CORE ANGLE $\alpha$			PYRITE		BARITE		CO <sub>3</sub>		OTHER						
	Inter-section	True Depth			Bedding W	Structure EW	E	Lam. % Thickness	Diss. % Size	Bed. % Thickness	Bleb. % Size	Type	%		Description	%	%	% ppt	% ppt	oz.
			LOW-MOD. SIL. THICK BEDDED, NON-CALC. BLK. SHALE (4CM - 20CM)	MINOR GRADED TUFFY BEDS < 1 CM THICK	27/W	43				BEAD TF	NOD TF									
	470.0		SOS	SOS	21/W 23/WNW	43				BEAD TF	NOD TF									
		480.0	SOS	SOS	23/WNW 22/WNW 18/W	43				BEAD TF	NOD TF									
		490.0	SOS	SOS TUFFY V. MINOR, V. THIN BEDD.	25/W(LW) 30/W(LW) 27/W(LW)	43				BEAD TF	NOD TF									
		500.0	SOS	"	20/W(L) 23/W(LW) 27/W(LW)	37				BEAD TF	NOD TF									
		510.0	SOS	"	25/W(L) 50/E(FLAT) 27/W(LW)	30				BEAD TF	NOD TF									
		520.0	SOS	"	30/W(HK) 30/W(LW) 27/W(LW)	33				BEAD TF	NOD TF									
		530.0	SOS AS ABOVE	TUFFY 2 CM SCATTERED, MINOR	27/W(LW) 23/W(LW) 23/W(LW)	32			DISS TF	BEAD TF	NOD TF									
		540.0	SOS NON-CALC	6 CM LISW BED @ 534.5' TUFF < 0.5 CM	21/W(LW) 21/W(LW) 28/W(LW)	32					NOD TF									LOST CORE 545-549'

















# GJV-DRIFTPILE CREEK PROJECT: LOG DDH 79-23

COORD. L305.1+00W DIP-55° AZIM. 055° ELEV. \_\_\_\_\_ SIZE BQ STARTED July 6/79 COMPLETED July 10/79 LOGGED BY \_\_\_\_\_

VISUAL LOG	FOOTAGE		PRIMARY LITHOLOGY	SECONDARY INTERBEDS OIL COMMENTS	CORE ANGLE			PYRITE		BARITE		CO <sub>3</sub>		OTHER Description	ANALYSES				
	Inter-section	True Depth			Bedding W	Structure EW	E	Lam. % Thickness	Diss. % Size	Bed. % Thickness	Bleb. % Size	Type	%		%	%	%	oz.	%
	0.0		CASING OUB																
	30.0		MOD-U. SIL. BLK SHALE, CHESTN. INTERVAL, NON-CALC.		05/w	55	LAM TR						~70% CORE REC.						
	40.0		S0E		00/w		THIN DISCONT						~25% CORE REC.						
	50.0		S0S		30/w (LOW)	44	LAM TR												
	58.0				CONTACT	NOT BADLY SHEARED													
MIN'D				MASSIVE CO <sub>3</sub> @ TOP (TO SB.F) & BASAL O.P.	17/w	40	BED 50					NOD 50							
	65.7			LOW-MOD SIL BLK SHALE, LOW SIL BLK SHALE @ BASE	30/w		THIN MASSIVE SECTIONS					21 CM							
MIN'D				25	35/w		BED 40					NOD 35							
	72.0				45/w		"					22 CM							
MIN'D				DEC. DIS 5 CM LOW SIL BLK SHALE @ TOP	15	50/w	BED 45					NOD 40							
	77.0				40/w		"					"							
MIN'D					40/w		BED 45					NOD 55							
	82.0				42/w		"					25 CM							
MIN'D				NON-SIL. U.CARB. BLK SHALE BCM BED @ TOP, SCATTERED U.CARB.	15	44/w	BED 45					NOD 40							
	87.0				45/w		"					21 CM							
MIN'D				S0S, 10 CM @ 87.6, 7 CM @ 90.8 (CALC.)	20	40/w	BED 35					NOD 45							
	92.0				23/w	47	"					22 CM							
MIN'D					10/w	45	BED 40					NOD 50							
	97.0			20/w			"					22 CM							





# GJV-DRIFTPILE CREEK PROJECT: LOG DDH 79-23

COORD \_\_\_\_\_ DIP \_\_\_\_\_ AZIM \_\_\_\_\_ ELEV \_\_\_\_\_ SIZE \_\_\_\_\_ STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_ LOGGED \_\_\_\_\_

VISUAL LOG	FOOTAGE		PRIMARY LITHOLOGY	SECONDARY INTERBEDS OR COMMENTS	CORE ANGLE			PYRITE		BARITE		CO <sub>3</sub>		OTHER Description	ANALYSES					
	Inter-section	True Depth			W	Structure EW	E	Lam. % Thickness	Diss. % Size	Bed. % Thickness	Bleb. % Size	Type %	% Description		% ppt	% ppt	oz.	% ppt		
																			Zn	Cu
00000	310.0		MED-THICK BDD, LOW-MOD SIL. BLK SHALE, J. CARB.		25/W	30														
00000			18/SW																	
00000	320.0		SOS		23/W															
00000			00/W																	
00000	325.0		SOS		12/SW	41														
00000			16/W																	
00000	334.8		QZ-CO <sub>3</sub> VEIN		12/W (LOW)															
00000			45/E (STEEL)																	
00000	340.0		SOS	MINOR "TUFF" BEDS 2 CM	35/VERT	35														
00000			18/SW (LOW)																	
00000	350.0		SOS - MINOR CHERT INTERVALS 4 CM	V. MINOR THIN (2.3 CM) CALC. INTERVALS MINOR "TUFF"	26/W (LOW)	38	BED TR													
00000			17/W (LOW)						THIN COARSE											
00000	360.0		SOS	"TUFF" INC DIS	24/W (L)	38														
00000			9/W (L)																	
00000	366.0		SOS HEALED BRAY TECTONIC?	V. MINOR THIN CALC INTERVALS	31/W (L)	45														
00000			37/VERT																	
00000	376.0		SOS HEALED BRAY TECTONIC?	"TUFF" INC DIS	45/VERT	45														
00000			20/W (LOW)																	
00000	385.0		SOS	MINOR "TUFF"	67/E (LOW)															
00000			27/W (LOW)																	
00000	396.0		SOS LOW-MOD SIL. THICK-MED BDD CARB SHALE	V. MINOR CALC INTERVALS "TUFF" TO 4 CM INC DIS	36/W (LOW)		BED TR													
00000			18/W (LOW)						THICK (3 CM)											
00000	403.0		SOS	"TUFF" COMMON 4 CM	46/FLAT	43														
00000			18/W (LOW)																	
00000	410.0		FLY GOUGE A03-A04.5 LOW-MOD SIL THICK-THIN BDD	SIGHTLY CALC INTERVALS NO TUFF	38/W (L)	45														
00000			15/W (L)																	
00000	410.0				10/W (L)	28														
00000			25/W																	

50% CORE REC













# GJV-DRIFTPILE CREEK PROJECT: LOG DDH 79-25

COORD 16S, 1440E DIP 50 AZIM 095° ELEV. \_\_\_\_\_ SIZE BQ STARTED July 14/79 COMPLETED July 16/79 LOGG. BY P. C. ...

VISUAL LOG	FOOTAGE		PRIMARY LITHOLOGY	SECONDARY INTERBEDS	%	CORE ANGLE			PYRITE		BARITE		CO <sub>3</sub>		OTHER	ANALYSES						
	Inter-section	True Depth				Bedding W	Structure EW	E	Lam. Thickness	% Diss.	% Bed.	% Bleb.	Type	% Size		Description	%	%	%	%	%	%
	0.0		CASING																			
	25.0		LEACHED TO 22'	MOD-U.SIL, VFG & BLK SHALE; NON-CALC.	75	57/E(7CA)			BED 10			BLEB 15	NOD 15									
	25.0			SOS	55	90/CA	↖ 53		BED 10			BLEB 15	NOD 20									
	30.0			SOS	50	15/W			BED 10			BLEB 15	NOD 30									
	38.7		MASSIVE THIN TO MED BDD CALC "TUFF"																			
	41.3			MOD-U.SIL BLK SHALE; MINOR THIN "TUFF"	55	38/W			BED 10			BLEB 15	NOD 20									
	45.0			MOD-U.SIL SLIGHTLY GRITTY BLK SHAL	75	38/W	↖ 49		BED 05			BLEB 10	NOD 10									
	50.0			SOS	80	47/VERT			BED 05			BLEB 5	NOD 10									
	55.0			SOS	75	43/W			BED 05			BLEB 10	NOD 10									
	60.0		AS ABOVE			40/W																
	65.0			SOS	60	41/W			BED 10			BLEB 10	NOD 50									
	70.0			SOS	60	25/W	↖ 48		BED 10			BLEB 10	NOD 20									

B8

# GJV-DRIFTPILE CREEK PROJECT: LOG DDH 79-25

Page    of   

COORD. \_\_\_\_\_ DIP \_\_\_\_\_ AZIM. \_\_\_\_\_ ELEV. \_\_\_\_\_ SIZE \_\_\_\_\_ STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_ LC \_\_\_\_\_

VISUAL LOG	FOOTAGE		PRIMARY LITHOLOGY	SECONDARY INTERBEDS	% CORE ANGLE	SH	PYRITE		BARITE		CO <sub>3</sub>		OTHER				
	Inter-section	True Depth					Bedding W	Structure E	Lam. %	Diss. %	Bed. %	Bleb. %		Type	% Size	% Size	
																	Thickness
B <sub>2</sub>				MOD. V. SIL, SLIGHTLY GRITTY, NON-CALC BLK SHALE, MINOR "TUFF"	60	47°/FLAT	47	BED	15			BLEB	05	NOD	20		
	75.0			"SOS TUFF" TO 2CM	55	26/W (LOW)		BED	15			BLEB	10	NOD	20		
	80.0							45/W (VERT)									
	85.0			"SOS TUFF" < 0.5CM SCATTERED	65	47/W (VERT)		BED	10			BED	TR	BLEB	10	NOD	15
								44/W (L)		DEC	DIS	8CM TOP	DEL	DIS	DEC	DIS	
	90.0			"SOS AS ABOVE"	60	40/W		BED	15				BLEB	15	NOD	20	
								30/W					INC	DIS	INC	DIS	
	95.0			"SOS"	45	30/W		BED	15				BLEB	20	NOD	20	
				"SOS"		21/W							MASSIVE SECTIONS 2-3CM				
	100.0			"SOS"	45	35/W		BED	10				BLEB	20	NOD	25	
				"SOS"		32/W							MASSIVE SECTIONS NR BASE				
	105.0			"SOS"	35	24/W		BED	15				BLEB	30	NOD	20	
													MASSIVE SECTIONS 3-4CM				
110.0			MOD. SIL, SLIGHTLY GRITTY BLK SHALE & VEG. CHERTY ARGIL INC. DIS	55	25/W	46	BED	10				BLEB	15	NOD	20		
												DEC	DIS	DEC	DIS		
115.0			"SOS TUFF" BEDS < 2CM INC. DIS	55	25/W		BED	05				BLEB	25	NOD	15		
												MASSIVE SECTIONS					
			"SOS TUFF" < 2CM LOW MOD	65	50/E (L)	42	BED	05				BLEB	15	NOD	15		
121.0												DEC	DIS				
			LOW-MOD. SIL, V. FISSILE BLK SHALE V. FISSILE		45/VERT		BED	TR				BLEB	TR	NOD	TR		
125.0				CHERTY BLK ARGIL INTERBEDS "TUFF" BEDS < 2CM SCATTERED				1-3 CM SCATTERED				SCATTERED THIN		< 3CM			
			"SOS"	"SOS"		*	BED	TR				BLEB	TR				
						45		"				"					
130.0							50/VERT					"					

BY \_\_\_\_\_

ANALYSIS									
wt. %	%	ppm	%	wt. %	oz. ppm	%	ppm	%	ppm
Pb	Zn	Cu	Ag	Ba					

B<sub>2</sub>

B<sub>2</sub>

B<sub>2</sub>

# GJV-DRIFTPILE CREEK PROJECT: LOG DDH 79-25

COORD. \_\_\_\_\_ DIP \_\_\_\_\_ AZIM. \_\_\_\_\_ ELEV. \_\_\_\_\_ SIZE \_\_\_\_\_ STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_ LOG# \_\_\_\_\_

VISUAL LOG	FOOTAGE		PRIMARY LITHOLOGY	SECONDARY INTERBEDS	% CORE	CORE ANGLE CH		PYRITE		BARITE		CO <sub>3</sub>		OTHER Description	ANALYSES						
	Inter-section	True Depth				Bedding W E	Structure E W	Lam. % Thickness	Diss. % Size	Bed. % Thickness	Bleb. % Size	Type % Size	Zn		Cu	g	% Ba	%		ppm	
●			LOW-MOD SIL THIN BDD BLK SHALE,	CHERTY INTERVALS (ESP TO BH)		48/VERT	40	BED T <sub>F</sub>		BLED T <sub>F</sub>	NOD T <sub>F</sub>										
●	140.0		SOS MINOR "TUFF" CLCA	MINOR CHERTY INTERVALS		51/E (7CA) 40/VERT					THIN SCATTERED	41CM									
●	150.0		U. FISSILE SOS NO "TUFF"	NO CHERTY INTERVALS		30/W					THIN DEC/DK	43CM									
●	160.0		MOD-U. SIL. SLIGHTLY TO MOD CALC. BLK SHALE			30/E (7CA)						NOD T <sub>F</sub>	46CM								
●	171.0		SOS NON-CALC			90/CA						BED T <sub>F</sub>	~40% CORE AT 71								
●	180.0		SOS SLIGHTLY CALC INTERVALS			25/W	44					NOD T <sub>F</sub>	~40% CORE								
●	189.5			BADLY BROKEN CORE SHEARED MINOR FLT GOUGE, RECD. JEN 189.5		30/E (7CA)	45					6CM @ 185.5	~30% CORE								
●	193.0		MOD-U. SIL. BLK SHALE, CHERTY INTERVALS			17/W (LOW)	40					NOD DS	~25% CORE								
●	211.0		END			45/VERT						45CM									
●						25/W															

AC  
A  
FC (FAULT)

# GJV-DRIFTPILE CREEK PROJECT: LOG DDH 79-26

COORD.  $L22+50S, 13+90E$  DIP- $50^{\circ}$  AZIM  $055^{\circ}$  ELEV. \_\_\_\_\_ SIZE BQ STARTED July 17/79 COMPLETED July 19/79 LOGGED BY R. Cox

VISUAL LOG	FOOTAGE		PRIMARY LITHOLOGY	SECONDARY INTERBEDS	% CORE ANGLE	PYRITE		BARITE		CO <sub>3</sub>		OTHER Description	ANALYSES						
	Inter-section	True Depth				Bedding W	Structure E	Lam. % Thickness	Diss. % Size	Bed. % Thickness	Bleb. % Size		Type % Size	%	%	%	%	%	%
	0.0		CASING																
	0.0		UB P																
	0.0		BADLY BRECCIA BEDROCK																
	42.0			MOD. U. SIL	55		BED 10		BLEB OS	NOD 30		LEACH							
				SLIGHTLY GRITTY BLK SHALE		46/E (CA)	SCATTERED THICK		SCATTERED THIN	< 4 CM		40% CO <sub>3</sub>							
	50.0			LOW U. SIL	85	37/W (LOW)	BED 10		BLEB F	NOD 10		70% CO <sub>3</sub>							
				SLIGHTLY GRITTY BLK SHALE		05/W (LOW)	SCATTERED < 3 MM		THIN	< 3 CM		RES.							
				CHERT INTERBEDS		55/W (NEEP)													
	60.0			SOS	80	25/W	BED OS			NOD 15									
				THIN (LICH) TUFF BEDS		20/W	II			INC DKS									
						31/W													
	73.0			SOS	70	45/W	BED 15		BLEB OS	NOD 10									
				AS ABOVE		35/W	INC DKS		INC DKS	< 4 CM									
						20/W													
	80.0			SOS	50	51/E (7CA)	BED 15		BLEB OS	NOD 30		PARTIALLY LEACH							
				"		40/W (WOOD)			C TOP	< 3 CM									
						41/W (II)													
	90.0		GOOD SL IN CO <sub>2</sub>	MOD. U. SIL	40	36/W	BED 20			NOD 40									
				SLIGHTLY GRITTY BLK SHALE		75/E (7CA)	4 MM			MASSIVE SECTIONS									
				CHERT INTERBEDS		10/W													
				NO TUFF															
	100.0			SOS	50	30/W	BED 10		BLEB 10	NOD 30									
						54/E (2CA)	< 3 MM		ESP NR TOP										
						37/FLAT													
						42/E (4CA)													
	110.0			SOS	50	32/W	BED 15		BLEB OS	NOD 30									
						40/E FLAT			THIN	< 3 CM									
						26/W (LOW)			SCATTERED 6 TO										
						25/W													
	120.0			SOS	15	20/W	BED 35			NOD 50									
				MOD. U. THIN (2.5 MM) TUFF BEDS - CHLOR. XSTY		33/W													
						35/W													
						37/W													
	130.4			SOS	05	31/W	BED 50			NOD 55									
				THIN (4.5 CM) VARIABLY SURF. BLK SHALE, SOME CHERT		30/W	< 2 MM MASSIVE												
	135.0																		

B<sub>3</sub>

4









# GJV-DRIFTPILE CREEK PROJECT: LOG DDH 7927

COORD. \_\_\_\_\_ DIP \_\_\_\_\_ AZIM. \_\_\_\_\_ ELEV. \_\_\_\_\_ SIZE \_\_\_\_\_ STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_ LOGG. \_\_\_\_\_

VISUAL LOG	FOOTAGE		PRIMARY LITHOLOGY	SECONDARY INTERBEDS	CORE ANGLE Bedding W E Structure EW E	PYRITE		BARITE		CO <sub>3</sub> Type %	OTHER Description %	ANALYSES			
	Inter-section	True Depth				Lam. % Thickness	Diss. % Size	Bed. % Thickness	Bleb. % Size			% Zn	% Cu	% Pb	% Ba
[Pattern]			LOW-MOD SLT, JFG, MOD. CALC SHALE	NON-CALC SECTIONS 2' 4CM THIN (2' 1CM) TUFF THICK 800 SHALE	66/E(70)										
[Pattern]	310.0				69/E(4)										
[Pattern]			SOS. NOW ONLY SLIGHTLY CALC SECTIONS	THIN (2' 1CM) "TUFF" BARITE SHALE (W/ C. 822)	85/E(4) 77/E(4) 70/E(4)	↙ 41									
[Pattern]	230.0						CLUST TR DIPID MARKS 2.1CM								
[Pattern]			NOW NON-CALC SOS	THIN (2' 1CM) "TUFF" BEDS	71/E(4) 53/E(4)	↙ 41									
[Pattern]	250.0			"	60/E(4) 64/E(4)	↙ 39									
[Pattern]	260.0			"	66/E(4) 81/E(4) 90/CA	↙ 38									
[Pattern]	272.0														
END			END												

Case

# GJV-DRIFTPILE CREEK PROJECT: LOG DDH 79-28

COORD.   72°14'50"   4450W DIP   50W   AZIM.   235°   ELEV.        SIZE   BQ   STARTED   July 21/79   COMPLETED   July 23/79   LOGGED BY   J.C. F.  

VISUAL LOG	FOOTAGE		PRIMARY LITHOLOGY	SECONDARY INTERBEDS	% CORE ANGLE	PYRITE		BARITE		CO <sub>3</sub>		OTHER Description	ANALYSES				
	Inter-section	True Depth				Bedding W	Structure EW	Lam. Thickness	% Diss. Size	Bed. Thickness	Bleb. % Size		Type	% Size	Pb	Zn	Cu
		2.0															
		36.0	OUTS CASING														
		36.5	CHERTY AROUND THIN (4CM) TUFF	LOW-MOD SIL BLK SHALE SLIGHTLY CALC INTERVALS	85	27/NE (STEEP)	40	BED 05			NOD 10	LOST CORE 3m-3.5m					
		36.5	36 CM CO <sub>3</sub> NOD TOP NO TUFF	MOD-U. SIL BLK SHALE NON-CALC	75	27/E (FLAT)	41	BED 05			NOD 20						
		41.5	CHERTY INTERBED THIN (4-1cm) TUFF	LOW-MOD SIL BLK SHALE SLIGHTLY CALC LAMINAR BEDS	75	37/NE (L)		BED 05			NOD 20	SL, GL "					
		46.5	"	SOS	80	37/NE (STEEP)	47	BED 05			NOD 15	"					
		51.5	"	SOS	75	28/NE		BED 05			NOD 20	"					
		56.0	"	SOS	75	26/NE		BED 05			NOD 20	"					
		56.0	NO TUFF	SOS IN SCATTERED 4-6 CM BLS	20	40/NE		BED 40			NOD 40						
		60.5	6CM MOD-SIL, UFG SHALE BED @ BASE	SOS SCATTERED 1-3cm FEIN BLS	10	45/NE		BED 40			NOD 50	3CM BED @ BASE					
		67.0	0.5CM SHALE BED @ BASE	BROKEN, FRAGMENTAL MODSIL BLK SHALE	TR	41/E		DISS 05			NOD 75	REICT BDG "					
		12.8	2CM BLK LOW-MOD SIL SHALE @ BASE	MOD-U. SIL BLK SHALE IN 2.1CM BEDS SCATTERED NODS	85	41/E (VERT)		BED 40			NOD 35	20.8CM BEDS					
		70.4						BED 95			NOD TR						
		75.2						MASSIVE INCL BLK TGL			NOD TR	1.2CM BED @ TOP					

D B

TH

MASSIVE SULFIDE

# GJV-DRIFTPILE CREEK PROJECT: LOG DDH 79-28

COORD. \_\_\_\_\_ DIP \_\_\_\_\_ AZIM. \_\_\_\_\_ ELEV. \_\_\_\_\_ SIZE \_\_\_\_\_ STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_ LOGG. BY \_\_\_\_\_

VISUAL LOG	FOOTAGE		PRIMARY LITHOLOGY	SECONDARY INTERBEDS	CORE ANGLE			PYRITE		BARITE		CO <sub>3</sub>	OTHER	ANALYSES					
	Inter-section	True Depth			Bedding W	Structure E	E	Lam. % Thickness	Diss. % Size	Bed. % Thickness	Bleb. % Size	Type % Size	Description	Pb	Zn	Cu	Ag	Ba	
																			%
TH			ABRUPT FTWL CNT	MDD-U SIL, BLK SHALE 79.0-79.7, INC DIS (INTERBEDDED W PY)	OS	64/W (7CA)			BED 20	DGS 25		BEAT 50	BEST						
	88.0	30.9				54/W (11)			78.6-79.4	INTERMIT TO CO <sub>2</sub> 8 SL		INC DIS 10 79.0	GL W 79.9-80.0						
			LOW-MID SIL, OFF THICK BED BKN SHALE, THIN SLIGHTLY CALC INTERVALS	SEDG (?) BRKY ~4CM THICK @ TOP, MINOR TUFF" (2 CM)		46/W (11)													
		90.0				50/W (11)													
			SOS	U. MINOR, THIN & SCATTERED TUFF"		45/W (11)		55											
		100.0				60/W (11)													
			SOS	"		75/W (11)													
		110.0				05/E (HIGH)		61/40											
			SOS	"		40/E (VERY)													
		120.0				25/E													
-BC			BARITIC?	BARITIC SHALE (BRN-GREEN) W DISSEM PY @ 123 1/2 CM THICK		28/NE		44											
		130.0				03/E (HIGH)													
			SOS	U. MINOR TUFF" < 0.5 CM, THIN & SCATTERED		10/E (L)													
		140.0				17/E		39											
CB				"		14/E													
			SOS	2-3 CM TUFF" @ BASE		17/E		45											
		147.0				26/E													
			MDD-U SIL, VFG, SLIGHTLY CALC BLK SHALE, 2-3 CM NON CALC INTERVALS	SCATTERED TUFF" 2 CM		33/E													
	155.0					55/W (7CA)		37											
						20/E													
						20/E													
			END																











# GJV-DRIFTPILE CREEK PROJECT: LOG DDH 79-30

COORD. \_\_\_\_\_ DIP \_\_\_\_\_ AZIM. \_\_\_\_\_ ELEV. \_\_\_\_\_ SIZE \_\_\_\_\_ STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_ LOG# \_\_\_\_\_

VISUAL LOG	FOOTAGE		PRIMARY LITHOLOGY	SECONDARY INTERBEDS	% CORE	ANGLE $\alpha$			PYRITE		BARITE		CO <sub>3</sub>	OTHER	ANALYSES					
	Inter-section	True Depth				Bedding W	Structure E	E	Lam. Thickness	% Diss. Size	Bed. Thickness	Bleb. Size	Type	% Description	Zn	Cu	g	% ppt	Ba	% ppt
[Hatched]			MOD.-U.SIL. SLIGHTLY GRITTY BLK SHALE SLIGHTLY CALC	FREQUENT FINE-GR. MASSES @ TOP DEC D/S & SCATTERED 2.2 CM RAD. INT. BED.	20/w		55	LAM TF				BED OS	6% calc REC. 136.0							
	147.0		OLIVE-GREY LIGN. FINELY BANDED CARBONACEOUS		59/w							BED 20								
[Grid]			MOD. SIL. SLIGHTLY GRITTY BLK SHALE NON-CALC.	THIN, SCATTERED RAD. CHAZ. BEDS. 4.1 CM.	40/w 43/w 33/w		63	LAM TF												
	149.7																			
	160.0		SOS		24/w 15/w 10/w		63	LAM TF												
[Grid]			MOD.-U.SIL. BLK SHALE SLIGHTLY GRITTY RAD. CHAZ. 20" U.	THIN CALC. INTERBEDS. CALC. RY. INTERBEDS.	00/w 40/FROT 25/w(low)		59	LAM TF				BED OS	CW. REC. 136.0							
	150.0																			
	170.0		SOS	"	16/w (low) 27/w 04/w		54	LAM TF				BED TF	3cm @ 186.5 4cm @ 187.0							
	190.0		SOS	"	10/w (low) 90/EA 40/w		52							50% calc REC. 141.0						
[Hatched]			NON-SIL. VFG. U. CARB. THICK BEDDED BLK SHALE CALC. INTERVALS	U. THIN. MINOR "TUFF" BEDS. "METAL FLAKE" SHALE. SEE PY.	58/E (CA)		35 15	DKG TF				BED TF	7cm @ 205.0							
	209.0		VARIABLE LOW-MOD SIL. VFG-GRITTY BLK SHALE, MOD. TO THICK BDD.	SCATTERED CALC. INTERVALS LAM. U. THIN "TUFF" MINOR	16/w 24/w 20/w		42	BED TF		BED TF	BLEB OS	NOB OS	THIN TO BLEBS U. THICKEST BLEBS SCATTERED 4 CM CONC.							
[Hatched]			SOS	SOS	05/w 20/w		40	BED TF				BLEB IO	NOB OS							
	220.0																			
	227.0		MOD. SIL. VFG. SLIGHTLY CALC MASSIVE BLK SHALE		15/w															
[Hatched]			SOS SILICH CUT W/ D/S.	U. SILICEOUS SHALE (CHAZ.?) ABOVE & BELOW ISLEBEDS BARITE	08/w 00/w			BED TF				BLEB TF	NOB OS	SCATTERED 2.4 CM INTERBEDS TO BLEB						
	230.0																			
	236.0																			

B2?

B3?

# GJV DRIFTPILE CREEK PROJECT: LOG DDH 79-30

COORD. \_\_\_\_\_ DIP \_\_\_\_\_ AZIM. \_\_\_\_\_ ELEV. \_\_\_\_\_ SIZE \_\_\_\_\_ STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_ LOG# \_\_\_\_\_

VISUAL LOG	FOOTAGE		PRIMARY LITHOLOGY	SECONDARY INTERBEDS	% CORE ANGLE		PYRITE		BARITE		CO <sub>3</sub>		OTHER Description	ANALYSES				
	Inter-section	True Depth			Bedding W	Structure E	Lam. Thickness	% Diss. Size	Bed. % Thickness	Bleb. % Size	Type % Size	% ppt		% ppt	% ppt	% ppt	% ppt	% ppt
			INTERBEDDED NON-SIL. VFG BLK SHALE & SILICEOUS TOCHRYA BLK ARGL	MINOR CALC INTERVALS	20/W	FA 23°	BED TR		BED OS	BLEB 10	NO D	TR						
	246.0		SOS	"	10/W		BED TR		BED TR	BLEB OS	NO D	OS						
	256.0		SOS	"	15/W		"		NEAR BASE	2.2 CM INTERVALS								
	266.0		SOS	LOW-MOD SIL VFG. PARAL. BLK SHALE. MASSIVE. 257-268.4, 269-275	08/W		BED OS	DISS TR	BED TR	BLEB 10	NO D	OS						
	276.0		SOS	SCATTERED SECTIONS OF ABOVE 4.2 CM	16/W		BED OS	DISS TR		BLEB 10	NO D	OS						
	286.0		SOS	4.5 CM NR TOP SCATTERED LICH "TUFF" BEDS	22/W	51°	BED OS	DISS TR	BED OS	BLEB 15	NO D	IO						
	296.0		SOS	"	18/W		BED TR			BLEB OS	NO D	OS						
	306.0		SOS	NON-SIL. VFG CARB. BLK SHALE. 296.0-300.2, 301.5-303.8	09/W		BED TR	DISS TR	BED OS	BLEB OS	NO D	TR						
	310.0		MIN'D	CHERTS BLK ARGL (V. SIL. BLK SHALE < 6 CM "TUFF" BEDS < 1 CM	00/W		BED TR	DISS TR	BED IO	BLEB 15	NO D	IO						
	320.0		MIN'D	SOS	"	00/W	57°	BED TR	DISS TR	BED 20	BLEB 15	NO D	IS					
	330.0		MIN'D	SOS	"	17/W	50°	BED TR	DISS TR	BED OS	BLEB 30	NO D	OS					
	340.0		MIN'D	VARIABLELY MOD. SIL. TO. V. SIL. CHERTS BLK SHALE BEDS < 6 CM	35/W		BED TR		BED OS	BLEB 40	NO D	OS						
	350.4		MIN'D	SOS	VFG NON-SIL SHALE 346.0-349.0	12/W		BED OS		BED 10	BLEB 15	NO D	TR					

B?

4?



# GJV-DRIFTPILE CREEK PROJECT: LOG DDH 79-30

COORD. \_\_\_\_\_ DIP \_\_\_\_\_ AZIM. \_\_\_\_\_ ELEV. \_\_\_\_\_ SIZE \_\_\_\_\_ STARTED \_\_\_\_\_ COMPLETED \_\_\_\_\_ LOG # \_\_\_\_\_

VISUAL LOG	FOOTAGE		PRIMARY LITHOLOGY	SECONDARY INTERBEDS	% CORE ANGLE CH			PYRITE		BARITE		CO <sub>3</sub>		OTHER Description	ANALYSES				
	Inter-section	True Depth			Bedding W	Structure E	E	Lam. % Thickness	Diss. % Size	Bed. % Thickness	Bleb. % Size	Type	% Size		ppm	% Zn	ppm Cu	% Ag	ppm Ba
			LOW-MOD. SIL, SLIGHTLY GRAY BLK SHALE, CHERTY INTERVALS NO S-SCALE	PS-HYDROC. MASSES SCATTERED MINOR RAD CHRT 2 CM	50/VERT		60	BED 10											
	466.8				85/E(4CA)		45	2.2CM SCATTERED IRREG											
		467.9-468.6	VARIOUS NON-SIL, V. GRAY BLK SHALE	VARIOUS NON-SIL TO CHERTY ARGL 2-3 CM	46/VERT		43	BED 10				NOD 15		REACT IN CD, NO ROT					
			MINOR THIN "TUFF"	V. SIL TO CHERTY BLK, SLIGHTLY GRAY SHALE 2.5CM, INC. DIS	45	35/W (VAT)	43	BED 25		BED 15	BLEB 15	NOD 15							
	481.0				50/VERT		43	DEC DIS		15 BLEB	1-2 CM SECTION INC. DIS	DEC 15							
			V. MINOR U. SIL PYRITIC, ARGL MASSIVE 40-45 CM	SOS <10 CM	55	20/W	48	BED 15	DISS TR	BED 15		NOD 10							
	491.0				45/W		48	<3MM IN MASS ARGL		"	"	<3CM							
			V. THIN MINOR THICK, CONTAINS TO	SOS 2-3CM	45	30/W		BED 20		BED 15	BLEB 20	NOD 15		A BRUFF					
	494.6							"		"	"	"		BARITE					
			"	SOS	50	38/W		BED 25				NOD 25							
			NON-SIL BLK SHALE, MASSIVE TO 2.5CM	<4CM		34/W		"				<9CM							
	505.0					41/W													
			SOS	SOS	50	28/W		BED 25				NOD 25		CLASTIC					
			"	"		28/W		"				"		TRACED IN SHALE					
			"	"	60	50/VERT													
	515.0					41/W		BED 30				NOD 20		USA-TRACED					
			"	"		42/W		"				"		SEPT AGG					
			"	"		56/E(PCA)								2.2CM IN SHALE					
	535.0																		
			SOS	SOS	45	42/VERT	38	BED 35				NOD 20		GOOD SL					
			"	"		55/E(7CA)		INCL. MASS SL				"		MINOR GLT					
			"	"										MASS SL 52.0					
	531.0													52.0					
			SOS	SOS	70	35/W		BED 15				NOD 15		FAIR SL					
			"	"				INCL. THIN SL BEDS				"		DEC DIS					
	533.5																		
			V. THIN, MINOR "TUFF" BEDS	V. SIL TO CHERTY BLK SHALE TO 20CM, ARG 8 CM	55	35/W		BED 10		BED 5	BLEB 20	NOD 10		FAIR					
						35/W		2.1CM		2.1CM	4.2CM	<3CM		SL IN THIN					
	543.0					40/W		15 BLEB		CONC. 2.4CM									
				SOS	50	12/W	38	BED 10		BED 5	BLEB 20	NOD 15							
						35/W													
	552.5																		

Ac

B3

LA?

SL BEDS CORRE

GOOD SL

FAIR SL

2.2



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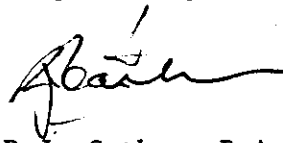
1016 STANDARD BUILDING  
510 WEST HASTINGS STREET  
VANCOUVER, B. C.  
V6B 1L8

## CERTIFICATE

I, Robert J. Cathro, with business addresses in Whitehorse, Yukon Territory, and Vancouver, British Columbia, and residential address in West Vancouver, British Columbia, do hereby declare

1. I am a consulting engineer.
2. I am a 1959 graduate of the University of British Columbia in geological engineering.
3. From 1959 to 1965 I was engaged in mining and exploration geology with United Keno Hill Mines Ltd., Giant Yellowknife Mines Ltd., and Eldorado Mining and Refining Ltd. I entered private practice in January, 1966.
4. I am a registered professional engineer in British Columbia and Yukon Territory.
5. I have supervised the work described in this report.

Respectfully submitted,



R.J. Cathro, B.A.Sc., P. Eng.



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VANCOUVER, B.C.  
V6B 1L8

STATEMENT OF QUALIFICATIONS

I, Robert C. Carne, residing at 5665 Toronto Road, Vancouver, British Columbia, state that:

1. I have graduated from the University of British Columbia with a B.Sc. degree in Geological Sciences in 1974.
2. I have been employed by Archer, Cathro & Associates Ltd. as a geologist since 1977 and that I have been engaged in mineral exploration in British Columbia, Yukon Territory and Northwest Territories since 1970.
3. I am a member of the Geological Association of Canada.
4. I am a member of the Geological Society of America.
5. I am a member of the Society of Economic Paleontologists and Mineralogists.
6. I personally supervised the exploration program at the Driftpile property during 1979 and logged all drill core.

Respectfully submitted,



Robert C. Carne, B.Sc.

RCC:jm

MINERAL RESOURCES BRANCH  
 ASSESSMENT REPORT  
**7658**  
 NO. \_\_\_\_\_

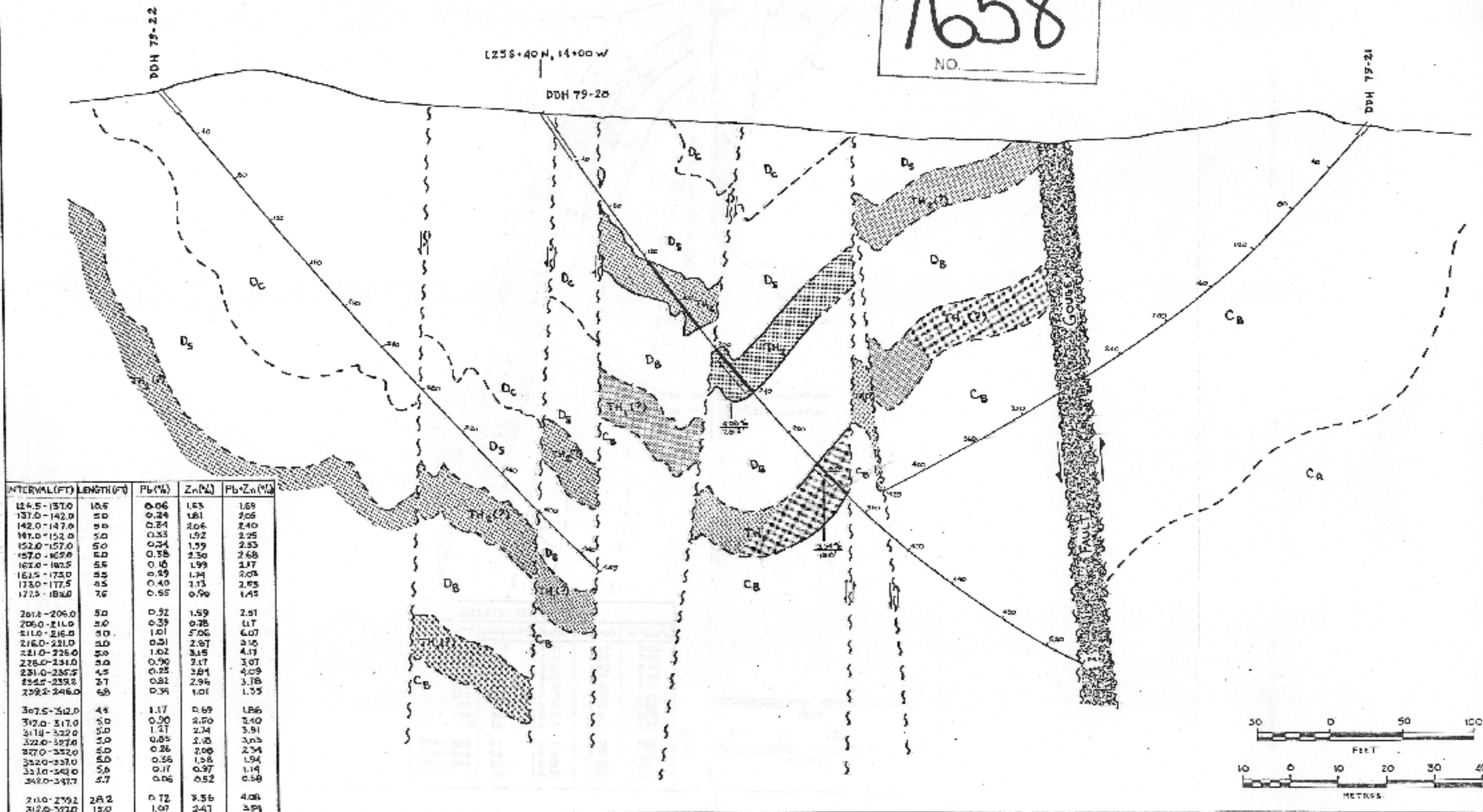


Figure A-13: Generalized cross-section, DDH 79-20, 79-21 and 79-22

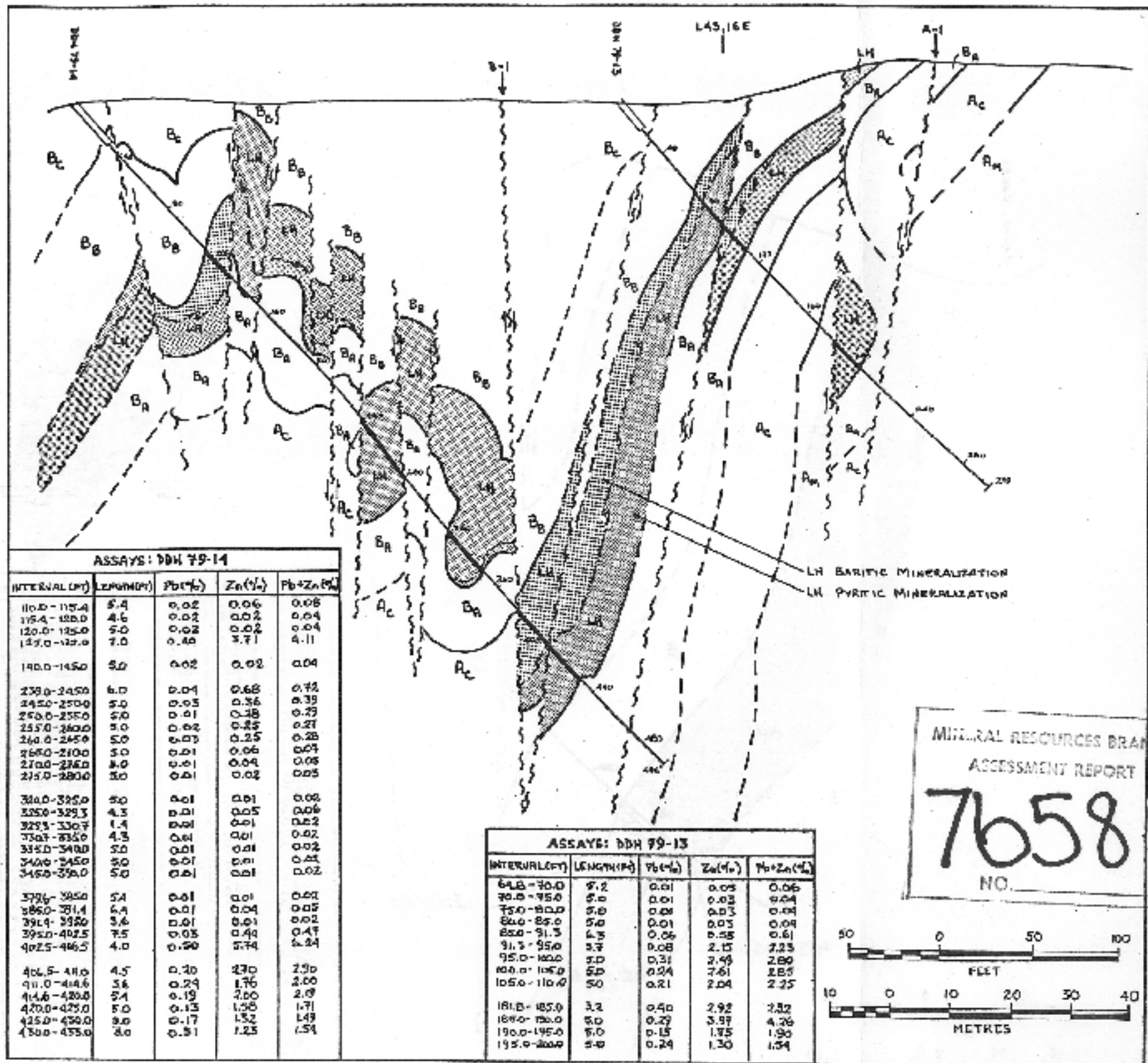


Figure A-8: Generalized cross-section, DDH 79-13 and 79-14

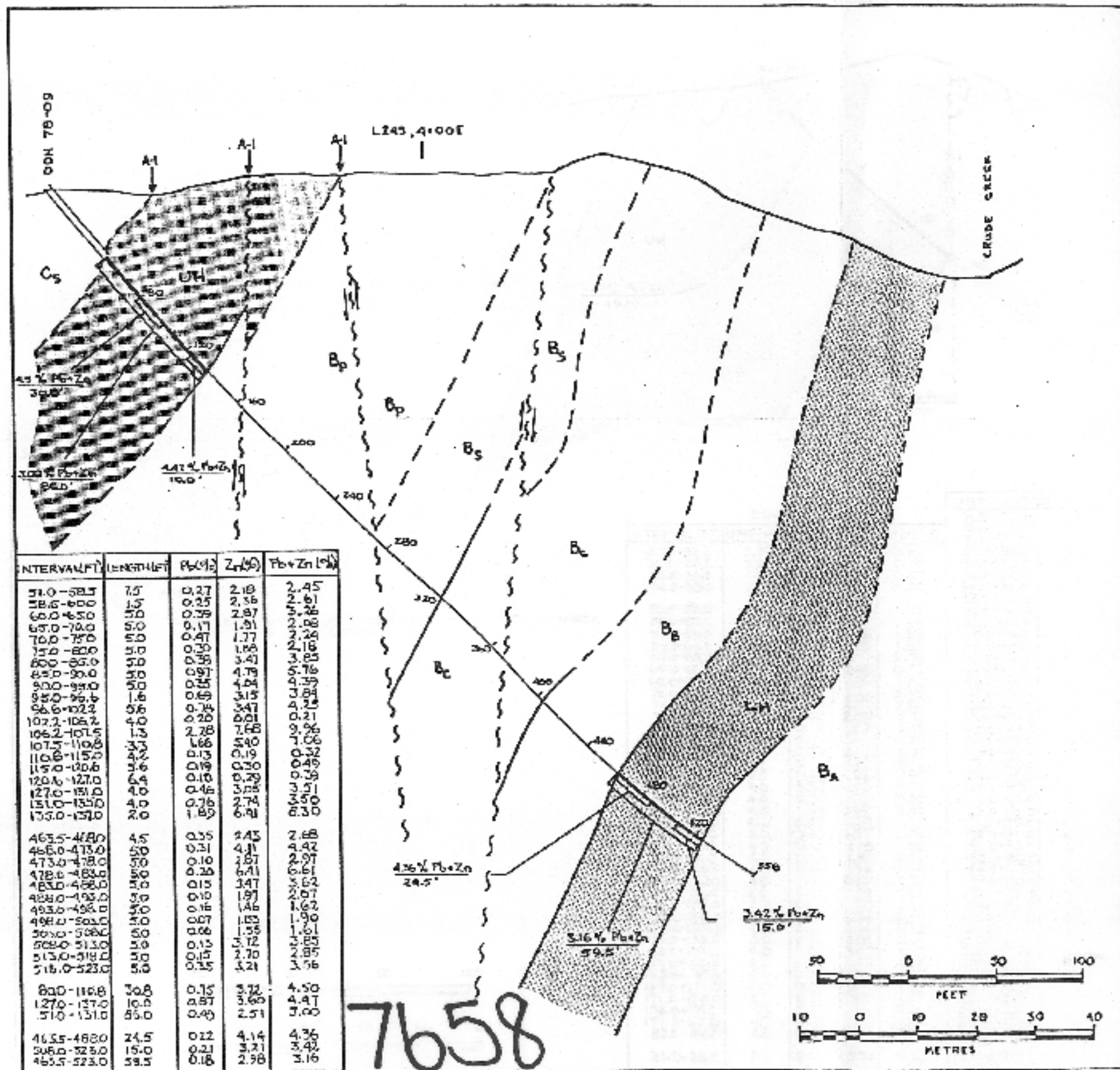
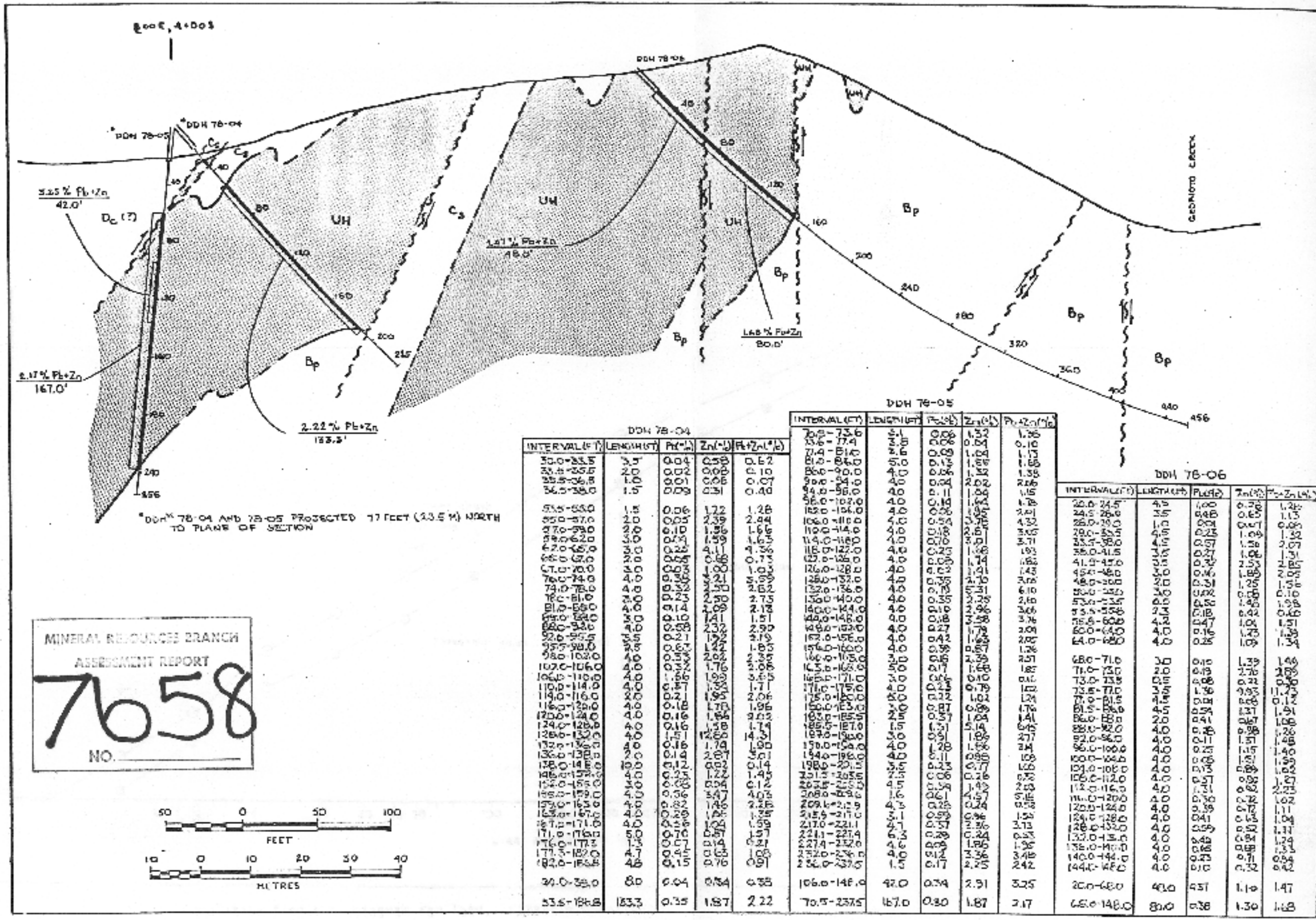


Figure A-5: Generalized cross-section, ODH 7B-09



DDH 78-04					DDH 78-05					DDH 78-06				
INTERVAL (FT)	LENGTH (FT)	Pb (%)	Zn (%)	Pb+Zn (%)	INTERVAL (FT)	LENGTH (FT)	Pb (%)	Zn (%)	Pb+Zn (%)	INTERVAL (FT)	LENGTH (FT)	Pb (%)	Zn (%)	Pb+Zn (%)
30.0-33.5	3.5	0.04	0.58	0.62	70.5-73.6	3.1	0.08	0.41	0.49	68.0-71.0	3.0	0.15	1.33	1.48
33.5-35.5	2.0	0.02	0.05	0.07	73.6-77.4	3.8	0.06	0.10	0.16	71.0-73.0	2.0	0.09	2.76	2.85
35.5-36.5	1.0	0.01	0.05	0.07	77.4-81.0	3.6	0.09	0.13	0.22	73.0-73.5	0.5	0.88	0.92	1.80
36.5-38.0	1.5	0.03	0.31	0.40	81.0-84.0	3.0	0.04	0.15	0.19	73.5-73.0	0.5	1.56	0.93	2.49
53.5-53.0	1.5	0.06	1.22	1.28	84.0-84.0	0.0	0.00	0.00	0.00	73.0-81.5	8.5	0.31	0.71	1.02
55.0-57.0	2.0	0.05	2.39	2.44	84.0-84.0	0.0	0.00	0.00	0.00	81.5-81.5	0.0	0.00	0.00	0.00
57.0-59.0	2.0	0.10	1.56	1.66	84.0-84.0	0.0	0.00	0.00	0.00	81.5-82.0	0.5	0.41	0.27	0.68
59.0-62.0	3.0	0.07	1.59	1.66	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
62.0-65.0	3.0	0.25	4.11	4.36	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
65.0-67.0	2.0	0.05	0.68	0.73	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
67.0-70.0	3.0	0.06	1.00	1.06	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
70.0-74.0	4.0	0.09	2.21	2.30	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
74.0-78.0	4.0	0.09	2.50	2.59	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
78.0-81.0	3.0	0.23	2.50	2.73	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
81.0-85.0	4.0	0.14	2.09	2.23	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
85.0-88.0	3.0	0.10	1.41	1.51	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
88.0-93.0	5.0	0.08	2.32	2.40	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
93.0-95.5	2.5	0.21	1.42	1.63	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
95.5-98.0	2.5	0.06	1.42	1.48	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
98.0-103.0	5.0	0.05	2.02	2.07	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
103.0-106.0	3.0	0.00	1.76	1.76	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
106.0-110.0	4.0	0.06	1.93	2.00	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
110.0-114.0	4.0	0.17	1.33	1.50	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
114.0-116.0	2.0	0.21	1.95	2.16	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
116.0-120.0	4.0	0.18	1.75	1.93	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
120.0-124.0	4.0	0.16	1.56	1.72	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
124.0-128.0	4.0	0.16	1.38	1.54	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
128.0-132.0	4.0	0.15	1.66	1.81	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
132.0-136.0	4.0	0.16	1.74	1.90	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
136.0-138.0	2.0	0.14	2.07	2.21	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
138.0-148.0	10.0	0.12	0.83	0.95	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
148.0-153.0	5.0	0.25	1.22	1.47	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
153.0-155.0	2.0	0.03	0.04	0.07	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
155.0-159.0	4.0	0.06	3.47	3.53	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
159.0-163.0	4.0	0.02	1.46	1.48	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
163.0-167.0	4.0	0.29	1.26	1.55	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
167.0-171.0	4.0	0.26	1.04	1.30	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
171.0-176.0	5.0	0.16	0.97	1.13	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
176.0-177.3	1.3	0.07	0.94	1.01	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
177.3-182.0	4.7	0.45	0.63	1.08	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
182.0-186.5	4.5	0.15	0.76	0.91	84.0-84.0	0.0	0.00	0.00	0.00	82.0-82.0	0.0	0.00	0.00	0.00
34.0-38.0	4.0	0.04	0.34	0.38	106.0-146.0	40.0	0.34	2.91	3.25	20.0-68.0	48.0	0.51	1.10	1.61
53.5-186.8	133.3	0.35	1.87	2.22	70.5-237.5	167.0	0.30	1.87	2.17	68.0-148.0	80.0	0.38	1.30	1.68

Figure A-3: Generalized cross-section, DDH 78-04, 78-05 and 78-06

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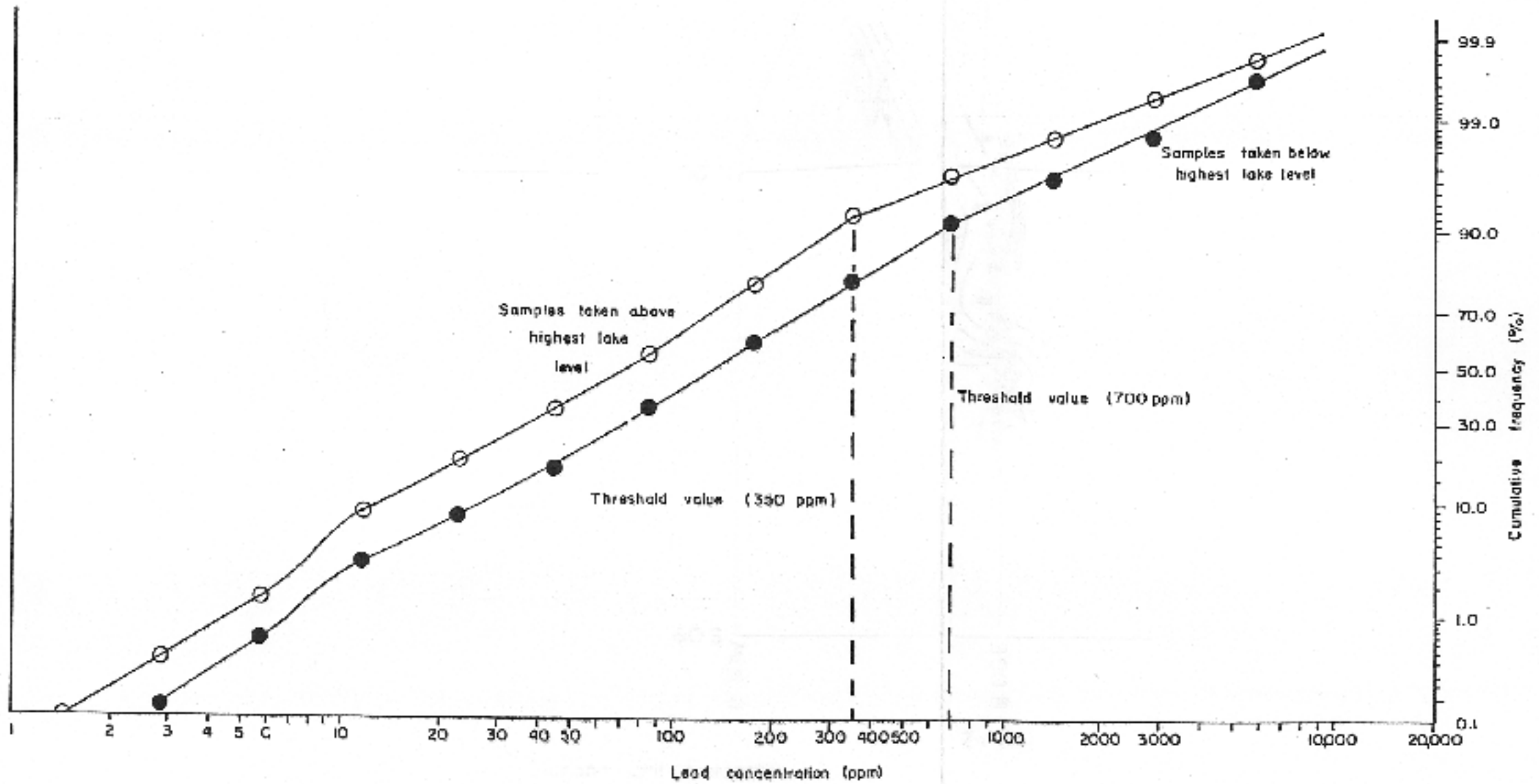


Figure 9 : Cumulative frequency diagram for lead, Driftpile Creek property

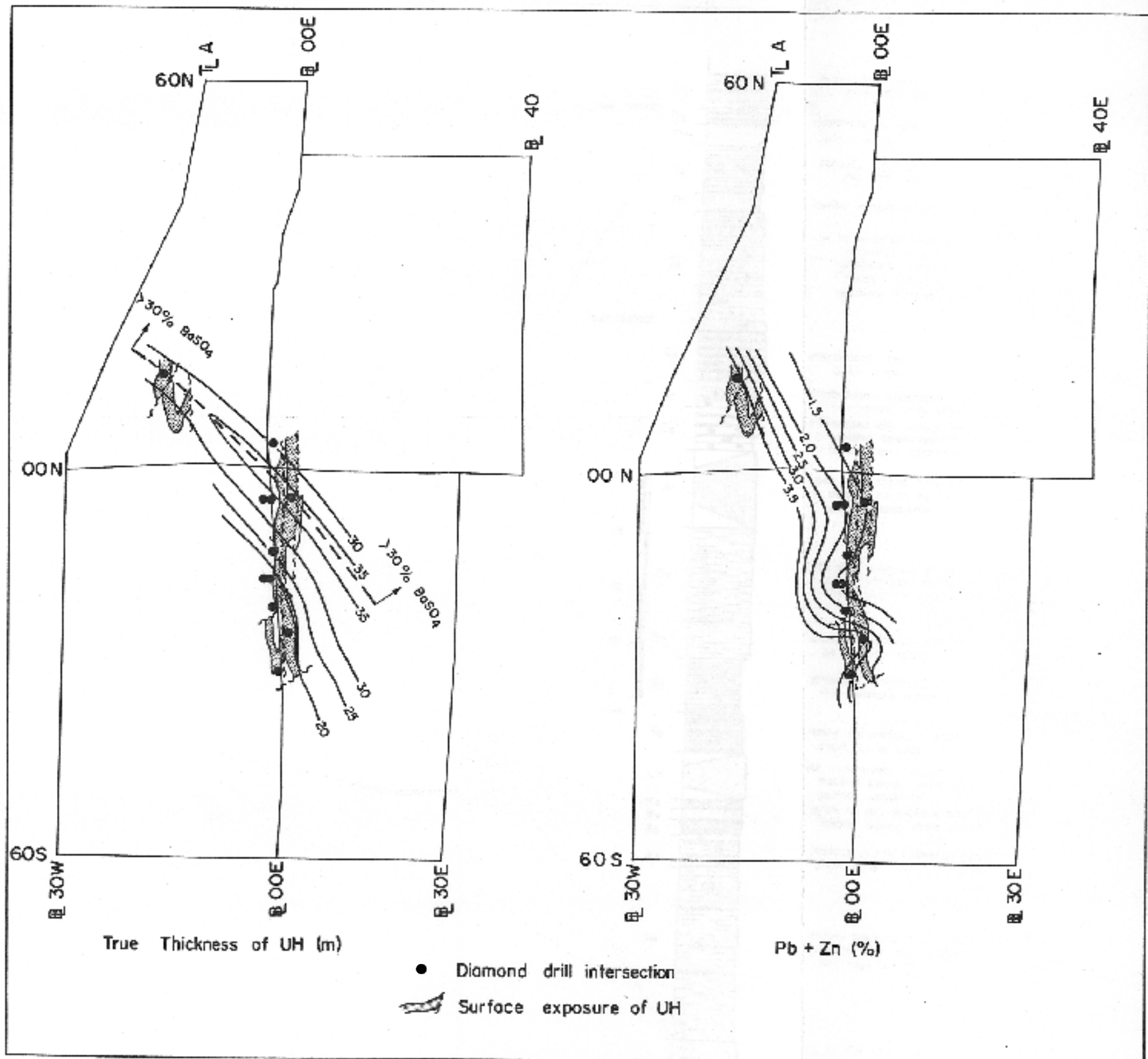


Figure 5: Isopach and metal ratio maps, UH

7658

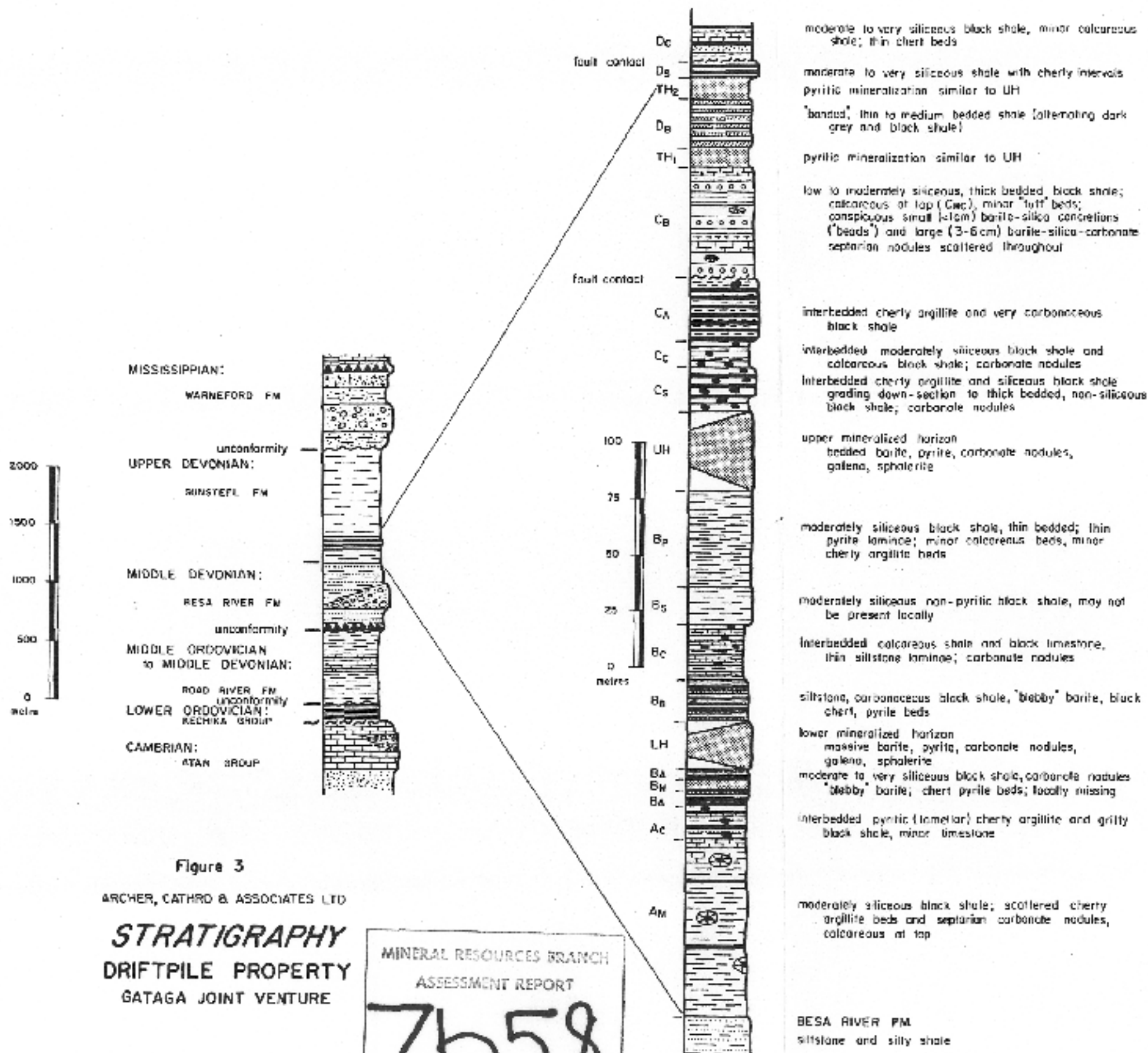


Figure 3

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**STRATIGRAPHY**  
**DRIFTPILE PROPERTY**  
GATAGA JOINT VENTURE

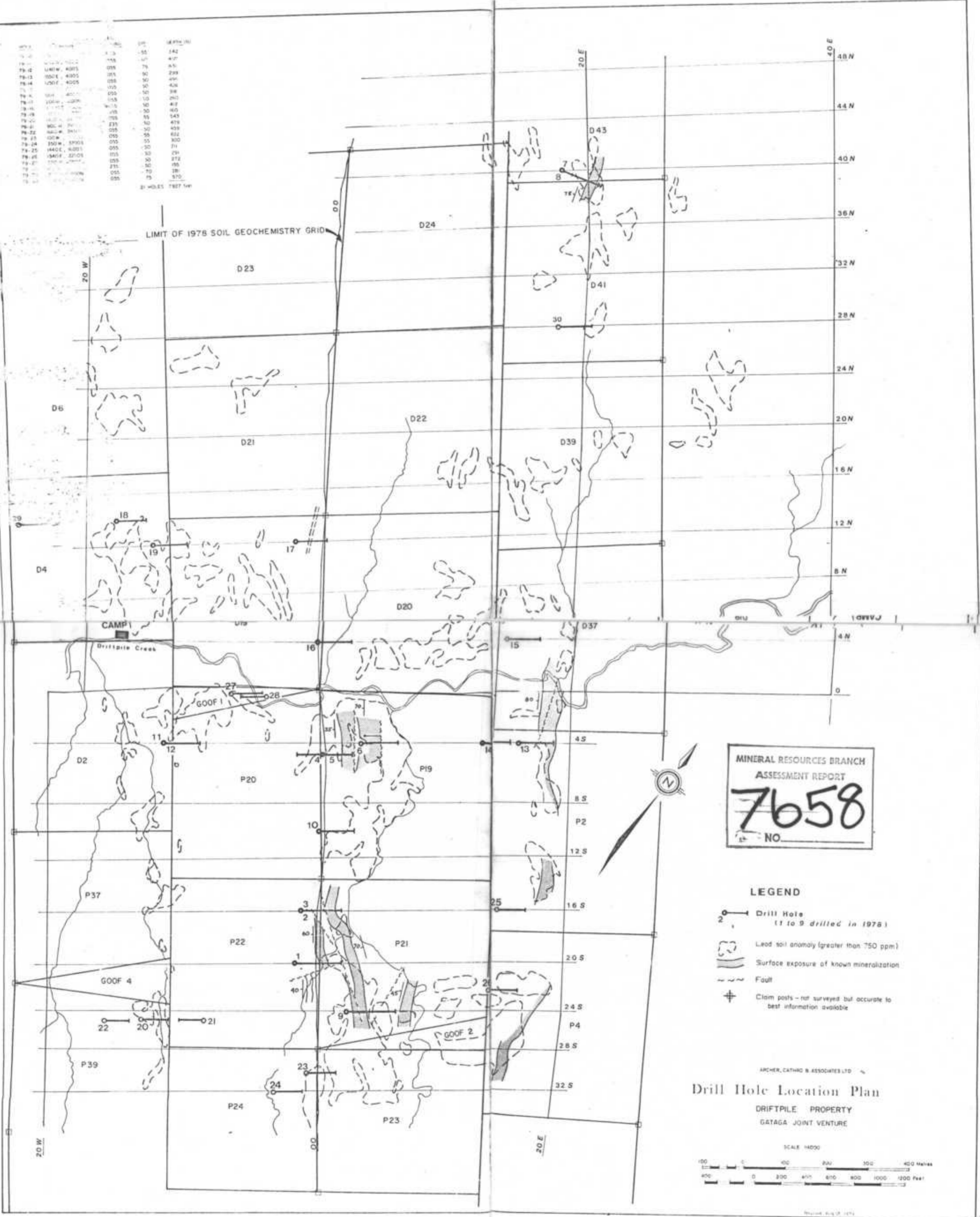
MINERAL RESOURCES BRANCH  
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NO.



NO.	DATE	DEPTH (M)	DEPTH (FT)
79-1	1978	55	142
79-2	1978	55	142
79-3	1978	55	142
79-4	1978	55	142
79-5	1978	55	142
79-6	1978	55	142
79-7	1978	55	142
79-8	1978	55	142
79-9	1978	55	142
79-10	1978	55	142
79-11	1978	55	142
79-12	1978	55	142
79-13	1978	55	142
79-14	1978	55	142
79-15	1978	55	142
79-16	1978	55	142
79-17	1978	55	142
79-18	1978	55	142
79-19	1978	55	142
79-20	1978	55	142
79-21	1978	55	142
79-22	1978	55	142
79-23	1978	55	142
79-24	1978	55	142
79-25	1978	55	142
79-26	1978	55	142
79-27	1978	55	142
79-28	1978	55	142
79-29	1978	55	142
79-30	1978	55	142

20 HOLES 1987-1991



MINERAL RESOURCES BRANCH  
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**7658**  
NO.

**LEGEND**

- Drill Hole  
(1 to 9 drilled in 1978)
- Lead soil anomaly (greater than 750 ppm)
- Surface exposure of known mineralization
- Fault
- Claim posts - not surveyed but accurate to best information available

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**Drill Hole Location Plan**  
DRIFTPILE PROPERTY  
GATAGA JOINT VENTURE

SCALE 1:4000

