COMINCO LTD.

EXPLORATION

WESTERN DISTRICT

NTS: 105 O/1

ASSESSMENT REPORT

DIAMOND DRILLING, AND ROADBUILDING

ON THE HASTEN, BASIN AND FETCH CLAIMS

Situated at: 130°12'W, 63°06'N

Mayo and Watson Lake Mining Districts

Yukon Territory

JULY 7, 1983

M.R. MURRELL

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ATTACHMENTS

COMINCO LTD.

EXPLORATION

WESTERN DISTRICT

7 July 1983

ASSESSMENT REPORT

DIAMOND DRILLING, AND ROAD BUILDING REPORT

ON THE

HASTEN, BASIN AND FETCH CLAIMS

MAYO AND WATSON LAKE MINING DISTRICTS

YUKON TERRITORY

I. INTRODUCTION

The Hasten, Basin and Fetch claims were staked in 1976 and 1977 to cover the possible southerly strike extension of the stratigraphy which hosts the nearby Tom and Jason lead-zinc-silver deposits.

The property is underlain by the Ordovocian-Silurian Road River Group and the Devono-Mississippian Earn Group. This latter group is divided into the Canol and Imperial formations.

This report covers road building and diamond drilling on the Mayo Mining district side of the property.

II. SUMMARY

Field work on the Hasten, Basin and Fetch property was carried out during the period May 27 to June 30. Roadbuilding was done during May 27 to June 2. Diamond drilling was carried out during June 2 - June 30 with a significant delay caused by washed out roads and ferry. Work was carried out by Caron drilling of Whitehorse, who also supplied the D-7 cat for the roadwork.

III. LOCATION AND ACCESS

The Hasten, Basin and Fetch property is located approximately 390 km northeast of Whitehorse, Yukon Territory, within the MacMillan Pass valley. The Mac-Pass airstrip is located just six miles north (by road) of the claim group.

Drawn by:		Traced by:	
Revised by	Date	Revised by	Date

MKM

HASTEN, BASIN AND FETCH PROPERTY

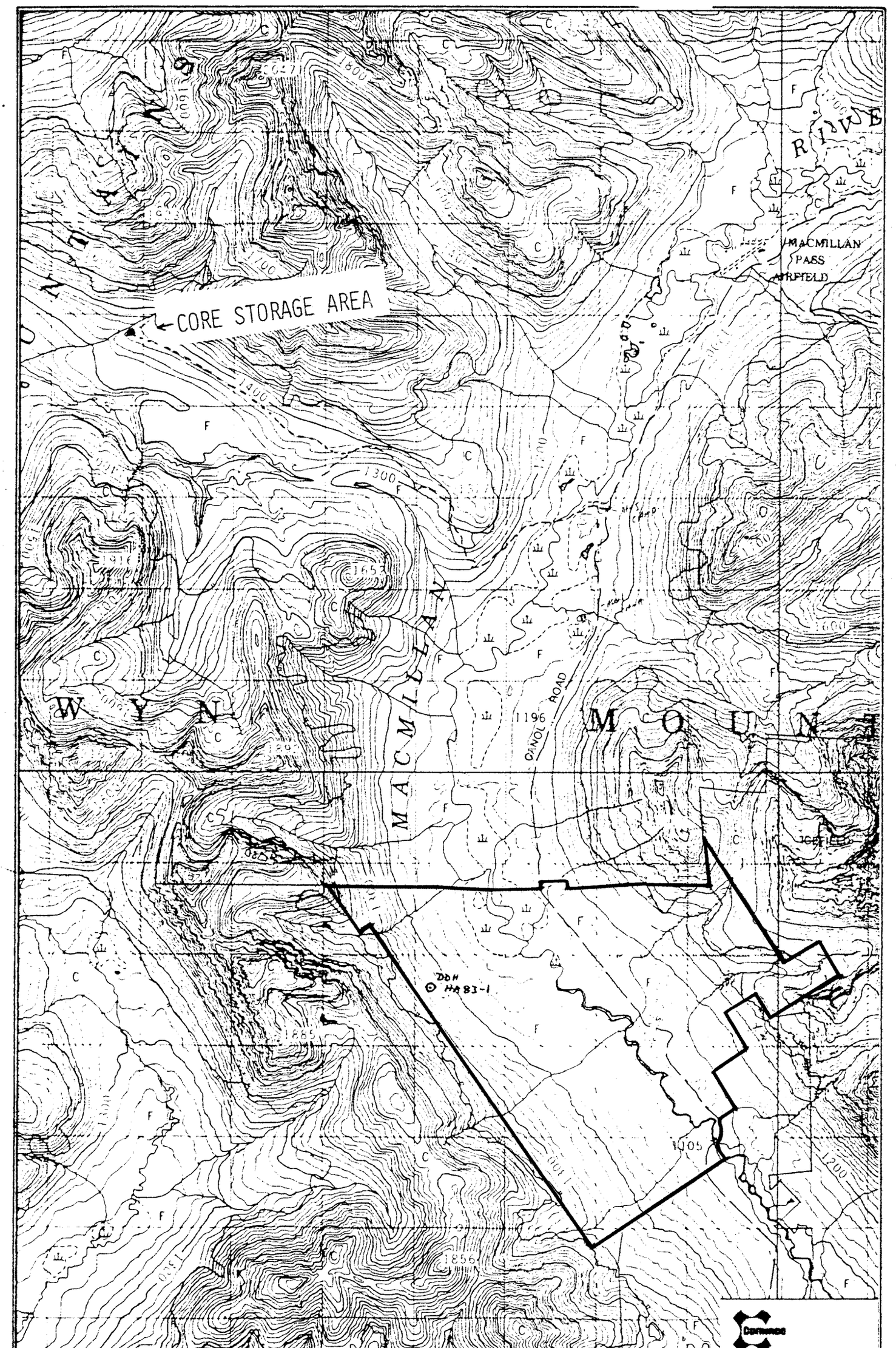
LOCATION MAP

091476

Scale: 1: 2,500,000 | Date: July 5, 1983 | Plate: A

NCT - 112A - CL

210-0610



Drawn by: MRM	Traced by:		
Revised by	Date	Revised by	Date

HASTEN, BASIN AND FETCH PROPERTY

LOCATION MAP

CORE STORAGE AREA

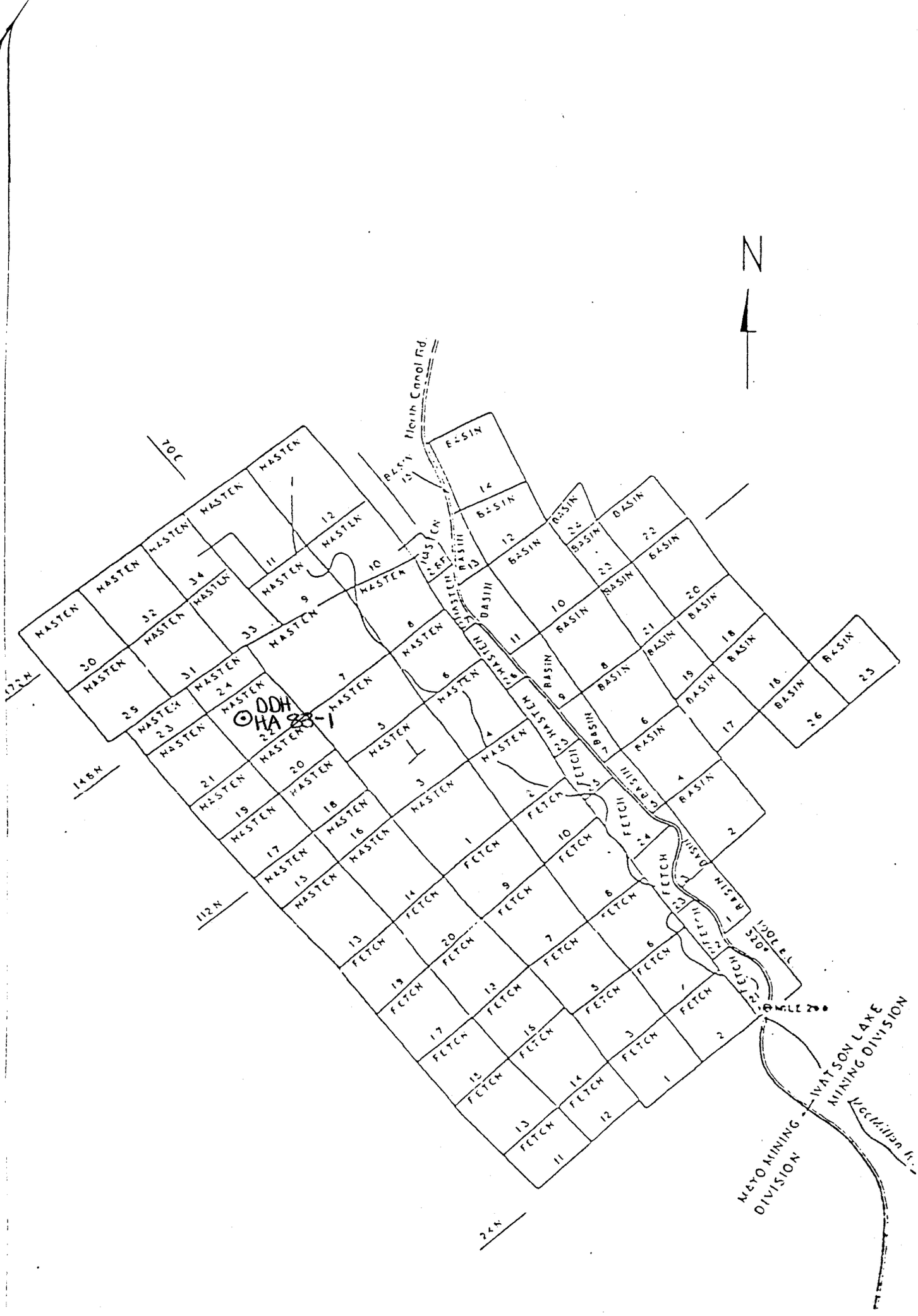
MRM

0914.6

Scale: 1:50,000 | Date: July 5, 1983 | Plate B

NCL 112A CL

210-0610



NTS: 105-O-1

Drawn by:	Traced by:
Revised by Date	Revised by Date

HASTEN OPTION CLAIM MAP

MRM

0914-6

Scale 1:31680 Date JAN., 1983 Plate C

Access to the property is usually by road, for the Canol Highway bisects the property. The Hasten and Fetch claims are within the Mayo Mining District to the west of the highway, and the Basin claims are within the Watson Lake Mining District to the east of the highway. Access within the property is by foot, helicopter or, for a brief period by utilizing a timberjack on the newly constructed road.

IV. TENURE

The Hasten, Basin and Fetch property consists of 85 claims. Assessment work is being claimed on the Hasten and Fetch claims, the details of which are contained on associated reporting forms.

All of the 1983 work was carried out on the west side of the highway, within the Mayo Mining District. Even though the amount of work far exceeds the maximum allowable for assessment credits, the excess cannot be applied to the Basin claims, under current Yukon regulations, for they are within a different mining division.

V. DIAMOND DRILLING

A total of 301.8 metres (990 ft.) of HQ and NQ was completed in one hole by Caron Drilling of Whitehorse, Y.T. The hole is located in the southwest corner of the Hasten 22 claim. Its bearing is 60° and its dip -70°. The purpose was to test a low value Pb geochemical anomaly near the contact of the Ordovician-Silurian Road River Formation with the overlying Devonian Earn Group, (often called the Canol Fm). The rocks intersected included mainly mudstones, minor sandstones and grits, and several magnetic dykes. Sphalerite mineralization was present in trace amounts in a thin (1 m) grit unit, and as interstitial infillings around mudflow blobs. The bottom portion of the hole was slightly calcareous, so may be the equivalent stratigraphy as that seen in the Canico hole 54320 located on the east side of the valley.

The core for HA83-1 is stored at the old Nidd camp near the Jason "End Zone" located 8 km NNW of the drill hole.

VI. ROADBUILDING

A road was built to the drill site to provide an access route for the unitized drill rig. The road was of tote road standards and was built with a D-7 cat and operator supplied by Caron Drilling. Although the road served its purpose, the amount of runoff and melting permafrost has rendered this road impassable for most vehicles at present. The road was "surveyed" with hip-chain and compass and its location is sketched on an accompanying map.

DIAMOND DRILL LOGS

CLAIM SHEET 105-0-1 YEAR July 7th, 1983

AREA Mac Pass Area

COMPANY cominco Ltd.

NUMBER OF HOLES One FOOTAGE 990 Ft. (301.8 Metres)

CLAIM DRILLED Hasten No. 22 YA5960

CORE STORAGE Old NIDD camp near Jason "End Zone" 8 Km NNW of the drill hole.

NOTES & REMARKS:

Hasten Claims in good standing to 5th Nov. 1987
Fetch No. 1 claim to 5th Nov. 1988

091476

Report by: _____
M.R. Murrell, Project Geologist

Endorsed by: _____
D. Rhodes, Senior Geologist

Approved for
Release by: _____
G. Harden, Manager
Exploration
Western District

MRM/skm
Distribution
Mining Recorder (2)
Western District (1)

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property	Hasten, Basin, Fetch	District	Mayo M.D.	Hole No.	HA83-1
Commenced	June 12, 1983	Location	West Side of Valley (Hasten 22)	Tests at	78.4(-,-72°) 243.0(42°,59.5°) 139.3(63°,-68°) 295.7(53°,64.5°)
Completed	June 27, 1983	Core Size	NQ	Corr. Dip	-67° overall
Co-ordinates	4+25W, between cut lines 5N and 6N (Note line labelling is unconventional)	True Brg.	60°	Hor. Comp.	116.5 m
Objective	To test for Zn, Pb mineralization similar to the Jason south zone, by drilling a Pb soil anomaly	% Recov.		Vert. Comp.	275.5 m
				Logged by	M.R. Murrell
				Date	June 15-28/83

Claim	T Brg.	Collar Dip	Elev.	Length	Hole No.	Sheet
Hasten 22	60°	-72°	1275 m (approx)			1

Metres From	Metres To	Description	Sample No.	Length	Analysis ppm Pb	Zn	Ag	Ba
0	26.5	Overburden - General and boulders recovered. Most boulders are medium grey fine grained to sandy looking siltstone (some limy) or shales, recovered as HQ to 21.6, then reduce to NQ. A 15 cm boulder at 12.5 on is coarse light grey sandstone with 20% interstitial light creamy yellow siderite.						
26.5	29.9	Oxidized zone - Black massive unstructured to faintly laminated mudstone broken into 1-5 cm size pieces that are rusty on fracture surfaces most of which are 60° to core axis with a fair number at 30°. Disseminated laminations of pyrite present at 28.6 - 29.0. A 1 cm wide upper massive pyrite bed is partially leached in the central, coarser grained portion. Other laminaes are the disseminated type perhaps 10% overall. Bedding laminations at 60°.						
29.9	39.6	Massive black mudstone with disseminated to laminated pyrite. Most is soft and can easily be scratched with a nail, however it gives off a gritty sound. The occurrence and mode of pyrite is the only differentiating feature in this section:						
		29.9 - 30.3 Few thin discontinuous laminations at 65°. Fractures at 40°.						
		30.3 - 30.6 30% pyrite as small disseminated grains and crystals forming rough laminations at 60°, and a few semi-massive eye-like blebs to 3 cm long set in a brownish weathering soft but competent mudstone matrix.						
		Sample: 30.3 - 30.6	951	0.3	77	793	1.2	489
		30.6 - 35.9 Mainly thin hair-line pyrite laminations, but occasional disseminated zones or irregular blebs (ie. 32.0)						
		Thin silica vein parallel to bedding has ladder-like hair-width veins emenating						

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property Hasten, Basin, Fetch	District	Hole No. HA83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. HA83-1 | Sheet 2

Metres From	To	Description	Sample No.	Length	Analysis
		off it at 20° to core axis.			
		35.9 - 36.5 Irregular grain clusters of pyrite-elongate parallel to bedding or as semi-massive wisps set in a black matrix with pin-point disseminated pyrite (like comets in a starry night). Overall content perhaps 5-6%.			
		36.5 - 39.6 Few scattered or wispy lams as previous, with a few 1-2 cm wide massive crystalline pods at 38.7 - also a few elongate black slightly silty lenses have irregular fringing equiggles of pyrite on either side - may be "rolled up" slightly showing soft sediment deformation(??).			
39.6	40.1	Limy siltstone - light to medium grey, gritty. Bedded at 60° but broken at various angles. Has scattered large (to 0.7 cm) pyrite cubes throughout (5%). Cut by a 1 cm wide white quartz vein that curves through this section, and is slightly pitted.			
40.1	49.3	Mudstone - much as previous. Black, aphanitic, very slightly laminated throughout by slightly - subtly-lighter thin bands, and local alignment of disseminated pyrite specks. One well displayed 1/2 cm pyrite band at 42.5 is coarse and wavy-like at the top grading to finer and more disseminated at the bottom. Bedding well defined at 65°. Includes a few broken zones, and a graphitic mud seam at 48.0 - 48.3.			
49.3	53.9	Broken graphitic zone with a "stockwork" of thin medium white quartz veining containing cream coloured small grains of ankerite (siderite?) and a few pyrite grains. Rock type is the usual pyritic mudstone, with pyrite pronounced as films on thin fractures (40°) and associated			

211-0437

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property Hasten, Basin, Fetch	District	Hole No. HA83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. HA83-1 | Sheet 3

Metres From	To	Description	Sample No.	Length	Analysis
		horsetail fractures. All core is broken into small 2-5 cm pieces.			
		Between 51.2 and 52.4 only 30 cm of core - Appears most recovered is a dark green fine grained dyke with a few darker specks, and lighter green (chloritic?) film on fractures. Followed by a 3 cm wide wavy banded to laminated semi-massive pyrite zone, then 5 cm quartz calcite.			
		52.7 - 53.9 No recovery at all.			
53.9 - 55.9		Very limy mudstone - Two beds separated by a blebby non-calcareous pyritic mudstone. Limy section is light to medium grey, massive and fine grained. Has disseminated small clots of pyrite. First section has a large (30 cm long) fracture filled with grey and white sandy textured dirty calcite. Resembles a large mud crack - open at the top and pinching off at the bottom. Central pyritic mudstone is streaked with short lines of pyrite that grade to elongate grape-like clots down the hole. A short graphitic shear zone (with slickensides) separates this from the underlying 40 cm wide pyritic limy unit, which much resembles the one previously described - Competent - Last 5 cm has enfoldings of lighter banded (fine grained pyrite?) material inferring soft sediment deformation. Bedding 45^{0}.			
55.9 - 65.5		Black carbonaceous mudstone. Fairly unstructured except for disseminated pyrite (5-10%) in bands 2 or 3 cm wide every 20-30 cm showing bedding at 55^{0}, and a few thin wispy calcite veins parallel to bedding that are usually in slightly more carbonaceous zones. Very slight wavy appearance to these calcite veins inferring more gentle deformation (soft sed.). These become more irregular and silty looking over 62.7 - 62.9, and are mixed with small pyrite cubes.			
		62.9 - 63.7 Black mud seam. Small amount of black fault gouge with broken chips of mudstone			

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property Hasten, Basin, Fetch	District	Hole No. HA83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. HA83-1 | Sheet 4

Metres From	To	Description	Sample No.	Length	Analysis
		enclosed.			
		63.7 - 65.5 Broken black mudstone as previous. Contains a few thin quartz-ankerite veins at low angles (10-15°).			
65.5 - 66.1		Thin bed of sandy grained to finer medium grey limy siltstone with scattered cubes of pyrite (not as large as those seen previous, but are well formed). Grades downward to a finer grained partially limy silty band - light grey, gritty, bedded at 60°, and possibly fining down-hole(?)			
66.1 - 68.3		Black carbonaceous pyritic mudstone. Pyrite as small scattered disseminated cubes and as a few thin hairline laminations often associated with minor grey quartz. Some of these are later thin fracture fillings that cut the bedding. Bedding at 55°, fractures at 30°. Has one thin orange-white wandering calcite (& ankerite?) vein at 67.4.			
68.3 - 88.7		Black mudstone. Most is broken into short pieces, but seems to become more competent with depth. No disseminated pyrite, but instead pyrite is confined to several thin (3-4 mm) bands of coarse grained to crystalline beds, or as at 80.0 mixed with crackle zone type wispy quartz veins. Overall less than 1% pyrite. Bedding indistinct, but a weak parting at 35° is present. Fault zone at start of section 68.5 - 69.5 - muddy deterioration core followed by black pyritic mud with chips. Fault zone (gouge) at 75.8 - 75.9, and possible fault at 80.4. Slightly silty to give a mottled texture at 80.5 - 80.8. Some basic rock type continues to 88.7.			
88.7 - 89.9		Crackle Zone - Black mudstone shot through with thin irregular white quartz veins and yellowish			

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property Hasten, Basin, Fetch	District	Hole No. HA83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No HA83-1 | Sheet 5

Metres From	To	Description	Sample No.	Length	Analysis
		ankerite(?) so as to give an almost brecciated look to the core. Minor pyrite sometimes associated as small clots. No bedding, but parting is weak at 40^0.			
		About one metre missing above this section - fault zone? or ground core?			
89.9	91.3	Siltstone - slightly limy. Light grey almost sandy textured, competent. Scattered larger cubes of pyrite confined to a few 10 cm wide bands. Contains a central 35 cm wide section of black mudstone that has thin one-cube thick lams. of cubic pyrite (2-3%) and a few similar looking bands occurring on cross-fractures at 30^0 to core. In this regard it resembles 53.9 - 55.9. Bedding at 50^0.			
91.3	102.4	Massive mudstone - Grades slowly from black to dark grey. Most is broken, but numerous 10-30 cm sections are present. Pyritic as a few thin disseminated cube-lams. over the first few metres, then pyrite is present only as a few larger (to 1 cm) clots of grains every 0.5 metres or so, or as clots associated with thin quartz veins such as at 97.5. No obvious fault zones in this mudstone section. Core loses its bedding aspect after about 95.2, becoming massive and unstructured but most fractures about 45^0. Some fractures have a light green film on them.			
102.4	105.4	Magnetic dyke - Dark green to almost black, fine grained, breaks easily. Has a trace of minute light green grains and small black squarish grains. Central portion is more green, and has a 1 cm wide white calcite vein cutting at 35^0 - it has a greenish (chlorite?) film on its fracture surface. This dyke is bound top and bottom by very muddy fault like zones which may actually be alteration zones as the dyke "baked" the surrounding mudstones.			

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property Hasten, Basin, Fetch	District	Hole No. HA83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. HA83-1 | Sheet 6

Metres From	To	Description	Sample No.	Length	Analysis PPM Pb		Zn	Ag	Ba
		Sample: 102.4 - 103.9	952	1.5	6		114	<.4	4000
		103.9 - 105.4	953	1.5	5		89	<.4	3903
105.4 - 147.0		Dark grey mudstone - Non-calcareous, fine grained and non-structured for the most part. Most is moderately competent (10-20 cm long pieces) but is cut by a fair number of thin mud seams or fault gouge zones, or few wider zones of gouge with lost core and sometimes "crackle breccia". Local subtle colour banding (carbon vs. silt)such as 130-132. Pyrite is absent over most of the core, but does occur locally with quartz along thin fractures, associated with a few (minor) silty blobs, or as a few discrete blebs, or (in one 1 m instance) as tiny disseminations.							
		Broken gouge section, or mud seams:							
		112.8 - 115.8 Mud and thumb size chunks of mudstone. Caused drilling problems - NQ bogged down, had to ream out with HQ to this depth, and push on with HQ to 119.2. This section is "squeezing", so reduced to NQ at 119.2.							
		117.7 - 117.9 Mud and slabby mudstone.							
		120.0 - 121.8 Mudstone and 5% disseminated pyrite with a fault core containing mud and angular chunks of pyritic (disseminated)mudstone silty and gritty.							
		Sample: 120.0 - 121.0	954	1.0	9		26	<.4	1278
		121.0 - 121.8	955	0.8	6		17	<.4	1386
		123.5 2 cm of carbonaceous "sandy" textured black mud.							
		127.7 1 cm of carbonaceous mud.							
		128.6 - 128.9 Two zones of black carbonaceous mud surrounding pyritic grey mudstone.							
		132.3 - 132.5 Mud and mudstone chunks to 3 cm wide.							

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property Hasten, Basin, Fetch	District	Hole No. HA83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. HA83-1 | Sheet 7

Metres From	Metres To	Description	Sample No.	Length	Analysis
		138.2 - 138.4 Broken muddy zone cuts core at 30°.			
		145.1 - 145.5 Broken and muddy over upper 30 cm, thin 2 cm carbonaceous black mud cutting at 35°.			
		Main pyrite occurrences: 109.2 - 109.6 - Thin quartz fracture parallel to core has outer linings of granular to cubic pyrite.			
		111.0 - 111.5 Similar			
		111.8 Two elongate slightly silty lenses are almost surrounded by granular pyrite.			
		118.8 Few larger grains and crystals in the main quartz-ankerite(?) crackle breccia zone.			
		120.0 - 121.8 disseminated (5%) as small rounded to crystalline grains or as a few thin laminations in a soft black mudstone.			
		123.3 Granular pyrite follows a vein at 10°, but is cut by a thin intrusive looking type quartz vein at 45° to core.			
		129.0 - 129.8 Minor disseminated pyrite shows bedding at 55°.			
		130.8 - 131.5 Slightly striped unit with pyrite in quartz or silty zones.			
		134.5 Follows hair line veins at 20°, whereas trace disseminated pyrite shows bedding at 55°.			
		136.6 As above			
		139.1 - 139.5 Larger evenly disseminated cubes (3%) in light grey mudstone			
		Crackle Breccia Zones:			
		118.0 - 119.4 Broken zone, moderate random fine grained white quartz and cream ankerite(?)			
		146.5 2 cm white quartz vein with minor "stockwork" type off shoots.			

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property Hasten, Basin, Fetch	District	Hole No. HA83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. HA83-1 | Sheet 8

Metres From	Metres To	Description	Sample No.	Length	Analysis
		Bedding, when displayed, is at 55-60°.			
		Start to see trace units of pin-point light grey specks subtly before 130. These specks (possibly barite?) are not present where the core is slightly silty or pyritic. These are always very subtle, but increase in size and amount down hole, so that by 130 they become quite apparent and by 146 starts to give the wet core a spotted appearance (cannot be easily seen on dry core).			
147.0	152.0	Black and dark grey pyritic mudstone. First metre is subtly banded with a few thin lighter coloured (slightly silty) units. Most of the mudstone is fairly massive and black, but contains several 2-3 cm wide 5-10% disseminated pyrite zones which infer the bedding to be about 30° at the start, 50° centrally, and 25-30° towards the end, but 45° at 152. Spotted (barite at 3-4% locally) more common in the dark grey zones.			
		149.8 - 150.5 Crackle breccia zone - sheared up with quartz and pyrite.			
		"Collaform-looking" pyrite around darker quartz in irregular veins at 151.5			
		Most fractures at 30-45°, but a few at low angles to core.			
152.0	170.3	Spotted mudstone and minor fault gouge. Mudstone is dark grey-black grading down-hole to almost dark green-black. Fine grained, moderately competent, but broken by fault action to pieces usually less than 10 cm long. Moderately graphitic on broken slickensides at the start grading to much less so down-hole. Barite(?) as small disseminated ovoid spots at the start grading perhaps 8%, with ore semi-massive wavy textured bed 2 cm wide at 153.3. Below this depth, the spots become much less pronounced, usually as smaller specks subtly disseminated, or as			

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property Hasten, Basin, Fetch	District	Hole No. HA83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. HA83-1 | Sheet 9

Metres From	Metres To	Description	Sample No.	Length	Analysis PPM Pb		Zn	Ag	Ba
		thin disseminated (3-4%) bands. Bedding, as shown by the barite(?) spots is usually 40^0.							
		Fracturing at 40^0 to 20^0 +. Some minor thin fractures not quartz filled.							
		Pyrite as a 1 cm disseminated (with siltstone or tuffaceous material) at 157.1 and a small							
		cluster at 153.6. Sample 153.2 - 153.5 - Barite	956	0.3	11		1481	<.4	990
		Quartz veining at 153.6 - 153.7 - 10 cm, vuggy, has minor yellowish-cream carbonate(?) - Possible							
		ankerite.							
		157.9 - 158.8 Gouge zone - sheared up muddy mudstone as above, with a central 10 cm of dark							
		green fine grained magnetic dyke surrounded top and bottom by 2-3 cm of broken							
		quartz. Sample 157.9 - 158.8	957	0.9	<4		44	<.4	1582
		158.8 - 166.5 Mudstone with several minor muddy zones.							
		166.5 - 167.3 Fault gouge, with gravelly bits of broken mudstone.							
		167.3 - 170.3 1.4 m recovered - Broken mudstone with 10 cm black mud at 168.1 - 168.2							
170.3 - 175.3		Fault gouge and Dyke Rock - Most is dark green fine ground up to muddy carbonaceous gouge -							
		dyke, but a central 25 cm piece is competent dark green locally spotted with minor (1%) small							
		calcite blebs in what might be vesicles?? Has scattered black, non-metallic looking spots							
		as well. Quite magnetic. No bedding apparent.							
		Samples: 170.3 - 170.6 Soft green dyke rock - broke	958	0.3	7		69	<.4	1002
		170.6 - 171.2 Medium grey gouge and mudstone chips	959	0.6			74		1171
		171.2 - 171.7 Dyke rock, broken, chloritic	960	0.5	4		83	<.4	942
		171.7 - 173.5 Gouge and mudstone	961	1.8	9		31	<.4	1080
		173.5 - 175.3 Dyke rock and 10 cm grey gouge.	962	1.8	7		113	0.5	1140

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property Hasten, Basin, Fetch	District	Hole No. HA83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. HA83-1 | Sheet 10

Metres From	To	Description	Sample No.	Length	Analysis PPM Pb		Zn	Ag	Ba
175.3	180.0	Graphitic subtly striped mudstone - very broken. Black to shiny grey with a few of the more competent sections showing slight banding with dark grey almost black material (minor amt. of silty material?). Shows bedding at 40°. Most is broken to almost ground up as thin slabs to chunks of shiny graphite slickensides on bedding surfaces on down the dip.							
180.0	189.3	Black graphitic gouge. Likely was the same rock type as above, but now is broken into very small graphitic shards. Much core lost as it was simply washed away in the drilling process. - ie. total for this section is only 3 metres, with notes that a few 1 metre sections were completely lost. Sample: 189.3 - 190.3	963	1.0	4		74	0.5	182
190.3	194.8	Graphitic black gouge as previous to the volcanic, but has local disseminated pyrite specks or crystals 192.0 - 194.2 - completely missing.							
194.2	210.5	Graphitic black mudstone, locally siliceous. Represented only by about 3.5 metres of small chunky pieces of shard graphitic mudstone, and irregular breaking almost cherty looking dark grey siltstone. (ie 203-204). Appears to be a fair amount of quartz veining through most of this section. Last 1.5 metres (50 cm recovered) is a more competent, black siltstone with graphite on broken surfaces, and subtle bedding at 30°.							

Drill Hole Record

Cominco

Scale

Colour Plot & Dips

0

Property Hasten, Basin, & Fetch	District	Hole No. HA83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. HA83-1 | Sheet 11

Metres From	To	Description	Sample No.	Length	Analysis PPM Pb		Zn	Ag	Ba
210.5	211.9	Volcanic dyke - Most is dark green fine grained to slightly sandy textured, but does have "chilled margins" where the core is more karki coloured and aphanitics over about 30 cm at the top and 20 cm at the bottom. Rest of the core is much like those dykes described previously. -ie. black specks, etc. Has a few calcite blebs (looking like vesicles), and a few irregular calcite wisps. Quite magnetic, but the chilled margins are not magnetic. "Bedding" at 35 - 40°.							
		Sample 210.5 - 211.9	964	1.4	<4		86	0.4	1623
211.9	215.7	Carbonaceous fault zone. Broken, ground up graphitic pieces; and less graphitic mudstone. Minor quartz veining also present. Actual amount of muddy gouge is minor. Only about 1.3 m of core recovered.							
215.7	218.2	Volcanic dyke much as previous,but does not display chilled margins -ie. is silty to almost sandy textured throughout. Has minute disseminated blebby calcite over the first 30 cm (at 1-2%) and small blebs over the next 10 cm. They appear to define bedding at 45° . Portions are broken and infilled with calcite to give a brecciated affect. This becomes more pronounced down hole, so the last 20cm is 15% calcite in small offset hairline to wispy fractures. Minor white quartz also, associated with those fractures.							
		Sample 215.7 - 217.2	965	1.5	7		77	<.4	2203
		217.2 - 218.2	966	1.0	10		80	0.4	>11300
218.2	239.1	Dark grey graphitic siliceous mudstone, with a minor amount of silty component locally giving the core a subtle banded to stripe appearance, so bedding is readily apparent. Most of the							

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property Hasten, Basin, & Fetch	District	Hole No. HA83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. HA83-1 | Sheet 12

Metres From	Metres To	Description	Sample No.	Length	Analysis PPM Pb		Zn	Ag	Ba
		bedding at the start is about 30 , but slowly decreases down - hole. Because of the graphite,							
		most core is broken along bedding planes into < 5 cm. chunks, but overall appears to be							
		gaining competence, primarily because we are getting away from the main fault zone, and into							
		more siliceous material. Short black carbonaceous sections are not siliceous.							
218.2	221.4	Carbonaceous black fault gouge - All ground up into mud or small pebbles							
		Local vein - type calcite with trace amounts of sphalerite as small amber grains.							
		Actual occurrence is 219.3 - 219.6.							
		Samples: 218.2 - 219.3 - Gouge only 30cm of material.	967	1.1	27		3680	0.8	2331
		219.3 - 219.6 - Gouge with calcite a trace amber ZnS	968	0.3	20	e12	250	0.9	e1460
		219.6 - 220.6 - Gouge changing to mudstone at 220.4	969	1.0	108	e22	200	4.8	6600
225.7	225.9	Limy siltstone (tuff?) as seen further up the hole. No pyrite.							
227.5	227.7	Siltstone - light grey and white, laminated. Bedding at 30° contains a few thin							
		pyritic beds. Taps?							
228.9	229.3	Blocky rounded arrangement of mudstone shows plastic flow; has disseminated to							
		laminated pyrite in some blocks showing some were consolidated, therefore							
		may represent minor scale slumping.							
232.5		1 cm massive pyrite "bed".							
234.7		Two thin silty bands (less than 1 cm) show bedding at 25°, and tops up hole.							
235.8		Becomes more silty, and has a 2 cm wavy whitish silty zone that shows bedding							
		at 20° to core axis. Remains moderately graphitic and broken to 239.1.							

211-9437

Scale

Colour Plot & Drop

0

Drill Hole Record

Cominco

Property Hasten, Basin, Fetch	District	Hole No. HA83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Sheet 1.3 | Hole No. HA83-1

Metres From	To	Description	Sample No.	Length	Analysis PPM Pb	Zn	Ag	Ba
239.1	242.5	Limy Siltstone - Dark tannish grey on dry surface, fine grained, with subtle streaking due to bedding. Possibly a tuffaceous component (??) Trace of minute pyrite throughout. Quite competent (20-30 cm pieces) and becomes cut by a series of thin (1-2 mm) quartz-calcite veins spaced < 1cm between 240.8 and 241.5. Rock is very limy in this vicinity, but content drops off over the last 0.5m as it becomes more muddy. Bedding at about 17°. Last 0.5m is a black sliced graphitic mudstone.						
242.5	246.5	Mineralized Zone: Most is fine grained grit to sandstone, light grey, grading downward to a darker grey to almost black dirty siltstone. Sphalerite in trace to 10.5% amounts as minute disseminated orange-red grains. Note that core bedding angle is only about 10° to locally parallel, so this does not represent a very great thickness.						
		242.5 - 242.9 Fine grit (or coarse sandstone) - Light grey colour when dry; dark grey with white quartz grains when wet. Cut by a few quartz calcite veins @ 80°, up to 2 cm wide. ZnS as a few honey coloured grains in the quartz.						
		Sample 242.5 - 242.9 - Represents perhaps 15 - 20 cm true section	970	0.5	66	5460	0.4	370
		242.9 - 243.9 Medium grained grit unit. Dark and light grey grains, with bedding emphasized by disseminated small grains of orange sphalerite, which locally make up to 2-4% of the core, but usually less. Limy, and cut by a few leached quartz veins that have disseminated small calcite grains, are pitted, and have calcitic boundaries. Bedding at 15°. Last 10cm has dark muddy looking flowbanded siltstone with yellowish disseminated ZnS surrounding "blocks" of grit??						

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property Hasten, Basin, Fetch	District	Hole No. HA83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. HA83-1 | Sheet 14

Metres From	To	Description	Sample No.	Length	Analysis PPM Pb		Zn	Ag	Ba
		Sample 242.0 - 243. - disseminated ZnS	971	1.0	12	e	8100	<.4	154
		243.9 - 244.8 Striped sandstone - grit. Light & dark grey almost laminated looking (pin striped). Subtle X-bedding at one point. Slightly stylolitic not limy. Contains numerous high angle quartz veins. ZnS in trace disseminated amounts at top, not apparent over most of this section.							
		Sample 243.9 - 244.8	972	0.9	14		734	<.4	162
		244.8 - 245.9 Carbonaceous dirty sandstone to siltstone, with pin-point orange ZnS in trace amounts disseminated fairly evenly over the upper portion. Following a contact with graphitic mudstone, over most of this section.							
		Sample 244.8 - 245.8	973	1.0	78		740	0.6	702
		245.8 - 24615 Follows along the contact between the dirty sandstone - grit with trace disseminated ZnS, and the black carbonaceous slightly silty mudstone.							
		Sample 243.8 - 246.5	974	0.7	81		1910	<.4	1281
246.5	261.9	Mainly black carbonaceous siliceous mudstone with minor bands to narrow beds of lighter coloured siltstone. Much of this core length follows or approximates the bedding so this whole length may only represent a few metres of section. Siltstone and/or white quartz sometimes seen that shows wavy banding inferring slight plastic deformation or a soft-sediment-deformation (ie 257.9-258). Although much is graphitic and fine grained, it all appears silicified, with very little of it being scratchable. Bedding parallel or near-parallel to the core at 259.3 seem to touch or cross a thin "dirty sandstone" band of wavy sandstone with minute trace							

211-9437

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property Hasten, Basin, Fetch	District	Hole No. HA83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. HA83-1 | Sheet 15

Metres From	To	Description	Sample No.	Length	Analysis
		amounts of ZnS similar to that seen at 246.4. Only present over about 10cm. Not sampled for assay.			
261.9	263.0	Dirty sandstone Unit - Black on wet surface, but light grey when dry. Medium-grained, with small rounded grey white quartz(?) specks throughout. Contains several discrete pin-point minute specks of red-orange Zns and a 1 cm wide irregular quartz patch which has a small grain of PbS. Bedding follows core axis, so this unit may actually only be ± 10 cm thick. At the start of this unit a light grey siltstone (4cm) unit cuts at 10°, is mixed with mudstone, and shows wavy deformation. (This main unit is possibly tuffaceous but is not limy).			
623.0	274.3	Subtly interlayered or interbedded siliceous block mudstone and dark to medium grey siltstone. Siltstone stands out best on dry core and usually occurs as irregular undulatory type lenses to smears in the darker siliceous mudstone. Most is broken to small chunks over much of this section and has an actual cherty appearance. Graphite in minor amounts is confined to a few low angle faults at the top of this section.			
		Bedding angles 263-268 0° to 10°			
		268-273 20° to 30°			
		273-274.3 ± 5			

811 0457

Scale

Colour Plot & Dips

Drill Hole Record

Cominco

Property Hasten, Basin, & Fetch	District	Hole No. HA83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. HA83-1 | Sheet 16

Metres From	Metres To	Description	Sample No.	Length	Analysis PPM Pb		Zn	Ag	Ba
		271 - 272.3 Blocky "debris flow", mainly of mudstone with local siltstone. Broken into irregular mottled to semi-angular pieces that usually have black stylolitic type contacts but often are filled by irregular white quartz. ZnS is present sporadically throughout this section in a variety of modes. Best developed as minute orange-red congregations within the interstitial quartz. Locally the actual quartz content is low so the ZnS appears disseminated in mudstone. ZnS as small honey coloured grains are found in a 1cm side 45° quartz vein at 271.2, and in a quartz vein at 273.1.							
		Sample 271 - 272.3	975	1.3	55		6340	0.4	620
274.3	275.8	Mixed siltstone, sandstone and grit all jumbled together with stylolitic type contacts. Healed and competent individual blocks are 10-30cm wide, and instead bedding appears similar to the bounding rocks on either side: ie. - almost parallel to about 20°. Siltstone at the start shows very nice thin light and dark grey laminations, and is gently folded over its 30cm length. ZnS is present throughout this length as about 8-10 micro sized specks either as discrete disseminated grains in the grit (f.g.) or as small orange clusters within wispy wandering quartz grains. Not assay sampled, but litho sample taken for petrographic work.							
275.98	280.0	Carbonaceous to locally graphitic siliceous black mudstone mixed (in varying proportions) with light to dark grey fine grained siltstone. Contains also four short sections of competent and grey very silty mudstone (ie 280.0 - 282.6) which is fairly massive to very subtly banded,							

211-9437

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property Hasten, Basin, & Fetch	District	Hole No. HA83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. HA83-1 | Sheet 17

Metres From	Metres To	Description	Sample No.	Length	Analysis
		and a few "pin striped" units and minor thin gritty type units.			
		275.8 - 279.3 Graphitic siliceous mudstone and minor thin (1cm) medium grey very silty bands. Also a 3cm wide light grey to white sandstone band at 277.3. Most bedding 0 - 5°.			
280.0	287.0	Slightly limy siliceous black mudstone and minor siltstone. Slow HCl reaction with warm acid. Most core is broken into short irregular carbonaceous pieces. Subtle bedding seen with slightly lighter coloured siltstone units (thin).			
		279.3 - 280.0 Rubbly textured "debris-type" mudstone with minor disseminated pyrite, ending in 10 cm of fault gouge. Quartz vein (1cm) contains a few specks of ZnS.			
		280.0 - 282.6 Silty mudstone. Quartz veins at 281.6, contains a small speck of PbS, ZnS.			
		282.6 - 284.8 Fault gouge, carbonaceous black mudstone (siliceous). Local graphite.			
		284.8 - 286.0 Mixed siliceous black mudstone and "dirty" sandstone to grit - carbonaceous Bedding at 25°.			
		286.0 - 287.0 Graphitic black mudstone all broken, could represent two small faults.			
287.0	301.8	Slightly limy subtly banded siliceous mudstone and siltstone. Gradational from previous unit. Black and near-black, with the occasional thin (<1 cm) bed of medium grey siltstone, usually non-graphitic, and fairly competent throughout. Bedding more pronounced where silt becomes slightly coarser in grain size, which then gives a laminated appearance (ie 288.7-289.9). Minor post-litho fractures displace some of these beds - maximum 1 cm. Tops appear to be up-hole judged by grading of the silty beds. Fractures at 30° or often almost parallel to core are			

811-0437

Scale

Colour Plot & Dips

0

Drill Hole Record

Cominco

Property Hasten, Basin, & Fetch	District	Hole No. HA83-1	
Commenced	Location	Tests at	Hor. Comp.
Completed	Core Size	Corr. Dip	Vert. Comp.
Co-ordinates		True Brg.	Logged by
Objective		% Recov.	Date

Claim | T Brg. | Collar Dip | Elev. | Length | Hole No. HA83-1 | Sheet 18

Metres From	Metres To	Description	Sample No.	Length	Analysis
		often filmed with graphite. Bedding varies; rolling over from a 40° dip at 287 to 25° by 289, to 15° by 291, then parallel at 294-298.5, back to 15° by 299.6. Only a few random quartz veins present over this section. A thin one in a dirty sandy unit (2 cm wide) contains a few specks of ZnS at 290.2. And a quartz cemented crackle breccia zone is present at 299.2 - 299.4. Calcite present at 299.0 as whiteinfillings on short fractures. Pyrite almost non-existent, but is sometimes present in silty zones as disseminations (291.8 - 298.8).			

211-9437

APPENDIX A

IN THE MATTER OF THE YUKON QUARTZ MINING ACT

AND IN THE MATTER OF DIAMOND DRILLING & ROADBUILDING

CARRIED OUT ON MINERAL CLAIMS OF THE HASTEN, BASIN AND FETCH PROPERTY

LOCATED IN THE MAYO AND WATSON LAKE MINING DIVISIONS, YUKON TERRITORY

MORE PARTICULARLY N.T.S.: 105 O/1

A F F I D A V I T

I, MICHAEL R. MURRELL, OF THE DISTRICT OF NORTH VANCOUVER, IN THE PROVINCE OF BRITISH COLUMBIA, GEOLOGIST, MAKE OATH AND SAY:-

1. THAT I am employed as a geologist by Cominco Ltd. and, as such have a personal knowledge of the facts to which I hereinafter depose;

2. THAT annexed hereto and marked "Appendix B" to this my affidavit is a true copy of expenditures on diamond drilling and roadbuilding carried out on mineral claims on the Hasten, Basin and Fetch property.

3. THAT the said expenditures were incurred between the 21st day of May 1983 and the 30th day of June, 1983, for the purpose of mineral exploration on the above noted property.

Signed: M.R. Murrell

M.R. Murrell
Project Geologist

7 July 1983

APPENDIX B

STATEMENT OF EXPENDITURES

on Hasten, Basin and Fetch Claim Group

Period of Field Work - May 21 to June 30, 1983

I. ROADBUILDING (May 27 - June 2)

- Carried out on the following claims:
  Fetch 1, 2, 3, 5, 7, 18, 20
  Hasten 14, 16, 18, 20, 22

Direct Contract Costs - 39 hrs. @ $70	$ 2,730	
Mobilization	500	
Supervision - M.R. Murrell - 7 days @ $244	1,708	
Truck Rent - 7/30 x 901	210	
Fuel	80	
Domicile - 2 x 7 x $25	350	
	$ 5,578	$ 5,578

II. DIAMOND DRILLING (June 2 - June 30)

- Carried out on Claim Hasten 22

Direct Contract Costs	$58,748	
Supplies, Equipment, Personnel Mob.	500	
Communications	400	
Assaying (25 samples @ 10.25)	256	
Supervision - M.R. Murrell - 28 days @ $244	6,832	
Domicile - 28 x $25	700	
Transportation - Truck - 1 mo. @ $900	900	
Fuel	150	
Timberjack - 8 x $130	1,040	
Cat - 27 hrs. @ $70	1,890	
Fixed Wing & Shipping	600	
Helicopter - 6 hrs. @ $500	3,000	
	$57,016	$75,016
Total claimed under this report		$80,594

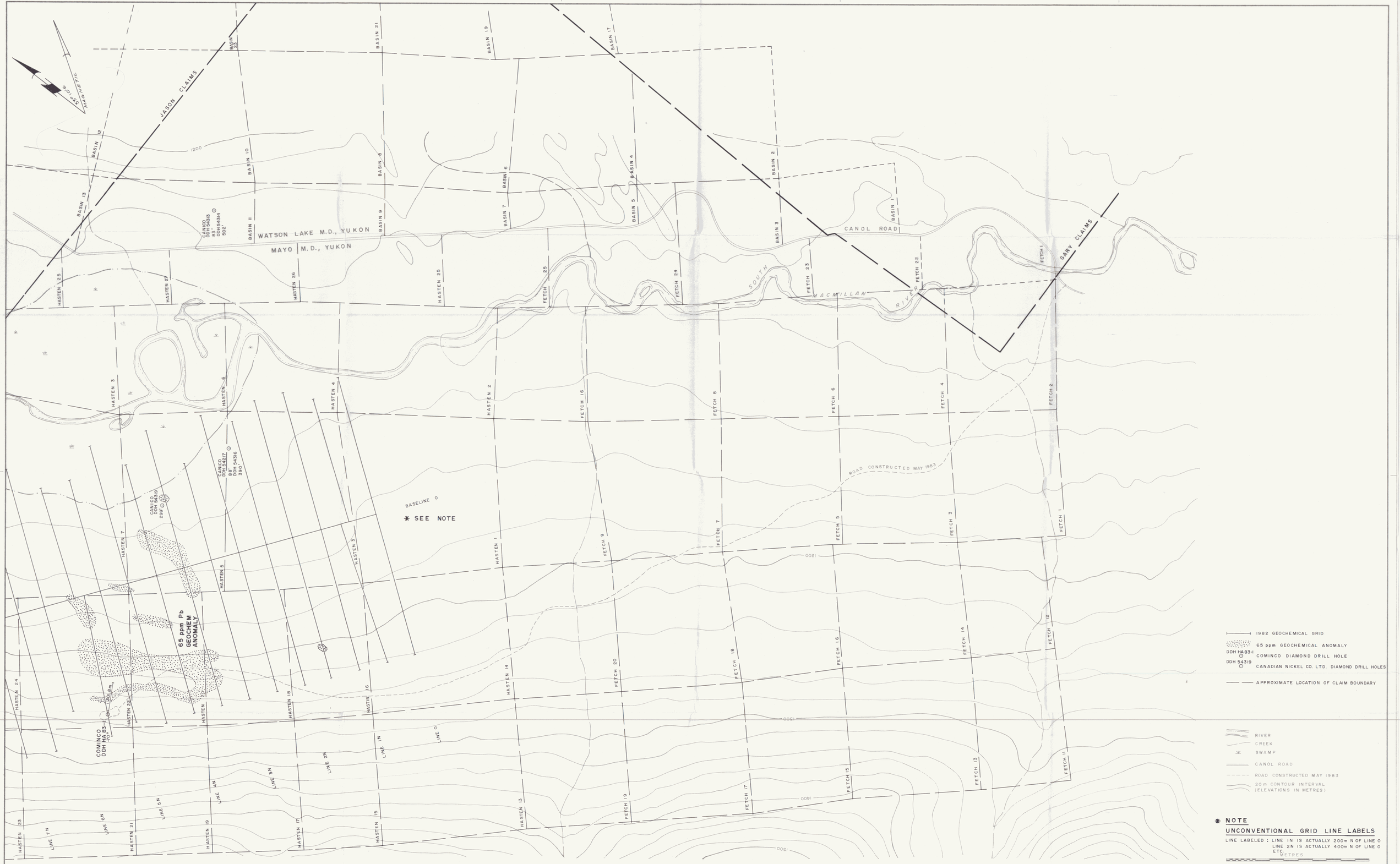
APPENDIX C

STATEMENT OF QUALIFICATIONS

I, Michael R. Murrell of 1662 Ralph Street, in the District of North Vancouver, British Columbia, hereby state that I was graduated from the University of Alberta, Edmonton, with a B.Sc. (Hon-Geology) in 1966. During my undergraduate summers, I worked for B.A. Oil (now Gulf Oil), and a small mining company. Upon graduation, I joined Cominco Ltd. and have worked on many aspects of mining exploration since that time.

Signed: _____
M.R. Murrell
Project Geologist

7 July 1983



1982 GEOCHEMICAL GRID

65 ppm GEOCHEMICAL ANOMALY

DDH HA83-1 ⊙ COMINCO DIAMOND DRILL HOLE

DDH 54319 ⊙ CANADIAN NICKEL CO. LTD. DIAMOND DRILL HOLES

APPROXIMATE LOCATION OF CLAIM BOUNDARY

RIVER

CREEK

SWAMP

CANOL ROAD

ROAD CONSTRUCTED MAY 1983

20 m CONTOUR INTERVAL (ELEVATIONS IN METRES)

*** NOTE**

UNCONVENTIONAL GRID LINE LABELS

LINE LABELED : LINE 1N IS ACTUALLY 200m N OF LINE O
LINE 2N IS ACTUALLY 400m N OF LINE O
ETC.

METRES
0 100 200 300 400 500

091476

HASTEN PROPERTY

105-071

Drawn by: M.R.M.		Traced by: J.P.S.	
Revised by	Date	Revised by	Date

MACMILLAN PASS – YUKON

DRILL HOLE AND ROAD LOCATION

MAYO M.D., YUKON – WATSON LAKE M.D., YUKON

Scale: 1:5,000 | Date: JULY 1983 | Plate: D

N.C.I. - 118 - CL

FORM 210 6670