COMINCO LTD.

EXPLORATION

WESTERN DISTRICT

DIAMOND DRILLING

ROWAN GROUP

Fort Steele Mining Division

Mark Creek Area

N.T.S. 82F/9E

- Assessment Report -

LATITUDE: 49° ~~41'~~ 40'27" N

LONGITUDE: 116° 01' 24" W

OWNER/OPERATOR

Cominco Ltd.

Box 2000
Kimberley, B.C.
V1A 2G3

Work performed during June, 1987

Report by:

P.W. Ransom
Project Geologist

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COMINCO LTD.

EXPLORATION WESTERN DISTRICT

DIAMOND DRILLING REPORT

ROWAN GROUP

Fort Steele Mining Division

1.00 INTRODUCTION

1.10 Specific Location

DDH 6460, the hole being reported on, was drilled on North Star Hill, one half kilometer south of the Dreadnaught ski run. Access to the drill site is by exploration roads.

1.20 Property Description

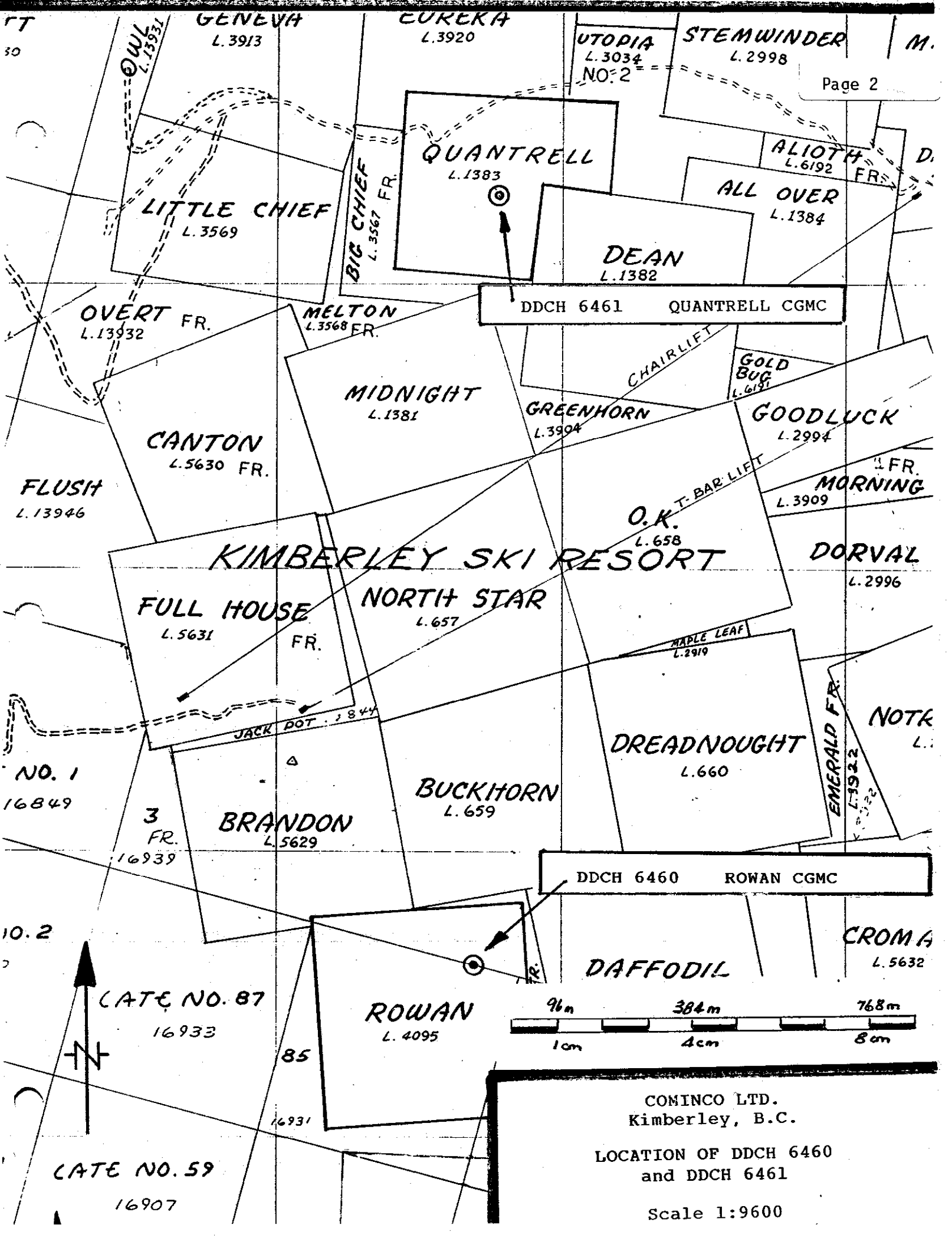
The property being investigated forms part of the Sullivan Mine claim group, owned by Cominco Ltd. Cominco has operated the mine for about 75 years. The Sullivan stratiform Ag-Pb-Zn-Fe sulphide deposit is one of the most important of its type worldwide and has contributed significantly to the mineral wealth generated in the province of British Columbia.

1.30 Drilling

One hole is being reported on. It was collared at -70° dip and was drilled to a depth of 167 meters using N wireline tools.

1.40 Claims Explored

DDH 6460 was drilled on the Rowan Crown Granted Mineral Claim.



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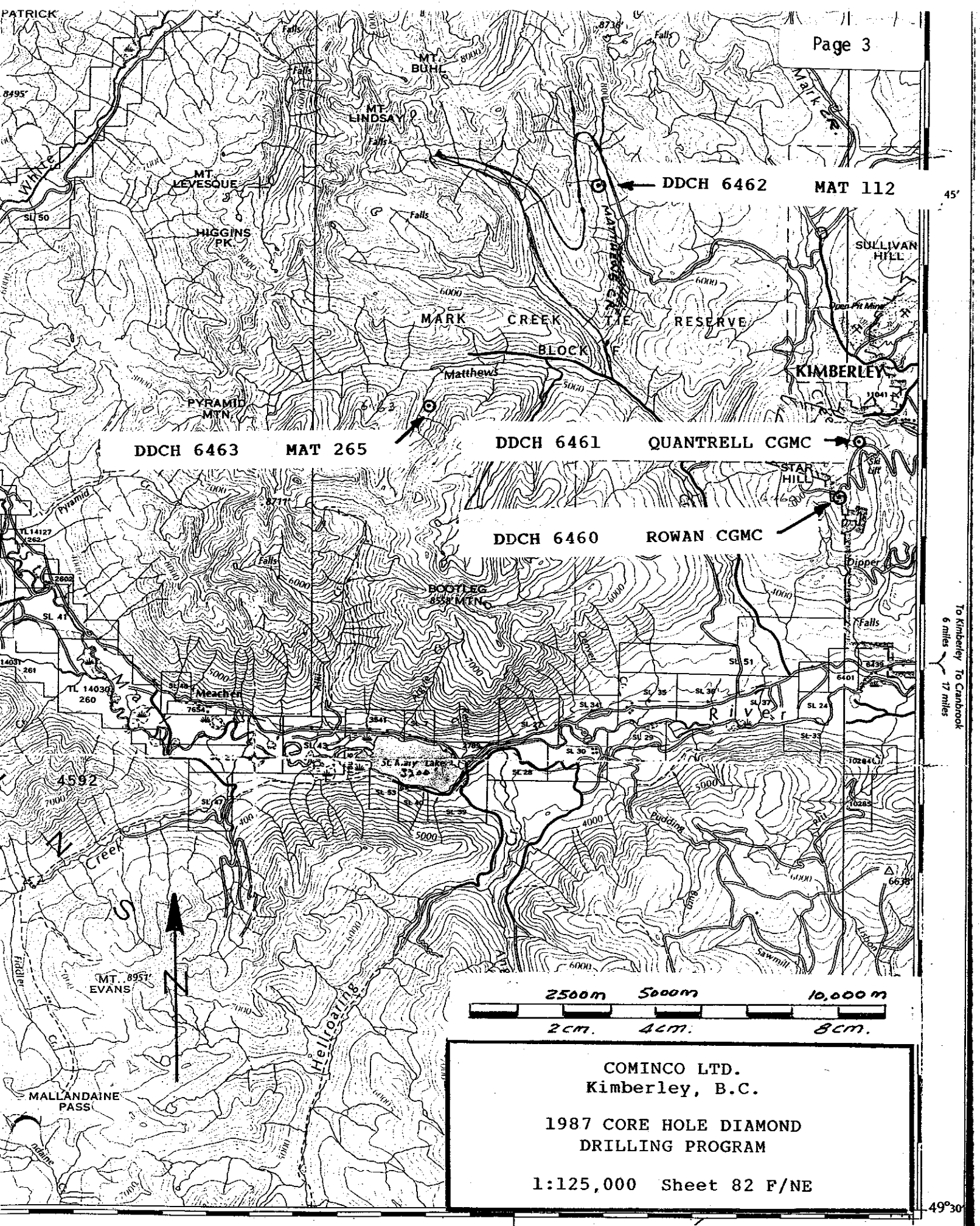
LOCATION OF DDCH 6460
and DDCH 6461

Scale 1:9600



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1987 CORE HOLE DIAMOND
DRILLING PROGRAM

1:125,000 Sheet 82 F/NE

2.00 DETAILED TECHNICAL DATA AND INTERPRETATION

2.10 Drilling

2.11 Objective

The objective of drilling DDH 6460 was to locate stratiform Ag-Pb-Zn-Fe sulphide ore.

2.12 Results

DDH 6460 intersected siliciclastic sedimentary rocks typical of the area. Pyrrhotite was noted locally, disseminated as an accessory mineral as well as in a few thin fractures and seams.

2.13 Interpretation

0.0 - 21.3 m	Overburden
21.3 - 167.0 m	Siliciclastic sedimentary rocks, Aldridge Formation.

2.14 Conclusion

DDH 6460 intersected siliciclastic sediments of turbidite and related origin, typical of the Middle Proterozoic Aldridge Formation.

Report by: P.W. Ransom

P.W. Ransom
Project Geologist
Cominco Ltd.

Endorsed by: John Hamilton

J.M. Hamilton
Manager, Exploration
Western Canada
Cominco Ltd.

Copies: Mining Recorder (2) ✓
Western District
Sullivan Mine
Kootenay Exploration

APPENDIX A

Diamond Drill Geological Log For D.D.H. 6460

Page 1

LAT. 5010 S DEP. 0380 W ELEV. 5380'
DIP: 70° AZIM.: 270° LENGTH: 547'
HORIZ. COMP. 187' VERT. COMP. 514'
DATE COLLARED: June 22, 1987 DATE COMPLETED: June 23, 1987
CORE STORAGE: Open Pit Storage Area
DRILLED ON CLAIM(S): Rowan Crown Grant
OBJECTIVE: To test electromagnetic anomaly.

PLANNED LENGTH: 500 feet
TERMINATION COMMENTS: No significant sulphide mineralization was intersected.

DRILLED BY: Tonto Drilling (B.C.) Ltd.
TYPE DRILL: Longyear 38
CORE SIZE: NQ
PERFORMANCE COMMENTS: Good productivity; used only WDS-120 Polymer and did not recirculate. Creek supply to shotcrete pool was insufficient and was necessary to haul water (Barker Contr.)

CASING REMAINING IN HOLE (LENGTH & SIZE): 70' HWL + Shoe

TYPE CAP & SEALING METHOD: 6" casing cap

OTHER MATERIAL REMAINING IN HOLE: None

SURVEY INSTRUMENT USED: Sperry Sun Single Shot

ADDITIONAL DOWN HOLE TESTS:

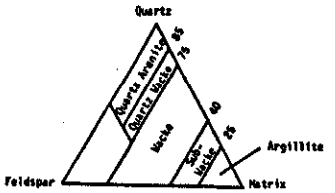
GENERAL COMMENTS: Sperry Sun Readings

Depth	Azimuth (Cor.)	Dip
300	N87W	-67.9
547	N85W	-67.75

LOG LEGEND

BED THICKNESS CLASSIFICATION

BEDS	Very Thick Bedded	100 cm
	Thick Bedded	30 cm
	Medium Bedded	10 cm
	Thin Bedded	3 cm
	Very Thin Bedded	1 cm
LAMINAE	Laminated	0.3 cm
	Thinly Laminated	



LITHOLOGIC CLASSIFICATION

D.D.H. 6460

1 Foot = 0.3048 metres

Drill Hole Record

Property	District Western/Ft. Steele M.D.	Hole No. DDH6460	
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. DDH6460 | Sheet

Analysis

Footage From	To	Description
0.0 -	70.0	Overburden
70.0 -	115.0	Heavily weathered sediments, 50% recovery. Wacke, some fresh is medium grey, medium bedded with scattered dendritic staining; some partially weathered is bleached (very top 3 feet only) and pitted (pyrrhotite dissolution); remainder is brown mud and rock fragments. Bedding to core 62° @ 80' and 72° @ 105'.
115.0 -	117.5	Wacke, thin medium and dark grey, flat parallel laminations throughout. Faint dendritic staining throughout; brown weathered zones 117.0 - 117.5. Bedding to core 76°.
117.5 -	137.0	Wacke, medium grey, medium bedded with a few thick and a few thin beds, most contacts are sharp to distinct and flat. Most beds have argillite and or subwacke tops one to two cm thick. Faint internal lamination noted in some beds. Pyrrhotite present disseminated in parts of most beds; some dissolution and decomposition of pyrrhotite; some fine dendritic staining. Sericite alteration; flecks of sericite up to about 1 mm across throughout. Bedding to core 74° @ 126', 79° 137'.
137.0 -	155.0	Quartz wacke, lesser wacke, thick bedded with a few medium beds, medium to light grey, contacts generally distinct and flat (some vague), one bed noted with fine quartz grains. Argillite or subwacke tops 1-10 cm thick. Pyrrhotite present, not abundant. Minor dendritic staining. Bedding to core 75° @ 151'.
155.0 -	164.0	Wacke and quartz wacke, medium grey, medium to thin bedded, beds graded with 1-3 cm argillite or subwacke tops. Many beds are composite with massive central part and faintly laminated base (latter in some cases is interturbidite sediment), contacts sharp and flat. Pyrrhotite commonly present at the base of many of the beds. Bedding to core 80° @ 162'.
164.0 -	178.5	Quartz wacke with 20% wacke; medium grey; medium and thick bedded (with a few thin beds); bed contacts sharp to distinct and flat; tops of argillite or subwacke

211-0437

Scale
Colour Plot & Dips

Drill Hole Record

Property	District	Hole No. DDH6460	
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. DDH6460 | Sheet

Analysis

Footage From	To	Description
164.0 - 178.5 Cont'd		generally 1-2 cm thick. Pyrrhotite at base of some beds and disseminated throughout Bedding to core 82° @ 170'.
178.5 -	208.5	Wacke, subwacke, argillite 70%, medium to light grey, very distinctly thin bedded with sharp and flat bed contacts, most beds are composite with 1-3 cm light grey argillite tops and very faintly and thinly laminated dark wacke bases 1-5 cm thick. Quartz wacke 30% as thick or medium beds throughout the interval. Pyrrhotite is weakly to moderately disseminated in some of both types of beds. Bedding to core 78° @ 180' and 85° @ 200'.
208.5 -	235.0	Quartz wacke, medium grey, medium bedded with a few thick and a few thin beds, bed contacts sharp, most flat, at least one is wavy. Grading is common in some beds, internal parallel laminations noted in some beds, one narrow zone possibly cross-laminated. Pyrrhotite present near the bases of most beds; weakly disseminated in some. Bedding to core 84° @ 215', 86° @ 235'.
235.0 -	255.0	Wacke, subwacke, argillite 70%, medium to light grey, very distinctly thin bedded with sharp and flat bed contacts; most beds are composite with light grey argillite tops and dark grey interturbidite laminates some of which have disseminated pyrrhotite; some beds are graded wacke with disseminated pyrrhotite (a few are cross-laminated in the middle). Quartz wacke 30%, medium grey, medium to thick bedded, variably graded; faint laminations or cross-laminations noted; pyrrhotite scattered near the bases. 1-2 mm wide pyrrhotite lamina at 241'. Bedding to core 87° @ 255'.
255.0 -	270.0	Quartz wacke, medium to light grey; medium and thick bedded with few thin beds; bed contacts sharp to distinct and flat; vague Bouma subdivisions in some beds (cross-laminations and parallel high flow regime laws); pyrrhotite scattered lightly through some beds, often concentrated near bases of beds. Bedding to core 84° @ 265'.
270.0 -	285.0	Quartz wacke 60%, wacke, subwacke, argillite 40%, medium grey, thin bedded with a few medium beds; bed contacts generally sharp to distinct, most are flat but some are wavy; cross-laminations noted in several beds. Pyrrhotite is disseminated

211-043

Scale

Colour Plot & Dips

Drill Hole Record

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Property	District	Hole No. DDH6460	
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. DDH6460 | Sheet

Analysis

Footage From	To	Description
270.0 - 285.0 Cont'd.		in most thin quartz wacke beds and weakly disseminated in the thicker quartz wacke beds; some is electrically conductive 1-2 cm parallel to bedding. Several types of fine parallel, flat laminations occur over a few mm up to 10 cm. Bedding to core 88° @ 282'.
285.0 - 305.5		Quartz wacke 70%, wacke with minor subwacke and argillite 30%; medium grey; medium bedded with a few thick and a few thin beds; about 25% interval (mostly quartz wacke) has very fine and faint parallel flat lamellae (one set at 288.3' have an angular discordance that does not appear to be a synsedimentary fault but, possibly, cross-laminations that are not tangential at the base); bed contacts sharp to distinct and flat to slightly wavy; pyrrhotite is weakly to moderately disseminated in most beds (especially 10 cm at 303° and in a minor slump at 296'); pyrrhotite is electrically connected across diameter of core in a few places. Bedding to core 89° @ 296'.
305.5 - 327.5		Quartzwacke and wacke, medium grey; difficult to describe bedding - 75% of interval is laminite generally in medium to thick packages with occasional thin argillite or siltstone parting 0.3 to 4 cm. Pyrrhotite is typically weakly disseminated with a few thin but continuous seams and one 10 cm calcite-pyrrhotite zone at 320.0; the seams are electrically continuous. Bedding to core 85° @ 307' and 85° @ 322'.
327.5 - 359.0		Quartzwacke and wacke alternating over 0.5 - 3.0 foot intervals, medium grey, medium bedded with some thin beds, about 50% of interval is laminite; bedding contacts distinct to vague and definition if individual beds is often difficult to determine; pyrrhotite is weakly disseminated in some beds, coarsely disseminated at the bases of several beds, forms numerous continuous (physically and electrically) lamellae 0.5 to 3 mm wide and one concretion-like structure 10 cm in diameter (331.5'). Bedding to core @ 330' and 86° @ 356'.
359.0 - 382.0		Quartzwacke and wacke, medium grey, thin and medium bedded, bed contacts from sharp to vague and flat; about 70% of interval is laminite in which about 5% is

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Scale

Colour Plot & Dips

Drill Hole Record

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Property	District	Hole No. DDH6460	
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. DDH6460 | Sheet

Analysis

Footage From	To	Description
359.0 - 382.0 Cont'd.		argillite as bands 1 to 10 mm thick and having sharp flat top and bottom contacts; pyrrhotite is weakly to moderately disseminated in most beds, some coarser pyrrhotite blebs (to 2X5 mm) concentrated near bases of several beds, and some pyrrhotite lamellae 0.5 to 3 mm wide. Bedding to core 86° @ 370'.
382.0 - 421.5		Quartz arenite, very light grey, thick bedded with a few medium beds. Bed contacts are sharp, generally wavy, several beds have soft spots indicating probable amalgamation of beds; grains in most beds are medium and fine sand size; about 15% of interval is argillaceous tops and thin beds of quartz arenite, quartzwacke to wacke, subwacke, argillite; pyrrhotite present as faint disseminations both in beds and in steep cross-cutting zones and narrow quartz veins. Bedding to core 81° @ 387', 80° @418'. Entrained clast 10 cm across in 30 cm bed @ 375'.
421.5 - 440.0		Quartzwacke, possible some quartz arenite, with subwacke/argillite tops about 0.5 - 1 cm thick and predominantly subwacke/argillite intervals up to 20 cm thick, medium grey, 30% laminite, medium and thin bedded, bed contacts are sharp and generally flat (large flame at base of 30 cm bed at 436', dark argillite clast in 20 cm bed at 432'), dendritic mottling in some beds. Pyrrhotite is present in about half of the non-laminite beds, often near bed bases, and is parallel to bedding in some laminated subwacke/argillite. Bedding to core 85° @ 437'.
440.0 - 446.5		Quartzwacke, two thick (46 cm & 63 cm) beds, separated by 80 cm of wacke and quartzwacke, thin beds and laminite, medium grey, bed contacts sharp and flat. Scattered pyrrhotite in the non-laminite beds; coarse blebs near tops of thick beds.
446.5 - 486.0		Wacke, minor subwacke, argillite and quartzwacke, medium to dark grey, predominantly laminite with subwacke/argillite beds spaced generally at 1 to 30 cm intervals, probable silicification makes most of this interval appear much harder than wacke, from 462' sericite flakes with minor calcite are common form of alteration. Fine scattered pyrrhotite noted in much of the laminite 1 to 3 mm ldng grains sometimes forming continuous layers are in the subwacke/argillite beds. Bedding to core 82° @ 450', 81° @ 484'.

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Scale

Colour Plot & Dips

Drill Hole Record

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Property	District	Hole No. DDH6460	
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. DDH6460 | Sheet

Analysis

Footage From	To	Description
486.0	490.4	Argillite, minor subwacke, light grey, characterized by biotitic laminae at 0.5 to 2 cm intervals. Pyrrhotite is dispersed in the subwacke beds, generally aligned parallel to cleavage. Top 20 cm brecciated, some calcite veining.
490.4	498.3	Quartz arenite, medium grey, fine grained, thick bedded, contacts distinct and irregular (loading/flames etc.), wacke, subwacke/ argillite tops to 30 cm. Quartz veinlets 5° and 15° to core. Alteration patches 2-3 cm across with garnet, biotite and calcite.
498.3	500.0	Argillite, (subwacke), light grey, upper portion laminated, lower portion is wispy laminated, few faint pyrrhotite laminae and wisps (lower portion is probably the top of a quartz arenite bed). Bedding to core 81°.
500.0	522.0	Quartz arenite, minor wacke/subwacke/argillite graded tops and interbeds to 20 cm, light grey, medium grained, thick and very thick bedded. The thickest bed is 1.75 meters and contains a 15 cm section with disseminated pyrrhotie. From 517 - 522' is minor weathering and oxidation along fractures. Bedding to core 65° @ 518'.
522.0	526.5	0.5 feet of core, only gouge, recovered. Parting (fault) is 50°.
526.5	547.0	Quartz arenite, minor wacke, medium grey, weathering oxidation on fractures throughout, core broken, medium and fine grained, thick bedded, bed contacts vague (few distinct, broken core makes recognition of some difficult). At 535' a strange bedding contact may be indicative of movement of unconsolidated sediments. Bedding to core 60° @ 532'.

***** END OF HOLE *****

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Scale

Colour Plot & Dips

Drill Hole Record

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Property	District	Hole No. DDH6460	
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. DDH6460 | Sheet

Analysis

Footage From To | Description

RUNS	SHORTS	RUNS	SHORTS	RUNS	SHORTS
70-77	1.5	257-267	0.0	467-477	0.0
-85	3.0	-277	0.5	-487	0.0
-91	5.0	-287	0.0	-497	0.0
-97	1.5	-297	0.0	-507	0.0
-107	6.0	-307	0.2	-517	0.0
-115	6.0	-317	0.0	-527	4.0
-125	0.5	-327	0.0	-530	0.0
-127	0.3	-337	0.0	-537	0.0
-137	0.2	-347	0.0	-547	5.0
-147	0.0	-357	0.0		
-157	0.0	-367	0.0		
-167	0.0	-377	0.0		
-177	0.0	-387	0.0		
-187	0.0	-397	0.0		
-197	0.0	-407	0.0		
-207	0.0	-417	0.0		
-217	0.0	-427	0.0		
-227	0.0	-437	0.0		
-237	0.0	-447	0.0		
-247	0.0	-457	0.0		
-257	0.0	-467	0.0		

211-8437

APPENDIX B

SULLIVAN MINE GROUP OF MINERAL CLAIMS

NOVEMBER 27, 1986

		Number of Units	
1.	Crown-Granted M.C.		680
2.	Held by Assessment:		
	2(a) TWO POST CLAIMS		
	Luke Group	75	
	Rho Group	20	
	Med Group	15	
	Donna, Etc. Group	15	
	Uke Group	11	
	Mar Group	17	
	Bad Group	36	
	Late Group	91	
	Mat Group	268	
	Jackpot	1	549
	2(b) REVERTED CROWN GRANTED MINERAL CLAIMS		
	Tip 4-12	9	
	Hope 2-12	11	
	Sun 2-12	11	
	Cue 2-12	11	
	B.C., Silver Bell, Tarrant	3	
	Black Hills, Yankee Girl, Wasp Fr.	3	
	Blue Dragon	1	49
	2(c) MINERAL CLAIMS (54)		
	Dip 1-8	56	
	Fal 1-14	84	
	Golf 1-3	17	
	Quark 1&2	12	
	Fin 1-3	18	
	Mead 1-3	36	
	Gin 1-9	110	
	Clair 24-32	56	
	Mark 1-3	17	406
3.	Greenhorn Mineral Lease		1
	GRAND TOTAL (1 + 2 + 3)		1,685

PWR/lrm

APPENDIX C

STATEMENT OF EXPENDITURES

DDH 6460

DIRECT COSTS

Contractor: Tonto Drilling (B.C.) Ltd.
#200 - 3920 Norland Ave.
Burnaby, B.C. V5G 4K7

Item	Amount
Mobilization/Demobilization	$ 500.00
Drilling 0-547	11,831.00
Moving	2,782.00
Surveys	75.00
Other	338.00
Materials	1,539.45
Direct Costs =	$17,065.45

INDIRECT COSTS

Salaries

P.W. Ransom - Geologist - supervision, core logging, report writing 10 days @ $250/day $ 2,500.00

Other Contractors:

W. Barker Contracting Ltd., Kimberley, B.C. - Site access/Preparation - 0.1 km of road plus site

D-7 buldozer	12.5 hours @ $85/hour	1,062.50
plus cat hauling		130.00
Water hauling	6.5 hours @ $45/hour	292.50

Henderson Heavy Hauling (1973) Ltd., Cranbrook, B.C.

Equipment hauling (Cat)	639.00

Transportation:

one 4X4 truck - 10 days @ $40/day	400.00

Supplies:

Mud - Gel	152.00
- Polymer (incl. transport)	1,017.42
Core boxes (incl. transport)	180.00
Cap	34.92
Indirect costs =	6,408.34
Total Direct + Indirect costs =	$23,473.79

Signed: P.W. Ransom

P.W. RANSOM
Project Geologist

APPENDIX D

IN THE MATTER OF THE

B.C. MINERAL ACT

AND

IN THE MATTER OF A DIAMOND DRILL PROGRAMME

CARRIED OUT ON THE ROWAN CLAIM GROUP

MARK CREEK AREA

in the Fort Steele Mining Division of
the Province of British Columbia

More Particularily N.T.S. 82F/9

A F F I D A V I T

I, P.W. Ransom, of the rural district of Wycliffe, in the Province of British Columbia, 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 as Appendix C to this my Affidavit is a true copy of expenditures incurred on a Diamond Drill programme, on the Rowan mineral claim group.

3. That the said expenditures were incurred between the 1st day of June, 1987 and the 1st day of August, 1987 for the purpose of mineral exploration on the above noted claim group.

P.W. Ransom

P.W. RANSOM
PROJECT GEOLOGIST

APPENDIX E

STATEMENT OF QUALIFICATIONS

As author of this report, I, Paul W. Ransom, certify that:

I am a geologist active in minerals exploration.

I am a graduate of McGill University with a degree of Bachelor of Science.

I have been continuously engaged in mining and exploration since 1966.

I am a member of the Geological Association of Canada.

I supervised Cominco Ltd.'s Sullivan Mine area exploration drilling program in 1987.

P.W. RANSOM, G.A.C.