86-243-15128

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Province of British Columbia

Ministry of Energy, Mines and Petroleum Resources

MAY 21 1986

GOLD COMMISSIONER

ASSESSMENT REPORT TITLE PAGE AND SUMMARY

FORT STEELE MINING DIVISION
CRANBROOK, B.C.

TYPE OF REPORT/SURVEY(S)	TOTAL COST
Drilling (underground)	$30,896.60

AUTHOR(S) Bruce Reid, Ed Oslund SIGNATURE(S) B. Reid, E.W. Oslund

DATE STATEMENT OF EXPLORATION AND DEVELOPMENT FILED May 21, 1986 YEAR OF WORK 1986

PROPERTY NAME(S) Sullivan Mine

COMMODITIES PRESENT Ag, Pb, Zn, Fe

B.C. MINERAL INVENTORY NUMBER(S), IF KNOWN 82F/NE-52

MINING DIVISION Fort Steele NTS 82G/12W, 82F/9E

LATITUDE 49°41.9' LONGITUDE 116°00.6'

NAMES and NUMBERS of all mineral tenures in good standing (when work was done) that form the property [Examples: TAX 1-4, FIRE 2 (12 units); PHOENIX (Lot 1706); Mineral Lease M 123; Mining or Certified Mining Lease ML 12 (claims involved)]:

Cue 2-6 (5 units total), Hope 2-6 (5 units total), Sun 2-6 (5 units total), Tip 4-6 (3 units total), Mark 1-3 (3 units total), Alta Fr. (Lot 12001), Stoney Fr. (Lot 4051)

OWNER(S)

(1) Cominco Ltd. (2)

MAILING ADDRESS

Box 2000
Kimberley, B.C. V1A 2G3

OPERATOR(S) (that is, Company paying for the work)

(1) As Above (2)

MAILING ADDRESS

As Above

GEOLOGICAL BRANCH
ASSESSMENT REPORT

15,128

FILMED

SUMMARY GEOLOGY (lithology, age, structure, alteration, mineralization, size, and attitude):

The drill holes were collared in sedimentary rocks of the Lower Aldridge Formation and penetrated layered sphalerite, galena and pyrrhotite sulphides. The drill program provided grade and mining hanging wall information.

REFERENCES TO PREVIOUS WORK

(over)

86-243-15128

BC Geological Survey
Assessment Report
15128

COMINCO LTD.
Sullivan Mine
Kimberley Operations

SULLIVAN MINE GROUP OF MINERAL CLAIMS

		December 31st 1985 Number of Units	
1.	Crown-Granted M.C.		680
2.	Held by Assessment:		
	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	
	8 Dip M.C.	56	
	14 Fal M.C.	84	
	3 Golf M.C.	17	
	2 Quark M.C.	12	
	7 Reverted 2 Post Crown-Granted	7	
	3 Fin M.C.	18	
	Tip, Sun, Hope, Cue Reverted Crown-Granted M.C.	24	
	3 Mead M.C.	36	
	9 Gin M.C.	110	
	Clair 24 to 32 Inclusive	56	
	Mark 1, 2, 3	17	
	18 Reverted Crown-Granted M.C. (Tip,Sun,Hope,Cue)	18	
	Sub Total Group 2		1,004
3.	Greenhorn Mineral Lease		1
	GRAND TOTAL (1 + 2 + 3)		1,685

A.L. Burrows/ml
December 31st 1985

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DRILLING LOCATION CLAIM MAP	3
UNDERGROUND WORKINGS MAP	4, 4A
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INTRODUCTION

Two separate diamond drill core hole exploration programs are being included in this report.

Both programs were drilled within the Sullivan Mine, Kimberley, B.C., which is owned and operated by Cominco Ltd. This mine has operated for 75 years and its Ag, Pb, Zn revenues have contributed to the well being of British Columbia.

The Sullivan Mine is located in the Fort Steele Mining Division at latitude 49° 43' N and 115° 59' W.

The first program consisting of three AX size holes, totalling 80.2 m, were drilled in order to determine the presence of economic sulphides in this fringe area of the mine.

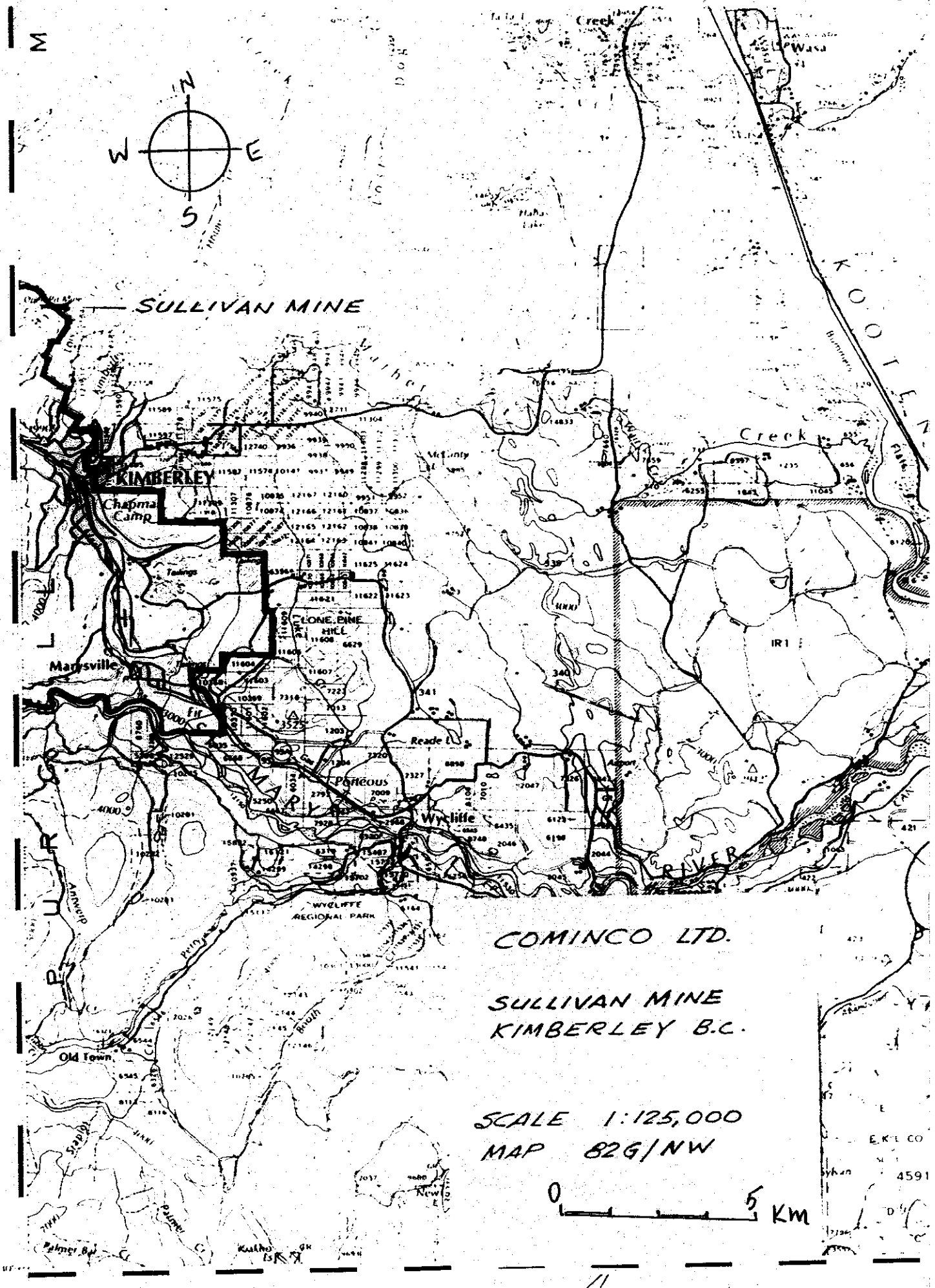
D.D.C.H. No. 6247, 6248, 6249 were drilled on the Alta Fr. (L12001) crown-granted mineral claim.

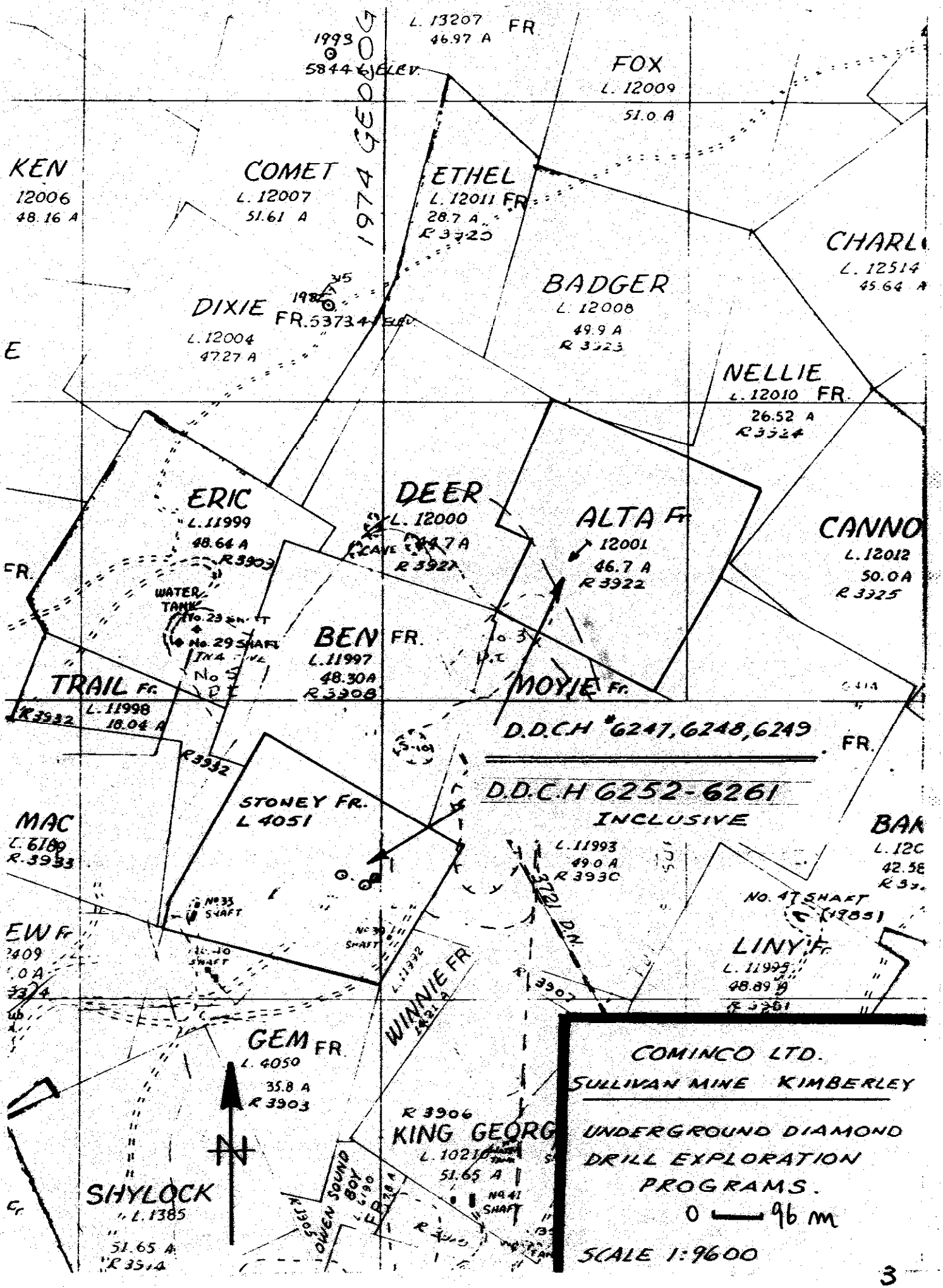
Bruce Reid is the co-author of this part of the report being submitted in May, 1986.

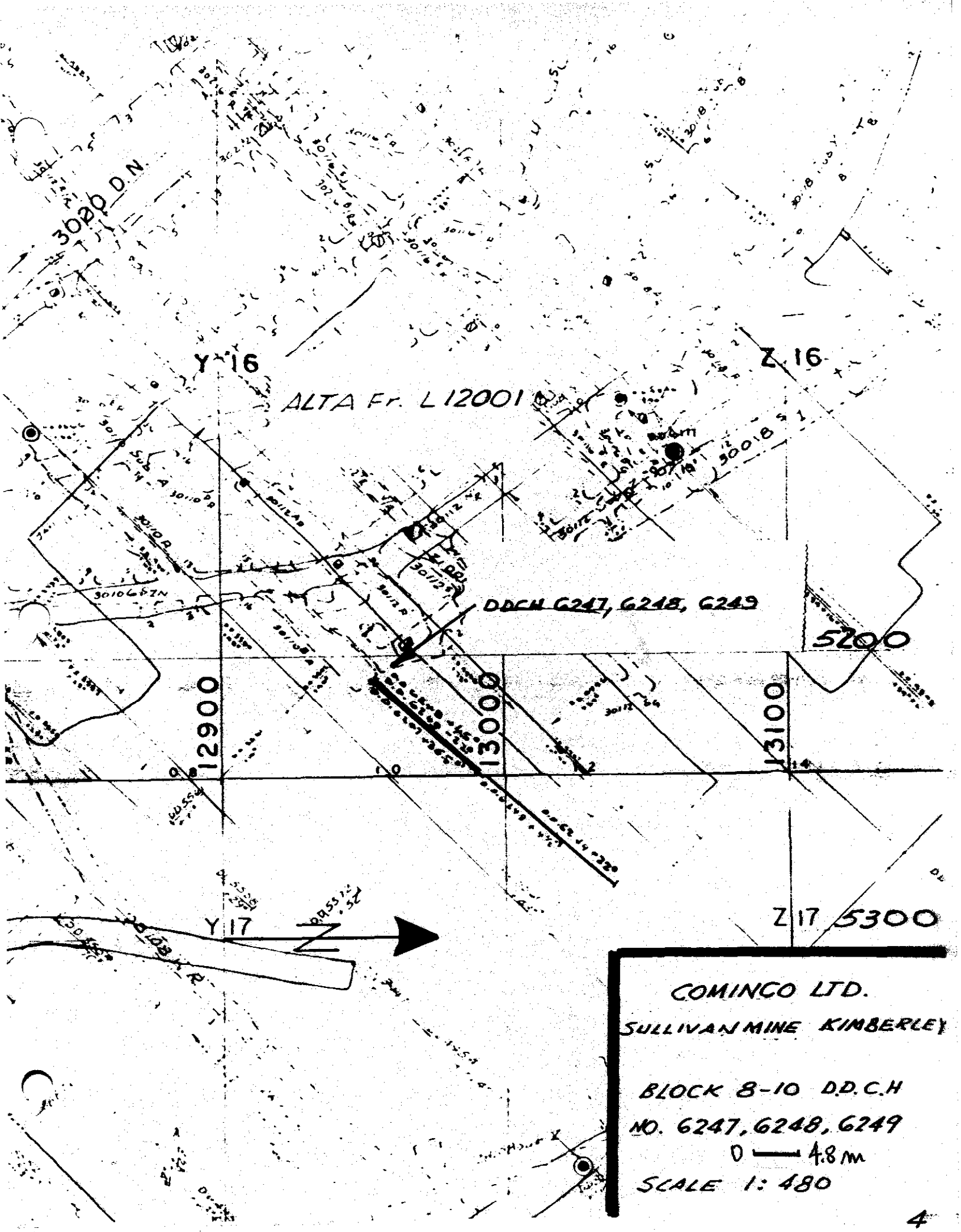
The second program, consisting of 10 AX size diamond drill core holes, was necessary in order to determine the Ag, Pb, Zn values adjacent to a massive iron sulphide deposit that is present in the Sullivan Mine.

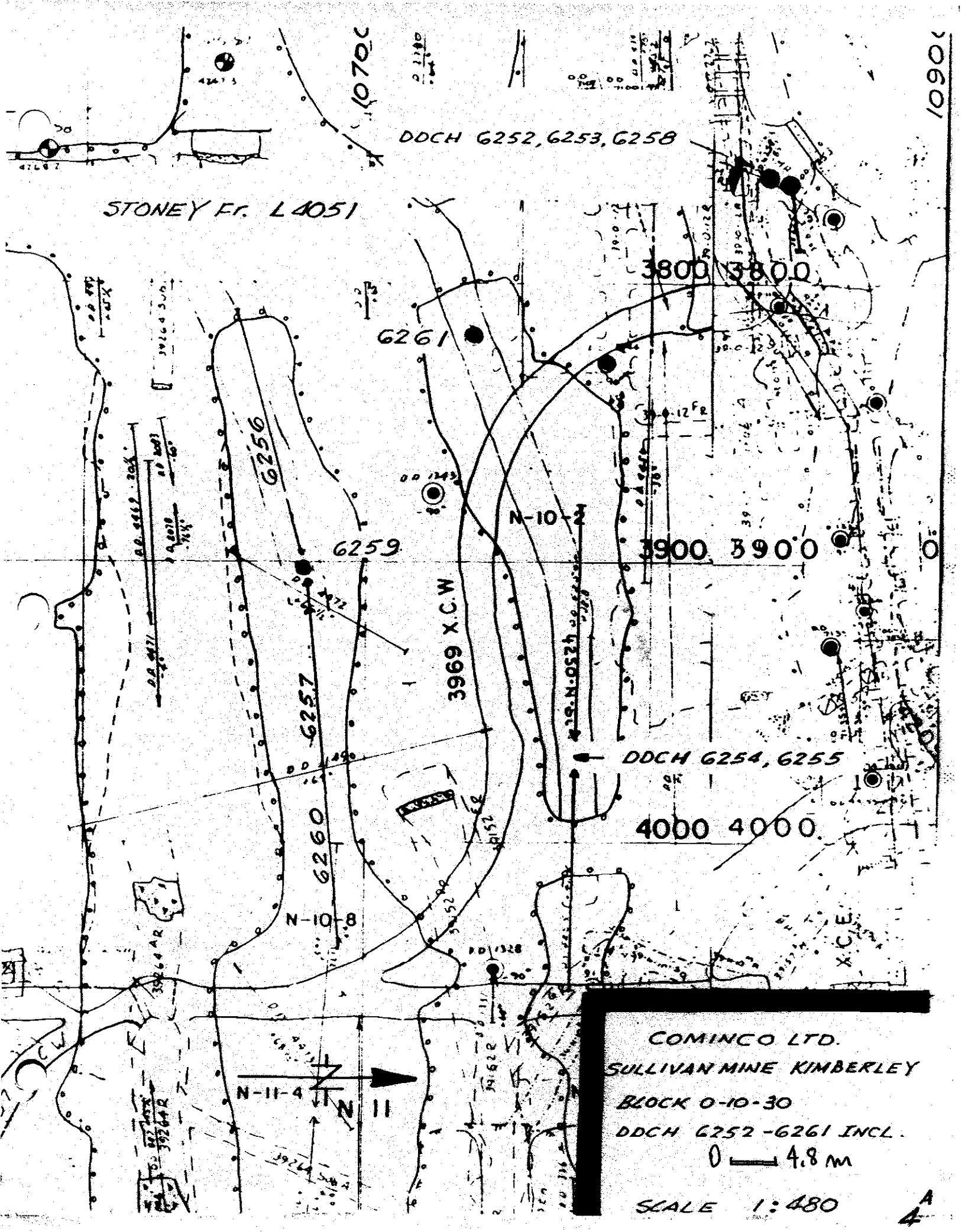
Core holes 6252-6261 inclusive, totalling 273.1 meters, were all drilled on the Stoney Fr. (L4051) crown-granted mineral claim.

Ed Oslund is the co-author of this part of the report that is being submitted in May, 1986.


N
W
E
S
SULLIVAN MINE
KIMBERLEY
Chapman Camp
Marysville
LONE PINE HILL
Reade L.
Ponteous
Wycliffe
WYCLIFFE REGIONAL PARK
Old Town
Creek
IR1
RIVER
COMINCO LTD.
SULLIVAN MINE
KIMBERLEY B.C.
SCALE 1:125,000
MAP 82G/NW
0
5
Km


1974 GEOG
L. 13207 FR
46.97 A
1993
5844 ELEV.
FOX
L. 12009
51.0 A
KEN
12006
48.16 A
COMET
L. 12007
51.61 A
ETHEL
L. 12011 FR
28.7 A
R 3925
CHARL
L. 12514
45.64 A
BADGER
L. 12008
49.9 A
R 3923
DIXIE
FR. 5373.4 ELEV.
L. 12004
47.27 A
NELLIE
L. 12010 FR.
26.52 A
R 3924
ERIC
L. 11999
48.64 A
R 3903
DEER
L. 12000
44.7 A
R 3921
ALTA FR
12001
46.7 A
R 3922
CANNO
L. 12012
50.0 A
R 3925
WATER TANK
No. 23 SHAFT
No. 29 SHAFT
BEN FR.
L. 11997
48.30 A
R 3908
TRAIL FR.
L. 11998
18.04 A
R 3932
MOYIE FR.
D.D.C.H #6247, 6248, 6249
FR.
D.D.C.H 6252-6261
INCLUSIVE
STONEY FR.
L 4051
MAC
L. 6189
R. 3933
L. 11993
49.0 A
R 3930
No. 47 SHAFT
(1985)
No 33 SHAFT
No 39 SHAFT
LINY FR
L. 11995
48.89 A
R 3931
WINNIE FR.
GEM FR.
L. 4050
35.8 A
R 3903
R 3906
KING GEORG
L. 10210
51.65 A
No 41 SHAFT
SHYLOCK
L. 1385
51.65 A
R 3914
OWEN SOUND BAY
COMINCO LTD.
SULLIVAN MINE KIMBERLEY
UNDERGROUND DIAMOND
DRILL EXPLORATION
PROGRAMS.
0 — 96 m
SCALE 1:9600


3020 D.N.
Y 16
Z 16
ALTA Fr. L 12001
DDCH 6247, 6248, 6249
5200
12900
13000
13100
Y 17
Z 17
5300
COMINCO LTD.
SULLIVAN MINE KIMBERLEY
BLOCK 8-10 D.D.C.H
NO. 6247, 6248, 6249
0 — 4.8 m
SCALE 1: 480


1070C
1090C
DDCH 6252, 6253, 6258
STONEY Fr. L4051
3800 3800
6261
6256
6259
N-10-2
3900 3900
3969 X.C.W
6257
DDCH 6254, 6255
4000 4000
6260
N-10-8
N-11-4
N 11
COMINCO LTD.
SULLIVAN MINE KIMBERLEY
BLOCK 0-10-30
DDCH 6252 -6261 INCL.
0 4.8 m
SCALE 1:480

4A

DETAILED TECHNICAL DATA AND INTERPRETATION

A. OBJECTIVE

The objective of drilling DDH 6247 was to locate Ag-Pb-Zn-Fe sulphide ore below the lowest known intercept in this area of the Sullivan deposit.

B. RESULTS

DDH 6247 intersected 9.7 meters of economic grade sulphides.

C. INTERPRETATION

00 - 3.0 meters	Laminated sediments
3.0 - 12.7 meters	High grade layered sphalerite-galena-pyrrhotite ore
12.7 - 16.8 meters	Pyrite-chlorite-calcite

D. CONCLUSION

DDH 6247 was collared in laminated sediments of the footwall series and penetrated through a high grade continuation of the Sullivan deposit. The pyrite-chlorite-calcite assemblage is an alteration product related to a hydrothermal system along the Kimberley Fault.

DETAILED TECHNICAL DATA AND INTERPRETATION

A. OBJECTIVE

The objective of drilling DDH 6248 was to locate Ag-Pb-Zn-Fe sulphides below the lowest known intercept of economic grade sulphides in this area of the Sullivan deposit.

B. RESULTS

DDH 6248 intersected 26.2 meters of economic grade sulphides.

C. INTERPRETATION

0 - 5.7 meters	Laminated sediments
5.7 - 28.2 meters	High grade layered sphalerite-galena-pyrrhotite
28.2 - 31.9 meters	Alternating zones of barren pyrite and high grade sphalerite-galena-pyrrhotite
31.9 - 33.4 meters	Vuggy pyrite zones in fractured argillite
33.4 - 34.4 meters	Massive argillite

D. CONCLUSION

DDH 6248 was collared in laminated sediments of the footwall series and intersected a high grade continuation of the Sullivan deposit at a low angle. The pyrite zone at the top of the hole is an alteration product related to a hydrothermal system along the Kimberley Fault.

DETAILED TECHNICAL DATA AND INTERPRETATION

A. OBJECTIVE

The objective of drilling DDH 6249 was to locate Ag-Pb-Zn-Fe sulphides below the lowest known intercept of economic grade sulphides in this area of the Sullivan.

B. RESULTS

DDH 6249 intersected 9.4 meters of economic grade sulphides.

C. INTERPRETATION

0 - 16.3 meters	Laminated sediments
16.3 - 25.7 meters	High grade layered sphalerite-galena-pyrrhotite
25.7 - 29.0 meters	Laminated sediments

D. CONCLUSION

DDH 6249 was collared in laminated sediments of the footwall series and intersected a high grade continuation of the Sullivan deposit at a very low angle and then re-entered laminated sediments. The interpretation is a fold in the stratigraphy with the core hole going back into footwall sediments.

DETAILED TECHNICAL DATA AND INTERPRETATION

A. OBJECTIVE

The objective of drilling these ten core holes was to provide grade and mining hanging wall information.

B. RESULTS AND INTERPRETATION

Assayed at the mine lab. Core in storage at the mine.

	Meters	Ag	Pb	Zn	Fe	
1. 0-10-30 I:		oz/t	%	%	%	
DD 6252	0 - 12.2	0.4	0.6	1.9	57.9	Part MB, chiefly pyrrhotite
	12.2 - 13.1		No sample			Breakthrough into gravel fill
DD 6253	13.1 - 10.1	0.9	1.3	1.1	57.7	Chiefly pyrrhotite
	10.1 - 10.7		No sample			Breakthrough into gravel fill
DD 6258	10.7 - 14.9	0.9	1.3	1.1	57.7	Chiefly pyrrhotite
	14.9 - 23.2	1.7	3.3	3.0	53.2	Pyrrhotite with some Pb,Zn values
	23.2 - 24.7	0.1	0.4	0.3	42.9	Pyrite, top MB
	24.7 - 30.8		No sample			HW rocks, brecciated albite
2. N-11-31:						
DD 6256	0 - 17.1	0.6	1.2	2.7	51.5	Part MB, chiefly pyrrhotite
	17.1 - 25.6	19.0	46.0	6.6	19.0	Part MB, high grade sulphides
	25.6 - 27.1	0.6	1.3	0.4	39.5	Pyrite, top MB
	27.1 - 37.2		No sample			HW rocks, brecciated albite, argillite
DD 6257	0 - 9.8	0.9	1.8	3.7	53.9	Part MB, chiefly pyrrhotite
	9.8 - 26.8	0.2	1.0	0.3	43.2	Pyrite, top MB
	26.8 - 27.4		No sample			HW albite
DD 6259	0 - 8.5	0.9	1.9	2.9	54.1	Part MB, chiefly pyrrhotite
	8.5 - 13.1	4.9	35.5	4.8	28.4	Part MB, high grade sulphides
	13.1 - 14.6	0.4	1.0	0.3	39.5	Pyrite, top MB
	14.6 - 19.5		No sample			Albite, argillite, chlorite
DD 6260	0 - 5.8	0.9	1.7	1.9	50.1	Part MB, chiefly pyrrhotite
	5.8 - 30.2	1.1	6.2	8.7	41.7	Part MB, good Pb,Zn in pyrrhotite
	30.2 - 34.8	0.2	0.5	0.3	40.6	Pyrite, top MB
	34.8 - 40.0		No sample			HW rocks, albite, argillite, chlorite
3. N-10-30:						
DD 6254	0 - 7.0	1.0	1.9	1.6	57.3	Part MB, chiefly pyrrhotite
	7.0 - 25.0	3.3	12.7	10.4	38.7	Part MB, good Pb,Zn in pyrrhotite
	25.0 - 34.1	0.2	0.3	0.2	42.5	Pyrite, top MB
	34.1 - 35.4		No sample			HW argillite, chlorite
DD 6255	0 - 7.6	1.8	3.7	3.6	53.1	Part MB, some Pb,Zn in pyrrhotite
	7.6 - 21.0	3.4	7.5	14.3	41.5	Part MB, good Pb,Zn in pyrrhotite
	21.0 - 29.0	0.2	0.8	0.8	39.7	Pyrite, top MB
	29.0 - 32.0		No sample			HW rocks, brecciated albite, argillite
DD 6261	0 - 11.6	1.2	1.2	1.3	58.6	Part MB, chiefly pyrrhotite
	11.6 - 17.2	5.2	12.9	4.6	36.3	Part MB, good Pb,Zn in pyrrhotite
	17.2 - 18.9	0.3	0.3	0.1	18.8	Pyrite, top MB
	18.9 - 27.1		No sample			HW rocks, brecciated albite, argillite

C. CONCLUSION

All core holes were collared above the sulphide footwall and showed the erratic distribution of the Pb and Zn values in the main band immediately north of the central iron core. These core holes also confirmed the altered nature of the hanging wall rocks in this part of the Sullivan Mine.

ITEMIZED COST STATEMENT

From January 26, 1986 to February 3, 1986, three diamond drill core holes were drilled (No. 6247, 6248, 6249) in 8-10 block within the Sullivan Mine, Kimberley, B.C.

Drill Labour Costs	15 manshifts x $245.40/MS =	$3,680
Equipment Rental, Bits, Rods and Supplies		1,972
Geological Supervision, Logging, Report Writing		2,000
Total Program Cost		$7,652
Costs per meter (80.2 m)		$95.41

ITEMIZED COST STATEMENT

Ten diamond drill core holes were drilled during the period of February 4, 1986 to March 6, 1986.

Drill labour costs	49 manshifts x $245.40/MS =	$12,024.60
Equipment, Bits, Rods and Supplies		6,720.00
Supervision, Core Logging, Assays, Report Writing		4,500.00
Total Program Cost		$23,244.60
Costs per meter (273.1 m)		$85.11

AUTHOR'S QUALIFICATIONS

As co-author of this report, I, Bruce Reid, certify that:

I am employed by Cominco Ltd. as a Senior Geological Technician active in minerals exploration.

I have been continuously engaged in mining and exploration geology for the past 10 years.

B. Reid
Bruce Reid

Approved: D. McMurdo
Superintendent, Mine
Engineering & Geology

AUTHOR'S QUALIFICATIONS

As co-author of this report, I, Ed Oslund, certify that:

I am employed by Cominco Ltd. as a Senior Geological Technician active in minerals exploration.

I have been continuously engaged in mining and exploration geology for the past 34 years.

Ed Oslund

Approved: D. McMurdo
Superintendent, Mine
Engineering & Geology

Diamond Drill Geological Log

Cominco

Objective: Locate Econ. MB			Sampled:		
Logged By: D.B. Reid	Date: January 30/86		Composites:		
Block: 8-10	Sect.: 10	Place: 30110 B/R	App. Bear: N41°44'59"E	App.: Dip.: +36.4°	Length: 55'

(1' = 0.305m)

From	To	Discard:	Reason:
0	10	Lam. argillite - some silicification. Core is quite broken.	
10.0	11.3	High grade - layered Sp-Gn-Po occasional Py.	
11.3	15.8	Pyrrhotite - sediment mix. Estimate 50-60% Po. No visible Pb or Zn. Vague layering.	
15.8	40.2	High grade layered Sp-Gn-Po occasional Py. Some contorted layers. 24.2 - 28.0 - Mainly Po with "buckshot" Py throughout. 32.0 - 32.5 - Some fragments of sediment. Good core recovery. 0.3' loss.	
40.2	41.7	Calcite veining. Some good sphalerite mixed with pyrite in calcite. 40.2 - 42.7 - Mainly cal. vein. *Vein separates high grade from Py-Chl-Cal.	
41.7	55.0	Pyrite-Chlorite-Calcite. Pyrite-Chlorite mixture with frequent cal. veinlets. Pyrite estimated from 10-75%.	

Core Size

Hole No. 6247

Page 1 of 1

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507-

DBReid

DBReid

Diamond Drill Geological Log

Cominco

Objective:			Sampled:		
Logged By: D.B. Reid	Date: February 26/86		Composites:		
Block: 8-10	Sect.: 10	Place: 30110 S/A	App. Bear: N42°30'51"	App.: Dip.: +4.5°	Length: 113'

(1' = 0.305m)

From	To	Discard:	Reason:
0	18.7	Argillite	
		0 - 15.5 - Vague laminations - possibly massive argillite in places. Some mottled texture+elongated Po blebs 12.0-15.0.	
		15.5 - 18.7 - Distinctively thin laminated. Po lams near SFW.	
18.7	21.5	High grade layered Sp-Gn-Po. Generally vague layering. Minor amounts of sediment.	
21.5	28.3	Pyrrhotite - Argillite mixture. Po 50-80%. Slight layering. Very minor Pb-Zn visible.	
28.3	56.0	High grade layered ore. Very good Zn.	
		41.5 - 42.5 - Near massive Sp with large Py phenocrysts ("buckshot texture").	
56.0	58.6	Sediments with Po layers. Minor Pb-Zn.	
58.6	92.5	High grade Sp with sediment fragments, pyrite zones + Qtz-Sp veins.	
		58.6 - 59.4 - Coarse Sp + Gn with pyrite in Qtz veining.	
		60.0 - 60.5 - Py + coarse Sp in fracture zone.	
		70.2 - 70.6 - Py + coarse Sp in fracture zone.] 0.7' core loss	
		72.0 - 72.2 - Qtz-Sp vein.]	
		72.2 - 75.0 - Sed. fragments with high grade Sp.	
		Broken core. 1.4' core loss	

Core Size

Hole No. 6248

Page 1

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

DBReid
DBReid

2507-

Diamond Drill Geological Log

Cominco

Objective:

Sampled:

Logged By: Date:

Composites:

Block: Sect.: Place: App. Bear: App.: Dip.: Length:

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

From	To	Discard: Reason:
		75.0 - 80.2 - Mixed up sed. fragments, coarse Sp + Py. 0.2' core loss. 30-40% sediment.
		80.2 - 92.5 - Mainly high grade Sp with occasional sediment fragment and some pyrite xstl's.
92.5	104.6	Mixed high grade sphalerite, pyrite in vuggy fracture zones and frectured up sediment.
		92.5 - 95.0 - Vuggy pyrite zone in brecciated sediment - driller reported voids. *1.5' core loss.
		95.0 - 95.9 - Breccieted sediment.
		95.9 - 96.6 - Sp + Py in broken zone.
		96.6 - 97.5 - Sediment breccia with Sp + Py.
		97.5 - 101.8 - Vuggy pyrite fracture zone. Driller reported voids. *3.3' core loss.
		101.8 - 102.3 - High grade Sp with Py.
		102.3 - 103.5 - Sediment + pyrite breccia.
		103.5 - 104.6 - High grade Sp.
104.6	109.7	Vuggy pyrite and fractured sediments - no visible Zn-Pb.
109.7	113.0	Massive argillite + minor amounts of pyrite. 1.3' core loss.
	End	

Core Size

Hole No. 6248

Page 2

2507-

DBReid
DBReid

Diamond Drill Geological Log

Dominco

Objective: Locate Economic M.B.			Sampled:		
Logged By: D.B. Reid	Date: February 13/86		Composites:		
Block: 8-10	Sect.: 10	Place: 30110 Sub A	App. Bear: N43°37'06"E	App. Dip.: -22.3	Length: 95'

(1' = 0.305 m)

From	To	Discard: Reason:
0	53.5	Footwall argillite - Laminations at low angle to core - 16°
		0 - 12.3 - Thin laminated argillite. Broken at 6.3 - 6.5. No core loss.
		12.3 - 49.5 - Massive argillite - no visible laminations. Very broken 22.0 - 23.5.
		49.5 - 53.5 - Po lams in argillite. Very broken 27.0 - 28.0. 0.5' loss.
		Very broken 46.6 - 47.0. 0.2' loss.
53.5	84.2	High grade layered sulphides - very high Zn.
		53.5 - 62.4 - Vaguely layered high Zn sulphides. Broken 65.5 - 66.0. 0.5' loss.
		Some sediments mixed with ore in crude layers and disseminated - usually approx. 10%. Only 0.9' core loss over total sulphides.
		62.4 - 63.4 - High grade Zn with large pyrite phenocrysts. Pyrite approx. 30%.
		63.4 - 84.2 - Layered sulphides - high Zn. Some disseminated and layered sediment layering near parallel to core.
84.2	95.0	Footwall argillite - vague laminations of pyrrhotite.
	End	93.0 - 93.5 - Breccia zone.

Core Size

Hole No. 6249

Page

40 Scale

Color Plot & Dips | Ore Classes & Aver.

0

2507-

DBReid
DBReid

19

Diamond Drill Geological Log

Cominco

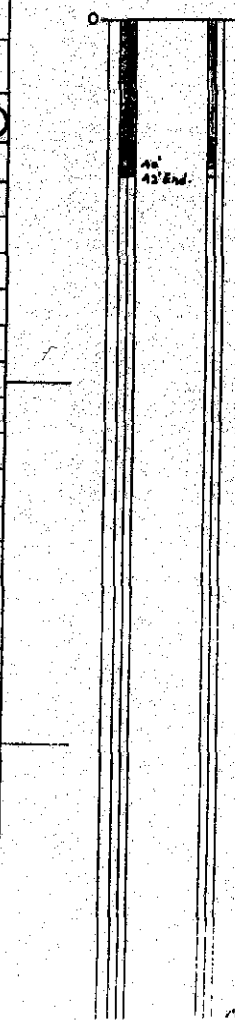
Objective: Provide grade and HW information			Sampled: 0-6, 6-11, 11-17, 17-23, 23-29, 29-35, 35-40 (40-43 discarded)		
Logged By: E. Oslund	Date: February 12, 1986		Composites:		
Block: 0-10-30 I	Sect.: 10850X	Place: 42179 XCE	App. Bear: N81°E	App.: Dip.: +60°	Length: 43 ft

Discard: Yes Reason: Whole core sampled (1' = 0.305m)

From	To	
0.0	40.0	Massive pyrrhotite with scattered fine stringers and small patches of Zn. Fair Zn, and some Pb in section 11-17 ft.
		Core is calcite spotted in local sections.
		Core becomes tarnished with some dark red surfaces from 25-40 ft - probably from being close to the pillar edge.
		In general the core is in fairly good shape - estimate core loss 1-1.5 ft.
40.0	43.0	Breakthrough into gravel filled stope - rounded and angular pieces of argillite, albite, epidote, sandstone, etc. noted.
		End hole at 43 ft.

40 Scale

Color Plot & Dips | Ore Classes & Aver.



E W Oslund

E W Oslund

Core Size: AXK

Hole No.: 6252

Page: 1

Diamond Drill Geological Log

Cominco

Objective: Provide grade and HW information	Sampled: 0-5, 5-10, 10-16, 16-22, 22-27, 27-33 (33-35 discarded)
Logged By: E. Oslund Date: February 12, 1986	Composites:

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
0-10-30	10850X	42179 XCE	--	+90°	35 ft

Discard: Yes Reason: Whole core sampled (1 ft = 0.305 m)

From	To	
0.0	33.0	Massive pyrrhotite with fine stringers and small patches of Zn; good Pb and Zn values 22-27'. Core is generally discoloured, tarnished; some dark red oxidized surfaces - probably from proximity to gravel filled stope. Calcite spotting in local sections.
33.0	35.0	Breakthrough into gravel filled stope - rounded and angular pieces of argillite, epidote, sandstone, etc. noted. Core is in fairly good condition - estimate ± 1 ft core loss 0-33 ft. End hole at 33 ft.

40 Scale

Color Plot & Dips | Ore Classes & Aver.

E W Oslund

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Core Size: AXK

Hole No.: 6253

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Diamond Drill Geological Log

Cominco

Objective:	Provide grade and hanging wall information	Sampled:	0-112' (112-116' discarded)
Logged By:	E. Oslund	Date: March 4, 1986	Composites: Tin and antimony

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
N-10-30	10750-10800	4250-N-Scram	East	+40°	116 feet

From	To	Discard: Yes	Reason: Whole core sampled

(1 ft = 0.305 m)

From	To	Description
0.0	112.0	Part main vein sulphides:
		0-65' = Massive pyrrhotite with erratic Pb and Zn in patches and stringers.
		0-23' estimate ± 5 units, while 23-65' the Pb and Zn values increase noticeably. Local calcite and chlorite streaks in the core. Some oxidized, reddish surfaces in the core.
		65-82' = Fine grained, crystalline pyrite with patchy Pb and Zn - fair to good grade sections. Core is carbonate rich with minor chlorite spotting.
		82-112' = Fine to medium to coarse grained crystalline pyrite, the closer to the sulphide hanging wall (112 ft) the coarser the pyrite. The core is carbonate rich with 10-15% chlorite in the last 6-7 feet. No visible Pb or Zn.
112.0	116.0	HW rocks - chloritic argillite. Core quite broken.
		End hole at 116 feet.
		Shorts: All in all the core is in good condition, estimate 1-2 feet short from 0-112 feet.

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Core Size: AXK

Hole No.: 6254

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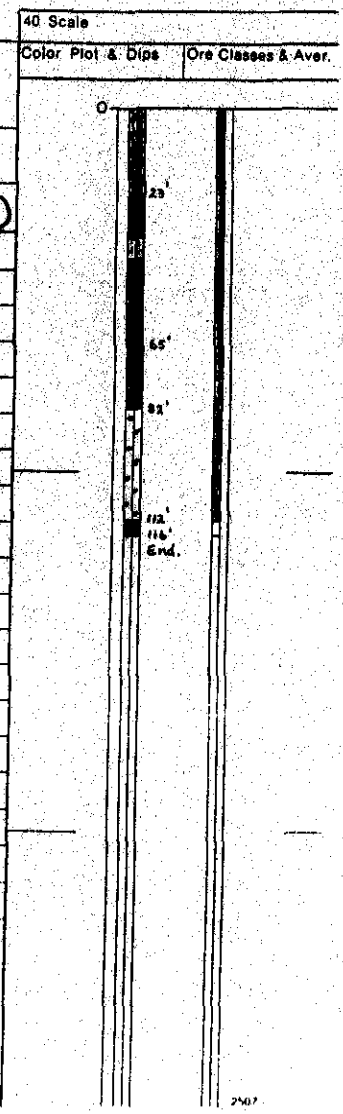
40 Scale



Diamond Drill Geological Log

Cominco

Objective:	Provide grade and hanging wall information	Sampled:	0-95 (95-105 discarded)
Logged By:	E. Oslund	Date: March 5, 1986	Composites: Tin and antimony

Block:	Sect.:	Place:	App. Bear:	App. Dip.:	Length:
N-10-30	10750-10800	4250-N-Scram	East	+40°	105 feet

Discard: Yes Reason: Whole core sampled (1 ft = 0.305 m)

From	To	
0.0	95.0	Part main vein sulphides:
		0-66' = Massive pyrrhotite with erratic patches, stringers of Pb and Zn. Local calcite and chlorite spotting and streaks,
		6" calcite fracturing and crystalline pyrite at 19 feet. Increasing Pb and Zn values (especially Zn) from 25-66 feet.
		Occasional rusty, oxidized surfaces present in the core. Core is badly broken 20-25 ft (1.3' missing) - pillar break?
		66-95' = Fine to medium to coarse grained crystalline pyrite (last 6' coarse grained with 15-20% chlorite).
		Core is carbonate rich with some chlorite streaks.
		66-69' - good Zn values in patches, spotting and disseminated.
		73.5-74.5' - calcite fracture (crystals) with some coarse Zn in the pyrite.
		74.5-83' - spotty Zn in pyrite.
		83-85' - some Zn patches in the pyrite.
		85-95' - no visible Pb or Zn in the pyrite.
95.0	105.0	Brecciated albite with some argillite and chlorite; local pyrite crystals.
		End of hole at 105 feet.
		Shorts = core in good shape except 20-25 ft; estimate 2-2.5' short from 0-95 ft.

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Core Size: AXK

Hole No.: 6255

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Color Plot & Dips	Ore Classes & Aver.

2507

Diamond Drill Geological Log

Cominco

Objective: Provide grade and HW information

Logged By: E. Oslund Date: February 20, 1986

Sampled: 0-7, 7-13, 13-19, 19-25, 25-31, 31-37, 37-43, 43-49, 49-56, 56-62, 62-68, 68-74, 74-80, 80-83, 83-84, 84-89; (89-122 discarded)

Composites: Sn & Sb 0-56', 56-80'; 80-89'

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
N-10-31	10650-10700	4250-N-Scram 1	West	+40°	122 ft

Discard: Yes Reason: Whole core sampled

(1 ft = 0.305 m)

From	To	
0.0	89.0	Part main vein sulphides:
		0-56' = Massive pyrrhotite with erratic streaks, spots and patches of Zn; some Pb generally with the patchy Zn.
		Core is chlorite spotted to about 15'; local porphyroblastic pyrite patches 40-50'. Pb and Zn values increase approaching
		the 56 foot mark. The core is in fair shape with broken sections near the start of the hole and 30-40 foot interval,
		some fractured, rusty surfaces present.
		56-80' = High grade sulphides (Pb + Zn with some pyrrhotite, estimate 40-50 units). Core shows massive to contorted
		banding sections (shallow angles to core). The core itself is in good condition.
		80-83' = Fine grained crystalline pyrite, carbonate speckled. No visible Pb or Zn.
		83-84' = Fine grained crystalline pyrite, with patchy Zn - fair grade.
		84-89' = Fine to coarse grained crystalline pyrite, carbonate speckled with 10-15% chlorite.
89.0	95.0	40% coarse, crystalline pyrite and 60% chlorite - no visible Pb or Zn.
95.0	122.0	Irregular mixture of chlorite, argillite and brecciated albite - core in good shape.
		End hole at 122 feet
		Shorts: Sulphides (0-89') estimate ± 3 ft
		Waste (89-122') estimate ± 2 ft

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Core Size: AXK

Hole No.: 6256

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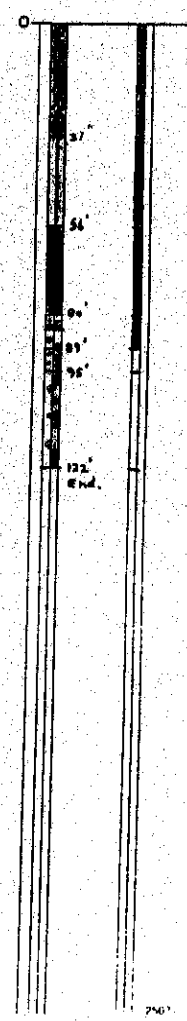
40 Scale

Color Plot & Dips | Ore Classes & Aver.



Diamond Drill Geological Log

Cominco

Objective: Provide grade and HW information

Logged By: E. Oslund Date: February 21, 1986

Sampled: 0-7, 7-14, 14-20, 20-26, 26-32, 32-39, 39-46, 46-52, 52-58, 58-64, 64-70, 70-76, 76-82, 82-88, 88-90 (discarded)
Composites: Sn & Sb 0-32' & 32'-88'

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
N-10-31	10650-10700	4250-N-Scram 1	East	+40°	90 feet

Discard: Yes Reason: Whole core sampled

(1 ft = 0.305 m)

From	To	Description
0.0	88.0	Part main vein sulphides:
		0-32' = Chiefly massive pyrrhotite with streaks, spots and patches Zn - no definite "zoning" but better grades from 26-32 feet. Some Pb generally with the patchy Zn. A hint of banding at 16' (57°) and 30' (60°). Local chlorite patches and spotting; some porphyroblastic pyrite 10-16 feet. Core is broken 0-10' & 21-32' with some rusty, tarnished surfaces.
		32-88' = Fine grained crystalline pyrite, core is carbonate speckled. No visible Pb or Zn on the surface of the core; but while breaking the core for sampling an occasional piece showed Zn spotting. 80-88 ft the core shows coarser grained pyrite with increasing chlorite patches.
88.0	90.0	Brecciated albite with some chlorite and argillite.
		End hole at 90 feet.
		Shorts: Estimate ± 2 feet.

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Core Size: AXK

Hole No.: 6257

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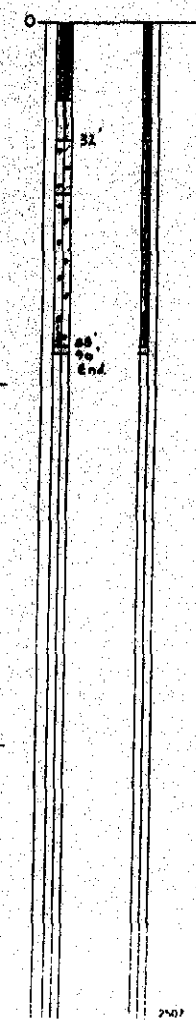
40 Scale

Color Plot & Dips | Ore Classes & Aver.



Diamond Drill Geological Log

Cominco

Objective: Provide grade and HW information			Sampled: 0-6, 6-12, 12-18, 18-24, 24-30, 30-36, 36-42, 42-49, 49-56, 56-63, 63-69, 69-76, 76-81, (81-101 discarded)		
Logged By: E. Oslund	Date: February 14, 1986		Composites:		
Block: 0-10-30 I	Sect.: 10850X	Place: 42179 XCE	App. Bear: --	App.: Dip.: +90°	Length: 101 ft

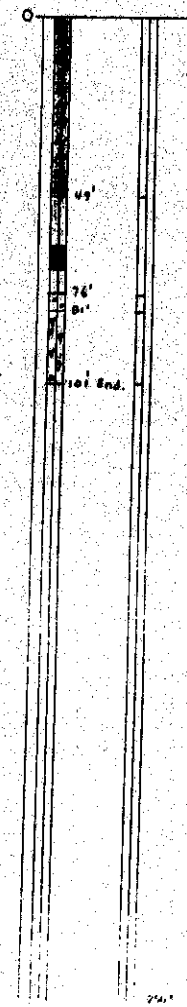
From	To	Discard: Yes	Reason: Whole core sampled

(1 ft = 0.305 m)

From	To	Description
0.0	81.0	Main vein sulphides:
		0-49 = massive pyrrhotite with some fine stringers, specks and small patches Zn; occasional streak Pb noted.
		49-76 = grades improve, more pronounced Pb, Zn patches, stringers in pyrrhotite.
		76-81 = crystalline pyrite with chloritic patches, no visible Pb or Zn.
		Sulphide core is calcite spotted and tarnished (oxidized) in places.
		Core is quite broken 58-77 ft.
81.0	101.0	Brecciated albite with some chlorite and argillite, albite ranges in colour from white-grey-brownish.
		Shorts: Core in general from poor to fair condition (local broken, tarnished [oxidized] sections - could be pillar cracks).
		± 6' short in section 65-77 ft.
		± 1' short in section 81-101'.
		End hole 101 ft.

40 Scale

Color Plot & Dips | Ore Classes & Aver.



E W Oslund

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Core Size: AXK

Hole No.: 6258

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Diamond Drill Geological Log

Cominco

Objective:	Provide grade and HW information	Sampled:	0-6, 6-12, 12-18, 18-24, 24-28, 28-33, 33-38, 38-43, 43-48, (48-64 discard)
Logged By:	E. Oslund	Date:	February 25, 1986
Composites:	Sn and Sb		

Block:	Sect.:	Place:	App. Bear:	App. Dip.:	Length:
N-10	10700	4250-N-Scram 1	--	+90°	64 feet

Discard: Yes Reason: Whole core sampled

(1 ft = 0.305m)

From	To	Description
0.0	48.0	Part main vein sulphides:
		0-28 = Massive pyrrhotite with erratic patches, stringers and spots of Zn - some Pb, generally with the patchy Zn.
		Some porphyroblastic pyrite from 13-15- feet. Pb and Zn values improve approaching the 28 foot mark. Core has
		spotty chlorite and calcite throughout. Some broken, rusty surfaces but otherwise the core is in fair condition
		except near the collar.
		28-43' = High grade Pb and Zn with some pyrrhotite to 34 feet, then a change to fine grained crystalline pyrite
		with the high Pb and Zn to 43 feet. Core is badly broken from 31.5-34 feet - probably from drilling.
		43-48' = Fine grained crystalline pyrite with 15-20% chlorite. No visible Pb or Zn on the surface of the core but
		when the core was broken for sampling a few streaks of Pb and some spotty Zn was seen.
48.0	64.0	Hangingwall rocks: 48-54' = Chloritic argillite with some crystalline pyrite.
		54-60' = Brecciated albite with some chlorite and a few pyrite bands? - dips 63°.
		60-64' = Massive looking chloritic argillite with some buckshop pyrite.
		Shorts: Estimate 1-2 feet.
		End hole at 64 feet.

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Core Size: AXK

Hole No.: 6259

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40 Scale

Color Plot & Dips | Ore Classes & Aver.

Diamond Drill Geological Log

Cominco

Objective: Provide grade and HW information			Sampled: 0-114'		
Logged By: E. Oslund	Date: February 27, 1986		Composites:		
Block: N-10 Area	Sect.: 10700	Place: 4250-N-Scram 1	App. Bear: N85°E	App.: Dip.: +20°	Length: 131 feet

From	To	Discard: Yes	Reason: Whole core sampled (1 ft = 0.305 m)
0.0	114.0	Part main vein sulphides:	
		0-37' = Massive pyrrhotite with streaks, stringers, patches Zn scattered throughout core. 0-6' - mixture sulphides, quartz,	
		calcine (probably drilling parallel to a vein), fair Pb, Zn near start and finish of this section; both pyrite and pyrrhotite	
		in the quartz. The Pb and Zn values increase toward the 37 foot mark.	
		37-54' = Fine to coarse grained crystalline pyrite, core is carbonate rich and chlorite spotted. 37-49' has occasional patch	
		Pb, Zn; 49-54' increasing Pb and Zn values - good grade.	
		54-78' = Good to high grade sulphides - Pb and Zn in pyrrhotite. No indications of banding, the core has local small patches	
		calcite and chlorite.	
		78-99' = Fair to good Pb and Zn values in fine grained, crystalline pyrite. Core is carbonate rich in places with some	
		chlorite spotting.	
		99-114' = Fine grained crystalline pyrite - no visible Pb or Zn; 25-30% chlorite from 105-114 ft.	
114.0	131.0	Brecciated albite with argillite and chlorite. Some pyrite in individual crystals and clusters.	
		End 131 feet.	
		Shorts: All in all the core is in good condition, some broken sections 0-27 feet.	
		Estimate 1-2' short in sulphides and ± 1' in the HW rocks.	

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Core Size: AXK

Hole No.: 6260

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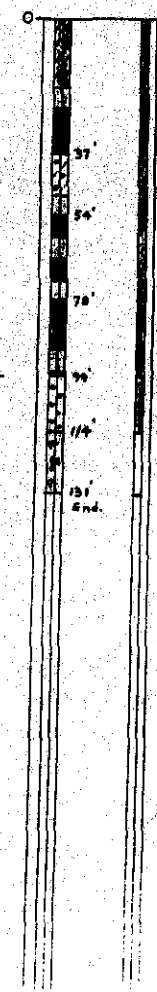
40 Scale

Color Plot & Dips	Ore Classes & Aver.



Diamond Drill Geological Log

Cominco

Objective:	Provide grade & HW information	Sampled:	0.0-62.0 (62-89 discarded)
Logged By:	E. Oslund	Date: March 7, 1986	Composites: Tin & Antimony

Block:	Sect.:	Place:	App. Bear:	App.: Dip.:	Length:
N-10-30	10750	4250-N-Scram	--	+90°	89 ft

Discard: Yes Reason: Whole Core Sampled

(1 ft = 0.305 m)

From	To	
0.0	62.0	Part main vein sulphides:
		0-38' = Massive pyrrhotite with scattered streaks, spots and patches of Zn, minor Pb generally with the patchy Zn. Calcite fracturing fairly common; chlorite in streaks and on jointing surfaces. Core is broken 0-20 ft with some rusty, oxidized surfaces.
		38-52' = Increasing Pb and Zn values in massive pyrrhotite; high-grade, fined grained galena with minor pyrrhotite 45.5 - 50 ft.
		52-62' = Fine to medium to coarse grained crystalline pyrite (coarse grained at end). Core is carbonate rich. Good Zn values in pyrite 53.5 - 56.5'.
62.0	64.0	Coarse pyrite, chlorite patches, albite inclusions.
64.0	89.0	Brecciated albite, argillite and chlorite. A few scattered pyrite crystals. Albite is grey-white-tan coloured. End hole at 89 ft
		Shorts: Estimate 1-2' short 0-62' (sulphides) and ± 1' in the HW rocks 64-89'

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Core Size: AXK

Hole No.: 6261

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40 Scale

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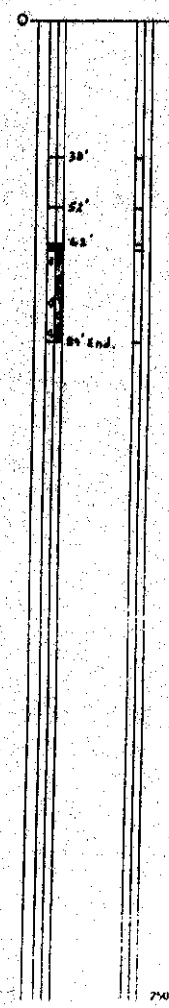

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