

MAP NO.: ASSESSMENT REPORT X  
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CONFIDENTIAL X  
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DOCUMENT NO: 093065  
MINING DISTRICT: WATSON LAKE  
TYPE OF WORK: DIAMOND DRILLING

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REPORT FILED UNDER: COMINCO LTD

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DATE PERFORMED: JUNE 7 - JULY 17, 1992

DATE FILED: JANUARY 11, 1992

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LOCATION: LAT.: 61°40'N

AREA: FRANCES LAKE

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LONG.: 129°50'W

VALUE \$:

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CLAIM NAME & NO.: FIN, LAY, BROWN BEAR, QUEST  
CHECK RECORDS FOR CURRENT STATUS

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WORK DONE BY: PAUL A. MACROBBIE

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WORK DONE FOR: COMINCO LTD.

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DATE TO GOOD STANDING:

REMARKS: 1,390.3 M IN 7 HOLES  
FIVE SECTIONS AT 1:500



COMINCO LTD.

EXPLORATION

WESTERN DISTRICT

NTS 105 H/12, G/9

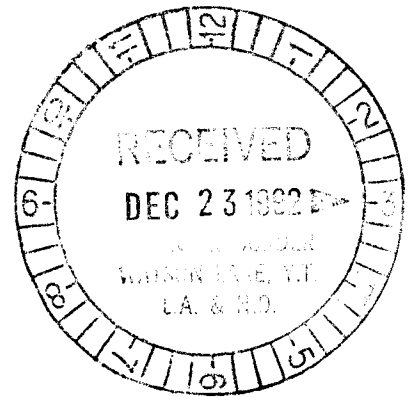


1992 ASSESSMENT REPORT

FIN PROPERTY

DIAMOND DRILLING

WATSON LAKE M.D., YUKON



093065

FRANCES LAKE AREA

LATITUDE: 61°40'N

LONGITUDE: 129°50'W

WORK PERIOD

JUNE 7 - JULY 17, 1992

DECEMBER, 1992

PAUL A. MACROBBIE

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1992 DRILL LOGS WITH RUNS AND RECOVERIES AND CORE  
GEOCHEMISTRY

Cominco Ltd.

Exploration  
NTS: 105H/12, G/9Western Canada  
December, 1992**1992 ASSESSMENT REPORT****FIN PROPERTY, YUKON TERRITORY****1. SUMMARY**

Systematic exploration work by Cominco has proven that the Fin property has an excellent potential for hosting a large, high grade Pb-Zn-Ag deposit. This target is in a low lying, overburden covered area of the southeastern Yukon, 225 km northwest of Watson Lake and 15 km north of the Robert Campbell Highway.

Geological-geochemical-geophysical work plus diamond drilling (2,300 m in 13 holes) between 1978 and 1985 has focused on the Fin Creek showing area where numerous lenses of massive sphalerite-galena-pyrite with grades up to 23% Zn, 11% Pb and 4.4 oz/T Ag over 0.4 m occur over a 1.1 km strike length. These lenses of sp-gn-py or sp-py have formed within a thick sequence of Devonian-Mississippian black, carbonaceous, siliceous and locally calcareous mudstone and silty mudstone deposited in a restricted subbasin. The subbasin mudstones have distinctive geochemical and geophysical signatures; they are distinctly anomalous in Pb-Zn-Ag content and their high carbon content makes them good EM conductors.

The 1991 ground geophysical survey and 1992 diamond drilling (7 holes totalling 1390.3 m) have successfully traced several conductive, carbonaceous mudstone intervals over 8 km from the original showings. Of the 4 initial UTEM targets, only 3 were tested; each with a single drill hole (F92-15, F92-19 and F92-20). Significantly, each conductor tested was found to represent favourable stratigraphy and not a structural feature. Hole F92-20 only partially tested the conductor as the hole stopped in anomalous mudstones.

Although no significant Zn-Pb-Ag mineralization was found, each sub-basinal interval is Pb-Zn-Cd±Ba-Ag-V anomalous. Laminated sphalerite was identified in 2 holes. The intervals of interest are:

F92-15 9.7 metres of 189 ppm Pb, 1294 ppm Zn, 1.2 ppm Ag, 5250 ppm Ba, 11 ppm Cd and 177 ppm V.

40.2 metres of 63 ppm Pb, 1143 ppm Zn, 0.9 ppm Ag, 3985 ppm Ba, 19 ppm Cd and 268 ppm V.

F92-19 24.8 metres of 144 ppm Pb, 1393 ppm Zn, 0.5 ppm Ag, 2426 ppm Ba, 15 ppm Cd and 28 ppm V.

F92-20 16.1 metres of 176 ppm Pb, 504 ppm Zn, 0.4 ppm Ag, 1286 ppm Ba, 5 ppm Cd and 22 ppm V.

23.0 metres of 236 ppm Pb and 2329 ppm Zn, 0.7 ppm Ag, 4117 ppm Ba, 26

ppm Cd and 21 ppm V including 1.2 metres of 0.1% Pb, 0.9% Zn and 1.9 ppm Ag.

The 1992 drill program has shown the presence of an areally extensive mineralizing process which has affected thick sequences of favourable subbasin stratigraphy. Due to the preliminary nature of the 1992 drilling, it is difficult to comment on the potential for high grade mineralization.

Three phases of future exploration work are recommended. The initial phase involves an AEM survey to cover the favourable stratigraphy to the west and northwest of the area flown in 1985. A second phase of linecutting and follow-up ground geophysical surveys (UTEM, Mag, and selected HLEM and Gravity) extending westward from the 1991 survey grid using the AEM survey as a guide. The third phase would involve continued methodical drill testing of the Fin subbasin including targets identified by 1992 and 1991 work and subsequent targets to be identified by the proposed geophysical surveys.

## 2. LOCATION AND ACCESS

The Fin property is located 10 km NNW of Frances Lake at LAT. 61°40' N and LONG. 129°50' W on NTS map sheet 105H/12 and G/9, 140 km ESE of Ross River and 215 km NNW of Watson Lake, Yukon (Figure 1). Access is by helicopter from Ross River with mob/demob possible from the Robert Campbell Highway 15 km to the SW.

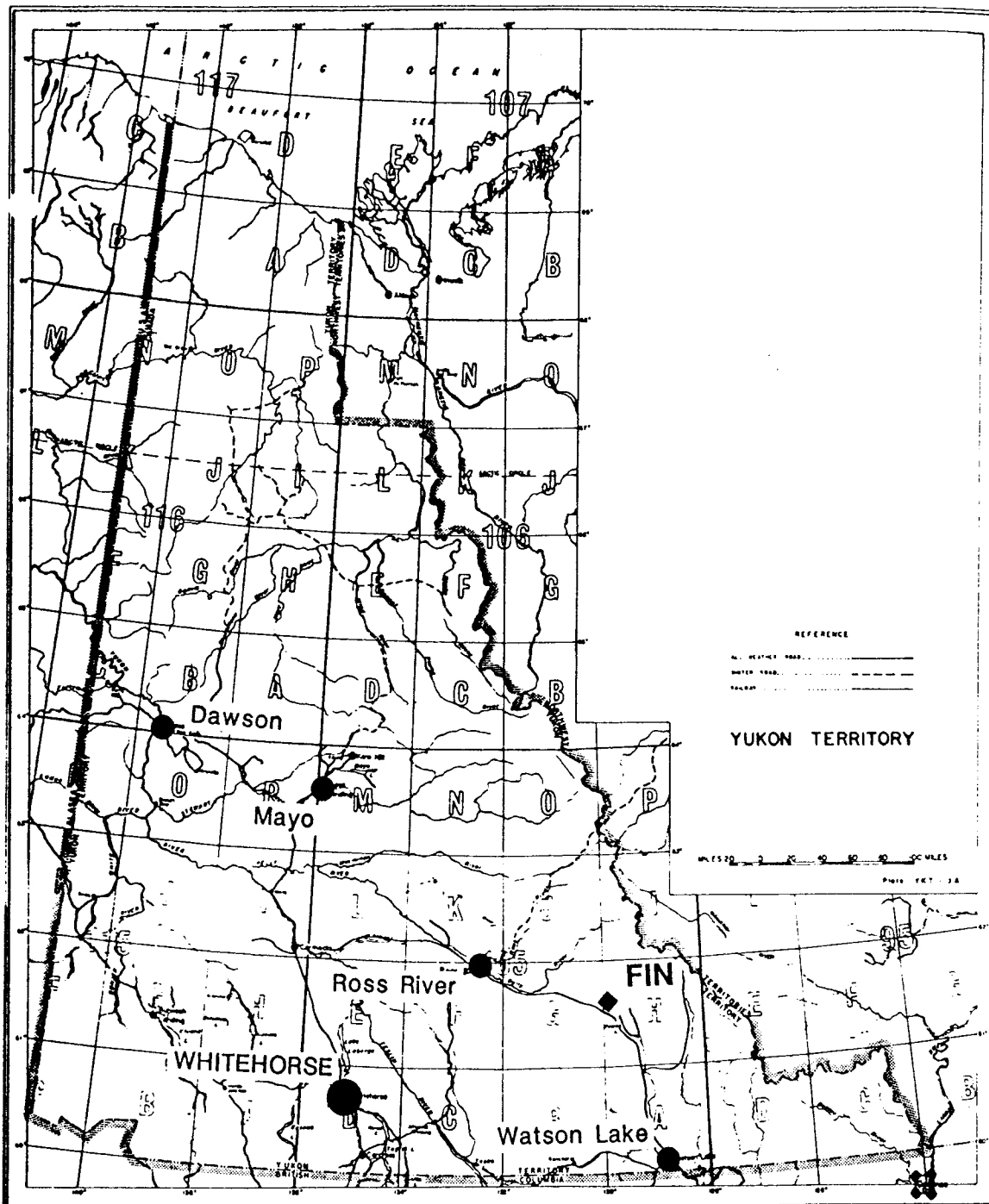
## 3. TOPOGRAPHY

The Fin property covers a low lying area drained by Fin Creek and the Yusezyu River. The elevation ranges from 800 to 1400 metres in flat to low sloping ground. The property is well vegetated by small scrub conifers and deciduous trees. The area has been glaciated with the limited outcrop exposure being confined largely to creek beds.

## 4. PROPERTY AND OWNERSHIP

The Fin property consists of 4 claim groups (535 units) owned 100% by Cominco Ltd. (Plate 92-1).

<u>FIN Group</u>	<u>due dates</u>
Fin 1-56, Fin 67, Fin 69-125, Fin 127-133, Fin 139-141, Fin 213-282	Dec. 1, 1998
Fin 233-234	Dec. 1, 1997
Fin 363-364, Fin 377-378, Fin 391-392, Fin 405-406	Nov. 11, 1998
Fin 419-420, Fin 434	Nov. 11, 1997



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

# LOCATION MAP

Scale: \_\_\_\_\_ Date: \_\_\_\_\_ Plate: **FIGURE 1**

Fin 456-567	Dec. 1, 2000
<u>LAY Group</u>	<u>due dates</u>
Lay 1-70, Lay 75-86, Lay 97-145	Mar. 23, 1998
Lay 146-177, Son 1-3	Jul. 13, 1998
<u>BROWN BEAR Group</u>	<u>due dates</u>
Bear 1-4	Feb. 7, 1998
<u>QUEST Group</u>	<u>due dates</u>
Quest 1-48	Nov. 4, 1996

## 5. PREVIOUS WORK

The Fin property was originally staked in 1978 as a result of the Selywn Clastic Recce in the Frances Lake area. Geological mapping, soil/silt geochemistry and trenching in 1978 and 1979 identified several showings of high grade stratiform Pb-Zn mineralization hosted within black carbonaceous and pyritic mudstone and siltstone. In 1980 additional soil geochemistry and a program of diamond drilling (6 NQ holes totalling 697 m) was completed. Regional soil sampling and geological mapping of the area to the east of the Fin showings was undertaken in 1981. In 1982 a UTEM survey and accompanying soil geochemistry over the main showing area was completed. A second program of diamond drilling (7 NQ holes totalling 1657 m) in the Fin showing area was completed in 1984. In 1985 a 1000 km of regional airborne EM-MAG (AEM) survey over the Fin-Frances Lake area was flown. Between 1985 and 1990 no work was performed on the property.

In 1990, 112 claims were staked to cover favourable ground outlined by the 1985 AEM survey and geological mapping. A total of 100 line km of grid linecutting was also completed in 1990/91. The 1991 program involved ground UTEM and Mag over the entire grid as well as HLEM and gravity over selected grid lines. Grid soil geochemistry (1098 samples), geological mapping and re-examination of the drill core was also completed.

## 6. 1992 WORK

### DIAMOND DRILLING

The 1992 Fin diamond drilling program was conducted with the objective of drill testing several 1991 UTEM targets in hope of defining areas of restricted, subbasin sedimentation with potential for significant thick and high grade Zn-Pb-Ag SEDEX mineralization. However, the small number and wide spacing of drill holes realistically provided only an initial test of the conductors.

Seven holes (F92-14 to F92-20 inclusive), totalling 1390.3 metres were drilled in 1992 (Figure 2). All the drilling was undertaken by Falcon Drilling Ltd. of Prince George, B.C.. The holes were drilled with a helicopter portable, hydraulic, DMW 65 drill (fly 38 equivalent) using NQ2 core tube and barrel. All holes were drilled at -90°, except for the last 3 holes which



were drilled at -70°. Acid tests were taken at the bottom of each hole with the exception of F92-14. A total of 223 core samples were collected and analyzed for Cu, Pb, Zn, Ag, Cd, Mn, V and Fe by I.C.P. and Ba by XRF at Cominco Exploration Research Laboratory in Vancouver (see Appendix 3). Two samples of core were collected from F92-15 for conodont and fossil identification work. All drill core is stored at the 1980/84 camp site, above the Fin Creek showings.

### **CLAIM STAKING**

In the spring of 1992, a total of 131 claim units were staked (Lay claims) in order to cover the favourable ground between the Fin and Quest properties. During the drill program, a contractor was used to tag the Fin and Lay claim posts. In addition, a further 35 units (Lay and Son claims) were staked in order to cover gaps between claim groups.

## **7. REGIONAL GEOLOGY**

The Frances Lake area is underlain predominantly by Cambrian to Devonian-Mississippian clastic and minor mafic volcanic rocks deposited near the western transition from the Selwyn Basin and Kechika Trough to the Pelly-Cassiar Platform (Tempelman-Kluit, 1977b). This succession has been intruded by Cretaceous quartz monzonite and diorite.

In the Fin area, the succession consists primarily of fine to coarse-grained sandstone, siltstone, mudstone and chert of the Ordovician to Lower Devonian Road River Group and Devonian-Mississippian Earn Group. These rocks were deposited within paleodepressions (2<sup>nd</sup> order basins) as quiescent basinal muds interrupted by proximal to distal turbidites, along the northeast flank of the Pelly-Cassiar Platform. Several paleotopographic highs controlling the deposition of shallow water, Silurian to Devonian sandy dolomite and dolomite, developed along a NW trend between Frances Lake and Pelly Lakes. The lateral basin-shelf facies transition is reflected by a change from black, argillaceous and carbonaceous mudstone dominant sections of the Road River and Earn Groups to sections dominated by shallow water carbonate, dolomitic siltstone, quartzite and siltstone.

## **8. PROPERTY GEOLOGY AND MINERALIZATION**

Outcrop exposure is very poor, confined to creek cuts and knobby hilltops. Mudstone dominated units are generally recessive and, where exposed; their relative stratigraphic position is unknown. However, the subbasin stratigraphy is well defined in the Fin Creek showings area because of the 1980/84 drilling (Table 1).

In summary, the Zn-Pb-Ag-Fe mineralization occurs as thin and discontinuous laminations and lenses (1 mm to 65 cm in thickness) of very fine-grained, massive sp-gn-py or sp-py formed within the black, carbonaceous mudstone/silty mudstone facies of a restricted sub-basin. Chip samples of surface exposures in Fin Creek returned grades up to 30.3% Zn, 12.5% Pb, 0.8% Cd and 3.0 oz/T Ag over 0.3 m. The subbasin mudstone and silty mudstone have distinctive geochemical and geophysical signatures; they are distinctly anomalous in Pb-Zn-Ag content and their high carbon content makes them good EM conductors. Influxes of coarse clastic and volcanoclastic material shed into the sub-basin as turbidites, periodically interrupted hydrothermal activity such that at least 3 intervals of Zn-Pb-Ag mineralized mudstone/silty

TABLE 1

FIN SHOWING AREA  
STRATIGRAPHIC COLUMN

uDMsv	UPPER DEVONIAN - MISSISSIPPIAN
9	dark grey to black, weakly pyritic siltstone with 5-20% thin black carbonaceous mudstone interbeds and intervals of dark grey to black silty mudstone. Unit appears to become tuffaceous near base.
8	green, fine-grained sericitic felsic quartz crystal ash tuff with minor interbedded light green to grey tuffaceous chert and siliceous siltstone. Unit is locally pyritic and contains 1-7 cm, light to medium grey carbonate (barite?) nodules.
7	predominantly grey to light green, locally tuffaceous, siltstone with intervals of siliceous and calcareous siltstone, tuffaceous chert and minor black mudstone. Unit containing 1-5% pyrite and only rare thin ash tuff interbeds.
	UPPER MUDSTONE
6	dark grey to black carbonaceous, siliceous and locally calcareous mudstone and silty mudstone with up to 30% thin interbedded, dark grey to black siltstone. Unit contains 1-10% finely disseminated and laminated pyrite and thin intervals of geochemically anomalous Zn.
5	medium grey, tuffaceous quartz-feldspar crystal-rich, fine to coarse sandstone and gritstone. Unit is generally pyritic (2-5%) and thin to massive bedded with locally preserved scour marks.
	MIDDLE MUDSTONE
4	black siliceous carbonaceous mudstone and silty mudstone containing 5-40% dark grey thin interbedded siltstone. Siltstone dominant intervals (25-45% mudstone) occur near the units base. Mudstones often contain radiolarians. Mineralization consists of 1-5% disseminations and laminated pyrite and high grade, thin bedded to laminated Pb-Zn sulphides (ie. 12.6% Zn, 0.19% Pb, over 1.2m) within geochemically Pb-Zn anomalous black mudstone intervals (3557 ppm Zn, 844 ppm Pb over 27.5 m DDH84-12).
3	light to medium grey package of thin to massive bedded, variably pyritic fine to coarse sandstone, gritstone and relatively minor chert pebble conglomerate and siltstone. Conglomerate subunits are typically matrix supported with abundant chert clasts as well as a significant proportion of black mudstone/siltstone clasts. Coarser subunits often are normally graded suggests deposition as turbidites.
	LOWER MUDSTONE
2	black carbonaceous, siliceous and locally calcareous mudstone and silty mudstone with 10-40% thin interbedded to interlaminated siltstone, often displaying soft sediment deformation textures. Mineralization occurs as 1-20% disseminations and laminated pyrite with locally developed laminated to thin bedded, high grade Pb-Zn sulphides (ie. 11.4% Zn, 2.9% Pb over 0.5m) within a thick, geochemical Pb-Zn anomalous mudstone package (3548 ppm Zn, 863 ppm Pb over 57.0m DDH 80-1).
1	thick sequence of medium-dark grey to black interlaminated to medium bedded mudstone (25-60%), siltstone and sandstone (5-30%). Sandstone interbeds are weakly to moderately calcareous and contain the same constituents as the overlying sandstone/gritstone turbidite unit. The unit often appears colour banded.
Dc	LOWER-MIDDLE DEVONIAN
	white to yellow weathering, light grey fossiliferous dolomite containing 2 holed crinoids.
Ossl	ORDOVICIAN-SILURIAN
2	black to silver weathering, interbedded black chert and locally calcareous mudstone to silty mudstone containing occasional limy concretions; locally graptolitic.
1	tan weathering, thin bedding to laminated grey siltstone

mudstone are present. It is significant that the high grade Pb-Zn mineralization occurs in thick sections of weakly mineralized mudstone/silty mudstone and that these mineralized intervals are separated only by influxes of coarse clastic and volcanoclastic material. The mineralizing process appears to have been long lived, affecting 3 thick packages of mudstones.

Unfortunately, the stratigraphy in the 1992 drill area is poorly understood. Three drill holes (F92-15, 19 and 20) intersected restricted, subbasinal facies mudstones/silty mudstones; however, due to wide drill hole spacing and apparent facies changes, the geochemically anomalous subbasinal strata in these holes can not be correlated with each other or to strata in the Fin showing area.

## 9. 1992 DIAMOND DRILLING

1992 drill targets were defined almost solely by geophysics because of poor outcrop exposure and lack of a geochemical response due to glacial overburden. The 1991 UTEM conductors are believed to represent the near surface traces of restricted, subbasinal carbonaceous mudstone/silty mudstone intervals which host significant Zn-Pb-Ag SEDEX mineralization in the Fin Creek showings area. Several conductors were selected as initial prime targets for drilling based on the presence of more localized EM responses, possibly representing increased conductivity within the conductive target intervals (Holroyd, 1991 Report on Geophysical Surveys). The conductors strength and lateral continuity were seen as favourable indicator of size (ie. large tonnage potential).

Seven diamond drill holes (totalling 1390.3 m) were drilled in 1992. Drill hole locations are shown on Figure 2. Drill hole logs with runs and recoveries and core geochemistry are in Appendix 3. Drill hole cross sections are shown on Plates 92-1 to 92-5. The following is a discussion of each hole.

Both F92-14 and F92-15 were drilled in an area at the west end of the grid in order to test 3 UTEM conductors which gave very similar UTEM responses as the 3 mudstone/silty mudstone intervals in the Fin Creek showings area. Also the presence of a green volcanic unit, similar to the hangingwall volcanoclastic unit in the Fin Creek showings area, suggested that the conductors are located at favourable stratigraphic positions. These conductors were therefore rated as excellent targets.

### F92-14

This hole was collared at grid coordinates 101 + 87W and 26 + 46N at a dip of -90°. The hole was drilled to a depth of 63.7 metres.

The objective of this hole was to test the down dip extension of the uppermost cross-over type UTEM anomaly. Assuming a 30° southern dip of the strata, the target was expected at 150 metres; unfortunately, the hole was stopped well in advance of this depth.

The geology is shown in drill section on Plate 92-1. The hole collared in thin to medium bedded siltstone and sandstone with minor mudstone interbeds. No volcanics were encountered. Laminated to thin bedded siltstone/silty mudstone and sandstone with medium to thick, fine to coarse-grained sandstone interbeds predominate in the hole. Two thin intervals (0.8 metres and 2.4 metres) of black, carbonaceous mudstone with 5-25% very fine-

grained laminated pyrite occur near the bottom of the hole.

Core geochemistry is shown on the drill section. With the exception of increasing anomalous Ag (0.7-0.9 ppm over 2.4 metres) and Cu values down hole, the mudstone intervals are not anomalous. Matrix Fe-carbonate alteration of medium to coarse-grained sandstone and siltstone interbeds increased in intensity near the bottom of the hole.

The average core recovery was 82%, reflecting the presence of several faults. The hole was stopped within a fault zone due to a loss of circulation and squeezing of the rods. The targeted UTEM anomaly remains untested and is considered a high priority target.

### **F92-15**

This hole was collared at grid coordinates 105 + 35W and 31 + 47N at a dip of -90°. The hole was drilled to a depth of 360.6 metres.

The objective of this hole was to test the down dip extension of the 2 lower contact-type UTEM anomalies. Assuming a 30° southern dip of the strata, the targets were expected at 70 and 220 metres, respectively. The hole was technically successful. The UTEM conductors appear to be mapping stratigraphic, not structural, features.

The hole drilled a very thick accumulation of subbasinal facies carbonaceous mudstone/silty mudstone separated by units dominated by thin bedded, distal siltstone and sandstone turbidites, shed into the sub-basin. The geology is shown in drill section on Plate 92-2. Core geochemistry is shown on the drill section. The intersection of very carbonaceous mudstones at the expected depths and bedding core axis angles support a ~30° southern dip of the stratigraphy in this area.

The stratigraphically upper conductor reflects an upper, 75 metre thick unit of thick bedded to laminated black, carbonaceous (locally graphitic), variably silicified, calcareous and pyritic mudstone. Pyrite (trace-25%) occurs as very fine-grained disseminations, laminations and blebs throughout. Geochemically this interval is strongly Ag and V anomalous and weakly Zn and Cd anomalous. A 9.1 metre section (88.7-97.8 m) contained 1.5 ppm Ag and 124 ppm V including a 3.4 metre interval (88.7-92.1 m) of 949 ppm Zn, 13 ppm Cd and 949 ppm Ba (Plate 92-2). Ba is perhaps anomalously low.

The stratigraphically lower conductor is thought to represent a lower, 140 metre thick package of laminated to medium bedded black, carbonaceous and pyritic mudstone/silty mudstone. Fossiliferous (tentaculites?) silty mudstone and calcareous mudstone interbeds increase in abundance towards the bottom of the interval. The basal 15-20 metres contains numerous thin to thick interbedded, dark grey, massive fine-grained, fossiliferous (tentaculites? and occasional crinoid ossicle fragments) limestone/limy mudstone interbeds. A thin bedded fossiliferous siltstone/sandstone interval near the base of the mudstone section contains 40-60% crinoid ossicle fragments, including 1 and 2 hole (Lower Devonian) ossicles. A sample of a limestone interbed (314.5-315.1 m) was collected for conodont work. A second sample of fossiliferous mudstone (286.0-296.0 m) was collected for fossil identification.

The mudstone/silty mudstones contain trace-20% very fine-grained disseminated, laminar and blebby pyrite throughout. Trace reddish brown sphalerite is found within and adjacent to

quartz-calcite veins throughout the mudstone section. Massive, medium-grained galena was found in a 30 cm quartz-calcite-barite vein at 264.2 metres. Geochemically, this interval contains 2 significant anomalous zones. An upper, 9.7 metre thick zone (226.3-236.0 m) is strongly Pb (189 ppm), Ag (1.2 ppm), Ba (5250 ppm) and V (177 ppm) anomalous and moderately Zn (1294 ppm) and weakly Cd (11 ppm) anomalous. A lower, 40.2 metre thick zone (261.8-302.0 m) is strongly V (268 ppm) and Ba (3985 ppm) anomalous, moderately Zn (1143 ppm), Cd (19 ppm) and Ag (0.9 ppm) anomalous and weakly Pb (63 ppm) anomalous. Cu content is often strongly anomalous (> 50 ppm) throughout the analyzed sections, correlating well with Pb and Ag content.

The average core recovery was 83.7%. The coarse-grained lithologies (sandstones, conglomerates) cored well; however, once carbonaceous (locally graphitic) mudstones were encountered the recoveries dropped significantly, reflecting the presence of strongly foliated to gouged/faulted zones within a less competent, fissile sequence of mudstones. Although polymers were used during drilling, some sort of mud program may prove more successful in the future. The hole was coring carbonaceous siltstones and sandstones when it was suddenly stopped due to pinched and stuck rods. The entire rod string was lost.

#### **F92-16**

This hole was collared at grid coordinates 86 + 00W and 37 + 43N at a dip of -90°. The hole was drilled to a depth of 248.7 metres.

The objective of this hole was to test the down dip extension of a cross-over type UTEM conductor. Assuming a 30-40° southern dip of the strata, the target was expected at about 125-150 metres.

The geology is shown in drill section on Plate 92-3. The hole was not successful in reaching the target. The entire hole consisted of thick interbedded sandstone and chert pebble conglomerate with minor thin siltstone and silty mudstone interbeds. No significant carbonaceous mudstone/silty mudstones were encountered. Several zones of matrix Fe-carbonate alteration are found to contain rare, fine sphalerite grains within and on chert pebble clasts. Bedding to core axis angles were inconclusive as to the dip direction of the strata. With depth the bedding appeared to be steepening, such that, even with southern dips, the target would not be intersected at a reasonable depth. The hole was therefore stopped. Due to uncertainty as to the dip of the strata in the area, it was decided to move to the next target anomaly and not try another hole immediately.

The average core recovery was 88.2% which reflects the predominance of competent coarse-grained lithologies.

#### **F92-17**

This hole was collared at grid coordinates 82 + 17W and 45 + 20N at a dip of -90°. The hole was drilled to a depth of 246.1 metres.

The objective of this hole was to test the down dip extension of 2 UTEM conductor with both cross-over and contact type UTEM responses. Assuming a southern dip of 30-40°, the targets were expected at about 125 and 200 metres respectively.

The geology is shown in drill section on Plate 92-4. The hole was unsuccessful at testing either UTEM conductor. The upper 213 metres of the hole intersected a thick package of thin to thick bedded sandstone and chert pebble conglomerate with minor interbedded siltstone and silty mudstone, very similar to the stratigraphy of hole F92-16. No significant carbonaceous mudstones were encountered. Again minor matrix Fe-carbonate alteration of sandstone and conglomerate, as in F92-16, was found to host rare fine grains of disseminated sphalerite. Core geochemistry is shown on the drill section and with histograms on Plate 92-6A. Anomalous Ag and elevated Zn geochemistry (Plate 92-4) reflect this weak mineralization. At 213 metres the hole entered a wide fault/gouge zone. The hole continued in the fault until 246 metres where it was forced to stop due to squeezing of the rods and loss of circulation.

The bedding to core axis angles were again inconclusive as to the dip direction of the stratigraphy. The possibility of north dipping strata had to now be tested.

The average recovery was very similar to F92-16 at 89.4%.

### **F92-18**

This hole was collared at grid coordinates 82 + 16W and 51 + 26N (~ 600 metres north of F92-17) and drilled at an azimuth of 180° and a dip of -70°. The hole was drilled to a depth of 108.8 metres.

The objective of this hole was to test whether the conductors and strata were north or south dipping, in the absence of other information. The hole was drilled at a dip of -70° to be certain as to the dip direction of the strata (Plate 92-4).

The geology is shown in drill section on Plate 92-4. The hole encountered a package of thin to medium bedded siltstone, silty mudstone, mudstone and minor sandstone. The colour banded and less carbonaceous nature of the section is very similar to the "footwall" unit (Unit 1, Table 1) in the Fin Creek showing area. The presence of this strata as well as the low bedding to core axis angles indicate the strata to be south dipping. Only weakly developed Fe-carbonate alteration with associated increased disseminated pyrite content (2-10%) was found.

The average core recovery was 68.7% due primarily to the fissile nature of the lithologies and the low bedding to core axis angle.

### **F92-19**

This hole was collared at grid coordinates 82 + 00W and 41 + 48N at an azimuth of 180° and a dip of -70°. The hole was drilled to a depth of 180.4 metres.

The objective of this hole was to test the down dip extension of the cross-over type UTEM conductor which hole F92-16 was unable to test. Assuming the strata to be north dipping, the hole was located north of the conductor and drilled to the south at -70° (Plate 92-5).

The geology is shown in drill section on Plate 92-3. The hole was successful at testing the conductor. The hole collared in thick package of thin to thick interbedded sandstone, conglomerate and minor siltstone and silty mudstone, similar to F92-16 and F92-17. At 112

metres the hole went through a fault and into a 40 metre thick package of subbasin facies rocks comprising laminated to thin bedded, black, very carbonaceous silty mudstone and mudstone with minor siltstone and sandy mudstone interbeds. Both the position of the conductive, subbasin interval within the hole and the bedding to core axis angles indicate a 45-50° north dipping sequence. The silty mudstones/mudstones are non-calcareous, locally siliceous and contain trace-15% very fine-grained disseminated and laminated pyrite. Trace sphalerite occurs as creamy beige, very fine-grained laminations.

Core geochemistry is shown on the drill section. This interval includes a 24.8 metre section (114.5-139.3 m) strongly Pb (144 ppm) anomalous, moderately Zn (1393 ppm) and Cd (15 ppm) anomalous and weakly Ag (0.5 ppm) and Ba (2426 ppm) anomalous (Plate 94-3). The lower contact appears conformable into a package of medium to thick bedded, dark carbonaceous sandstone and conglomerate.

The average core recovery was 89.7%. As with F92-15, the coarse-grained lithologies (sandstones, conglomerates) cored very well; however, core recoveries dropped significantly when the foliated and fissile, graphitic silty mudstones and mudstones were intersected. Several wide fault zones with very poor recovery are present.

#### **F92-20**

This hole was collared at grid coordinates 70+00W and 46+70N at an azimuth of 0° and a dip of -70°. The hole was drilled to a depth of 182.0 metres.

The objective of this hole was to test the down dip extension of the contact type UTEM conductor targeted for F92-17 and F92-18. The hole was drilled on L70+00W to avoid the structures evident on the F92-17 area. The UTEM response on L70+00W was interpreted as being better than that on L74+00W (RWH, pers. comm.).

The geology is shown in drill section on Plate 92-5. The hole was successful at testing the conductor. The hole intersected a thick sequence of dark grey to black, thick to thin bedded silty mudstone, siltstone and minor mudstone and sandstone. The entire hole contains trace-5% very fine-grained disseminated and laminated pyrite. An increase in carbon content occurs about 120 metres and continues to the end of the hole. Of note is a 40 metre thick interval which contains numerous thin, distal light green volcanoclastic sandstone turbidites. This volcanoclastic lithology has not been encountered in previous drilling. Also, interbedded siltstones and silty mudstones within this section are typically calcareous and contain trace-30% crinoid ossicle fragments.

Within the carbonaceous silty mudstone/mudstone section, trace sphalerite and rare galena are found within quartz-calcite veinlets. Core geochemistry is shown on the drill section. An upper 16.1 metre thick section (135.0-151.1 m) is strongly Pb (176 ppm) anomalous with weak Zn and low Ag, Ba, Cd, V and Cu contents. Laminations of creamy beige, very fine-grained sphalerite first appear at 159 metres. A lower 23.0 metre thick section (159.0-182.0 m EOH) is very strongly Pb (236 ppm), Zn (2329 ppm), Cd (26 ppm) and Ba (4117 ppm) anomalous with weak to moderately anomalous Ag (0.7 ppm) content (Plate 92-5). This includes 1.2 metres of 1101 ppm Pb, 8656 ppm Zn and 1.9 ppm Ag within a 4.7 metre thick unit of black, very carbonaceous and pyritic (5-20%) mudstone.

Unfortunately, the hole was stopped at 182 metres due to squeezing ground and loss of

circulation. The average core recovery was 68.1% which reflects the abundant faulting and carbonaceous and fissile nature of the entire hole.

## 10. CONCLUSIONS AND RECOMMENDATIONS

Systematic exploration work by Cominco has proven that the Fin property has an excellent potential for hosting a large, high grade Zn-Pb-Ag SEDEX deposit.

The 1991 ground geophysical survey and 1992 diamond drilling have successfully traced several conductive, restricted subbasinal facies, black carbonaceous mudstone/silty mudstone intervals over 8 kms west of the original Fin Creek showings. Of the 4 initial UTEM targets, only 3 were tested; each with a single drill hole (F92-15, F92-19 and F92-20). Significantly, each conductor tested was found to represent favourable stratigraphy and not a structural feature. Hole F92-20 only partially tested the conductor as the hole stopped in anomalous mudstones.

Although no significant Zn-Pb-Ag mineralization was found, each subbasinal interval is Pb-Zn-Cd±Ba-Ag-V anomalous. Laminated sphalerite was identified in 2 holes. The intervals of interest are:

F92-15 9.7 metres of 189 ppm Pb, 1294 ppm Zn, 1.2 ppm Ag, 5250 ppm Ba, 11 ppm Cd and 177 ppm V.

40.2 metres of 63 ppm Pb, 1143 ppm Zn, 0.9 ppm Ag, 3985 ppm Ba, 19 ppm Cd and 268 ppm V.

F92-19 24.8 metres of 144 ppm Pb, 1393 ppm Zn, 0.5 ppm Ag, 2426 ppm Ba, 15 ppm Cd and 28 ppm V.

F92-20 16.1 metres of 176 ppm Pb, 504 ppm Zn, 0.4 ppm Ag, 1286 ppm Ba, 5 ppm Cd and 22 ppm V.

23.0 metres of 236 ppm Pb and 2329 ppm Zn, 0.7 ppm Ag, 4117 ppm Ba, 26 ppm Cd and 21 ppm V including 1.2 metres of 0.1% Pb, 0.9% Zn and 1.9 ppm Ag.

The 1992 drill program has shown the presence of an areally extensive mineralizing process which has affected thick sequences of favourable subbasin stratigraphy. The small number and wide spacing of the drill holes leaves open the possibility for significant thicknesses of better grade mineralization in this anomalous environment.

Three phases of future exploration work are recommended. The initial phase involves an AEM survey to cover the favourable stratigraphy to the west and northwest of the area flown in 1985. A second phase of linecutting and follow-up ground geophysical surveys (UTEM, Mag, and selected HLEM and Gravity) extending westward from the 1991 survey grid using the AEM survey as a guide. The third phase would involve continued methodical drill testing of the Fin subbasin including targets identified by 1992 and 1991 work and subsequent targets to be identified by the proposed geophysical surveys.

## 12. REFERENCES

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- MacRobbie, P.A. 1992. 1991 Year End Report, Fin Property. Cominco Ltd., Western District, Exploration Internal Report.
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- Tempelman-Kluit, D.J. 1977b. Quiet Lake (105F) and Finlayson Lake (105G) map areas, Yukon. Geological Survey of Canada, Open File 486.

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Western District

PAM/

S.

N.

26+00 N.

27+00 N.

28+00 N.

29+00 N.

30+00 N.

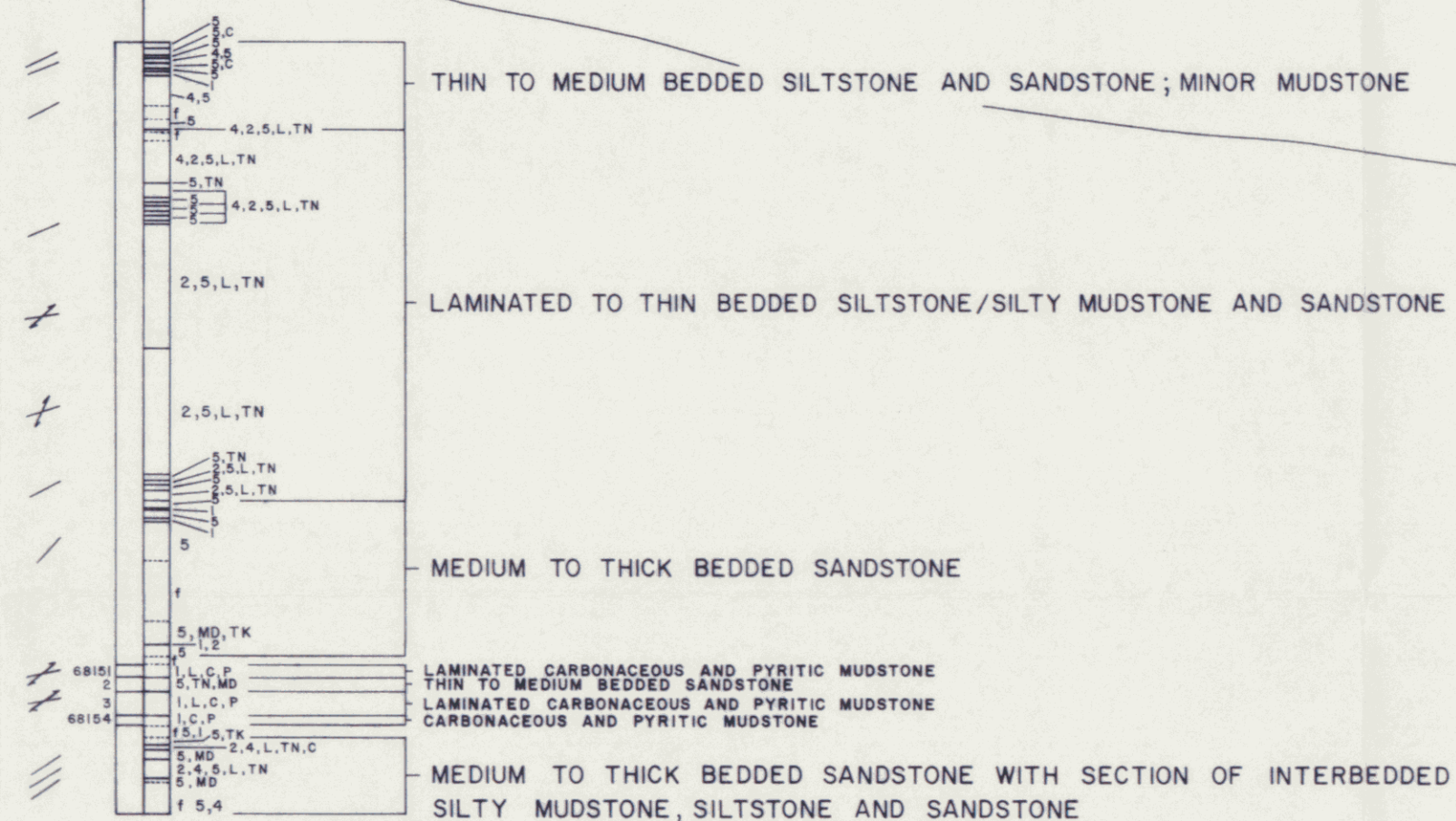
1000 m.

1000 m.

950 m.

950 m.

F92 - 14  
(-90°)



E.O.H. 63.7 m.

Hole stopped due to squeezing ground and loss of circulation

SAMPLE NO.	LAB#	FROM	TO	Cu (PPM)	Pb (PPM)	Zn (PPM)	Ag (PPM)	Cd (PPM)	Fe (%)	Mn (PPM)	V (PPM)	Ba (PPM)
68151	9209952	52.9	53.7	27	16	115	0.4	1	1.57	156	6	2359
68152	9209953	53.7	54.9	10	4	16	0.4	1	1.43	247	4	1292
68153	9209954	54.9	56.6	28	15	55	0.7	1	1.60	190	9	2404
68154	9209955	56.6	57.3	85	25	96	0.9	1	2.50	131	30	2483

LEGEND

SUBBASIN FACIES

- 1 MUDSTONE : Black, carbonaceous, laminated to thin bedded mudstone often containing >5% fine-grained, disseminated and laminated pyrite. Mudstones are generally nonsiliceous, but are locally calcareous and may contain interbeds with 20-60% white rounded calcareous fossils (<0.5mm radiolarians?).
- 2 SILTY MUDSTONE : Dark grey to black, carbonaceous, laminated to medium bedded silty mudstone often containing >5% fine-grained, disseminated and laminated pyrite. Silty mudstone often occur as vague interbeds within predominately black mudstone intervals.
- 3 LIMESTONE/LIM MUDSTONE : Medium to dark grey, fine-grained massive to vaguely bedded limestone interbeds locally containing crinoid ossicle fragments, and trace-2% fine-grained disseminated pyrite. These interbeds are often quartz-carbonate veined and form a minor component of sections dominated by calcareous mudstone.

DISTAL TO PROXIMAL TURBIDITIC DEBRIS

- 4 SILTSTONE : Medium to dark grey, laminated to medium bedded, often weakly calcareous siltstone often containing trace-3% fine-grained disseminated pyrite. Siltstones occur as the normally graded tops of coarser clastic intervals, but, more often occur as thin, distal turbidite interbeds (5-60') within mudstone and silty mudstone.
- 5 SANDSTONE : Light to medium grey, thin to thick bedded, often weakly calcareous sandstone often containing trace-3% fine-grained disseminated pyrite. Sandstones occur as thick, normally graded turbidites and as thin distal turbidites within mudstone and siltstone dominant intervals.
- 6 CHERT PEBBLE CONGLOMERATE : Light to medium grey, medium to thick bedded fine chert pebble conglomerate often containing trace-3% fine-grained disseminated pyrite. Medium bedded fine conglomerate often occurs as the coarse normally graded base to thicker sandstone dominated turbidites. More proximal, thick bedded fine to coarse chert pebble conglomerate are generally massive with vague internal stratification and have a sharp, reverse graded base and a normally graded top into sandstone. Conglomerates generally contain 30-60% clasts (>2mm to 8cm) comprising 90-95% rounded to subrounded, varied coloured chert, 5% angular to subrounded black mudstone and trace-2% rounded, clear blue grey quartz.

VOLCANICLASTIC TURBIDITIC DEBRIS

- 7 VOLCANICLASTIC SANDSTONE : medium green, fine to medium-grained reworked volcaniclastic sandstone interbeds often containing 50-85% feldspar (carbonate/quartz? altered) crystal fragments (<0.5mm) in a sericite/chlorite fine ash matrix. These interbeds clearly represent reworked epiclastic intervals with relatively massive bases grading normally into a laminated to thin bedded top with thin interbedded mudstone.

- f FAULT : Intervals or poor recovery containing broken and gouged core, often with abundant quartz-carbonate veining.

L - laminated	C - carbonaceous
TN - thin bedded	P - pyritic (>5%)
MD - medium bedded	CL - calcareous
TK - thick bedded	SL - siliceous

-	Bedding attitude
~	Foliation attitude
△	"contact"-type UTEM response
×	"cross over"-type UTEM response

-30° (?)

093065

DWG 91

**FIN PROPERTY**

Drawn by: P.A.M. Traced by: a. m. a.

Revised by: Date: Revised by: Date:

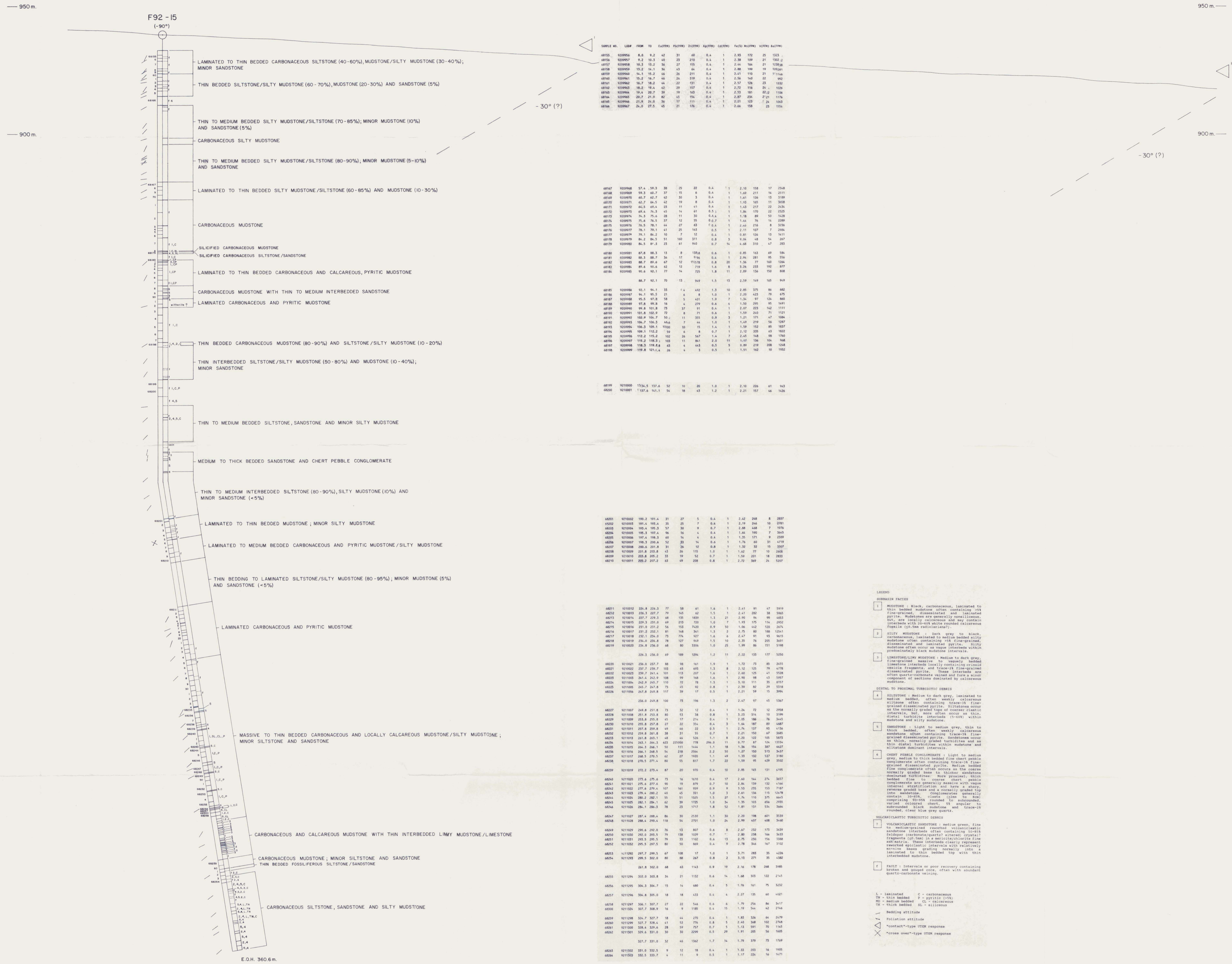
**1992 DRILL SECTION**  
D.D.H. F92 - 14  
L102 + 00 W. (Looking West)

WATSON LAKE M.D., YUKON

Scale: 1 : 500 Date: Oct. 30, 1992 Plate: 92 - 1



105  
6/9, H/12



SAMPLE NO.	LAB#	FROM TO	GR% (F)	GR% (M)	GR% (S)	GR% (T)	GR% (O)	GR% (C)	GR% (M)	GR% (S)	GR% (T)	GR% (O)	GR% (C)
48155	9209957	8.6 9.2	47	31	48	0.4	1	2.85	172	25	1523		
48156	9209957	9.2 10.3	45	23	210	0.4	1	2.38	109	21	1502		
48157	9209958	10.3 13.2	36	27	155	0.4	1	2.44	166	21	1738		
48158	9209959	13.2 16.1	36	43	66	0.4	1	2.88	199	19	1939		
48159	9209960	16.1 18.2	44	26	211	0.4	1	2.41	110	21	1116		
48160	9209961	18.2 20.7	44	26	319	0.4	1	2.56	149	22	292		
48161	9209962	20.7 21.9	42	22	131	0.4	1	2.37	126	23	1332		
48162	9209963	21.9 24.8	42	29	157	0.4	1	2.72	156	24	1529		
48163	9209964	24.8 27.5	45	19	143	0.4	1	2.33	181	22	1166		
48164	9209965	27.5 29.9	45	15	156	0.4	1	2.87	236	21	1176		
48165	9209966	29.9 31.0	36	17	111	0.4	1	2.01	127	7	1628		
48166	9209967	31.0 37.5	45	21	176	0.4	1	2.66	158	23	155		

48167	9209968	37.5 40.7	38	25	22	0.4	1	2.10	158	17	2548		
48168	9209969	40.7 42.7	37	15	6	0.4	1	1.69	211	14	2511		
48169	9209970	42.7 46.7	42	30	3	0.4	1	1.61	126	13	3199		
48170	9209971	46.7 48.4	42	19	6	0.4	1	1.52	105	11	3058		
48171	9209972	48.4 49.4	45	11	41	0.4	1	1.43	217	22	2434		
48172	9209973	49.4 51.3	45	14	41	0.4	1	1.36	170	22	2325		
48173	9209974	51.3 51.8	38	11	30	0.4	1	1.18	89	50	1528		
48174	9209975	51.8 52.5	37	12	25	0.7	1	1.44	76	11	2286		
48175	9209976	52.5 53.1	44	27	43	0.4	1	2.44	216	8	3756		
48176	9209977	53.1 53.1	41	25	143	0.5	1	2.11	107	7	2054		
48177	9209978	53.1 53.1	19	7	12	0.4	1	0.81	126	13	1411		
48178	9209979	53.1 53.1	31	160	311	0.8	3	9.34	48	54	247		
48179	9209980	53.1 53.1	23	61	940	0.7	14	4.48	310	47	283		

48180	9209981	53.1 53.1	13	8	139	0.6	1	0.85	163	49	586		
48181	9209982	53.1 53.1	36	17	936	0.4	1	2.34	281	95	556		
48182	9209983	53.1 53.1	47	12	1157	0.8	20	1.36	77	160	1264		
48183	9209984	53.1 53.1	62	12	719	1.0	8	3.36	233	162	877		
48184	9209985	53.1 53.1	77	14	725	1.8	11	2.89	136	152	808		

48185	9209986	53.1 53.1	33	4	492	1.3	10	2.85	375	86	682		
48186	9209987	53.1 53.1	21	6	8	1.0	1	2.20	423	79	475		
48187	9209988	53.1 53.1	58	5	431	1.9	7	1.34	67	104	860		
48188	9209989	53.1 53.1	16	4	279	0.6	4	1.30	295	95	1491		
48189	9209990	53.1 53.1	73	37	91	0.4	1	2.07	235	142	1111		
48190	9209991	53.1 53.1	72	8	71	0.6	1	1.39	242	71	1121		
48191	9209992	53.1 53.1	50	11	355	0.9	3	1.21	171	47	1084		
48192	9209993	53.1 53.1	46	7	44	1.0	1	1.67	219	56	1287		
48193	9209994	53.1 53.1	10	15	1.4	1	1.39	152	85	1837			
48194	9209995	53.1 53.1	59	6	8	0.7	1	2.12	335	43	1822		
48195	9209996	53.1 53.1	102	24	167	1.4	7	2.45	148	98	1762		
48196	9209997	53.1 53.1	103	11	843	2.0	11	1.07	136	106	568		
48197	9209998	53.1 53.1	103	4	443	0.5	9	1.89	218	208	1268		
48198	9209999	53.1 53.1	26	4	3	0.5	1	1.31	162	10	1932		

48199	9210000	137.6 137.6	52	10	20	1.0	1	2.10	226	41	163		
48200	9210001	137.6 141.1	54	18	43	1.2	1	2.21	137	46	1438		

48201	9210002	191.1 191.1	31	27	5	0.4	1	2.42	248	8	2837		
48202	9210003	191.1 193.4	35	25	7	0.4	1	2.19	246	10	2781		
48203	9210004	193.4 195.3	37	30	9	0.7	1	2.66	448	7	1276		
48204	9210005	195.3 197.4	36	16	4	0.4	1	1.46	192	7	3425		
48205	9210006	197.4 198.3	40	14	4	0.4	1	1.35	171	9	2359		
48206	9210007	198.3 200.6	42	14	6	0.4	1	1.79	40	31	4719		
48207	9210008	200.6 201.8	31	26	12	0.8	1	1.32	32	15	3307		
48208	9210009	201.8 203.8	43	26	110	1.0	1	1.62	77	10	2009		
48209	9210010	203.8 205.2	33	19	32	0.7	1	1.50	201	10	2823		
48210	9210011	205.2 207.2	43	19	208	0.8	1	2.72	349	24	5207		

48211	9210012	226.8 226.8	77	58	41	1.6	1	2.41	91	47	3919		
48212	9210013	226.8 227.7	79	62	62	1.5	1	2.41	202	38	5965		
48213	9210014	227.7 229.3	68	135	1839	1.3	21	2.90	94	99	4553		
48214	9210015	229.3 231.6	62	215	720	1.0	1	1.93	175	114	2292		
48215	9210016	231.6 231.6	56	153	7420	1.0	50	1.96	442	132	2674		
48216	9210017	231.6 232.1	81	148	341	1.3	2	2.75	80	188	1241		
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48218	9210019	234.0 234.8	78	127	949	1.5	10	2.35	76	205	3041		
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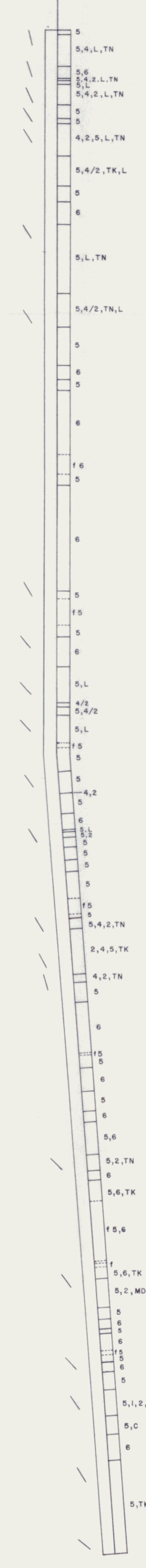
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48224	9210025	242.9 245.7	110	72	78	1.3	1	1.82	111	33	4197		
48225	9210026	245.7 247.8	73	45	10	0.8	1	2.39	82	29	3316		
48226	9210027	247.8 248.8	117	39	17	0.5	1	2.21	59	33	3996		

48227	9210028	248.8 249.8	100	75	196	1.3	2	2.47	67	45	1367		
48228	9210029	249.8 251.8	73	32	12	0.4	1	1.24	72	12	2058		
48229	9210030	251.8 253.8	80	53	38	0.8	1	3.23	314	32	3199		
48230	9210031	253.8 255.8	45	17	214	0.4	1	2.05	186	78	3443		
48231	9210032	255.8 257.8	37	22	354	0.4	3	1.64	187	85	1687		
48232	9210033	257.8 258.8	49	46	22	0.5	1	2.74	137	95	4336		
48233	9210034	258.8 261.8	38	31	55	0.7	1	2.21	190	67	3609		
48234	9210035	261.8 263.1	48	64	326	1.1	8	2.20	122	100	1879		
48235	9210036	263.1 264.5	54	238	2964	1.1	97	67	47	124	1354		
48236	9210037	264.5 265.5	62	27	1920	1.1	49	1.33	132	537	3182		
48237	9210038	265.5 271.1	80	55	817	1.7	22	1.59	95	429	3202		
48238	9210039	271.1 273.4	87	20	970	0.4	10	2.95	145	131	4195		

48239	9210040	273.4 275.4	73	16	1610	0.4	17	2.43	144	274	3637		
48240	9210041	275.4 277.4	90	19	879	0.7	10	2.84	139	132	4364		
48241	9210042	277.4 279.4	107	161	959	0.9	9	3.53	235	153	7187		
48242	9210043	279.4 280.2	42	45	391	1.0	3	2.61	136	115	1678		
48243	9210044	280.2 282.1	55	51	1325	1.5	27	1.74	110	375	6627		
48244	9210045	282.1 284.1	62	39	1785	1.0	34	1.35	103	484	2935		
48245	9210046	284.1 286.4	78	23	1717	1.8	52	1.81	131	534	3664		
48246	9210047	286.4 288.4	86	30	2530	1.1	30	2.20	198	401	3539		
48247	9210048	288.4 290.4	118	54	2701	1.0	24	2.99	407	406	3648		

48248	9210049	290.4 292.0	76	53	807	0.6	8	2.67	232	173	3639		
48249	9210050	292.0 293.5	79	138	1059	0.7	1	2.80	288	166	5639		
48250	9210051	293.5 295.5	79	33	1102	0.4	13	2.75	235	156	3388		
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482													

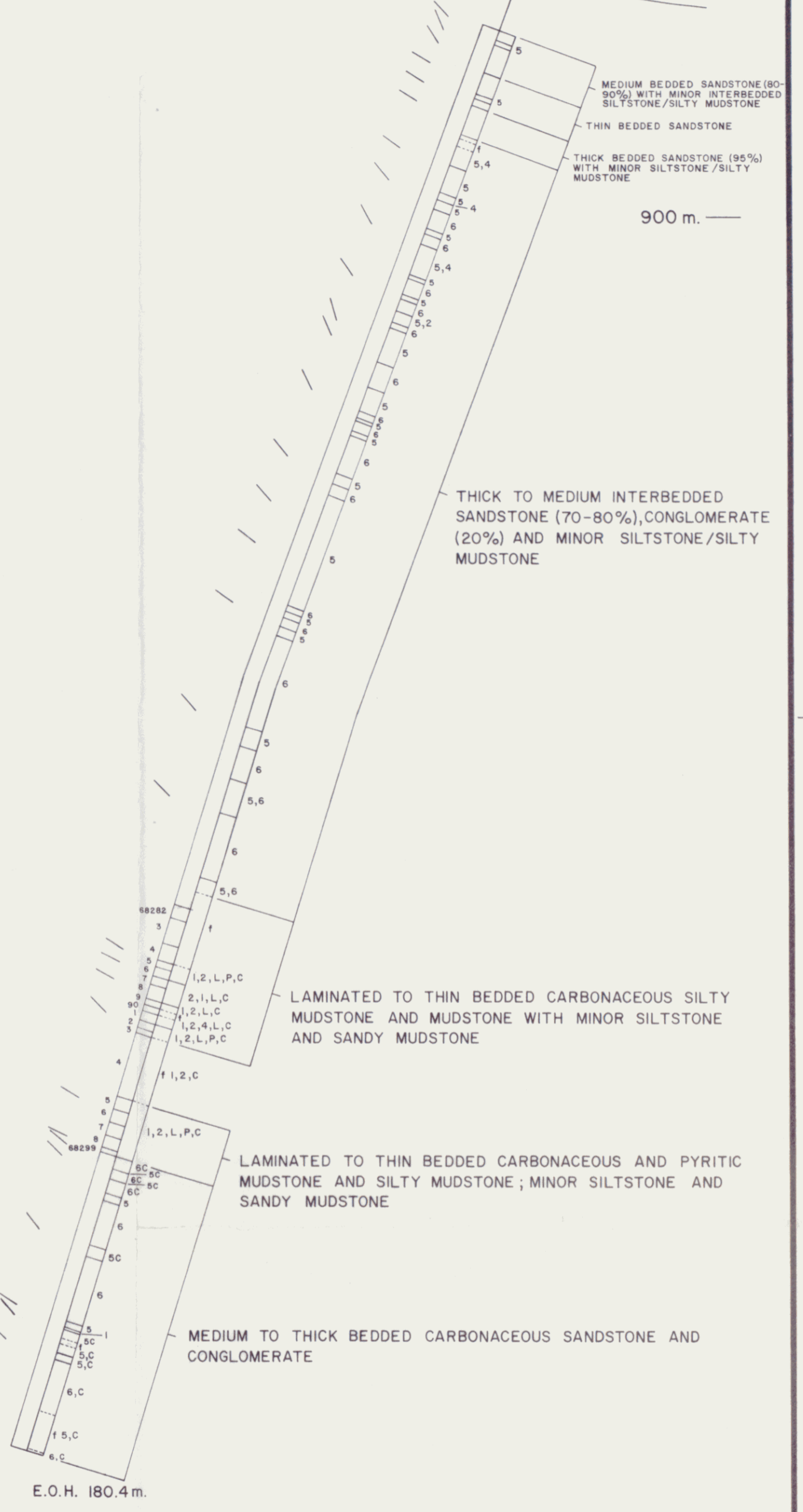
F92-16  
(-90°)



THICK INTERBEDDED SANDSTONE AND CHERT PEBBLE CONGLOMERATE;  
MINOR THIN SILTSTONE AND SILTY MUDSTONE INTERBEDS

E.O.H. 248.7m.

F92-19  
(-70°)



THICK TO MEDIUM INTERBEDDED SANDSTONE (70-80%), CONGLOMERATE (20%) AND MINOR SILTSTONE/SILTY MUDSTONE

E.O.H. 180.4m.

LEGEND

- 1 MUDSTONE: Black, carbonaceous, laminated to thin bedded mudstone often containing silty fine-grained, disseminated and laminated pyrite. Mudstones are generally nonilluminous, but are locally calcareous and may contain interbeds with 10-40% white rounded calcareous fossils (e.g. *Sphaerocyclonema*).
- 2 SILTY MUDSTONE: Dark grey to black, carbonaceous, laminated to medium bedded silty mudstone often containing 10-30% fine-grained, disseminated and laminated pyrite. Silty mudstone often occur as vague interbeds within predominantly black mudstone intervals.
- 3 LIMESTONE/LIMY MUDSTONE: Medium to dark grey, fine-grained massive to vaguely bedded limestone interbeds locally containing crinoid ossicle fragments, and trace-1% fine-grained disseminated pyrite. These interbeds are often quartz-carbonate veined and form a minor component of sections dominated by calcareous mudstone.
- 4 DISTAL TO PROXIMAL TURBIDITIC DEBRIS
- 4 SILTSTONE: Medium to dark grey, laminated to medium bedded, often weakly calcareous siltstone, often containing trace-1% fine-grained disseminated pyrite. Siltstones occur as the normally graded tops of coarse clastic intervals, but, more often occur as thin, distal, turbidite interbeds (1-4m) within mudstone and silty mudstone.
- 5 SANDSTONE: Light to medium grey, thin to thick bedded, often weakly calcareous sandstone often containing trace-1% fine-grained disseminated pyrite. Sandstones occur as thick normally graded turbidites and as thin distal, turbidite interbeds within mudstone and siltstone dominant intervals.
- 6 CHERT PEBBLE CONGLOMERATE: Light to medium grey, medium to thick bedded fine chert pebble conglomerate often containing trace-1% fine-grained disseminated pyrite. Medium bedded fine conglomerate often occurs as the coarse normally graded base to thicker sandstone dominated turbidites. More proximal, thick bedded fine to coarse chert pebble conglomerate are generally massive with vague internal stratification and have a sharp, reverse graded base and a normally graded top into sandstone. Conglomerates generally contain 30-60% chert. (One to 5m) comprising 80-95% rounded to subrounded, varied colored chert, 5% angular to subrounded black mudstone and trace-1% rounded, clear blue grey quartz.
- 7 VOLCANICLASTIC SANDSTONE: Medium green, fine to medium-grained reworked volcaniclastic sandstone interbeds often containing 10-30% feldspar (carbonate/quartz) altered crystal fragments, (1-2m) in a siltstone/silty mudstone matrix. These interbeds clearly represent reworked epiclastic intervals with relatively massive base grading normally into laminated to thin bedded top with thin interbedded mudstone.
- 8 FAULT: Intervals of poor recovery containing broken and gouged cores, often with abundant quartz-carbonate veining.

- L - laminated C - carbonaceous
- TN - thin bedded P - pyritic (>1%)
- MD - medium bedded CL - calcareous
- TK - thick bedded SL - silty
- Bedding attitude
- Foliation attitude
- \*contact\*-type UTM response
- \*cross over\*-type UTM response

SAMPLE NO.	LAB#	FROM	TO	Cu(PPM)	Pb(PPM)	Zn(PPM)	Ag(PPM)	Co(PPM)	Fe(C)	Mn(PPM)	V(PPM)	Ba(PPM)
68282	9211306	114.5	116.0	34	83	1923	0.4	9	2.40	410	42	1202
68283	9211307	116.0	119.0	30	105	2566	0.4	15	3.09	202	22	1752
68284	9211308	119.0	121.2	33	222	1281	0.4	13	3.01	162	22	1804
68285	9211309	121.2	121.9	31	169	2003	0.4	30	3.03	224	19	1856
68286	9211310	121.9	123.1	40	81	743	0.4	12	3.19	174	21	1789
68287	9211311	123.1	124.1	44	703	5538	0.8	103	3.17	155	26	3028
68288	9211312	124.1	125.8	33	199	1008	0.4	18	3.10	190	23	2049
68289	9211313	125.8	126.6	36	70	696	0.4	7	3.13	134	24	1713
68290	9211314	126.6	127.3	23	72	880	0.4	11	2.56	336	19	1325
68291	9211315	127.3	128.5	30	93	784	0.4	8	3.03	249	21	1909
68292	9211316	128.5	129.3	33	105	996	0.4	13	3.85	233	31	1808
68293	9211317	129.3	130.0	38	264	1373	0.4	20	3.41	254	33	2151
68294	9211318	130.0	137.8	40	108	561	0.4	5	3.00	337	32	3142
68295	9211319	137.8	139.3	42	153	1294	0.9	14	3.40	351	38	4606
		114.5	139.3	36	144	1393	0.5	15	3.06	265	28	2426
68296	9211320	139.3	140.8	36	54	391	0.7	3	3.09	245	26	4464
68297	9211321	140.8	142.4	44	25	260	0.4	2	3.25	194	36	4079
68298	9211322	142.4	143.9	43	18	439	0.4	5	2.40	96	47	4331
68299	9211323	143.9	144.5	51	28	332	0.4	2	3.25	112	27	3542

LAMINATED TO THIN BEDDED CARBONACEOUS SILTY MUDSTONE AND MUDSTONE WITH MINOR SILTSTONE AND SANDY MUDSTONE

LAMINATED TO THIN BEDDED CARBONACEOUS AND PYRITIC MUDSTONE AND SILTY MUDSTONE, MINOR SILTSTONE AND SANDY MUDSTONE

MEDIUM TO THICK BEDDED CARBONACEOUS SANDSTONE AND CONGLOMERATE

003-05  
093065  
DWG 93

**FIN PROPERTY**

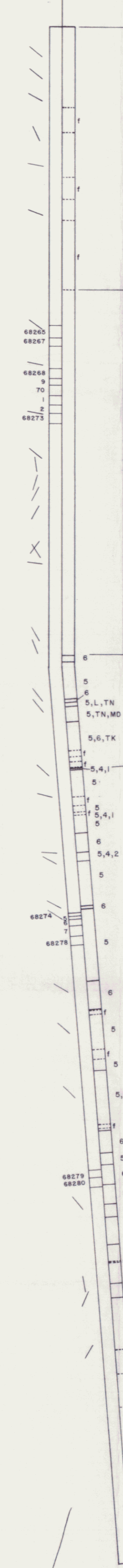
Drawn by P.A.M. Traced by a.m.a.

1992 DRILL SECTION  
D.D.H. F92-16, F92-19  
L86+00 W. (Looking West)

WATSON LAKE M.D. YUKON

Scale: 1 : 500 Date: Oct. 30, 1992 Plate: 92 - 3

F92-17  
(-90°)



THIN TO THICK BEDDED SANDSTONE (60-75%) WITH THIN INTERBEDDED SILTY MUDSTONE AND SILTSTONE (15-30%)

SAMPLE NO.	LAB#	FROM	TO	CLIPPTS	PLIPPTS	ZINCPTS	AGPTS	COPTS	FECL	MIPPTS	VEPTS	SLIPPTS
68265	9212307	54.1	56.0	20	14	165	1.1	1	1.29	165	6	811
68267	9212308	56.0	57.3	20	11	86	0.8	1	1.83	214	7	783
68268	9212309	60.8	62.4	18	9	62	0.9	1	1.34	239	5	608
68269	9212310	62.4	63.4	20	23	476	0.8	2	1.39	129	7	549
68270	9212311	63.4	65.1	23	13	45	1.0	1	1.52	199	6	725
68271	9212312	65.1	66.4	24	13	106	0.4	1	1.46	223	6	855
68272	9212313	66.4	67.8	28	17	65	0.4	1	1.39	180	6	785
68273	9212314	67.8	69.5	19	12	136	0.4	1	1.49	207	5	704

THIN TO MEDIUM BEDDED SANDSTONE (50-80%) WITH THIN INTERBEDDED SILTY MUDSTONE (20-30%), MUDSTONE AND SILTSTONE (5-10%)

THIN TO THICK BEDDED SANDSTONE WITH MINOR GRADED FINE CHERT PEBBLE CONGLOMERATE

68274	9212314	144.6	145.0	9	8	12	0.4	1	0.77	191	8	494
68275	9212315	145.0	145.5	17	12	84	0.6	1	0.76	73	6	777
68276	9212315	145.5	146.5	12	6	131	0.7	1	1.80	366	5	492
68277	9212316	146.5	148.1	35	33	396	2.1	2	1.50	27	15	1576
68278	9212317	148.1	149.5	9	8	50	0.8	1	0.51	82	3	459

THIN TO THICK BEDDED SANDSTONE WITH OCCASIONAL FINE CHERT PEBBLE CONGLOMERATE AND MINOR SILTSTONE/SILTY MUDSTONE INTERBEDS

68279	9212318	156.8	155.0	7	6	15	0.6	1	0.46	118	2	416
68280	9212319	155.9	157.4	21	25	69	1.3	1	0.99	75	16	897

BLACK TO DARK GREY SOUSE

SANDSTONE AND FINE CONGLOMERATE

DARK GREY TO BLACK SOUSE

GREY SOUSE

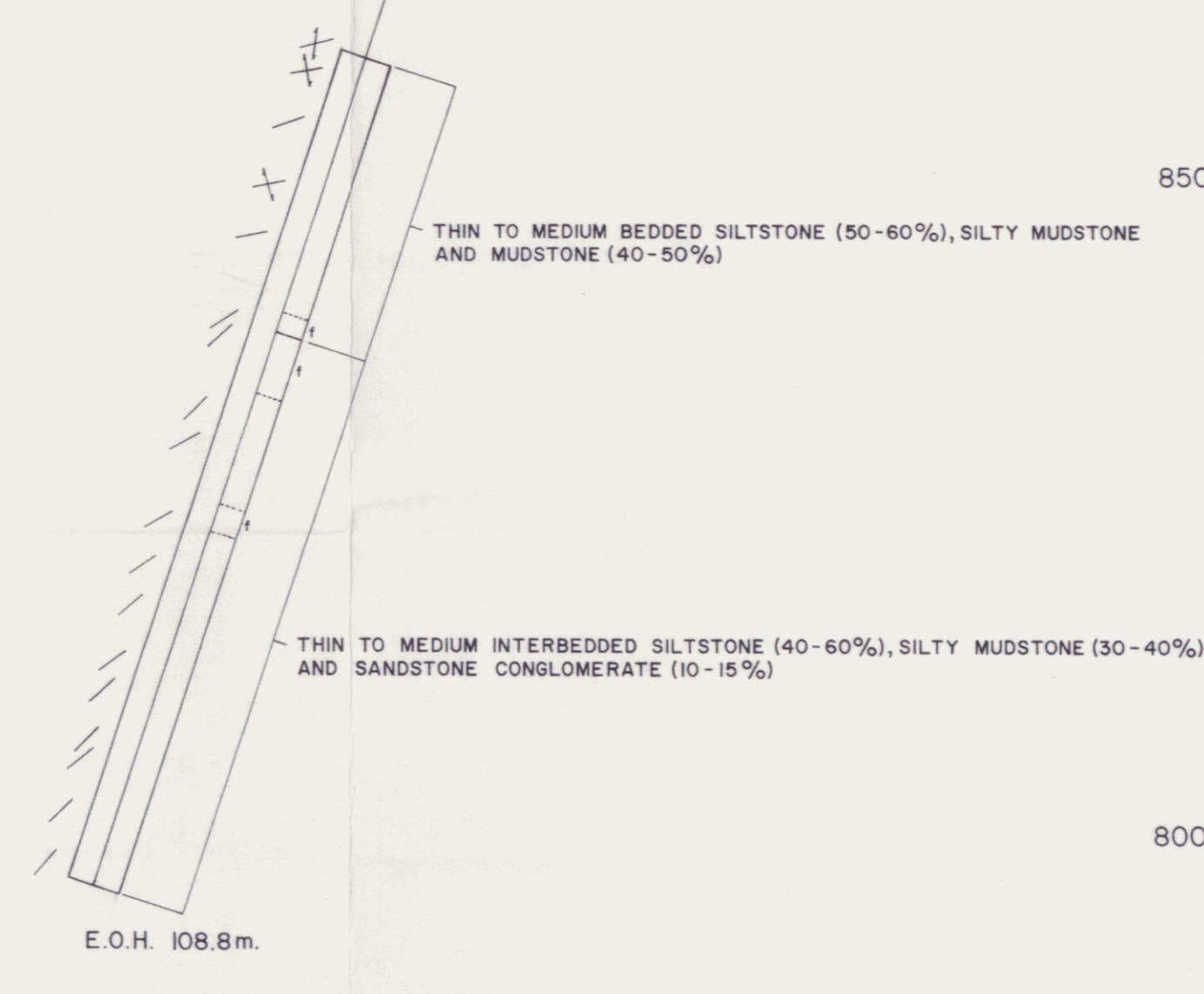
E.O.H. 246.1m.

HOLE STOPPED DUE TO SQUEEZING GROUND AND LOSS OF CIRCULATION

-40°(?)

-40°(?)

F92-18  
(-70°)



THIN TO MEDIUM BEDDED SILTSTONE (50-60%), SILTY MUDSTONE AND MUDSTONE (40-50%)

THIN TO MEDIUM INTERBEDDED SILTSTONE (40-60%), SILTY MUDSTONE (30-40%) AND SANDSTONE CONGLOMERATE (10-15%)

E.O.H. 108.8m.

**LEGEND**

**SYMBOLS**

1. MUDSTONE: Black, carbonaceous, laminated to thin bedded mudstone often containing silt siltstone often containing trace-1 fine-grained disseminated pyrite. Silty mudstone often occur as wedge interbeds within predominantly siltstone intervals.

2. SILTY MUDSTONE: Dark grey to black, carbonaceous, laminated to wavy bedded silty mudstone often containing silt siltstone often containing trace-1 fine-grained disseminated pyrite. Silty mudstone often occur as wedge interbeds within predominantly siltstone intervals.

3. SANDSTONE/SILT MUDSTONE: Medium to dark grey, fine-grained massive to wavy bedded sandstone siltstone locally containing trace-1 fine-grained disseminated pyrite. These intervals are often quartz-carbonate veined and form a component of sections dominated by calcareous mudstone.

**DISTAL TO PROXIMAL TURBIDITIC DEBRIS**

4. SILTSTONE: Medium to dark grey, laminated to medium bedded, often weakly calcareous siltstone often containing trace-1 fine-grained disseminated pyrite. Siltstone occurs as the normally graded top of coarse distal intervals but more often occur as thin, distal turbidite interbeds (1-4%) within mudstone and silty mudstone.

5. SANDSTONE: Fine to medium grey, thin to thick bedded, often weakly calcareous sandstone often containing trace-1 fine-grained disseminated pyrite. Sandstone occurs as thin, normally graded turbidites and as thin distal turbidites within mudstone and siltstone distal intervals.

6. CHERT PEBBLE CONGLOMERATE: Light to medium grey, medium to thick bedded fine chert pebble conglomerate often containing trace-1 fine-grained disseminated pyrite. Medium bedded fine conglomerate often occur as the coarse normally graded base to thicker sandstone calcareous turbidites. They generally show bedded fine to coarse chert pebble conglomerate are generally massive with upper normal stratification and have a sharp reverse graded base and a normally graded top. They contain 20-60% chert (10% to 80% comprising 10-15% coarse to very coarse, well rounded chert) in a siltstone/siltstone fine sand matrix. These intervals closely represent proximal epiclastic intervals with relatively little to no siltstone normally interbedded to thin bedded top with thin interbedded mudstone.

7. VOLCANIClastic SANDSTONE: Medium green, fine medium-grained rounded volcaniclastic sandstone intervals often containing 50-80% calcareous (carbonate/quartz) layered typical fragments (0.5mm) in a siltstone/siltstone fine sand matrix. These intervals closely represent proximal epiclastic intervals with relatively little to no siltstone normally interbedded to thin bedded top with thin interbedded mudstone.

8. FAULT: Intervals of poor recovery containing broken and crushed core, often with abundant quartz-carbonate veining.

**SYMBOLS**

L - laminated C - carbonaceous  
 TH - thin bedded P - pyritic (Pkt)  
 MC - medium bedded G - calcareous  
 TK - thick bedded SL - siliceous

bedding attitude  
 Foliation attitude  
 \*contact\*-type DTM response  
 X X \*cross over\*-type UTR response

093065

DWG 94

**FIN PROPERTY**

Drawn by: P.A.M. Traced by: a. m. a.  
 Revised by: Date

**1992 DRILL SECTION**  
 D.D.H. F92-17, F92-18  
 L 82 + 00 W. (Looking West)  
 WATSON LAKE M.D., YUKON

Scale: 1 : 500 Date: Oct. 30, 1992 Page: 92-4

S.

N.

46+00 N.

47+00 N.

48+00 N.

49+00 N.

900 m.

900 m.

850 m.

850 m.

F92-20  
(-70°)

-40°(?)

SAMPLE NO.	LAB#	FROM	TO	CU(FPM)	FE(FPM)	ZN(FPM)	AG(FPM)	CO(FPM)	Fe(X)	Mn(FPM)	V(FPM)	Bu(FPM)
68301	9211325	30.5	32.8	3	4	237	0.4	1	2.54	367	55	2137
68302	9211326	35.4	38.7	27	12	210	0.4	1	4.11	355	81	1419
68303	9211327	38.7	41.8	20	7	269	0.4	1	2.30	197	38	1623
68304	9211328	41.8	47.9	25	14	252	0.4	1	2.24	182	46	1399
68305	9211329	47.9	49.9	25	14	200	0.4	1	1.92	104	53	1580
68306	9211330	49.9	52.0	25	11	221	0.4	1	2.34	178	44	1443
68307	9211331	52.0	55.6	21	14	184	0.4	1	1.70	143	29	1388
68308	9211332	55.6	57.5	19	12	176	0.4	1	1.56	133	28	1392
68309	9211333	57.5	58.5	19	16	273	0.4	1	1.15	87	23	1501
68310	9211334	58.5	60.5	20	14	178	0.4	1	1.83	137	29	1422
68311	9211335	60.5	62.6	19	14	322	0.4	1	2.28	206	32	1402
68312	9211336	62.6	63.5	19	11	142	0.4	1	2.14	170	33	1533
68313	9211337	63.5	67.8	18	19	205	0.4	1	2.26	175	41	1473
68314	9211338	67.8	69.8	22	15	181	0.4	1	2.34	251	50	1267
68315	9211339	69.8	71.8	22	12	260	0.4	1	1.41	117	27	1448
68316	9211340	71.8	73.8	20	14	154	0.4	1	2.00	143	34	1378
68317	9211341	73.8	75.8	24	15	168	0.4	1	2.75	171	32	1460
68318	9211342	75.8	77.3	18	9	114	0.4	1	3.07	167	29	1553
68319	9211343	77.3	78.1	34	24	112	0.4	1	5.71	47	6	3064
68320	9211344	78.1	80.2	17	6	148	0.4	1	3.28	253	31	1275
68321	9211345	80.2	81.4	38	39	94	0.6	1	3.73	28	5	3079
68322	9211346	81.4	83.4	19	14	206	0.4	1	2.20	159	27	1513
68323	9211347	83.4	85.1	18	12	126	0.4	1	2.32	194	26	1396
68324	9211348	85.1	86.7	17	23	166	0.4	1	3.21	217	40	1148
68325	9211349	86.7	88.9	18	23	115	0.4	1	2.79	211	25	1328
68326	9211350	88.9	90.7	19	12	152	0.4	1	1.98	138	24	1428
68327	9211351	90.7	92.7	19	12	154	0.4	1	2.74	194	38	1131
68328	9211352	92.7	94.0	20	15	158	0.4	1	1.35	115	17	1361
68329	9211353	94.0	95.7	18	15	141	0.5	1	1.67	137	17	1368
68330	9211354	95.7	99.0	7	222	0.4	1	2.05	214	30	1061	
68331	9211355	99.0	102.7	21	49	161	0.4	1	2.00	215	20	1354
68332	9211356	102.7	104.6	23	35	162	0.4	1	2.07	182	22	1304
68333	9211357	104.6	106.6	23	13	229	0.4	1	2.15	177	27	1282
68334	9211358	106.6	108.6	27	14	215	0.4	1	1.78	133	25	1446
68335	9211359	108.6	110.6	23	63	1228	0.4	5	2.24	261	27	1258
68336	9211360	110.6	113.6	22	18	191	0.4	1	1.82	177	23	1277
68337	9211361	113.6	115.6	21	33	218	0.4	1	1.69	177	18	1378
68338	9211362	115.6	117.6	23	20	194	0.4	1	1.95	171	23	1409
68339	9211363	117.6	118.1	26	50	277	0.4	1	5.87	439	58	920
68340	9211364	118.1	119.4	27	66	227	0.7	1	1.95	135	20	1672
68341	9211365	119.4	120.9	1	10	118	0.4	1	0.81	146	7	526
68342	9212320	120.9	122.5	9	26	99	0.4	1	1.17	140	13	670
68343	9212321	122.5	123.8	8	19	470	1.1	1	0.71	66	11	795
68344	9212322	123.8	125.5	15	31	84	0.8	1	1.13	211	4	1104
68346	9212323	125.5	127.1	20	24	55	0.8	1	2.23	220	10	1045
68348	9211366	130.0	131.9	35	57	105	0.6	1	2.70	174	12	1137
68349	9211367	131.9	133.3	29	26	71	0.4	1	2.58	190	11	1148
68350	9211368	133.3	135.0	34	37	112	0.4	1	3.28	163	20	1208
68351	9211369	135.0	137.0	28	137	218	0.4	2	3.72	242	25	934
68352	9211370	137.0	139.0	24	192	453	0.4	3	3.76	356	22	980
68353	9211371	139.0	141.0	31	298	628	0.4	6	4.44	304	22	1064
68354	9211372	141.0	143.0	27	130	505	0.4	6	4.22	363	25	964
68355	9211373	143.0	145.0	30	165	573	0.4	8	3.34	243	15	1295
68356	9211374	145.0	147.0	36	39	149	0.4	1	3.61	181	20	1345
68357	9211375	147.0	149.0	36	401	637	0.4	6	3.87	260	25	1560
68358	9211376	149.0	151.1	34	75	831	0.4	8	3.20	301	23	1916
68359	9211377	151.1	153.0	36	33	96	0.4	1	2.91	217	15	2180
68360	9211378	153.0	155.0	37	22	327	0.4	2	3.21	225	18	2753
68361	9211379	155.0	157.0	41	58	517	0.4	5	3.02	205	22	2808
68362	9211380	157.0	159.0	36	54	281	0.4	2	3.38	241	21	2900
68363	9211381	159.0	161.0	32	71	1354	0.4	17	4.05	301	25	2939
68364	9211382	161.0	163.0	29	59	76	0.4	1	3.10	258	19	3323
68365	9211383	163.0	165.0	34	912	2662	0.4	51	2.56	246	12	3999
68366	9211384	165.0	166.6	33	175	3095	0.4	54	2.70	236	16	4522
68367	9211385	166.6	167.0	32	142	1213	0.4	22	2.56	217	18	4728
68368	9211386	167.0	169.0	35	41	496	0.4	6	2.74	230	17	4928
68369	9211387	169.0	171.0	37	96	1044	0.4	11	3.75	381	14	5022
68370	9211388	171.0	172.7	41	264	4133	0.7	37	2.75	220	25	5103
68371	9211389	172.7	173.2	44	572	2783	1.3	23	2.78	270	36	2878
68372	9211390	173.2	174.2	53	829	8695	1.7	39	1.78	149	62	2843
68373	9211391	174.2	174.4	59	2453	8472	3.2	76	3.25	371	18	3349
68374	9212324	174.4	175.7	71	201	1549	1.7	16	1.97	232	38	3237
68375	9212325	175.7	177.4	29	43	1674	0.7	13	2.81	243	14	4494
68376	9212326	177.4	178.9	42	97	1993	1.1	16	2.86	251	15	4309
68377	9212327	178.9	182.0	30	65	3299	0.9	27	2.84	362	17	4132

WGT. AVG.

159.0 182.0 37 234 2329 0.7 26 2.84 274 21 4517

E.O.H. 182.0 m.



- LEGEND
- SUBBASIN FACIES
- MUDSTONE: Black, carbonaceous, laminated to thin bedded mudstone often containing 5-10% fine-grained, disseminated and laminated pyrite. Mudstones are generally nonsiliceous, but, are locally calcareous and may contain interbeds with 20-60 white rounded calcareous fossils (50-500 radiolarium).
  - SILTY MUDSTONE: Dark grey to black, carbonaceous, laminated to medium bedded silty mudstone often containing 5-10% fine-grained, disseminated and laminated pyrite. Silty mudstone often occur as vague interbeds within predominantly black mudstone intervals.
  - LIMESTONE/LIMY MUDSTONE: Medium to dark grey, fine-grained massive to vaguely bedded limestone interbeds locally containing crinoid ossicle fragments, and trace-1% fine-grained disseminated pyrite. These interbeds are often quartz-carbonate veined and form a minor component of sections dominated by calcareous mudstone.
- DISTAL TO PROXIMAL TURBIDITIC DEBRIS
- SILTSTONE: Medium to dark grey, laminated to medium bedded, often weakly calcareous siltstone often containing trace-3% fine-grained disseminated pyrite. Siltstones occur as the normally graded tops of coarse clastic intervals, but, more often occur as thin, distal turbidite interbeds (5-6%) within mudstone and silty mudstone.
  - SANDSTONE: Light to medium grey, thin to thick bedded, often weakly calcareous sandstone often containing trace-3% fine-grained disseminated pyrite. Sandstones occur as thick, normally graded turbidites and as thin distal turbidites within mudstone and siltstone dominant intervals.
  - CHERT PEBBLE CONGLOMERATE: Light to medium grey, medium to thick bedded, fine chert pebble conglomerate often containing trace-3% fine-grained disseminated pyrite. Medium bedded fine conglomerate often occurs as the coarse normally graded base to thicker sandstone dominated turbidites. More proximal, thick bedded fine to coarse chert pebble conglomerate are generally massive with vague internal stratification and have a sharp, reverse graded base and a normally graded top into sandstone. Conglomerates generally contain 30-60% chert, 30-50% to 80% comprising 90-95% rounded to subrounded, varied coloured chert, 5% angular to subrounded black mudstone and trace-1% rounded, clear blue grey quartz.
- VOLCANICLASTIC TURBIDITIC DEBRIS
- VOLCANICLASTIC SANDSTONE: medium green, fine to medium-grained reworked volcaniclastic sandstone interbeds often containing silty feldspar (carbonate/quartz) altered crystal fragments (50-500) in a sericite/chlorite fine silt matrix. These interbeds clearly represent reworked epiclastic intervals with relatively massive bases grading normally into a laminated to thin bedded top with thin interbedded mudstone.
  - FAULT: Intervals of poor recovery containing broken and gouged core, often with abundant quartz-carbonate veining.
- L - laminated C - carbonaceous  
 TN - thin bedded P - pyritic (>5%)  
 MO - medium bedded CL - calcareous  
 TK - thick bedded SL - siliceous
- Bedding attitude  
 Foliation attitude  
 \*contact\*-type UTEM response  
 \*cross over\*-type UTEM response

093 065

DWG 95

FIN PROPERTY

105 G/9, H/12

Drawn by: P.A.M. Traced by: a.m.o.

Revised by: Date Revised by: Date

1992 DRILL SECTION  
 D.D.H. F92-20  
 L 70 + 00 W. (Looking West)  
 WATSON LAKE M.D., YUKON

Scale: 1 : 500 Date: Oct. 30, 1992 Plate: 92 - 5

**APPENDIX 1**

**STATEMENT OF EXPENDITURES**

# STATEMENT OF EXPENDITURES

PROJECTED TO END OF DECEMBER, 1992

COMMUNICATIONS		2,790.03
GEOLOGY :		
	PERM. STAFF: P.A. MACROBBIE (110 DAYS @ \$246.17)	27,078.73
	G.K. GRAHAM (52 DAYS @ \$214.83)	11,171.27
	TEMP. STAFF: M. WOLFE (49 DAYS @ \$104.29)	5,110.00
	A.G.S. DAVIES (20 DAYS @ \$141.00)	2,820.00
	SUPPLIES	3,275.09
	EXPENSE ACCOUNTS	5,514.55
GEOCHEMISTRY :	STAFF	470.00
	SUPPLIES AND ANALYSES	4,949.40
DIAMOND DRILLING :	DRILLING	116,624.30
	FUEL	3,568.19
	SUPPLIES	12,254.98
ORGAN. AND FEILD SUPERV.		2,602.00
TRANSPORTATION:	FIXED WING	3,501.18
	HELICOPTER	90,375.30
	TRUCK	3,448.41
	FUEL	137.56
	FREIGHT	8,475.29
DOMICILE		43,845.97
EXPEDITING		1,322.65
DRAFTING AND REPRODUCTION		3,568.72
TOTAL		352,903.62

**APPENDIX 2**

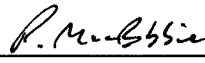
**STATEMENT OF QUALIFICATIONS**

## STATEMENT OF QUALIFICATIONS

I, Paul A. MacRobbie, of 11164 Southridge Rd., Delta, B.C. hereby declare that I:

1. Graduated from Carleton University, Ottawa, Ontario with a B.Sc. in Geology in May, 1986 and a M.Sc. in Geology in June, 1988.
2. Have been actively engaged in mineral exploration in Western Canada as a permanent geologist with Cominco Ltd. since June, 1988.

Date: December 18, 1992

  
\_\_\_\_\_  
P.A MacROBBIE  
GEOLOGIST II

**APPENDIX 3**

**1992 DRILL LOGS WITH RUNS AND RECOVERIES AND  
CORE GEOCHEMISTRY**

**DRILL HOLE RECORD**

**COMINCO LTD.**

Property: Fin  
 Commenced: June 17/92  
 Completed: June 18/92  
 Coordinates: 101 +87W 26 +46N  
 Objective: to test cross-over type UTEM anomaly  
 Date: June 19/92  
 Logged by: P.A. MacRobbie

District: Watson Lake  
 Location: Yukon  
 Core size: NQ2  
 Tests at:

Hole No.: F92-14  
 Hole Length: 63.7 m  
 Cor. Dip: -90°  
 True Brg.:  
 % Recovery.: 82.0  
 Horiz. Comp.:  
 Vert. Comp:

Metres From	To	Description
0.0	7.6	OVERBURDEN
7.6	13.9	<p>THIN TO MEDIUM BEDDED SILTSTONE AND SANDSTONE; MINOR MUDSTONE</p> <p>Dark to light grey, thin to medium bedded unit comprising dark to medium grey, moderately carbonaceous, normally graded siltstone (60%) and light grey weathering, medium grey, fine to coarse-grained sandstone (40%). Minor black, carbonaceous mudstone with no internal stratification are present locally. Siltstone is often interlaminated to medium bedded (0.1 to 4 cm thick) with very fine to fine-grained sandy beds. Coarse siltstone/fine sandstone often show wavy or ripple cross laminations. Sandstone beds between 10-70 cm thick are generally normally graded with granule and pebble-rich bases. Fragments (10-20% up to 1.2 cm, generally ~ 3 mm) are angular to subrounded and comprise 80% light grey chert, 15% dark grey siltstone and 5% black mudstone set in a fine to medium-grained, chert dominant sandy matrix. Sandstones contains tr-2%, fine-grained pyrite as disseminations, fracture fillings and as grains within pyritic cherty fragments.</p> <p>7.6 - 8.1 medium grey, fine to coarse sandstone with graded pebbly base.</p> <p>8.1 - 8.5 dark grey to black, carbonaceous sandstone with 0.5 mm to 3.5 cm mudstone fragments (2-5%) and white cherty fragments (15-20%) in a muddy matrix containing tr-2% pyritic cherty fragments. B/CA 64°.</p> <p>8.5 - 8.7 medium grey, fine to coarse sandstone.</p> <p>8.7 - 9.0 interlaminated to bedded dark grey siltstone and sandstone. B/CA 68°</p> <p>9.0 - 9.4 dark grey to black carbonaceous sandstone.</p> <p>9.4 - 9.7 dark to medium grey sandstone.</p> <p>9.7 - 9.9 black carbonaceous mudstone with tr-2% pyrite as very fine-grained disseminations and in fractures.</p> <p>9.9 - 13.2 graded, dark grey to black siltstone with interbedded carbonaceous sandstone. B/CA 62° at 12.1</p> <p>12.2 - 13.2 fault; rubble and gouge.</p> <p>13.2 - 13.9 medium grey sandstone.</p> <p>13.9 quartz-fe-carbonate+pyrite veins (2-10 mm) with a tr-2% disseminated pyrite alteration halo?</p>
13.9	40.8	LAMINATED TO THIN BEDDED SILTSTONE/SILTY MUDSTONE AND

Property:

SANDSTONE

Thin bedded dark grey to black siltstone/silty mudstone predominates with lesser light to medium grey, fine to coarse-grained sandstone and minor black carbonaceous mudstone. Sandstone interbeds often display normal grading, "flame and ball" textures, scouring and parallel and ripple cross laminations.

13.9 - 17.5 60% dark grey to black siltstone, 20% black silty mudstone/mudstone and 20% medium grey sandstone.

14.0 - 14.6 fault; gouge. Also at 17.5

17.5 - 20.7 40-50% sandstone, 20-40% siltstone and 10-20% silty mudstone/mudstone. Medium to coarse-grained, medium to massive interbedded sandstone occur at 17.7-17.8, 18.8-19.2, 19.35-19.45, 19.5-19.9 and 20.0-20.5.

20.7 - 29.8 70-85% silty mudstone/mudstone, 15-30% sandstone and minor siltstone.

20.9 B/CA 67°.

21.3 heavy pyrite laminations and thin interbeds.

27.3 - 27.7 B/CA 81° and foliation/CA 46°.

29.8 - 40.1 50-70% silty mudstone/mudstone, 30-50 % sandstone and minor siltstone.

34.0 B/CA 73° and foliation/CA 26°; 39.4 B/CA 62°.

40.1 - 40.8 increasing mudstone component with 20% interbedded sandstone.

40.3 - 40.5 2-5% pyrite occurring as discontinuous quartz-pyrite fracture fillings (<2mm).

40.8

45.2

MEDIUM TO THICK BEDDED SANDSTONE

Unit contains about 6 beds, 0.2 to 1.0 m thick, of medium grey, generally normally graded, fine to coarse-grained sandstone containing chert granules and pebbles and interbedded with minor carbonaceous mudstone.

40.8 - 41.5 coarse-grained sandstone containing 30-40% angular-subrounded clasts (>2 mm) supported in a fine to medium-grained sandy matrix. Fragments comprise 90% light-dark grey to black chert clasts (2-15 mm and generally angular), 5-10% black, carbonaceous and variably pyritic mudstone fragments (flattened and up to several cms) and minor fine-grained sulphide (pyrite) fragments and rare clear blue-grey quartz crystal fragments. Trace-1% fine-grained disseminated pyrite.

41.5 - 41.6 normally graded coarse-grained sandstone.

41.6 - 41.7 black, carbonaceous mudstone interbed.

41.7 - 42.2 coarse-grained sandstone containing 50-60% angular-rounded fragments of chert (80%) and mudstone (20%) supported in a finer matrix.

42.2 - 42.3 black carbonaceous mudstone interbed.

42.3 - 43.6 fine to coarse-grained sandstone with a 60-70 cm, normally graded conglomerate base containing 30-80% chert and minor mudstone clasts. B/CA 43° at 43.6.

43.6 - 45.2 fine to medium-grained, massive and homogenous

Property:

		<p>sandstone with relatively few clasts. Core is badly broken with numerous quartz-clay-pyrite veinlets cutting the sandstone.</p>
45.2	49.7	<p><b>FAULT</b> Black, carbonaceous gouge and badly broken sandstone with abundant quartz vein material.</p>
49.7	52.2	<p><b>MEDIUM TO THICK BEDDED SANDSTONE (as above)</b> Sandstone is medium-grained with 5-10%, angular-rounded chert fragments (up to 5 mm) supported in a moderately fe-carbonate altered fine sandy matrix.</p> <p>51.2 - 51.4 more graphitic and broken. 51.4 - 51.5 broken and fissile laminated to thin bedded, black carbonaceous mudstone, silty mudstone and siltstone with trace pyrite.</p>
52.2	52.9	<p><b>FAULT</b> Crushed and gouged black mudstone and carbonaceous sandstone.</p>
52.9	53.7	<p><b>LAMINATED CARBONACEOUS AND PYRITIC MUDSTONE</b> Nonsiliceous or calcareous, finely laminated to thin bedded black carbonaceous mudstone with 20-60% medium to dark grey, silty mudstone/siltstone? inter laminations and beds containing trace-5% (up to 20%) very fine-grained pyrite (sphalerite and barite??). Bedding is disrupted possibly reflecting synsedimentary slumping (more likely reflects a fold hinge with foliations at high angles to bedding).</p> <p>53.1, 53.4 thin, medium to dark grey coarse-grained sandstone interbeds. B/CA 78°, foliation/CA 50°. 53.4 mudstones become more pyritic with 5-10% discontinuous pyrite laminations. More discrete medium-dark grey bands (20%) locally containing whitish, bladed witherite (barium carbonate) crystals.</p>
53.7	54.9	<p><b>THIN TO MEDIUM BEDDED SANDSTONE</b> Light grey to medium grey, fine to coarse-grained massive textureless sandstone with minor carbonaceous and pyritic mudstone interbeds (as above).</p> <p>53.8 B/CA 62°, 64°; 54.0 B/CA 47°.</p>
54.9	56.6	<p><b>LAMINATED CARBONACEOUS AND PYRITIC MUDSTONE</b> Dark grey to black unit, as above, with up to 70% very fine-grained, medium to dark grey pyritic laminations and thin beds. Pyrite laminations occur at 55.3, 55.5 and 56.2.</p> <p>55.2 B/CA 83° and foliation/CA 55°. 55.5 B/CA 48° and foliation/CA 43°. 56.2 - 56.6 crushed mudstone with minor thin gouge zones.</p>
56.6	57.3	<p><b>CARBONACEOUS AND PYRITIC MUDSTONE</b></p>

Property:

		Unit is fissile and broken consisting of black, nonsiliceous or calcareous mudstone. Pyrite (10-20%) occurs as very fine-grained disseminations, discontinuous laminations and as fracture fillings. Minor quartz±calcite veinlets are present.
57.3	58.1	<b>FAULT</b> Crushed and gouged sandstone and mudstone with quartz±calcite veins (predominantly sandstone from 57.7 -58.1).
58.1	58.8	<b>THICK BEDDED SANDSTONE</b> Light to medium grey, fine to coarse-grained sandstone containing 10%, matrix supported clasts of angular to subrounded chert (80-85%), fe-carbonate altered tuff? (10-15%), mudstone (tr-5%) and rare sulphide clasts up to 10 mm (generally ~ 5 mm).
58.8	59.0	<b>LAMINATED TO THIN BEDDED CARBONACEOUS SILTY MUDSTONE AND SILTSTONE</b> Dark grey to black, weakly laminated to thin bedded silty mudstone (80-90%) with 10-20% medium to dark grey thin (up to 1.5 cm) siltstone and very fine-grained sandstone interbeds. Tr-1% pyrite occurs as fine-grained disseminations. This interval is similar to 54.9 - 56.6, but unmineralized.
59.0	59.6	<b>MEDIUM BEDDED SANDSTONE</b> Two sandstone beds seperated by thin silty mudstone interbeds at 59.2 (B/CA 56°). Upper bed is normally graded containing up to 40% chert and minor mudstone fragments averaging about 3 mm, set in a fine to medium-grained sandy matrix. Pyrite (2-3%) appears as very fine-grained, patchy disseminations associated with quartz-fe-carbonate veinlets. The lower bed contains 2-5% chert clasts (rare mudstone clasts).
59.6	61.4	<b>LAMINATED TO THIN BEDDED SILTY MUDSTONE, SILTSTONE AND SANDSTONE</b> Dark grey to black silty mudstone with thin interbeds of dark grey siltstone and medium grey, fine-grained sandstone. Slumped or disrupted sandstone interbeds are present locally. Unit contains trace fine-grained disseminated pyrite and minor quartz±calcite veins.  60.3 B/CA 57°. 60.5 - 61.1 increased siltstone/sandstone content produces a well banded appearance. 61.0 B/CA 56°. 61.2 - 61.4 crushed zone with vuggy quartz±calcite veins/breccia veins; minor gouge.
61.4	61.7	<b>MEDIUM BEDDED SANDSTONE</b> Broken, medium to dark grey, fine to medium-grained, massive sandstone with vuggy quartz±calcite veins.

**DRILL HOLE RECORD**

**COMINCO LTD.**

Page 5 of 5  
Hole No.: F92-14

Property:

61.7

63.7  
EOH

**FAULT**

Crushed zone with rubbly mixed sandstone and muddy siltstone.  
Abundant vuggy quartz+calcite vein material.

Hole stopped at 63.7 due to lack of circulation and squeezing of the rods.

Runs and Recoveries  
 Fin F92-14

From	To	Metres	Recv'd	%
0.0	7.6	7.6	0.00	0.00
7.6	8.5	0.9	0.85	94.44
8.5	11.6	3.1	1.90	61.29
11.6	14.6	3.0	2.10	70.00
14.6	17.7	3.1	2.80	90.32
17.7	20.7	3.0	3.40	113.33
20.7	23.8	3.1	2.85	91.94
23.8	26.8	3.0	2.55	85.00
26.8	29.9	3.1	2.95	95.16
29.9	32.9	3.0	2.65	88.33
32.9	36.0	3.1	2.80	90.32
36.0	39.0	3.0	3.00	100.00
39.0	42.1	3.1	2.95	95.16
42.1	45.1	3.0	2.25	75.00
45.1	48.2	3.1	0.60	19.35
48.2	51.2	3.0	2.35	78.33
51.2	54.3	3.1	2.35	75.81
54.3	57.3	3.0	2.85	95.00
57.3	60.4	3.1	2.85	91.94
60.4	63.4	3.0	1.75	58.33
63.4	63.7	0.3	0.20	66.67
7.6	63.7	56.1	46.00	82.00

## FIN DRILL HOLE 92-14

SAMPLE NO.	LAB#	FROM	TO	Cu(PPM)	Pb(PPM)	Zn(PPM)	Ag(PPM)	Cd(PPM)	Fe(%)	Mn(PPM)	V(PPM)	Ba(PPM)
68151	9209952	52.9	53.7	27	16	115	0.4	1	1.57	156	6	2359
68152	9209953	53.7	54.9	10	4	16	0.4	1	1.43	247	4	1292
68153	9209954	54.9	56.6	28	15	55	0.7	1	1.60	190	9	2404
68154	9209955	56.6	57.3	85	25	96	0.9	1	2.50	131	30	2483

**DRILL HOLE RECORD**

**COMINCO LTD.**

Property: Fin  
 Commenced: June 19/92  
 Completed: June 26/92  
 Coordinates: 105 +93W 31 +47N  
 Objective: to test 2 UTEM anomalies at SW end of grid  
 Date: June 27/92  
 Logged by: P.A. MacRobbie

District: Watson Lake  
 Location: Yukon  
 Core size: NQ2  
 Tests at:

Hole No.: F92-15  
 Hole Length: 360.6 m  
 Cor. Dip: -90°  
 True Brg.:  
 % Recovery.: 83.7  
 Horiz. Comp.:  
 Vert. Comp:

Metres From	To	Description
0.0	6.1	OVERBURDEN
6.1	15.2	<p>LAMINATED TO THIN BEDDED SILTSTONE AND MUDSTONE/SILTY MUDSTONE; MINOR SANDSTONE</p> <p>Medium to dark grey weathering, nonsiliceous or calcareous, thinly banded and contorted/disrupted unit comprising 40-60% dark to medium grey, fine-grained siltstone interlaminated/bedded with 30-40% dark grey to black carbonaceous mudstone/silty mudstone and occasional medium grey, fine to medium-grained sandstone. Core is generally broken. Beds range up to 3 cm thick and are contorted and disrupted, possibly reflecting syndepositional slumping. Pyrite (5%) occurs as very fine-grained disseminations and laminations (&lt;0.5 mm, up to 7 mm). Pyritic beds &gt;2 mm containing 15-70% pyrite (<math>\pm</math>sphalerite?) appear as thin, medium to dark grey silty beds.</p> <p>6.1 - 7.8 poor recovery (0.2 m recovered).                      7.8 - 8.0 quartz-feldspar-chlorite veining.                      7.8 very fine pyritic laminations                      8.2 B/CA 26°.                      8.3 - 8.4 1.3-1.5 cm thick, light creamy brown bed with 40-50% very fine-grained pyrite (<math>\pm</math>sphalerite?) containing 50-60% silt sized clasts. Adjacent 1.5 cm bed is light to medium grey coloured, fine-grained silty mudstone (sulphidic?). Minor quartz-fe-carbonate veins/veinlets are present. Similar pyritic beds at 8.7 (~8 mm), 9.5 (~5 mm), 13.4 (5-7 mm), 16.6 (3-4 mm), 18.2 (5 mm) and 18.8 (2 mm).                      6.1 - 14.1 2-5% very fine-grained pyrite laminations.                      8.5 - 9.2 fault; poor recovery and broken core with some quartz veins.                      9.6 B/CA 58°.                      10.3 - 13.2 fault; broken and gouged with quartz-carbonate veins.                      13.4 pyritic laminations (&lt;5 mm) in a 3 cm dark grey pyritic mudstone/siltstone interbed. B/CA 37°.                      14.0 - 14.1 thin discontinuous sandstone/siltstone interbeds, &lt;8 mm thick, with trace-20% pyrite disseminations and laminations. B/CA 60°.                      14.1 - 15.2 fault; gouge and rubbly core.</p>
15.2	24.0	<p>THIN BEDDED SILTSTONE/SILTY MUDSTONE, MUDSTONE AND SANDSTONE</p> <p>Light to dark grey weathering, thinly banded unit comprising thin interbedded, laminated medium to dark grey siltstone/silty mudstone (60-70%), carbonaceous mudstone (20-30%) and medium grey, fine</p>

Property:

	<p>to medium-grained sandstone (5%). Pyrite (5%) occurs as &lt; 1 mm laminations or as elongate blebs parallel the laminations. Relatively few quartz-carbonate veinlets are present.</p> <p>15.5 B/CA 45°; 17.0 B/CA 69°.          17.8 - 18.2 fault; rubbly core and gouge with veinlets          18.4 - 19.0 slight increase in blebby pyrite content.          18.5 B/CA 82°.          19.4 - 20.2 fault; rubble and gouge.          20.2 - 20.7 medium to dark grey weathering, contorted/disrupted thin interbeds with trace-2% disseminated pyrite throughout.          20.4 B/CA 33°.          20.5 trace sphalerite as fine patchy disseminations within a fine to medium-grained sandstone interbed.          20.7 - 21.9 fault; gouge and sand with quartz vein fragments oriented 10° to contact.          21.9 - 24.0 generally weaker pyrite; dark grey to black silty mudstone interbeds predominate.          22.2 foliation/CA 62°.          22.3 3-4 mm thick, fine-grained sandstone interbed with quartz veinlets containing trace-2% fine-grained sphalerite.          22.4 - 22.5 minor fault gouge.          23.6 B/CA 67°.</p>
<p>24.0                      27.5</p>	<p><b>FAULT</b>          Gouge, sand and rubbly black to dark grey siltstone and quartz-carbonate-chlorite vein material.</p>
<p>27.5                      40.3</p>	<p><b>THIN TO MEDIUM BEDDED SILTY MUDSTONE/SILTSTONE; MINOR MUDSTONE AND SANDSTONE</b>          Medium to dark grey weathering, thin to medium interbedded dark grey to black carbonaceous silty mudstone/siltstone (70-85%), black carbonaceous mudstone (10%) and occasional medium grey sandstone (5%). Unit contains only trace pyrite and has a thicker bedded appearance than the overlying units.</p> <p>28.2 - 29.7 fault; gouge and quartz-chlorite-carbonate veins.          28.2 - 36.2 fault; very poor recovery; numerous gouge zones with sections of good core.          29.7 B/CA 60°, 34.5 B/CA 39°, 36.9 B/CA 42°.          37.2 dark grey silty mudstones predominate. Siltstone content decreases with depth.</p>
<p>40.3                      42.9</p>	<p><b>CARBONACEOUS SILTY MUDSTONE</b>          Dark grey weathering, dark grey to black, nonsiliceous or calcareous, massive carbonaceous silty mudstone with trace-1% very fine-grained pyrite as disseminations and within quartz-carbonate veinlets and along fractures. Unit is laminated near top.</p> <p>40.4 B/CA 73°.</p>

42.9	57.4	<p>THIN TO MEDIUM BEDDED SILTY MUDSTONE/SILTSTONE; MINOR MUDSTONE AND SANDSTONE</p> <p>Medium to dark grey weathering, thin to medium interbedded dark grey silty mudstone/siltstone (80-90%), dark grey to black mudstone (5-10%) and occasional sandstone (as interval 27.5 - 40.3). Trace pyrite is found as disseminations and within fractures and quartz-carbonate veins.</p> <p>43.2 B/CA 25°, 47.3 B/CA 56°, 47.9 B/CA 67°, 49.8 foliation/CA 48°, B/CA 84°, 53.5 B/CA 64°.</p> <p>54.8 bedding becomes more laminated.</p> <p>54.9 5-10% disseminated fine-grained pyrite within a thin siltstone bed. Others at 55.1 and 56.0.</p> <p>55.4 mudstone and silty mudstone beds often contain 2% fine-grained, euhedral pyrite with pressure shadows.</p> <p>56.3 laminated, very fine-grained pyrite. B/CA 85°.</p>
57.4	64.5	<p>LAMINATED TO THIN BEDDED SILTY MUDSTONE/SILTSTONE AND MUDSTONE</p> <p>Light to dark grey weathering, laminated to thin interbedded dark grey to black silty mudstone/siltstone (60-85%) and black mudstone (10-30%), similar to the top of the hole. Occasional thin (<math>\leq 1</math>cm) sandstone interbeds above 61.5 m. Very fine-grained pyrite (2-5%) occurs as 1-5 mm discontinuous (boudined?) and continuous laminations.</p> <p>57.4 - 57.8 minor fault; broken and gouged zone with quartz-feldspar-carbonate veins.</p> <p>58.1 B/CA 74°.</p> <p>58.1 - 58.7 brecciated rock with numerous quartz-feldspar-carbonate veins and breccia veins.</p> <p>59.3 minor gouge.</p> <p>59.3 - 61.5 10% quartz-feldspar + carbonate veins/breccia veins.</p> <p>60.4 - 62.7 mudstone/silty mudstone predominate with fine-grained pyrite (5-10%) laminations and bedding parallel disseminations. Also at 63.5.</p> <p>60.5 B/CA 63°, 63.4 B/CA 68°.</p>
64.5	74.3	<p>FAULT</p> <p>Black, very carbonaceous (graphitic), crushed and gouged mudstone with abundant quartz vein material.</p>
74.3	79.1	<p>CARBONACEOUS MUDSTONE</p> <p>Black to dark grey weathering, black carbonaceous (graphitic), nonsiliceous or calcareous mudstone with rare thin interbeds (&lt; 1 - 5 mm) defined by dark grey silty mudstone. Pyrite (2-5%) occurs as very fine-grained disseminations and rounded, elongate blebs &lt; 3 mm in size.</p> <p>74.3 - 75.6, 75.9 - 79.1 abundant quartz and fe-carbonate veins and breccia veins.</p>

		76.5 - 79.1 increased content of thin interbedded dark grey to black silty mudstone/siltstone.
79.1	84.2	<p><b>FAULT</b>                  Poor recovery; broken and gouged core with abundant quartz-feldspar(?) -carbonate veining.</p>
84.2	84.5	<p><b>SILICIFIED CARBONACEOUS MUDSTONE</b>                  Medium grey to dark grey weathering, silicified and brecciated dark grey carbonaceous mudstone/silty mudstone with 40-50% silica vein/breccia veins containing 10-25% fine to medium-grained, massive to disseminated pyrite.</p>
84.5	86.3	<p><b>SILICIFIED SILTSTONE/SANDSTONE</b>                  Medium grey, silicified siltstone and fine-grained sandstone brecciated and veined by 30-40%, &lt;1 mm to 4 cm wide white quartz-pyrite veins. Pyrite (10-15%) also occurs as fine to medium-grained, patchy alteration of the siltstone/sandstone along quartz veins and fractures. Fine to medium-grained, reddish brown sphalerite occurs within the veins and light pinkish sphalerite occurs as fine disseminations (trace-5%) in the altered siltstone/sandstone, adjacent to the veins (ie. 84.5-84.6, 84.7, 86.2).</p>
86.3	87.8	<p><b>FAULT</b>                  Poor recovery; broken core and abundant quartz veins.</p>
87.8	97.8	<p><b>LAMINATED TO THINBEDDED CARBONACEOUS AND CALCAREOUS, PYRITIC MUDSTONE</b>                  Black laminated to thin bedded, very carbonaceous and weak to moderately calcareous, pyritic mudstone.</p> <p>87.8 - 88.1 30-40% quartz veinlets (<math>\leq 5</math>mm).                  88.1 - 88.3 fault gouge.                  88.3 - 88.7 dark brown grey, laminated to thin bedded limy mudstone containing 10-20% very fine-grained disseminated pyrite with minor fragmental interbeds containing 25% fine-grained disseminated pyrite and 20-30%, rounded to angular black mudstone/graphite chips (<math>\leq 1.5</math>mm). A 10 cm thick medium grey, disrupted/brecciated limestone/limy mudstone horizon is present with 1 cm of finely laminated massive pyrite at its base (B/CA 48°).                  88.7 - 89.6 black pyritic, non to moderately calcareous mudstone with light to medium grey, finely laminated fine-grained carbonate (witherite? and possibly some sphalerite?). Pyrite (5-10%) is very fine-grained and occurs disseminated throughout and in laminations. Gradational contact into...                  89.6 - 97.8 laminated to thin bedded noncalcareous, pyritic mudstone with interlaminated to thin interbedded medium to dark grey calcareous mudstone at 92.5-92.7, 93.6-94.1 (B/CA 30°) and 95.5-97.8. Pyrite (5-15%) occurs as disseminations, discontinuous blebs and laminations up to 4mm thick (light brown, very fine-grained pyrite or sphalerite is found in numerous laminations).</p>

		95.5 - 97.8 poor recovery; broken and quartz veined mudstone.
97.8	102.9	<p><b>CARBONACEOUS MUDSTONE WITH THIN TO MEDIUM INTERBEDDED SANDSTONE</b></p> <p>Light to medium grey to black interval with very poor recovery. Black very carbonaceous (graphitic) and weakly pyritic mudstones are very broken and locally gouged. Medium grey, fine-grained sandstone with abundant quartz veining and fracturing occur as pieces within the broken/gouged mudstone at 98.8-99.3, 99.4-99.5, 100.3-100.5, 100.7-100.8, 101.8-101.9, 102.8-102.9.</p> <p>98.6 - 98.8 fault; gouge. Also at 99.3-99.4 and 102.2-102.8.</p>
102.9	106.3	<p><b>LAMINATED CARBONACEOUS AND PYRITIC MUDSTONE</b></p> <p>Dark grey to black weathering, broken interval (poor recovery) of black to dark grey, very carbonaceous, weakly calcareous mudstone with 5-10% very fine-grained disseminated to laminated pyrite and light brown sphalerite? Light to medium grey calcareous laminations (witherite?) are present, especially at 104.4.</p> <p>104.8 - 106.3 decreased sulphide content (1-5%). 105.0 thin interbeds of fine-grained sandstone/siltstone appear. 105.9 B/CA 76°.</p>
106.3	119.8	<p><b>FAULT</b></p> <p>Very poor recovery of gouged and sheared black carbonaceous and locally calcareous mudstone with 2-5% disseminated fine pyrite. Quartz-calcite veining is locally abundant.</p>
119.8	121.4	<p><b>THIN INTERBEDDED CARBONACEOUS MUDSTONE AND SILTSTONE/SILTY MUDSTONE</b></p> <p>Medium grey to black unit with laminated to thin bedded black carbonaceous mudstone (80-90%) and dark grey, fine-grained siltstone/silty mudstone (10-20%) containing trace-1% fine-grained disseminated pyrite and 5-10% quartz-carbonate veins. Transitional into the underlying unit.</p> <p>120.7 B/CA 58°. 121.1 - 121.7 fault; crushed and quartz-carbonate veined.</p>
121.4	134.5	<p><b>THIN INTERBEDDED SILTSTONE/SILTY MUDSTONE AND MUDSTONE; MINOR SANDSTONE</b></p> <p>Light to dark grey, colour banded unit comprising interbedded (mm's to 12cm) dark to medium grey, very fine to fine-grained siltstone/silty mudstone (50-80%), dark grey to black mudstone (10-40%) and minor medium grey, fine-grained sandstone (1-5%). Pyrite (trace-2%) occurs as laminations in mudstones and as disseminations in other lithologies and quartz-carbonate veins.</p> <p>126.3 B/CA 38°, 131.6 B/CA 36°. 130.1 - 130.5 fault; gouged and rubbly core with abundant quartz-</p>

Property:

		carbonate veins. Also at 133.0-133.5. 131.4 1.5cm thick waxy (green) brown very fine-grained ash tuff(?) horizon.
134.5	144.4	<p><b>FAULT</b> Poor recovery. Black gouged and broken core with abundant quartz-carbonate-feldspar veining.</p> <p>134.5 - 141.1 black carbonaceous mudstone with 5-10% fine-grained disseminated and laminated pyrite. 141.1 - 144.4 medium grey siltstone and sandstone, as below.</p>
144.4	158.6	<p><b>THIN TO MEDIUM BEDDED SILTSTONE, SANDSTONE AND MINOR SILTY MUDSTONE</b> Medium grey weathering, interbedded weak to moderately carbonaceous dark grey siltstone and fine to coarse-grained sandstone containing 5-15% fine-grained disseminated pyrite.</p> <p>145.3 B/CA 86°. 146.2 - 147.8 40-60% quartz veins and breccia veins within crushed/gouged siltstone/sandstone. 147.8 - 149.0 fault; abundant gouge and crushed rock. 149.0 - 150.0 thin bedded carbonaceous silty mudstone with several interbeds (1.5-12cm) of dark grey siltstone and fine sandstone containing 20-40% subrounded fragments (1-9mm, avg. 4mm) of chert. B/CA 47° at 149.7. 150.0 - 158.6 laminated to thin bedded fine-grained sandstone (60-70%), siltstone and dark grey silty mudstone with only trace-2% fine-grained disseminated pyrite. 150.0 - 150.6 fault; crushed rock with quartz veins and minor gouge. 151.2 - 152.1 crushed rock and minor gouge. 156.7 B/CA 44°. 157.9 - 158.2 abundant quartz veining.</p>
158.6	162.6	<p><b>FAULT</b> Quartz+carbonate breccia veins and quartz healed fault zone with trace-1% fine pyrite disseminated throughout.</p> <p>158.6 - 160.9 white quartz+carbonate vein. 160.9 - 162.6 quartz healed fault zone; lower contact/CA 12°.</p>
162.6	170.5	<p><b>MEDIUM TO THICK BEDDED SANDSTONE AND CHERT PEBBLE CONGLOMERATE</b> Medium grey weathering unit of fine to coarse-grained sandstone with several interbeds of fine chert pebble conglomerate containing 20-30%, 1-14 mm clasts of subangular to subrounded fragments of light to dark grey chert (95%), dark grey to black silty mudstone (5%) and occasional pyritic fragments supported in a fine silt and silica matrix. Conglomerate beds are massive, containing no internal stratification. Very fine-grained pyrite (1-2%) is found disseminated throughout.</p>

Property:

	<p>162.6 - 163.1 fine to coarse-grained sandstone.                  163.1 - 164.3 breccia vein and quartz healed fault, as above. contact/CA 8°.                  164.3 - 165.4 fine chert pebble conglomerate.                  165.4 - 165.7 thin bedded dark grey muddy siltstone.                  166.0 - 170.2 quartz veins and breccia veins in sheared sandstone.                  170.2 - 170.5 chert pebble conglomerate, as above, with a more carbonaceous matrix.</p>
<p>170.5                      190.2</p>	<p>THIN TO MEDIUM INTERBEDDED SILTSTONE, SILTY MUDSTONE AND MINOR SANDSTONE                  Medium to dark grey weathering, weakly colour banded unit comprising medium to dark grey siltstone (80-90%), dark grey silty mudstone (10%) and light to medium grey fine to medium-grained sandstone (2-5%). Pyrite (trace-2%) occurs as fine disseminations and occasional laminations; also in microfractures.</p> <p>170.5 - 172.4 laminated to thin bedded silty mudstone and siltstone predominates. B/CA 49°.                  172.4 - 190.2 unit becomes more thin to medium bedded and siltstone dominated; normally graded sandstone interbeds (4mm-6cm) appear.                  175.3 - 177.1 broken and weakly sheared rock; no gouge.                  179.0 B/CA 66°, foliation/CA 46°.                  182.2 - 182.3, 183.6 - 184.0 minor gouge and crushed rock.                  184.0 - 184.4 minor fold hinge; B/CA 48°, foliation/CA 41°.                  184.7 - 185.2 quartz vein.                  185.6 B/CA 36°.                  187.5 - 188.4 broken core. Also at 188.9-189.2.                  189.2 - 190.4 fault; abundant quartz veins, sheared rock and gouge.</p>
<p>190.2                      198.3</p>	<p>LAMINATED TO THIN BEDDED MUDSTONE; MINOR SILTY MUDSTONE                  Dark grey to black interval of dark grey to black carbonaceous, locally calcareous and weakly pyritic mudstone with minor dark grey silty mudstone. White quartz-carbonate veins are abundant (5-20% throughout).</p> <p>190.2 - 191.3 non-calcareous, laminated to thin bedded mudstone and silty mudstone. Pyrite (2-5%) occurs as discontinuous laminations and very fine-grained disseminations; also found in quartz veinlets.                  191.3 - 191.5 medium to dark grey, massive fine-grained limy mudstone with 2-5% very fine disseminated pyrite. Abundant quartz-calcite veins are present.                  191.5 - 192.9 strongly foliated weakly calcareous mudstone.                  192.9 - 193.4 sheared mudstone with thin gouge zones and abundant quartz veins. Also at 194.3-194.9 and 195.3-196.4.                  193.4 - 194.1 non-calcareous mudstone.                  194.1 - 198.3 weakly calcareous mudstone/silty mudstone.                  197.4 - 198.3 fault; poor recovery.</p>
<p>198.3                      207.2</p>	<p>LAMINATED TO MEDIUM BEDDED CARBONACEOUS AND PYRITIC</p>

	<p><b>MUDSTONE/SILTY MUDSTONE</b>                  Black carbonaceous, weakly siliceous (locally weakly calcareous), pyritic mudstone and silty mudstone.</p> <p>198.3 - 200.6 non-calcareous, weakly siliceous mudstone with 15% fossiliferous laminations (3-5mm) defined by fine-grained, calcareous, light grey to white specks (<math>\pm 0.1</math>mm) (tentaculites or radiolarians?) and 10% fine-grained disseminated pyrite. Generally mudstone contains 1-3% disseminated pyrite. 199.4 B/CA 77°.</p> <p>200.6 - 203.8 broken interval of non-calcareous, laminated to thin bedded silty mudstone/mudstone.</p> <p>203.3 - 205.1 fault; quartz veining and sheared and gouged mudstones.</p> <p>203.8 - 207.2 laminated to medium bedded, weakly calcareous mudstone/silty mudstone with 5-15% fine-grained disseminated pyrite and abundant quartz-carbonate veining (up to 60% locally).</p> <p>206.5 trace disseminated fine to medium-grained reddish brown sphalerite in quartz-calcite veins.</p>
<p>207.2</p> <p>224.8</p>	<p><b>THIN BEDDED TO LAMINATED SILTSTONE/SILTY MUDSTONE; MINOR MUDSTONE AND SANDSTONE</b>                  Medium to dark grey, colour banded unit (similar to the interval from 170.5-190.2 and 27.5-57.4) comprising thin bedded medium to dark grey siltstone/silty mudstone (80-95%); minor dark grey to black mudstone (5%) and light to medium grey, fine-grained sandstone (2-5%). Pyrite (2-5%) occurs as very fine-grained laminations. Contorted quartz veinlets occur parallel bedding.</p>
<p>224.8</p> <p>245.8</p>	<p><b>LAMINATED CARBONACEOUS AND PYRITIC MUDSTONE</b>                  Laminated to thin bedded black carbonaceous, non to weakly calcareous mudstone with 5-25% very fine-grained laminated pyrite and 2-5% dark grey chert interbeds (<math>\leq 4</math>mm). Mudstones are occasionally fossiliferous (tentaculites/radiolarians?).</p> <p>225.3 - 227.7 locally weakly calcareous mudstone with 10-30% pyrite occurring as very fine-grained laminations, disseminations and <math>\leq 3</math>mm disseminated blebs. Interval also contains thin cherty interbeds. Trace fine-grained sphalerite occurs in quartz-carbonate veinlets at 226.4-226.5. At 227.0, a 3.0cm thick cherty interbed contains laminated fine-grained pyrite and fossils (<math>\leq 0.25</math>mm rounded, calcareous white specks - tentaculites/radiolarians?, as above).</p> <p>227.7 - 227.8 dark grey to black carbonaceous and silicified mudstone with trace-3% fine-grained pyrite and 5-10% quartz-carbonate veining. B/CA 59°.</p> <p>227.8 - 230.2 black carbonaceous, non to weakly calcareous mudstone with 10-25% very fine laminated and disseminated pyrite. Dark grey cherty interbeds (5-25% and 3-15mm) containing 10-20% white fossils, as above. Heavy, very delicate pyrite laminations (20-40%) at 230.1. Interval is cut by 2-5% quartz-graphite <math>\pm</math> carbonate and sphalerite veins.</p> <p>228.1 - 238.9 quartz-graphite <math>\pm</math> carbonate veins contain trace-2%,</p>

Property:

251.5 B/CA 63°.

264.1 - 264.3 quartz-calcite vein containing 15-25% fine-grained massive galena along the vein margins.

264.8 thin cherty interbed, B/CA 55°.

265.2 - 265.3 thin bed of medium grey, fine-grained sandstone grading upward into laminated to thin bedded siltstone, silty mudstone and mudstone. Pyrite (1-3%) occurs as fine-grained patchy disseminations.

265.3 - 266.1 mudstone with some silty mudstone/siltstone interbeds and laminations. Pyrite (2-5%) occurs as fine-grained disseminations and discontinuous laminations.

266.1 - 266.5 laminated to thin bedded, fine-grained medium grey sandstone. B/CA 66°.

266.5 - 271.4 carbonaceous and weakly pyritic (2-3%) mudstone, as above, with occasional thin calcareous fossiliferous beds ( $\leq 1$ cm). B/CA 67° at 270.2.

271.4 - 272.2 medium to light grey, fine to medium-grained sandstone. Unit is massive bedded, showing no internal stratification. An 8-9cm quartz-carbonate vein at 10° CA is present.

272.0 - 272.6 fault; broken and gouged core.

272.2 - 273.4 massive carbonaceous mudstone with 2-5% diffuse, disseminated pyritic blebs and wispy laminations.

273.4 - 273.6 medium grey weathering, dark grey, muddy fossiliferous siltstone?; weakly normally graded. Fossils are calcareous.

273.6 - 280.4 massive weakly siliceous and locally calcareous mudstone with rare thin cherty interbeds and 2-5% very fine-grained wispy and blebby (locally laminated) pyrite. 5-10% very fine-grained pyritic laminations and wispy disseminations at 279.4-279.7. B/CA 57° at 275.0; B/CA 76° at 279.8.

280.4 - 280.5 medium to dark grey weathering, dark grey fine-grained sandstone interbed.

280.5 - 286.3 massive carbonaceous and moderately siliceous mudstone with 5% laminated ( $\leq 1$ -3mm) fine-grained disseminated pyrite and 2-5% thin (2-20mm) fossiliferous interbeds. Thin beds and laminations of massive 40-60% disseminated fine-grained pyrite are present locally. Pyrite content increases to 10% at 285.8. Between 285.8 and 286.3 fine-grained sandstone and siltstone interbeds appear (B/CA 71°).

286.3 - 287.4 medium to light grey weathering, medium to dark grey, fine to medium-grained sandstone with abundant (25%) quartz-carbonate veining.

287.4 - 290.4 weak to moderately siliceous and locally calcareous mudstone containing trace-1% disseminated fossils and thin interbeds of fossil-rich mudstone. Pyrite (5-10%) occurs as fine-grained wispy blebs, laminations and disseminations.

288.1 - 288.3 6cm thick calcareous sandstone interbed and minor fossiliferous laminations and thin beds. Pyrite content is 10%. B/CA 70°.

288.8 sphalerite grains in quartz-calcite vein.

290.4 - 290.6 two dark to medium grey, fine-grained muddy fossiliferous sandstone interbeds containing 30-40% rounded

calcareous fossils? ( $\leq 1.5\text{mm}$ ), as above.  
 290.6 - 297.5 carbonaceous weak to moderately calcareous mudstone with 2-10% very fine-grained laminated, blebby and wispy pyrite and occasional thin fossil-rich interbed.  
 291.0 B/CA 42°.  
 296.5 - 302.0 broken core with minor gouge.  
 297.5 - 297.7 dark to medium grey, fine to medium-grained muddy fossiliferous and weakly calcareous sandstone containing 40-60% rads? ( $\leq 1.0\text{mm}$ ).  
 297.7 - 303.7 carbonaceous weak to moderately calcareous mudstone with 2-10% very fine-grained laminated, blebby and wispy pyrite.  
 303.7 - 304.3 light to medium grey weathering, medium to dark grey fine-grained sandstone with abundant quartz-carbonate veining (10-15%). B/CA 71° at 304.3.  
 304.3 - 304.7 carbonaceous and calcareous mudstone/silty mudstone with 2-5% very fine-grained disseminated pyrite.  
 304.7 - 304.8 medium grey, fine to medium-grained calcareous sandstone. B/CA 45°.  
 304.8 - 305.0 weakly laminated carbonaceous and calcareous mudstone/silty mudstone with 2-5% pyrite.  
 305.0 - 306.1 medium grey, fine to medium-grained massive calcareous sandstone with trace-2% disseminated blebby pyrite.  
 306.1 - 307.7 carbonaceous calcareous mudstone with 2-5% blebby and wispy pyrite.  
 307.7 - 308.9 weakly calcareous fine to medium-grained massive sandstone with trace-2% disseminated pyrite and abundant quartz-calcite veins with trace sphalerite. Trace-2% disseminated sphalerite occurs disseminated in the sandstone adjacent to the veining.  
 308.9 - 309.7 noncalcareous carbonaceous mudstone with trace-1% very fine-grained wispy pyrite.

309.7

324.7

**CARBONACEOUS AND CALCAREOUS MUDSTONE WITH THIN INTERBEDDED LIMY MUDSTONE/LIMESTONE**

Medium to dark grey, thick banded competent unit comprising black to dark grey carbonaceous and calcareous mudstone containing trace-3% very fine-grained disseminated and wispy pyrite. Light to medium brown grey weathering, medium to dark grey limy mudstone/limestone interbeds (10-65cm) are massive to laminated, locally fossiliferous (tentaculites or radiolarians? and occasional crinoids) and contain trace-1% fine disseminated pyrite. Limy interbeds are generally well quartz-carbonate veined.

Limy mudstone/limestone interbeds occur at 311.9-312.1, 313.0-313.2 (B/CA 59°), 313.9-314.3, 314.7-314.9, 315.4-315.5, 315.9-316.6, 317.9-318.1 (B/CA 66°), 318.7-319.0, 319.7-318.9, 320.2-320.5, 320.8-321.0, 321.5-321.8, 321.9-322.0, 322.7-322.9 (B/CA 62°), 323.4-323.6 and 324.1-324.4.

316.6 mudstones become laminated to thinly bedded with increasing limy mudstone interbeds. Mudstones are locally fossiliferous (ie. 316.6-319.7). Crinoid stem fragments in mudstone occur at 317.7 and 319.4.

Property:

324.7	328.4	<p>CARBONACEOUS MUDSTONE; MINOR SILTSTONE AND SANDSTONE Black carbonaceous and noncalcareous mudstone with rare thin, dark grey, fine-grained sandstone interbeds. Basal 20cm are increasingly silty/sandy.</p> <p>324.6 - 327.1 3-5% disseminated very fine-grained pyrite. Pyrite content increase (5-10%) after 327.1, occurring as disseminations, blebs and laminations.</p> <p>324.6 - 342.2 broken core with minor gouge zones and abundant quartz-carbonate veining.</p>
328.4	329.6	<p>THIN BEDDED FOSSILIFEROUS SILTSTONE/SANDSTONE Medium grey weathering unit dominated by dark grey to black, locally laminated, thin interbeds of siltstone/sandstone (<math>\leq 1-4</math>cm) containing 40-60% white crinoid ossicle fragments (1 and 2 holes, <math>\leq 2.5</math>mm in diameter) and tentaculites or radiolarians? (as above) set in a carbonaceous fine-grained sandy matrix. Pyrite (trace-1%) occurs as fine disseminations and patches.</p> <p>328.9 B/CA 59°.</p> <p>329.4 - 331.5 fault; badly broken and gouged core.</p>
329.6	331.0	<p>CARBONACEOUS SILTY MUDSTONE Dark grey to black carbonaceous silty mudstone with trace-10% very fine-grained pyrite disseminations, blebs and wispy laminations. Unit grades into carbonaceous siltstone near base.</p>
331.0	360.6 EOH	<p>CARBONACEOUS SILTSTONE, SANDSTONE AND SILTY MUDSTONE Medium grey weathering unit of thick bedded (internally laminated) dark grey silty mudstone, medium to dark grey siltstone and medium grey fine-grained sandstone. Contacts between beds are gradational with bedding defined primarily by varying proportions of the three dominant lithologies. Pyrite (trace-5%) occurs as fine-grained disseminations and minor blebs and wispy laminations. Pyrite content drops to trace-1% below 342.2.</p> <p>332.7 - 333.7 fault; broken core, gouge and quartz breccia veins. Also at 337.2-337.5, 339.2-339.6, 340.1-342.2.</p> <p>331.0 - 333.7 fine-grained massive unit of diffusely interlaminated dark grey, carbonaceous silty mudstone and siltstone.</p> <p>333.7 - 336.5 dark grey silty mudstone with siltstone and fine sandstone interlaminations.</p> <p>336.5 - 342.2 dark grey carbonaceous siltstone with fine sandstone and silty mudstone interlaminations. B/CA 62° at 337.1.</p> <p>342.2 - 343.8 interlaminated to thin interbedded (flaser bedding?) fine-grained sandstone and carbonaceous siltstone.</p> <p>343.8 - 345.0 interlaminated to thin interbedded carbonaceous silty mudstone and siltstone. B/CA 66° at 344.4.</p> <p>345.0 - 346.3 sandstone and siltstone, as above.</p> <p>346.3 - 349.0 silty mudstone and siltstone, as above.</p> <p>349.0 - 349.7 sandstone and siltstone, as above. B/CA 57° at 349.3.</p>

**DRILL HOLE RECORD**

**COMINCO LTD.**

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Hole No.: F92-15

Property:

349.7 - 350.1 silty mudstone and siltstone, as above.  
350.1 - 353.1 sandstone and siltstone, as above. B/CA 63° at 351.5.  
353.1 - 354.0 silty mudstone and siltstone, as above.  
354.0 - 357.1 sandstone and siltstone, as above.  
357.1 - 358.9 silty mudstone and siltstone, as above.  
358.9 - 360.6 sandstone and siltstone, as above. B/CA 64° at 358.9.

Hole lost at 360.6 due to loss of circulation and stuck rods. 110 rods lost in hole.

FIN PROPERTY 1992  
 DRILL HOLE 92-15

FROM	TO	METRES	RECV'D	%
0.0	6.1	6.1	0.00	0
6.1	8.5	2.4	0.94	39.17
8.5	11.6	3.1	1.70	54.84
11.6	14.6	3.0	1.70	56.67
14.6	17.7	3.1	2.70	87.10
17.7	20.7	3.0	2.60	86.67
20.7	23.8	3.1	2.50	80.65
23.8	26.8	3.0	1.40	46.67
26.8	29.9	3.1	2.40	77.42
29.9	32.9	3.0	1.10	36.67
32.9	36.0	3.1	1.30	41.94
36.0	39.0	3.0	2.80	93.33
39.0	42.1	3.1	2.90	93.55
42.1	45.1	3.0	2.80	93.33
45.1	48.2	3.1	3.00	96.77
48.2	51.2	3.0	2.90	96.67
51.2	54.3	3.1	2.70	87.10
54.3	57.3	3.0	2.80	93.33
57.3	60.4	3.1	3.00	96.77
60.4	63.4	3.0	2.90	96.67
63.4	66.4	3.0	1.80	60.00
66.4	69.5	3.1	0.90	29.03
69.5	72.5	3.0	3.00	100.00
72.5	75.6	3.1	2.00	64.52
75.6	77.1	1.5	1.50	100.00
77.1	78.6	1.5	1.50	100.00
78.6	80.2	1.6	0.80	50.00
80.2	83.2	3.0	0.80	26.67
83.2	84.7	1.5	1.00	66.67
84.7	86.3	1.6	0.85	53.13
86.3	87.8	1.5	0.18	12.00
87.8	90.8	3.0	2.90	96.67
90.8	93.9	3.1	2.80	90.32
93.9	96.9	3.0	2.25	75.00
96.9	100.0	3.1	2.65	85.48
100.0	103.0	3.0	1.95	65.00
103.0	106.1	3.1	1.26	40.65
106.1	109.1	3.0	1.20	40.00
109.1	112.2	3.1	0.85	27.42
112.2	115.2	3.0	1.25	41.67
115.2	116.7	1.5	0.65	43.33
116.7	118.3	1.6	0.65	40.63
118.3	119.8	1.5	0.60	40.00
119.8	121.3	1.5	1.40	93.33
121.3	122.8	1.5	0.64	42.67
122.8	124.4	1.6	1.60	100.00
124.4	125.9	1.5	1.50	100.00
125.9	127.4	1.5	1.45	96.67
127.4	128.9	1.5	1.50	100.00
128.9	130.5	1.6	1.50	93.75
130.5	132.0	1.5	1.45	96.67
132.0	133.5	1.5	1.00	66.67
133.5	135.0	1.5	1.05	70.00
135.0	136.6	1.6	0.45	28.13
136.6	138.1	1.5	0.45	30.00
138.1	139.6	1.5	0.40	26.67
139.6	141.1	1.5	0.40	26.67
141.1	142.6	1.5	0.55	36.67
142.6	144.2	1.6	0.70	43.75
144.2	145.7	1.5	1.40	93.33
145.7	147.2	1.5	1.40	93.33
147.2	148.7	1.5	1.10	73.33
148.7	150.3	1.6	1.40	87.50
150.3	151.8	1.5	1.45	96.67
151.8	153.3	1.5	1.50	100.00

153.3	154.8	1.5	0.20	13.33
154.8	156.4	1.6	1.55	96.88
156.4	157.9	1.5	1.45	96.67
157.9	159.4	1.5	1.50	100.00
159.4	160.9	1.5	1.45	96.67
160.9	162.5	1.6	1.40	87.50
162.5	164.0	1.5	1.40	93.33
164.0	165.5	1.5	1.45	96.67
165.5	167.0	1.5	1.40	93.33
167.0	168.6	1.6	1.55	96.88
168.6	170.1	1.5	1.50	100.00
170.1	171.6	1.5	1.45	96.67
171.6	173.1	1.5	1.50	100.00
173.1	174.7	1.6	1.40	87.50
174.7	176.2	1.5	1.40	93.33
176.2	177.7	1.5	1.40	93.33
177.7	179.2	1.5	1.50	100.00
179.2	180.7	1.5	1.50	100.00
180.7	182.3	1.6	1.40	87.50
182.3	183.8	1.5	1.10	73.33
183.8	185.3	1.5	1.40	93.33
185.3	186.8	1.5	1.40	93.33
186.8	188.4	1.6	1.00	62.50
188.4	189.9	1.5	1.40	93.33
189.9	191.4	1.5	1.50	100.00
191.4	192.9	1.5	1.30	86.67
192.9	194.5	1.6	1.40	87.50
194.5	196.0	1.5	1.10	73.33
196.0	197.5	1.5	0.90	60.00
197.5	199.0	1.5	1.50	100.00
199.0	200.6	1.6	1.60	100.00
200.6	202.1	1.5	1.40	93.33
202.1	203.6	1.5	1.20	80.00
203.6	205.1	1.5	1.40	93.33
205.1	206.7	1.6	1.60	100.00
206.7	208.2	1.5	1.50	100.00
208.2	209.7	1.5	1.40	93.33
209.7	211.2	1.5	1.50	100.00
211.2	212.8	1.6	1.50	93.75
212.8	214.3	1.5	1.50	100.00
214.3	215.8	1.5	1.50	100.00
215.8	217.3	1.5	1.50	100.00
217.3	218.8	1.5	1.50	100.00
218.8	220.4	1.6	1.50	93.75
220.4	221.9	1.5	1.40	93.33
221.9	223.4	1.5	1.50	100.00
223.4	224.9	1.5	1.50	100.00
224.9	226.5	1.6	1.50	93.75
226.5	228.0	1.5	1.40	93.33
228.0	229.5	1.5	0.90	60.00
229.5	231.0	1.5	1.10	73.33
231.0	232.6	1.6	1.20	75.00
232.6	234.1	1.5	1.30	86.67
234.1	235.6	1.5	1.40	93.33
235.6	237.1	1.5	1.30	86.67
237.1	238.6	1.5	1.10	73.33
238.6	240.2	1.6	1.40	87.50
240.2	241.7	1.5	1.40	93.33
241.7	243.2	1.5	1.20	80.00
243.2	244.7	1.5	1.50	100.00
244.7	246.3	1.6	1.10	68.75
246.3	247.8	1.5	1.50	100.00
247.8	249.3	1.5	1.50	100.00
249.3	250.8	1.5	1.40	93.33
250.8	252.4	1.6	1.40	87.50
252.4	253.9	1.5	1.40	93.33
253.9	255.4	1.5	1.50	100.00
255.4	256.9	1.5	1.40	93.33
256.9	258.5	1.6	1.50	93.75
258.5	260.0	1.5	1.40	93.33
260.0	261.5	1.5	1.50	100.00
261.5	263.0	1.5	1.50	100.00

263.0	264.6	1.6	1.40	87.50
264.6	266.1	1.5	1.45	96.67
266.1	267.6	1.5	1.50	100.00
267.6	269.1	1.5	1.40	93.33
269.1	270.7	1.6	1.55	96.88
270.7	272.2	1.5	1.50	100.00
272.2	273.7	1.5	1.50	100.00
273.7	275.2	1.5	1.50	100.00
275.2	276.8	1.6	0.17	10.62
276.8	278.3	1.5	1.45	96.67
278.3	279.8	1.5	1.40	93.33
279.8	281.3	1.5	1.40	93.33
281.3	282.9	1.6	1.50	93.75
282.9	284.4	1.5	1.40	93.33
284.4	285.9	1.5	1.45	96.67
285.9	287.4	1.5	1.40	93.33
287.4	289.0	1.6	1.50	93.75
289.0	290.5	1.5	1.50	100.00
290.5	292.0	1.5	1.35	90.00
292.0	293.5	1.5	1.30	86.67
293.5	295.0	1.5	1.40	93.33
295.0	296.6	1.6	1.45	90.62
296.6	298.1	1.5	1.30	86.67
298.1	299.6	1.5	1.45	96.67
299.6	301.1	1.5	1.45	96.67
301.1	302.7	1.6	1.60	100.00
302.7	304.2	1.5	1.50	100.00
304.2	305.7	1.5	1.40	93.33
305.7	307.2	1.5	1.30	86.67
307.2	308.8	1.6	1.50	93.75
308.8	310.3	1.5	1.50	100.00
310.3	311.8	1.5	1.25	83.33
311.8	313.3	1.5	1.40	93.33
313.3	314.9	1.6	1.45	90.63
314.9	316.4	1.5	1.50	100.00
316.4	317.9	1.5	1.45	96.67
317.9	319.4	1.5	1.50	100.00
319.4	321.0	1.6	1.55	96.87
321.0	322.5	1.5	0.65	43.33
322.5	324.0	1.5	1.10	73.33
324.0	325.5	1.5	1.30	86.67
325.5	327.1	1.6	1.30	81.25
327.1	328.6	1.5	1.35	90.00
328.6	330.1	1.5	1.30	86.67
330.1	331.6	1.5	1.30	86.67
331.6	333.1	1.5	1.40	93.33
333.1	334.7	1.6	1.20	75.00
334.7	336.2	1.5	1.35	90.00
336.2	337.7	1.5	1.35	90.00
337.7	339.2	1.5	1.40	93.33
339.2	340.8	1.6	1.25	78.12
340.8	342.3	1.5	1.40	93.33
342.3	343.8	1.5	1.45	96.67
343.8	345.3	1.5	1.40	93.33
345.3	346.9	1.6	1.50	93.75
346.9	348.4	1.5	1.40	93.33
348.4	349.9	1.5	1.60	106.67
349.9	351.4	1.5	1.50	100.00
351.4	353.0	1.6	1.60	100.00
353.0	354.5	1.5	1.45	96.67
354.5	356.0	1.5	1.50	100.00
356.0	357.5	1.5	1.50	100.00
357.5	359.1	1.6	1.60	100.00
6.1	359.1	345.0	288.69	83.68

SAMPLE NO.	LAB#	FROM	TO	Cu(PPM)	Pb(PPM)	Zn(PPM)	Ag(PPM)	Cd(PPM)	Fe(%)	Mn(PPM)	V(PPM)	Ba(PPM)
68155	9209956	8.0	9.2	42	31	60	0.4	1	2.93	172	25	1323
68156	9209957	9.2	10.3	40	23	210	0.4	1	2.38	109	21	1302
68157	9209958	10.3	13.2	36	27	155	0.4	1	2.44	164	21	1238
68158	9209959	13.2	14.1	36	43	64	0.4	1	2.88	199	19	1091
68159	9209960	14.1	15.2	46	26	211	0.4	1	2.41	110	21	1146
68160	9209961	15.2	16.7	46	26	319	0.4	1	2.56	140	22	992
68161	9209962	16.7	18.2	44	22	131	0.4	1	2.57	126	23	1332
68162	9209963	18.2	19.4	42	29	157	0.4	1	2.72	116	24	1026
68163	9209964	19.4	20.7	39	19	163	0.4	1	2.53	181	22	1106
68164	9209965	20.7	21.9	82	45	154	0.4	1	2.87	236	21	1176
68165	9209966	21.9	24.0	36	17	111	0.4	1	2.21	123	24	1063
68166	9209967	24.0	27.5	45	21	176	0.4	1	2.66	158	23	1554
68167	9209968	57.4	59.3	38	25	22	0.4	1	2.10	158	17	2348
68168	9209969	59.3	60.7	37	15	6	0.4	1	1.69	211	14	2511
68169	9209970	60.7	62.7	42	30	3	0.4	1	1.61	126	13	3189
68170	9209971	62.7	64.5	42	19	8	0.4	1	1.93	165	11	3658
68171	9209972	64.5	69.4	23	11	41	0.4	1	1.43	217	22	2434
68172	9209973	69.4	74.3	45	14	61	0.5	1	1.84	170	22	2325
68173	9209974	74.3	75.6	28	11	30	0.4	1	1.18	89	50	1428
68174	9209975	75.6	76.5	37	12	55	0.7	1	1.44	76	14	2289
68175	9209976	76.5	78.1	44	27	63	0.4	1	2.65	216	8	3236
68176	9209977	78.1	79.1	41	25	163	0.5	1	2.11	107	7	2884
68177	9209978	79.1	84.2	10	7	12	0.4	1	0.81	126	13	1411
68178	9209979	84.2	84.5	51	160	311	0.8	3	9.04	48	54	267
68179	9209980	84.5	86.3	23	61	940	0.7	14	4.68	310	47	283
68180	9209981	87.8	88.3	13	8	138	0.6	1	0.85	163	69	584
68181	9209982	88.3	88.7	36	17	96	0.4	1	2.94	281	95	556
68182	9209983	88.7	89.6	67	12	1578	0.8	20	1.36	77	160	1264
68183	9209984	89.6	90.6	62	12	719	1.6	8	3.26	233	192	877
68184	9209985	90.6	92.1	77	14	725	1.8	11	2.89	136	150	808
		88.7	92.1	70	13	949	1.5	13	2.59	149	165	949
68185	9209986	92.1	94.1	33	4	492	1.3	10	2.85	375	86	682
68186	9209987	94.1	95.5	21	6	8	1.0	1	2.20	423	79	675
68187	9209988	95.5	97.8	58	5	401	1.9	7	1.34	97	124	860
68188	9209989	97.8	99.8	16	4	279	0.6	4	1.50	295	95	1491
68189	9209990	99.8	101.8	73	37	91	0.4	1	2.07	223	142	1111
68190	9209991	101.8	102.9	72	8	71	0.6	1	1.59	240	71	1121
68191	9209992	102.9	104.7	50	11	355	0.9	3	1.21	171	47	1084
68192	9209993	104.7	106.3	46	7	44	1.0	1	1.49	219	56	1287
68193	9209994	106.3	109.1	100	10	15	1.4	1	1.59	152	85	1837
68194	9209995	109.1	112.2	59	6	8	0.7	1	2.12	335	63	1822
68195	9209996	112.2	115.2	102	26	567	1.4	7	2.45	148	98	1760
68196	9209997	115.2	118.3	103	11	841	2.0	11	1.17	136	104	968
68197	9209998	118.3	119.8	63	4	443	0.5	5	0.89	219	208	1248
68198	9209999	119.8	121.4	26	4	3	0.5	1	1.51	162	10	1932
68199	9210000	134.5	137.6	52	10	20	1.0	1	2.10	226	61	943
68200	9210001	137.6	141.1	54	18	43	1.2	1	2.21	157	46	1426
68201	9210002	190.2	191.4	31	27	5	0.4	1	2.42	248	8	2837
68202	9210003	191.4	193.4	35	25	7	0.4	1	2.19	246	10	2781
68203	9210004	193.4	195.3	57	30	9	0.7	1	2.88	468	7	1976
68204	9210005	195.3	197.4	96	16	4	0.4	1	1.64	190	7	3645
68205	9210006	197.4	198.3	60	14	4	0.4	1	1.35	171	9	2389
68206	9210007	198.3	200.6	52	33	14	0.6	1	1.76	60	31	4719
68207	9210008	200.6	201.8	31	26	12	0.8	1	1.32	32	15	3307

SAMPLE NO.	LAB#	FROM	TO	Cu(PPM)	Pb(PPM)	Zn(PPM)	Ag(PPM)	Cd(PPM)	Fe(%)	Mn(PPM)	V(PPM)	Ba(PPM)
68208	9210009	201.8	203.8	43	26	115	1.0	1	1.62	77	10	2608
68209	9210010	203.8	205.2	33	19	52	0.7	1	1.59	201	18	2833
68210	9210011	205.2	207.2	63	49	208	0.8	1	2.72	369	24	5207
68211	9210012	224.8	226.3	77	58	61	1.6	1	2.41	91	47	5919
68212	9210013	226.3	227.7	79	145	62	1.5	1	2.41	282	38	5965
68213	9210014	227.7	229.3	68	135	1839	1.3	21	2.90	94	99	4653
68214	9210015	229.3	231.0	69	213	720	1.0	7	1.93	175	114	2932
68215	9210016	231.0	231.2	56	153	7420	0.9	50	1.06	442	120	2674
68216	9210017	231.2	232.1	81	148	341	1.3	2	2.75	80	188	12541
68217	9210018	232.1	234.0	73	774	927	1.6	6	2.47	91	93	9615
68218	9210019	234.0	234.8	78	127	949	1.5	10	2.35	76	205	3601
68219	9210020	234.8	236.0	68	80	3306	1.0	25	1.99	86	151	5198
		226.3	236.0	69	189	1294	1.2	11	2.22	133	177	5250
68220	9210021	236.0	237.7	88	98	161	1.9	1	1.72	73	85	2455
68221	9210022	237.7	239.7	103	63	693	1.3	8	2.12	125	79	4778
68222	9210023	239.7	241.4	101	113	207	1.6	1	2.60	125	41	5528
68223	9211003	241.4	242.9	108	99	168	1.6	1	2.90	98	43	5957
68224	9211004	242.9	245.7	110	72	78	1.3	1	3.10	111	35	8157
68225	9211005	245.7	247.8	73	45	92	0.8	1	2.39	82	29	5318
68226	9211006	247.8	249.8	117	39	17	0.5	1	2.21	59	15	3994
		236.0	249.8	100	73	196	1.3	2	2.47	97	45	5367
68227	9211007	249.8	251.8	73	32	12	0.4	1	1.24	72	12	2958
68228	9211008	251.8	253.8	80	53	38	0.8	1	3.23	314	10	3199
68229	9211009	253.8	255.8	45	17	214	0.4	1	2.05	186	76	3445
68230	9211010	255.8	257.8	27	22	354	0.4	3	1.64	187	89	4687
68231	9211011	257.8	259.8	49	46	22	0.5	1	2.74	137	93	4136
68232	9211012	259.8	261.8	38	31	55	0.7	1	2.21	150	67	3685
68233	9211013	261.8	263.1	48	44	526	1.1	8	2.20	122	105	5873
68234	9211014	263.1	264.3	623	225000	778	296.0	11	0.77	87	124	13554
68235	9211015	264.3	266.1	50	111	1444	1.1	18	1.36	154	387	6627
68236	9211016	266.1	268.5	54	218	2064	2.2	50	1.27	150	513	3437
68237	9211017	268.5	270.5	62	27	1920	1.1	49	1.33	132	537	3180
68238	9211018	270.5	271.4	80	55	817	1.7	22	1.59	95	429	3502
68239	9211019	272.2	273.4	87	20	970	0.4	10	2.95	145	131	4195
68240	9211020	273.6	275.6	73	16	1610	0.4	17	2.60	144	274	3657
68241	9211021	275.6	277.6	90	19	879	0.7	10	2.84	139	132	4164
68242	9211022	277.6	279.4	107	161	959	0.9	9	3.53	235	153	7187
68243	9211023	279.4	280.2	40	45	351	1.0	3	2.61	136	115	12678
68244	9211024	280.2	282.1	55	51	1325	1.5	27	1.74	110	375	6645
68245	9211025	282.1	284.1	62	39	1725	1.0	34	1.35	103	656	2935
68246	9211026	284.1	286.3	78	23	1717	1.8	52	1.81	131	534	3664
68247	9211027	287.4	288.4	86	30	2530	1.1	30	2.20	198	601	3539
68248	9211028	288.4	290.4	118	54	2701	1.0	24	2.99	407	408	3460
68249	9211029	290.6	292.0	76	53	807	0.6	8	2.67	232	173	3639
68250	9211030	292.0	293.5	79	138	1029	0.7	11	2.80	238	166	3633
68251	9211031	293.5	295.5	79	33	1102	0.6	13	2.75	230	156	3388
68252	9211032	295.5	297.5	80	50	869	0.4	9	2.78	346	167	3102
68253	9211292	297.7	299.5	67	108	17	1.0	1	3.71	283	35	4226
68254	9211293	299.5	302.0	80	88	267	0.8	2	3.13	271	35	4382

SAMPLE NO.	LAB#	FROM	TO	Cu(PPM)	Pb(PPM)	Zn(PPM)	Ag(PPM)	Cd(PPM)	Fe(%)	Mn(PPM)	V(PPM)	Ba(PPM)
		261.8	302.0	68	63	1143	0.9	19	2.16	178	268	3985
68255	9211294	302.0	303.8	34	21	1132	0.6	14	1.68	303	122	2145
68256	9211295	304.3	304.7	15	14	680	0.4	5	1.76	161	75	3232
68257	9211296	304.8	305.0	18	18	433	0.4	4	2.27	135	60	4021
68258	9211297	306.1	307.7	27	22	546	0.6	6	1.79	256	86	3417
68300	9211324	307.7	308.9	16	9	1185	0.4	15	1.19	544	42	2146
68259	9211298	324.7	327.7	18	44	270	0.4	1	1.83	326	64	2479
68260	9211299	327.7	328.4	41	52	776	0.8	5	2.40	368	102	2748
68261	9211300	328.4	329.6	28	59	757	0.7	5	1.13	591	70	1145
68262	9211301	329.6	331.0	30	30	2299	0.5	29	1.91	205	56	1605
		327.7	331.0	32	46	1362	1.7	14	1.79	379	73	1769
68263	9211302	331.0	332.5	9	12	18	0.4	1	1.33	203	16	1905
68264	9211303	332.5	333.7	4	11	9	0.5	1	1.17	224	16	1471

# DRILL HOLE RECORD

COMINCO LTD.

Page 1 of 5

Property: Fin  
 Commenced: June 26/92  
 Completed: June 29/92  
 Coordinates: 86 + 00W 37 + 43N  
 Objective: to test the south central UTEM conductor.  
 Date: June 30/92  
 Logged by: P.A. MacRobbie

District: Watson Lake  
 Location: Yukon  
 Core size: NQ2

Hole No.: F92-16  
 Tests at: 245.7  
 Cor. Dip: -90°  
 True Brg.:  
 % Recovery.: 88.2  
 Horiz. Comp.:  
 Vert. Comp:

Metres From	To	Description
0.0	9.1	CASING
9.1	248.7 EOH	<p>THICK INTERBEDDED SANDSTONE AND CHERT PEBBLE CONGLOMERATE; MINOR THIN SILTSTONE AND SILTY MUDSTONE INTERBEDS</p> <p>Light to medium grey weathering unit consisting of generally normally graded, thick to medium bedded chert pebble conglomerate to coarse to fine-grained sandstone with interlaminated to thin interbedded medium to dark grey siltstone and silty mudstone. Unit typically contains trace-2% fine-grained disseminated pyrite.</p> <p>9.1 - 9.7 fine to coarse-grained sandstone with a normally graded fine conglomerate base. Sandstone is chert dominated with 10-15% mudstone component. Conglomerate is framework supported with 80-90% subrounded to angular clasts (<math>\leq 5-30\text{mm}</math>) of light to dark grey chert (90%) and black mudstone (10%).</p> <p>9.7 - 14.7 laminated to thin bedded sandstone with 15-25% thin dark grey siltstone interbeds. B/CA 12° at 11.7.</p> <p>14.7 - 16.6 thick bedded to laminated medium to fine-grained sandstone with a normally graded, 0.5m thick fine conglomerate base. The conglomerate contains 70%, matrix supported angular to subrounded clasts (<math>\leq 3-10\text{mm}</math>) of light to dark grey chert (95%) and black mudstone (5%).</p> <p>16.6 - 16.9 laminated to thin bedded, fine to medium-grained sandstone (50%) with thin interbedded dark grey siltstone (50%) and minor silty mudstone. B/CA 17° at 16.6.</p> <p>16.9 - 17.5 laminated interbed of homogenous, fine to medium-grained sandstone.</p> <p>17.5 - 20.7 laminated to thin bedded, fine to medium-grained sandstone (60-70%) with thin interbedded dark grey siltstone and minor silty mudstone, as above. B/CA 24° at 20.5.</p> <p>20.7 - 22.8 medium to dark grey thick bedded coarse-grained sandstone with 60% chert and 40% mudstone clasts (<math>\leq 2\text{mm}</math>) becoming laminated near top. Occasional mudstone fragments (<math>\leq 2.5\text{cm}</math>) are present.</p> <p>22.8 - 23.7 another graded sandstone interval, as above, with a laminated top and "flame and ball" textures along the lower contact. B/CA 34° at 23.7.</p> <p>23.7 - 28.8 laminated to thin interbedded dark grey siltstone/silty mudstone (50%) and light to medium grey, fine to medium-grained sandstone (50%). Sandstone interbeds (2-7cm) are locally laminated</p>

and ripple cross laminated, show evidence of scouring and contain trace-1% fine-grained disseminated pyrite. Siltstones/silty mudstones contain trace-2% fine pyrite. Minor quartz-carbonate ± pyrite veins are present. Sandstone dominant intervals occur at 25.8-26.6, 26.8-27.2 (B/CA 31°), 28.0-28.7.

28.8 - 33.5 thick bedded to laminated, normally graded coarse to fine-grained sandstone (90-95%) with minor thin siltstone/silty mudstone interbeds.

33.5 - 39.6 thick bedded to laminated, normally graded coarse to fine-grained sandstone which grades into a fine chert pebble conglomerate at 36.1. The conglomerate contains 30-40% subrounded to angular chert and 5-10% black to dark grey mudstone clasts ( $\geq 4-30\text{mm}$ ) set in a chert dominated coarse-grained sandstone matrix. Trace-1% fine-grained disseminated pyrite is present throughout. The conglomerate has a 30-40cm thick reverse grade base containing abundant large (up to 7cm) mudstone clasts.

39.6 - 50.4 laminated to thin bedded, fine to medium-grained sandstone with minor fine conglomerate at 43.7-44.2. B/CA 32° at 42.0.

44.9 - 54.0 broken and locally crushed core.

50.4 - 55.8 thin bedded to laminated dark grey siltstone/silty mudstone (25-30%) with thin to medium interbedded sandstone. Thick sandstone interbeds at 53.0-53.2, 54.4-54.6 and 55.0-55.4, B/CA 32°.

55.8 - 64.0 thick to laminated homogenous, medium to coarse-grained sandstone grading into coarse sandstone/fine conglomerate at 61.8. Sandstone/fine conglomerate basal portion contains 10-15%, matrix supported chert clasts ( $\geq 4\text{mm}$ ).

58.8 - 62.1 broken and locally crushed core.

64.0 - 75.8 medium-grained sandstone grading into coarse-grained sandstone/fine conglomerate around 65.6. Coarser interval contains 20-35% clasts  $> 2\text{mm}$ , comprising 90-95% varied coloured chert (generally  $< 5\text{mm}$ , up to 20mm) and minor mudstone.

69.0 - 82.8 broken and crushed core.

75.8 - 78.9 fault; poor recovery.

78.9 - 97.3 medium-grained sandstone (80-90% varied coloured chert and 10-20% mudstone grains) grading normally into chert pebble conglomerate at 80.6. The thick light grey conglomerate is massive and homogenous with 40-70% clasts are  $> 2\text{mm}$  to 12cm (25-40% are  $> 5\text{mm}$ ). Clasts are predominantly rounded to angular, varied coloured chert with trace-5% carbonaceous mudstone clasts occurring as flattened chips up to several cm's. Clasts are generally matrix supported in a coarse-grained chert sandstone matrix. Pyrite (trace-2%) occurs as fine-grained disseminations and small blebs. Unit is more stratified near its base.

97.3 - 109.2 thin to thick interbedded and graded fine to coarse-grained sandstone and minor chert pebble conglomerate (103.0-103.9) grading into a thick massive, fine conglomerate at 104.5. This fine conglomerate to coarse sandstone interval is also chert dominated with 30-50% matrix supported, rounded to subangular clasts,  $> 5\text{mm}$  and up to 6cm. Most, if not all conglomeratic units below and including

Property:

this interval contain trace-2%, rounded to subrounded light blue, clear quartz "eyes",  $\leq 3\text{mm}$  in size (volcanic origin?). Trace-2% very fine-grained disseminated pyrite and trace-1% pyritic clasts, generally  $\leq 3\text{mm}$  are present. B/CA  $30^\circ$  at 98.4,  $39^\circ$  at 106.5.

98.4 - 102.6 broken core with several crushed and gouged zones.

109.2 - 121.2 laminated, internally graded fine to coarse-grained sandstone with minor interbeds of dark grey siltstone and silty mudstone at 112.2 (B/CA  $41^\circ$ ), 112.5, 113.7, 114.8-115.4, 115.7, 116.1, 116.7-116.8, 118.1 (B/CA  $41^\circ$ ). Weak fe-carbonate alteration is reflected by minor fe-carbonate veinlets/fractures and 2-3% disseminated fe-carbonate developed in chert clasts and the matrix. Below 115.5, matrix alteration appears to increase (5-10% fe-carbonate) as well as pyrite content (3-5%). Fine sphalerite grains are found in chert clasts at 115.3, 118.1 and 119.0.

121.2 - 121.8 fault; broken and gouged sandstone.

121.2 - 148.7 thick interbedded to laminated, normally graded fine to coarse-grained sandstone and fine chert pebble conglomerate.

121.2-125.7 normally graded sandstone with conglomeratic base. Sphalerite grains found within chert clasts at 122.8, 124.8, 125.2, and 125.4.

125.7-129.0 fine to medium-grained sandstone. B/CA  $31^\circ$  at 127.0. 129.0 minor dark grey siltstone/silty mudstone.

129.0-134.8 medium-grained sandstone grading into chert pebble conglomerate at 132.2.

134.8-135.2 graded and laminated fine-grained sandstone.

135.2-136.0 fine to medium-grained sandstone with minor silty mudstone interbeds. B/CA  $28^\circ$ . Sphalerite grain in chert clast at 136.0.

136.0-137.5, 137.5-139.6, 139.6-141.4 three normally graded fine to coarse sandstone to fine conglomerate units. Sphalerite grain found at 136.8. Conglomeratic beds and medium to coarse sandstones typically contain 3-5% fe-carbonate.

141.4-148.7 thin to medium bedded, medium-grained sandstone.

145.6-148.0 broken core with abundant quartz-carbonate veins/breccia veins cutting silicified and fe-carbonate altered (5-15% disseminations) sandstone and fine conglomerate.

From 148.0, fe-carbonate alteration appears to increase to about 5-10% in conglomerate beds and 2-5% in sandstone intervals until about 209.9?

148.7 - 150.4 thin interbedded sandstone with medium to dark grey siltstone and minor silty mudstone interbeds. B/CA  $27^\circ$  at 149.5.

149.8 patch of very fine-grained disseminated sphalerite (trace-1%) with 2% fine-grained disseminated pyrite in a coarse-grained sandstone interbed.

150.4 - 157.5 thick bedded laminated to massive, fine to coarse-grained sandstone with minor dark grey silty mudstone/siltstone interbeds at 151.8, 152.1, 154.2, 154.7, 154.8-154.9, 155.3 (B/CA  $23^\circ$ ), 155.8-155.9.

157.5 - 158.7 thin bedded medium to dark grey siltstone and silty mudstone. Lower contact CA  $10^\circ$ .

158.7 - 169.8 fine to medium-grained massive sandstone grading into

Property:

chert pebble conglomerate at 161.8, containing 95% rounded to subangular, varied coloured chert clasts and 5% mudstone clasts, up to 4.5cm. Several fe-carbonate veinlets and trace-2% disseminated fine-grained pyrite are present.

169.8 - 170.2 fault; crushed core.

169.8 - 175.8 medium-grained sandstone grading into chert pebble conglomerate at 172.2. Conglomerate contains matrix supported clasts up to 7cm, as well as minor subangular pyritic clasts ( $\leq 2$ cm).

175.8 - 180.6 fine to medium-grained sandstone grading into a fine conglomerate at 179.0. Several quartz veins (3mm to 8cm), fe-carbonate veinlets and minor crush/gouge zones are present.

180.9 - 185.9 several fine to coarse-grained sandstone interbeds with minor fine conglomerate containing an occasional large (up to 8cm) mudstone clast.

185.9 - 188.4 fine to coarse-grained sandstone with minor thin bedded to laminated silty mudstone. B/CA  $41^\circ$  at 187.0.

188.4 - 189.9 fine conglomerate.

189.9 - 205.4 massive bedded (locally laminated) fine to coarse-grained sandstone with minor conglomerate interbeds.

193.3-202.7, 203.6-204.0 faults; broken core and poor recovery.

205.4 - 209.9 medium to thick bedded fine to coarse-grained sandstone with black silty mudstone interbeds at 205.4-205.9 (B/CA  $30^\circ$ ), 206.6-206.9, 207.3-207.9. Silty mudstones contain trace-10% very fine-grained laminated pyrite. Sphalerite grain at 206.4 in coarse-grained sandstone. At 209.0 several fine sphalerite grains occur disseminated in a conglomerate matrix.

209.0 - 110.2 broken and locally crushed core.

209.9 decrease in fe-carbonate development to 2-3% within sandstone and conglomerate matrix.

209.9 - 213.4 fine to medium-grained sandstone grading into a fine chert pebble conglomerate at 211.8.

213.4 - 213.5 fault; gouge.

213.4 - 216.7 medium to coarse-grained sandstone grading into a chert pebble conglomerate at 214.0.

216.7 - 217.3 fault; crushed and gouged sandstone.

217.3 - 218.5 massive bedded (internally laminated) fine to medium-grained sandstone. B/CA  $39^\circ$  at 218.5.

218.5 - 220.1 fine chert pebble conglomerate with several large (up to 10cm) chert clasts. At 219.8 2 sericitic volcanic? clasts are present.

218.5 slight increase in fe-carbonate content to end of hole.

220.1 - 222.8 fine to coarse-grained sandstone.

222.8 - 226.9 fine to medium-grained sandstone with thin interbeds of laminated to thin bedded mudstone and silty mudstone at 222.8, 223.5-223.7, 224.2-224.3 (very fine sphalerite grains disseminated in sandstone matrix), 224.7-224.8 (B/CA  $30^\circ$ ), 225.3-225.7, 225.9-226.9.

226.9 - 234.1 medium to dark grey, carbonaceous sandstone grades into a chert pebble conglomerate containing 2-3% fine-grained disseminated pyrite and pyrite veinlets at 229.9. Sphalerite grains disseminated in sandstone matrix found at 231.1.

Property:

234.1 - 248.7 thick massive laminated, fine to medium-grained sandstone (90-95%) with minor (5%) silty mudstone interbeds. From 246.3, the proportion of silty mudstone interbeds increases to 40%. B/CA 27° at 236.3, 47° at 247.2. Sphalerite grain in a quartz-carbonate vein found at 237.9.

Hole stopped at 248.7.

FIN PROPERTY 1992  
 DRILL HOLE 92-16

FROM	TO	METRES	RECV'D	%
0.0	9.1	9.1	0.00	0.00
9.1	11.6	2.5	2.50	100.00
11.6	14.6	3.0	2.30	76.67
14.6	17.7	3.1	3.10	100.00
17.7	20.7	3.0	2.85	95.00
20.7	23.8	3.1	2.95	95.16
23.8	26.8	3.0	3.00	100.00
26.8	29.9	3.1	3.10	100.00
29.9	32.9	3.0	3.00	100.00
32.9	36.0	3.1	2.70	87.10
36.0	39.0	3.0	2.30	76.67
39.0	42.1	3.1	3.00	96.77
42.1	45.1	3.0	2.80	93.33
45.1	48.2	3.1	2.75	88.71
48.2	51.2	3.0	2.35	78.33
51.2	54.3	3.1	2.25	72.58
54.3	57.3	3.0	2.55	85.00
57.3	60.4	3.1	1.75	56.45
60.4	63.4	3.0	2.75	91.67
63.4	66.4	3.0	2.80	93.33
66.4	69.5	3.1	2.45	79.03
69.5	72.5	3.0	0.75	25.00
72.5	75.6	3.1	1.20	38.71
75.6	78.6	3.0	1.00	33.33
78.6	81.7	3.1	2.20	70.97
81.7	84.7	3.0	2.45	81.67
84.7	87.8	3.1	3.10	100.00
87.8	90.8	3.0	2.50	83.33
90.8	93.9	3.1	3.10	100.00
93.9	96.9	3.0	3.00	100.00
96.9	100.0	3.1	2.40	77.42
100.0	103.0	3.0	3.00	100.00
103.0	106.1	3.1	3.00	96.77
106.1	109.1	3.0	2.90	96.67
109.1	112.2	3.1	2.00	64.52
112.2	115.2	3.0	2.45	81.67
115.2	118.3	3.1	3.00	96.77
118.3	121.3	3.0	3.00	100.00
121.3	124.4	3.1	2.65	85.48
124.4	127.4	3.0	2.50	83.33
127.4	130.5	3.1	2.70	87.10
130.5	133.5	3.0	3.00	100.00
133.5	136.6	3.1	3.10	100.00
136.6	139.6	3.0	2.90	96.67
139.6	142.6	3.0	2.90	96.67
142.6	145.7	3.1	2.90	93.55
145.7	148.7	3.0	2.65	88.33
148.7	151.8	3.1	3.00	96.77
151.8	154.8	3.0	2.70	90.00
154.8	157.9	3.1	3.10	100.00
157.9	160.9	3.0	3.00	100.00
160.9	167.0	6.1	6.10	100.00
167.0	170.0	3.0	3.00	100.00
170.0	173.1	3.1	2.80	90.32
173.1	176.1	3.0	2.95	98.33
176.1	179.2	3.1	3.00	96.77
179.2	182.2	3.0	2.60	86.67
182.2	185.3	3.1	2.70	87.10
185.3	188.3	3.0	2.90	96.67
188.3	189.8	1.5	1.50	100.00
189.8	191.4	1.6	1.10	68.75
191.4	194.4	3.0	2.10	70.00
194.4	197.5	3.1	1.50	48.39
197.5	200.5	3.0	1.00	33.33
200.5	203.6	3.1	3.00	96.77

203.6	206.6	3.0	2.60	86.67
206.6	209.7	3.1	2.70	87.10
209.7	212.7	3.0	2.90	96.67
212.7	215.8	3.1	3.00	96.77
215.8	218.8	3.0	3.00	100.00
218.8	221.9	3.1	3.10	100.00
221.9	224.9	3.0	3.00	100.00
224.9	227.9	3.0	3.00	100.00
227.9	231.0	3.1	3.00	96.77
231.0	234.0	3.0	2.95	98.33
234.0	237.1	3.1	3.00	96.77
237.1	240.1	3.0	2.80	93.33
240.1	243.2	3.1	3.00	96.77
243.2	246.2	3.0	3.00	100.00
246.2	248.7	2.5	2.50	100.00
9.1	248.7	239.6	211.20	88.15

**DRILL HOLE RECORD**

**COMINCO LTD.**

Property: Fin  
 Commenced: June 29/92  
 Completed: July 5/92  
 Coordinates: 45 + 20N 82 + 17W  
 Objective: to test the north central UTEM conductor  
 Date: July 6/92  
 Logged by: P.A. MacRobbie

District: Watson Lake  
 Location: Yukon  
 Core size: NQ2  
 Tests at:

Hole No.: F92-17  
 Hole Length: 246.1 m  
 Cor. Dip: -90°  
 True Brg.:  
 % Recovery.: 89.4  
 Horiz. Comp.:  
 Vert. Comp:

Metres From	To	Description
0.0	7.6	CASING
7.6	37.7	<p>THIN TO THICK BEDDED SANDSTONE WITH THIN INTERBEDDED SILTY MUDSTONE AND SILTSTONE</p> <p>Medium grey unit dominated by medium to thick bedded and normally graded fine to medium-grained sandstone (60-75%). Dark grey to greeny grey silty mudstone/siltstone (15-30%) are themselves laminated and thin bedded and occur as thin (10-25cm) intervals within this predominantly sandstone sequence. Thin bedded fine-grained sandstones (1-10cm) occur within the silty mudstone dominant sections. Medium-grained sandstone beds are locally weakly calcareous and chlorite altered. The unit is generally noncalcareous, weakly carbonaceous and contains trace-3% very fine-grained pyrite occurring as disseminations and within calcite-chlorite veinlets/fractures and the occasional chert pebble. Quartz±calcite-chlorite-pyrite veins and veinlets are present throughout.</p> <p>11.5 B/CA 50°.                      13.6 - 14.0 chlorite(epidote??)-calcite-graphite-quartz vein with chloritic? alteration halo.                      14.8 B/CA 50°.                      17.2 - 17.4 fault; gouge.                      18.4 - 18.7 interbedded fine to medium-grained sandstone within silty mudstone displaying "flame and ball" textures indicating the sequence is upright. B/CA 61°.                      20.1 - 23.9 fault; badly broken core with thin gouge zones.                      22.5 quartz-graphite-chlorite±calcite vein with 2 fine grains of reddish brown sphalerite.                      23.9 sandstones are no longer chlorite altered as above.                      24.2 B/CA 24°, 80° at 29.0.                      30.9 - 33.4 weak fault; crushed and locally gouged interbedded sandstone and silty mudstone. Abundant quartz-calcite-chlorite veining throughout.                      33.4 - 37.7 predominantly sandstone with &lt; 10% thin silty mudstone interbeds. B/CA 69° at 36.5.</p>
37.7	48.3	<p>FAULT</p> <p>Crushed and gouged sandstone/silty mudstone with several (&lt;5%) quartz-calcite-chlorite-graphite veins up to 10cm thick.</p>
48.3	105.3	THIN TO MEDIUM BEDDED SANDSTONE WITH THIN INTERBEDDED

Property:

SILTY MUDSTONE, MUDSTONE AND SILTSTONE

Medium to dark grey, thin to medium bedded (locally laminated) and normally graded, fine to coarse-grained sandstone (50-80%) containing the occasional well rounded chert pebbles (up to 3cm) and mudstone clasts, particularly near the base of individual sandstone beds. Dark grey sandstone interbeds often are either more carbonaceous (in matrix) or contain a greater proportion of carbonaceous mudstone grains. Sandstones appear weakly chloritic and weak to strongly ferrous altered and typically contain 1-5% very fine-grained disseminated pyrite and rare disseminated sphalerite grains. Dark grey to black, laminated to thin interbedded silty mudstone/mudstone (20-30%) and siltstone (5-10%) occur as thin intervals. Silty mudstone and mudstone interbeds often contain 3-5% fine-grained disseminated to locally laminated pyrite. Quartz-calcite veining is weak.

53.8 B/CA 53°.

54.3 - 54.6 graded sandstone bed with basal 8cm containing 10% black angular mudstone fragments (up to several cms). One 0.25mm grain of sphalerite found in matrix.

60.0 B/CA 78°.

62.4 - 63.4 one meter interval with several graded sandstone beds separated by thin mudstones containing trace-1% very fine-grained disseminated sphalerite within the matrix and chert clasts of coarse-grained sandstones. Also contains 3-5% very fine-grained disseminated pyrite.

67.5 patchy disseminations of 1-3% pyrite and trace sphalerite in a medium to coarse-grained sandstone bed.

67.7 B/CA 80°.

69.4 pyrite plus minor sphalerite replacement in a 1.8cm chert clast.

74.0 B/CA 51°, 0-10° at 75.6, 17° at 78.5, 27° at 80.1 (section is now upside down), 28° at 83.0.

88.9 fold hinge.

88.5 B/CA 36° (upright section), 32° at 89.1, 83° at 91.0.

97.1 - 99.5 and 100.3 - 103.3 broken core and minor gouge.

102.0 B/CA 30°, 22° at 104.0.

105.3

113.3

SANDSTONE WITH MINOR FINE CHERT PEBBLE CONGLOMERATE

Unit is reverse graded (overturned?) with a conglomeratic top grading into a coarse-grained sandstone at 106.2 and becoming thin bedded to laminated medium to fine-grained sandstone at 110.3. Fine chert pebble conglomerate contains 70-80% (>2mm, up to 10mm, avg. 4mm) clasts of varied coloured, rounded to angular chert (90-95%), black locally fossiliferous (tentaculites or radiolarians?), carbonaceous, angular to flattened mudstone (2-5%) and trace-5% light grey to blue grey, clear quartz (volcanic origin?). Clasts are closely packed, framework supported. Pyrite (trace-2%) is very fine-grained and disseminated throughout and within locally pyritic chert clasts. Grain size decreases down hole. B/CA 32° at 111.5.

112.3 - 113.3 Reverse graded unit (overturned?), as above, with a conglomeratic top grading into a coarse-grained sandstone at 112.7

Property:

113.3	115.7	<p>and thin bedded to laminated sandstone at 113.0. The conglomerate is also framework supported and contains clasts up to 1.2cm. B/CA 34° at 113.2.</p> <p>THIN TO MEDIUM BEDDED SANDSTONE WITH MINOR CHERT PEBBLE CONGLOMERATE</p> <p>Thin to medium interbedded coarse-grained sandstone with minor fine chert pebble conglomerate.</p> <p>113.3 - 116.4 broken core. Minor gouge with abundant quartz-carbonate veins and brecciated veins at 114.0, 115.1-115.2 and 115.7-115.8.</p>
115.7	121.9	<p>SANDSTONE/FINE CHERT PEBBLE CONGLOMERATE</p> <p>Massive bedded, homogenous coarse-grained sandstone to fine chert pebble conglomerate. Unit is not internally stratified. Unit is primarily a coarse-grained sandstone containing 50-60% clasts (&gt;2mm up to 2cm) with bimodal clast distribution of 95% clasts from 2-5mm and 5% clasts from 1-2cm. Clasts are matrix supported and comprise 90% chert, 5-10% mudstone and occasional clear quartz. Unit contains trace-2% fine-grained disseminated pyrite.</p> <p>119.9 - 121.9 broken core.</p> <p>120.2 - 120.3 and 120.4 - 121.2 crushed rock with abundant quartz-carbonate veining.</p>
121.9	122.8	<p>FAULT</p> <p>Broken and gouged sandstone.</p>
122.8	213.6	<p>THIN TO THICK BEDDED SANDSTONE WITH FINE CHERT PEBBLE CONGLOMERATE AND MINOR SILTSTONE/SILTY MUDSTONE</p> <p>Medium to dark grey, normally graded, thin to medium beds of coarse-grained to laminated fine-grained sandstone. Thick interbeds often have fine conglomeratic base. Minor siltstone, silty mudstone and mudstone locally separate sandstone beds.</p> <p>122.8 - 122.9 thin medium to coarse-grained sandstone with a 2cm pebbly base.</p> <p>122.9 - 123.2 medium to fine-grained sandstone grading into a thin laminated black carbonaceous mudstone containing 5-10% very fine-grained framboidal pyrite. B/CA 43° at lower contact.</p> <p>123.2 - 123.4 fault; gouge and vein fragments.</p> <p>123.4 - 124.9 weakly laminated, fine to medium-grained sandstone.</p> <p>124.9 - 125.3 fault; gouge and quartz-carbonate veining.</p> <p>125.3 - 127.0 normally graded, coarse to fine-grained sandstone with a 25cm basal fine conglomerate.</p> <p>127.0 - 136.2 fine to medium-grained sandstone with minor black carbonaceous mudstone interbeds grading into a fine conglomerate at 133.2. B/CA 72° at 127.2, 74° at 136.2.</p> <p>127.6 - 129.0 and 129.9 - 130.4 faults; broken and gouged core.</p> <p>136.2 - 137.4 fine to medium-grained sandstone with thin dark grey</p>

Property:

to black interbedded silty mudstone. B/CA 57° at 137.2.

137.4 - 140.8 massive, weakly normally graded fine to coarse-grained sandstone.

140.8 - 141.1 thin interbedded fine-grained sandstone and dark grey siltstone/silty mudstone with quartz-carbonate veining.

141.1 - 144.6 laminated to thin bedded, fine to coarse-grained sandstone. B/CA 57° at 144.1.

144.6 - 145.0 two fine conglomerate interbeds separated by a pyritic (trace-5%) mudstone. Trace sphalerite grains occur in chert clasts.

145.0 - 145.5 dark grey, carbonaceous fine-grained sandstone. Trace disseminated sphalerite grains at 145.4.

145.5 - 146.5 medium grey fine-grained sandstone. B/CA 53° at 145.7.

146.5 - 149.5 medium to dark grey, medium interbedded fine to medium-grained sandstone and fine conglomerate containing trace-5% fine-grained disseminated pyrite.

146.7 trace-1% disseminated sphalerite grains in a fine conglomerate, at a mudstone interbed contact.

149.0 trace disseminated sphalerite grains in a coarse-grained sandstone.

149.5 - 160.9 massive, medium to coarse-grained sandstone grading into a weakly reverse graded conglomerate at 156.3. The conglomerate contains 60-80% clasts ( $\geq 2$ mm) comprising 95% chert clasts and 5% angular black pyritic mudstone clasts (2-5mm, up to 3cm), as well as occasional clear quartz and trace-2% fine-grained disseminated pyrite. B/CA 55° at 157.3.

160.9 - 161.4 fault; gouge and abundant veining.

161.4 - 166.9 fine to medium-grained sandstone with minor coarse-grained sandstone interbeds. B/CA 44° at 163.5

164.6 - 165.1 broken core with minor gouge.

166.9 - 168.4 fault; gouge with 40% quartz-carbonate-chlorite veining.

168.4 - 170.1 medium to coarse-grained sandstone.

169.7 - 169.9 crushed sandstone and quartz-carbonate veins.

170.1 - 179.5 fine to medium-grained sandstone with minor dark grey silty mudstone and siltstone interbeds. Numerous quartz-carbonate veins are present. B/CA 40° at 173.5.

172.6 - 173.1 broken core and minor gouge.

178.5 - 181.8 broken core with abundant quartz-carbonate veins.

178.5 - 179.3 fault; gouge.

179.5 - 184.8 reverse graded conglomerate with carbonate-quartz veins grading into a basal fine to medium-grained sandstone at 183.0.

184.8 - 186.9 darker more carbonaceous sandstone containing 2-5% fine-grained disseminated pyrite.

186.9 - 187.8 broken dark grey to black carbonaceous sandstone and mudstone.

187.8 - 191.0 medium grey, fine to medium-grained sandstone with minor silty mudstone. B/CA 35° at 190.6.

188.5 - 188.8 broken and locally crushed core.

191.0 - 193.0 medium grey, quartz-carbonate veined conglomerate with fewer 2-3% mudstone clasts.

Property:

213.6

246.1  
EOH

193.0 - 200.1 fine to coarse-grained sandstone grading normally in a chert pebble conglomerate at 197.3. Conglomerate contains 40-60% clasts > 2mm (generally 4-10mm, up to 35mm) of chert (95%) and black mudstone (5%) and trace-2% disseminated fine pyrite.

193.1 - 194.5 broken and crushed core.

199.8 - 200.1 fault; gouge.

200.1 - 203.3 chert dominant conglomerate, similar to above, but coarser with 10-20% of fragments > 10mm.

203.3 - 205.5 laminated to thin bedded, fine to medium-grained sandstone with minor siltstone/silty mudstone interbeds. B/CA 5° at 203.4, 24° at 205.5 (perhaps overturned once more).

205.5 - 213.6 chert dominant conglomerate with 70-80% > 2mm (up to 6cm), matrix and framework supported clasts composed of 95-100% chert.

FAULT

Crushed and gouged core; poor recovery.

Upper contact at 35° to CA.

213.6 - 216.7 black to dark grey gouge with abundant quartz-carbonate vein material especially at 213.7-214.2.

216.7 - 221.8 medium to dark grey, crushed, coarse to medium-grained sandstone and fine conglomerate.

221.8 - 223.4 gouge.

221.8 - 226.6 dark grey to black, laminated to thin bedded, weakly carbonaceous and calcareous siltstone, silty mudstone and sandstone. B/CA 32° at 223.5.

226.6 - 232.0 black to dark grey gouge; poor recovery.

232.0 - 235.1 gouged and crushed laminated to thin bedded, dark grey to black silty mudstone/mudstone.

235.1 - 240.2 grey gouge and quartz-carbonate vein material.

240.2 - 245.2? badly broken fine-grained grey sandstone with gouge zones; poor recovery.

245.2? - 246.1 gouge; poor recovery.

Hole stopped at 246.1 due to squeezing ground.

FIN PROPERTY 1992  
 DRILL HOLE 92-17

FROM	TO	METRES	RECV'D	%
0.0	7.6	7.6	0.00	0.00
7.6	11.6	4.0	2.50	62.50
11.6	14.6	3.0	1.90	63.33
14.6	17.7	3.1	2.85	91.94
17.7	20.7	3.0	2.30	76.67
20.7	23.8	3.1	2.65	85.48
23.8	26.8	3.0	2.30	76.67
26.8	29.9	3.1	2.90	93.55
29.9	32.9	3.0	2.90	96.67
32.9	36.0	3.1	2.70	87.10
36.0	39.0	3.0	3.00	100.00
39.0	42.1	3.1	3.00	96.77
42.1	45.1	3.0	3.00	100.00
45.1	48.2	3.1	2.75	88.71
48.2	51.2	3.0	2.95	98.33
51.2	54.3	3.1	2.95	95.16
54.3	57.3	3.0	3.00	100.00
57.3	60.4	3.1	3.10	100.00
60.4	63.4	3.0	3.00	100.00
63.4	66.5	3.1	3.10	100.00
66.5	69.5	3.0	2.95	98.33
69.5	72.5	3.0	2.75	91.67
72.5	75.6	3.1	3.10	100.00
75.6	78.6	3.0	2.95	98.33
78.6	81.7	3.1	3.10	100.00
81.7	84.7	3.0	3.00	100.00
84.7	87.8	3.1	3.10	100.00
87.8	90.8	3.0	3.00	100.00
90.8	93.9	3.1	3.10	100.00
93.9	96.9	3.0	2.90	96.67
96.9	100.0	3.1	2.50	80.65
100.0	103.0	3.0	2.35	78.33
103.0	106.1	3.1	3.10	100.00
106.1	109.1	3.0	3.00	100.00
109.1	112.2	3.1	3.05	98.39
112.2	115.2	3.0	1.75	58.33
115.2	118.3	3.1	2.40	77.42
118.3	121.3	3.0	2.75	91.67
121.3	124.4	3.1	2.80	90.32
124.4	127.4	3.0	2.90	96.67
127.4	130.5	3.1	2.80	90.32
130.5	133.5	3.0	3.00	100.00
133.5	136.6	3.1	3.10	100.00
136.6	139.6	3.0	2.80	93.33
139.6	142.6	3.0	2.35	78.33
142.6	145.7	3.1	3.10	100.00
145.7	148.7	3.0	3.00	100.00
148.7	151.8	3.1	2.95	95.16
151.8	154.8	3.0	3.00	100.00
154.8	157.9	3.1	3.05	98.39
157.9	160.9	3.0	2.90	96.67
160.9	164.0	3.1	2.75	88.71
164.0	167.0	3.0	2.20	73.33
167.0	170.1	3.1	3.00	96.77
170.1	173.1	3.0	2.35	78.33
173.1	176.2	3.1	3.00	96.77
176.2	179.2	3.0	2.60	86.67
179.2	182.3	3.1	3.00	96.77
182.3	185.3	3.0	3.00	100.00
185.3	188.4	3.1	3.06	98.71
188.4	191.4	3.0	2.95	98.33
191.4	194.5	3.1	2.90	93.55
194.5	197.5	3.0	2.85	95.00
197.5	200.6	3.1	3.05	98.39
200.6	203.6	3.0	3.00	100.00

203.6	206.7	3.1	3.10	100.00
206.7	209.7	3.0	3.00	100.00
209.7	212.8	3.1	3.10	100.00
212.8	215.8	3.0	2.80	93.33
215.8	218.8	3.0	2.90	96.67
218.8	221.9	3.1	3.10	100.00
221.9	224.9	3.0	2.35	78.33
224.9	228.0	3.1	2.95	95.16
228.0	231.0	3.0	0.55	18.33
231.0	234.1	3.1	1.70	54.84
234.1	237.1	3.0	2.80	93.33
237.1	240.2	3.1	2.35	75.81
240.2	243.2	3.0	0.60	20.00
243.2	246.1	2.9	0.65	22.41
7.6	246.1	238.5	213.11	89.35

## FIN DRILL HOLE 92-17

SAMPLE NO.	LAB#	FROM	TO	Cu(PPM)	Pb(PPM)	Zn(PPM)	Ag(PPM)	Cd(PPM)	Fe(%)	Mn(PPM)	V(PPM)	Ba(PPM)
68265	9212307	54.1	56.0	20	14	165	1.1	1	1.29	165	6	811
68267	9212308	56.0	57.3	20	11	66	0.8	1	1.83	214	7	743
68268	9212309	60.8	62.4	18	9	62	0.9	1	1.54	229	5	608
68269	9212310	62.4	63.4	20	23	476	0.8	2	1.39	129	7	549
68270	9212311	63.4	65.1	23	13	45	1.0	1	1.52	199	6	725
68271	9212312	65.1	66.6	24	13	104	0.4	1	1.64	223	6	651
68272	9212313	66.6	67.8	28	17	65	0.9	1	1.39	180	6	785
68273	9212314	67.8	69.5	19	12	136	0.4	1	1.49	207	5	704
68274	9211304	144.6	145.0	9	8	12	0.4	1	0.77	191	8	494
68275	9211305	145.0	145.5	17	12	84	0.4	1	0.74	73	6	777
68276	9212315	145.5	146.5	12	6	131	0.7	1	1.80	366	5	492
68277	9212316	146.5	148.1	35	33	396	2.1	2	1.50	27	15	1576
68278	9212317	148.1	149.5	9	8	50	0.8	1	0.51	82	3	459
68279	9212318	184.8	185.9	7	6	15	0.4	1	0.46	118	2	416
68280	9212319	185.9	187.4	21	25	69	1.3	1	0.99	75	16	897

**DRILL HOLE RECORD**

**COMINCO LTD.**

Property: Fin	District: Watson Lake	Hole No.: F92-18
Commenced: July 5/92	Location: Yukon	Hole Length: 108.8 m
Completed: July 8/92	Core size: NQ2	Cor. Dip: -70°
Coordinates: 82 + 16W 51 + 26N		True Brg.: 180°
Objective: to test whether the north central strata/conductor dip to N		% Recovery.: 68.7
Date: July 9/92	Tests at:	Horiz. Comp.:
Logged by: P.A. MacRobbie		Vert. Comp:

Metres From	To	Description
0.0	42.7	OVERBURDEN
42.7	64.5	<p>THIN TO MEDIUM BEDDED SILTSTONE AND SILTY MUDSTONE; MINOR MUDSTONE</p> <p>Dark grey weathering, weakly banded unit of medium grey, thin to medium bedded (generally &lt; 30cm; locally laminated), fine to coarse-grained weakly carbonaceous siltstone (50-60%) with thin interbedded dark grey to black carbonaceous, nonsiliceous and noncalcareous silty mudstone and mudstone (40-50%). Pyrite (trace-2%) occurs as very fine-grained disseminations, locally associated with quartz veins and tension gashes.</p> <p>43.1 B/CA 57°, foliation/CA 10°.                      45.3 B/CA 60°, foliation/CA 28°.                      46.1 - 46.3 fault; broken and gouged core.                      49.4 B/CA 52°.                      50.0 - 51.4 and 51.6 - 51.9 broken core with narrow gouge zones.                      54.4 B/CA 60°, foliation/CA 36°.                      57.6 - 58.1 broken core and narrow gouge zones.                      58.3 B/CA 62°.                      60.3 - 60.5 and 62.0 - 62.6 broken core with narrow gouge zones.</p>
63.1	69.4	<p>FAULT</p> <p>Broken, crushed and gouged core with 5-15% quartz-chlorite-carbonate ± graphite veins.</p> <p>63.1 - 64.5 interbedded siltstone and silty mudstone, as above.                      64.5 - 69.4 locally silicified fine to coarse-grained sandstone with fine conglomerate interbeds at 64.5-65.0, 65.1-65.2, 65.3-66.1, 66.5-68.6. Unit contains dark grey siltstone/silty mudstone interbeds. Trace-3% disseminated fine-grained pyrite found throughout.                      64.8 B/CA 39°.                      66.3 foliation/CA 29°.</p>
64.5	108.8 EOH	<p>THIN TO MEDIUM INTERBEDDED SILTSTONE, SILTY MUDSTONE AND SANDSTONE/CONGLOMERATE</p> <p>Medium to dark grey weathering, colour banded unit consisting of thin to medium interbedded light to dark grey, fine to coarse-grained siltstone (40-60%), dark grey silty mudstone (30-40%) and light to medium grey, normally graded, fine to coarse-grained sandstone and fine conglomerate (10-15%). The coarser clastic content and well</p>

colour banded appearance distinguishes this unit from the one above. Pyrite (trace-2%) occurs as very fine-grained disseminations throughout. Sandstone interbeds are weak to moderately calcareous, weakly fe-carbonate altered and generally contain 2-10% disseminated, fine to coarse euhedral pyrite.

72.2 B/CA 27°.

72.6 trace fine disseminated sphalerite in a quartz veinlet.

73.7 - 74.5 broken core and minor gouge.

74.5 - 78.3 sandstone interbeds are generally normally graded; some beds show "flame and ball" textured bases indicating the strata is upright.

74.8 B/CA 43°.

78.3 - 80.6 fault; gouge and quartz-feldspar veins.

80.7 - 80.8 graded fine conglomerate interbed with varied coloured chert (80%), mudstone (10%) and sulphidic (10%) clasts (2-5mm, up to 10mm).

81.0 B/CA 42°.

84.8 B/CA 38°.

86.4 5cm wide ribboned quartz vein with trace pyrite, approx. parallel bedding.

88.0 B/CA 31°.

92.0 - 92.1 minor fault; gouge.

92.1 - 92.4 carbonaceous conglomerate interbed with 50-60% clasts (>2mm) comprising 60% angular to subrounded chert (up to 2cm) and 40% elongate/ flattened mudstone and silty mudstone clasts (up to 7cm); occasional clear blue grey quartz also present. Pyrite (10-15%) occurs as fine-grained disseminations and alteration of chert clasts and as sulphidic clasts( $\leq$ 4mm). B/CA 28° at 92.4.

93.4 - 93.6 less carbonaceous conglomerate interbed with 70-80% chert and 5-10% mudstone clasts (up to 18mm) and 10-15% pyrite.

94.8 B/CA 36°.

98.6 B/CA 27°.

100.0 B/CA 33°.

104.3 B/CA 28°.

108.5 B/CA 27°.

Hole stopped at 108.8.

Runs and Recoveries  
F92-18

From	To	Metres	Recv'd	%
0.0	7.6	7.6	0.00	0.00
7.6	8.2	0.6	0.45	75.00
8.2	11.3	3.1	2.36	76.13
11.3	14.3	3.0	2.60	86.67
14.3	17.4	3.1	1.25	40.32
17.4	20.4	3.0	0.50	16.67
20.4	23.5	3.1	0.45	14.52
23.5	26.5	3.0	0.40	13.33
26.5	29.6	3.1	0.50	16.13
29.6	32.6	3.0	0.45	15.00
32.6	35.7	3.1	1.80	58.06
35.7	38.7	3.0	1.90	63.33
38.7	41.8	3.1	1.90	61.29
41.8	42.7	0.9	0.00	0.00
42.7	44.8	2.1	1.40	66.67
44.8	47.9	3.1	2.30	74.19
47.9	50.9	3.0	2.30	76.67
50.9	53.9	3.0	2.15	71.67
53.9	57.0	3.1	2.20	70.97
57.0	60.0	3.0	2.25	75.00
60.0	63.1	3.1	1.80	58.06
63.1	66.1	3.0	2.50	83.33
66.1	69.2	3.1	2.45	79.03
69.2	72.2	3.0	2.65	88.33
72.2	75.3	3.1	2.85	91.94
75.3	78.3	3.0	2.50	83.33
78.3	81.4	3.1	1.50	48.39
81.4	84.4	3.0	3.00	100.00
84.4	87.5	3.1	2.95	95.16
87.5	90.5	3.0	3.00	100.00
90.5	93.6	3.1	3.10	100.00
93.6	96.6	3.0	2.90	96.67
96.6	99.7	3.1	2.20	70.97
99.7	102.7	3.0	3.00	100.00
102.7	105.8	3.1	3.10	100.00
105.8	108.8	3.0	2.90	96.67
7.6	108.8	101.2	69.56	68.74

Property: Fin  
 Commenced: July 8/92  
 Completed: July 10/92  
 Coordinates: 86+00W 41+48N  
 Objective: to test the N-dipping south central UTEM anomaly  
 Date: July 11/92  
 Logged by: P.A. MacRobbie

District: Watson Lake  
 Location: Yukon  
 Core size: NQ2  
 Tests at:

Hole No.: F92-19  
 Hole Length: 180.4 m  
 Cor. Dip: -70°  
 True Brg.: 180°  
 % Recovery.: 89.7  
 Horiz. Comp.:  
 Vert. Comp:

Metres From	To	Description
0.0	6.1	CASING
6.1	19.0	<p>THIN TO MEDIUM BEDDED SANDSTONE WITH MINOR INTERBEDDED SILTSTONE/SILTY MUDSTONE</p> <p>Medium grey interval comprising thin to medium bedded (0.4-50cm), fine to medium-grained and weakly calcareous sandstone (85-90%) with thin interbeds of laminated, medium to dark grey siltstone/silty mudstone (10-15%). Sandstone beds are internally laminated, weakly graded and contain few or no clasts <math>\geq 2</math>mm. Quartz-carbonate <math>\pm</math>pyrite veins/veinlets are abundant within sandstone lithologies.</p> <p>6.1 - 11.3 medium bedded sandstone containing trace-1% very fine-grained disseminated pyrite predominates (80-90%) with medium interbedded siltstone/silty mudstone. Sandstones at 7.3-7.8, 8.1-8.4 and 11.1-11.3. Cross bedding, "flame" structures and graded beds between 8.4-9.2 indicate that strata is overturned. B/CA 63° at 7.0, 42° at 8.5 and 52° at 10.2.</p> <p>11.3 - 15.4 thin bedded section with 80-90% sandstone. Thick sandstone interbed at 13.9-14.5. B/CA 79° at 12.7, 77° at 15.0.</p> <p>15.4 - 19.0 thick bedded sandstone (95%) with thin sections of thin bedded sandstone and laminated siltstone/silty mudstone. Sandstone beds at 15.4-16.2, 16.8-17.3, 17.4-18.0 and 18.5-18.8. Between 18.8 and 19.0, slumped "balls" of sandstone/siltstone (few mms, up to 3cm) within silty mudstone indicate the sequence is upright. B/CA 77° at 17.4.</p>
19.0	112.4	<p>THICK TO MEDIUM INTERBEDDED SANDSTONE, CONGLOMERATE AND MINOR SILTSTONE/SILTY MUDSTONE</p> <p>This section is dominated by thick to medium interbedded, normally graded, fine to coarse-grained sandstone (70-80%), frequently with well developed fine conglomerate (20%) bases. Minor laminated to thin bedded siltstone/silty mudstone (&lt; 10%) form the graded tops of sandstone dominant intervals.</p> <p>19.0 - 23.4 broken core with 5-10 quartz-carbonate veining.                      19.5 - 20.4 quartz-carbonate vein and minor fault gouge.                      19.0 - 20.4 fine-grained weakly calcareous sandstone with a normally graded 10cm conglomeratic base.                      20.4 - 20.6 carbonate-quartz vein.                      20.6 - 22.8 several fine to coarse-grained sandstone beds with thin fine conglomerate beds and minor interbedded siltstone.</p>

Property:

22.8 - 26.2 normally graded fine to coarse-grained sandstone with a 25cm fine conglomerate base. B/CA 74° at 23.2.

26.2 - 27.1 normally graded fine to coarse-grained sandstone and conglomerate with a reverse graded base.

27.1 - 27.2 thin bedded to laminated siltstone/silty mudstone. B/CA 59°.

27.2 - 30.7 medium-grained sandstone grading into a conglomerate at 28.3. The conglomerate contains 40-80% clasts  $\geq 2\text{mm}$  (generally 2-6mm, up to 4cm) of subangular to subrounded chert (90%), angular to subangular mudstone (10%) and 2-3% rounded ( $\leq 2.5\text{mm}$ ) blue grey, clear quartz crystal fragments. Matrix is weak to moderately calcareous and contains trace-2% fine disseminated pyrite.

30.7 - 32.6 similar to above with sandstone grading into a conglomerate at 31.3. This conglomerate contains 30-80% clasts  $\geq 2\text{mm}$  (generally 3-6mm, up to 2cm) of varied coloured, rounded to subangular chert (90-95%), subangular, locally fossiliferous (rads?) and pyritic mudstone (5-10%) and 1-2% clear blue grey quartz ( $\leq 2\text{mm}$ ) crystal fragments. Matrix is also calcareous and contains 2-5% disseminated pyrite. B/CA 49° at 32.6.

32.6 - 32.9 fine to medium-grained sandstone.

32.9 - 33.1 laminated to thin bedded and folded dark grey silty mudstone.

33.1 - 36.4 fine to medium-grained calcareous sandstone with 5% chert granules and several (2-5%) large ( $\leq 6\text{cm}$ ) pyritic mudstone/silty mudstone clasts.

36.4 - 36.6 carbonate-quartz veins with trace-1% disseminated pyrite. Also at 37.1-38.0.

36.6 - 40.8 interbedded coarse-grained sandstone and conglomerate. Sandstone (36.6-36.8) grades into conglomerate (36.8-38.8), then back into fine to coarse sandstone (38.8-39.4) and finally back into conglomerate (39.4-40.8). Weak to moderate fe-carbonate alteration is developed within coarser conglomerate interbeds. B/CA 54° at 39.1.

40.8 - 42.2 medium-grained sandstone with a few cms of silty mudstone at base.

42.2 - 42.8 fine conglomerate with a few cms of silty mudstone at base.

42.8 - 50.3 massive, medium to coarse-grained sandstone with 5-10% granules at 44.6-44.7 and 44.8-44.9. Unit becomes vaguely laminated to thin bedded at 44.5 and grades into a chert pebble conglomerate at 47.2. This conglomerate contains 70-80% clasts  $\geq 2\text{mm}$  (generally  $< 10\text{mm}$ , up to 3cm) of varied coloured chert (90-95%) and mudstone/silty mudstone and minor sandstone (5%) set in a weakly fe-carbonate altered medium to coarse-grained sandstone matrix. B/CA 36° at 44.5, 43° at 46.4.

50.3 - 50.7 laminated to thin bedded sandstone grading into a pebbly sandstone/fine conglomerate.

50.7 - 53.2 laminated to thin bedded sandstone with 5% angular mudstone clasts/"rip-ups" and 5-20% chert clasts  $\geq 2\text{mm}$ . Reddish brown sphalerite grain in a quartz fracture cutting a chert fragment at 50.9. Also disseminated sphalerite grain in a chert fragment at 51.5.

Property:

	<p>B/CA 46° at 53.1.                      53.2 - 54.1 reverse graded conglomerate grading into coarse-grained sandstone at 53.9.                      54.1 - 55.7 thin bedded sandstone grading into conglomerate at 54.4.                      55.7 - 61.0 thin to medium interbedded coarse-grained sandstone and pebbly sandstone grading into a thick, weakly stratified fine conglomerate at 56.3.                      61.0 - 81.1 medium to thin bedded, medium to coarse-grained sandstone grading in and out of fine conglomerate/pebbly sandstone interbeds. Between 72.0-76.2, sandstone unit shows signs of slumping/slope instability with sandstone fragments (30-80%, up to 8cm) rolled in a sandstone matrix. More discrete fine conglomerate beds at 62.3-63.6, 77.4-78.1 and 78.8-79.9. Minor gouge/faults at 63.6, 64.0-64.1, 65.6-65.8, 66.5-66.7 and 69.5-69.9. B/CA 59° at 61.3, 62° at 66.9, 72° at 72.1 and 75° at 79.6.                      81.1 - 92.4 locally silicified chert pebble conglomerate, internally reverse and normally graded with chert clasts up to 10cm. Thin gouge at 92.4.                      92.4 - 94.7 locally thin bedded medium to coarse-grained sandstone with thin conglomerate interbeds; weakly Fe-carbonate ± silica altered. B/CA 57° at 92.8.                      94.7 - 98.6 chert pebble conglomerate.                      98.6 - 102.9 medium to coarse-grained sandstone; locally conglomeratic.                      102.9 - 110.6 internally reverse and normally graded conglomerate. Upper contact/CA 62°.                      110.6 - 112.4 coarse-grained sandstone to conglomerate with increasing quartz veins at 109.5 toward fault.</p>
<p>112.4                      114.5</p>	<p>FAULT                      Quartz-carbonate vein cutting weakly sheared and broken core.</p>
<p>114.5                      130.0</p>	<p>LAMINATED TO THIN BEDDED CARBONACEOUS SILTY MUDSTONE AND MUDSTONE WITH MINOR SILTSTONE AND SANDY MUDSTONE                      Black, very carbonaceous, fissile/broken interval comprising laminated to thin bedded very carbonaceous and noncalcareous mudstone (30-40%), dark grey laminated to thin bedded generally noncalcareous silty mudstone (40-60%) and medium to dark grey laminated to thin bedded (few mms to 3cm), weakly calcareous siltstone to sandy mudstone (10-20%). Sandy mudstone interbeds (appear at 120.5) contain 40-60% fragments in a silty mudstone/mudstone matrix. Approximately 50-60% of fragments (<math>\leq 1</math>mm) are white equant to elongate carbonate (fossils?); 20-40% of fragments are clear grey to white, subrounded quartz crystals?; 10-30% of fragments are angular chert. Unit is mineralized with trace-5% very fine disseminated and laminated pyrite and sphalerite. Sphalerite? occurs as light creamy beige, very fine-grained laminations (<math>\leq 0.25</math>mm to 1.5mm) often with associated pyrite.                       114.5 - 121.2? fault; badly broken and sheared; poor recovery. Gouge zones plus quartz-carbonate veining from 114.5-116.0?. Broken core</p>

Property:

		<p>plus several gouge zones and some quartz-calcite veins at 116.0?-119.0?.</p> <p>From 119.0?-121.2? core is broken and crushed (1 gouge zone).</p> <p>121.2?- 121.9 wispy laminated mudstone/silty mudstone with light creamy beige, very fine-grained sphalerite and pyrite laminations (1 every few cms) and minor sandy mudstone containing trace-10% fine disseminated pyrite. B/CA 75° at 121.3.</p> <p>121.9 - 123.1 as above, but perhaps fewer sphalerite-pyrite laminations. Few minor gouge zones. Thin interbedded muddy sandstone at 122.6. B/CA 83° at 122.7.</p> <p>123.1 - 125.8 laminated to thin bedded silty mudstone, mudstone and minor sandy mudstone with intervals of 20-30% siltstone/silty mudstone interbeds at 124.1-124.6 and 30-50% siltstone interbeds at 125.3-125.8. Occasional pyrite-sphalerite laminations throughout; increasing laminations between 124.7-124.9. B/CA 79° at 124.8.</p> <p>125.8 - 126.6 laminated to thin bedded mudstone/silty mudstone with trace-3% disseminated and laminated pyrite and rare thin sandy mudstone interbeds.</p> <p>126.6 - 127.3 fault; calcite-quartz veining (60-70%) and gouge.</p> <p>127.3 - 128.5 laminated to thin bedded mudstone/silty mudstone with trace-5% disseminated and laminated pyrite and minor siltstone (5-10%) and sandy mudstone (5%) interbeds.</p> <p>128.5 - 129.3 vaguely laminated to bedded mudstone/silty mudstone with 5% disseminated and laminated pyrite±sphalerite. B/CA 61°, foliation/CA 53° at 128.7.</p> <p>129.3 - 130.0 as above, but with 10-15% laminated to thin bedded siltstone and trace-5% pyrite.</p>
130.0	137.8	<p><b>FAULT</b></p> <p>Bad ground with very poor recovery (1m recovered in zone). Black, fissile, crushed and gouged mudstone/silty mudstone, as above, with some quartz-carbonate veining.</p>
137.8	144.5	<p><b>LAMINATED TO THIN BEDDED CARBONACEOUS AND PYRITIC MUDSTONE AND SILTY MUDSTONE; MINOR SILTSTONE AND SANDY MUDSTONE</b></p> <p>As above. Black carbonaceous, weakly siliceous and noncalcareous mudstone with diffuse silty mudstone interbeds. Unit contains 5-15% very fine-grained disseminated and laminar pyrite. Minor thin interbeds of siltstone and coarse sandy mudstone appear at 139.3 (B/CA 76°).</p> <p>144.0 B/CA 82°, 69° at 144.5.</p> <p>144.5 two conformable quartz-calcite veins.</p>
144.5	180.4 EOH	<p><b>MEDIUM TO THICK BEDDED CARBONACEOUS SANDSTONE AND CONGLOMERATE</b></p> <p>Medium to dark grey unit consisting of medium to thick bedded, normally graded weak to moderately carbonaceous fine to coarse-grained sandstone and chert pebble conglomerate. Unit is locally moderately fe-carbonate altered and contains trace-5% fine disseminated pyrite and rare sphalerite grains disseminated in chert</p>

Property:

clasts or matrix.

144.5 - 146.0 medium to dark grey, weak to moderately carbonaceous medium-grained sandstone grading into a fine conglomerate at 144.8. Upper 10cm contains trace disseminated sphalerite grains.

146.0 - 147.2 thin, fine to coarse sandstone grades into a conglomerate at 146.2 (B/CA 61°). Conglomerate is a somewhat carbonaceous medium to dark grey colour with 50-75% clasts  $\geq 2$ mm (generally  $\leq 4$ mm, up to 15mm) of angular to rounded chert (90%), angular to subrounded mudstone (5%) and minor pyritic clasts (2-5%) and contains trace-2% pyrite as disseminations. A white alteration mineral (clay or carbonate?) alters matrix and clasts locally. The conglomerate contains larger clasts up to 3cm and 2-5% pyrite in basal 1m.

147.2 - 148.9 fine to coarse-grained sandstone grading into conglomerate at 147.4. This conglomerate is as above, but also contains trace-2% bluish grey, clear quartz crystal clasts throughout.

148.9 - 155.2 medium to coarse-grained sandstone grading into conglomerate at 149.8.

155.2 - 156.7 thin bedded, medium-grained carbonaceous sandstone with few chert pebbles ( $\leq 4$ mm) grading into a conglomerate at 155.3 (B/CA 53°). A 1mm sphalerite grain was found in a chert clast at 155.3.

156.7 - 164.5 minor thin sandstone grading into a thick conglomerate unit.

164.5 - 165.2 thin bedded to laminated, fine to medium-grained sandstone with minor pebbly sandstone interbeds. Thin conglomerate interbed occurs at 164.8-165.0. A very fine laminated mudstone/silty mudstone interbed occurs at 164.8 (B/CA 73°). Fine sphalerite grains are found disseminated in a chert clast at 164.4 and at the edge of a clast at 164.8. B/CA 53° at 165.1.

165.2 - 165.4 medium-grained sandstone.

165.4 - 165.5 thin black carbonaceous mudstone interbeds with 5% disseminated framboidal pyrite.

165.5 - 168.3 medium bedded coarse-grained carbonaceous sandstone and minor conglomerate interbeds.

166.0 - 167.9 badly broken zone with weakly crushed and gouged core. Rock becomes more carbonaceous with depth.

166.8 - 167.1 fault; gouged and crushed graphitic sandstone and conglomerate.

168.3 - 169.2 thin bedded, fine to coarse-grained carbonaceous sandstone grading into a fine conglomerate at 168.6 (B/CA 63°).

169.2 - 169.3 thin bedded fine to coarse sandstone.

169.3 - 175.4 predominantly a fine carbonaceous conglomerate.

175.4 - 175.7 thin bedded medium-grained sandstone (B/CA 80°).

175.7 - 180.1 fault; gouged and crushed carbonaceous sandstone with abundant quartz-carbonate veining at 177.5-177.8.

180.1 - 180.4 weak to moderately carbonaceous fine conglomerate with 2 sphalerite grains at 180.3.

Hole stopped at 180.4.

FIN PROPERTY 1992  
 DRILL HOLE 92-19

FROM	TO	METRES	RECV'D	%
0.0	6.1	6.1	0.00	0.00
6.1	8.2	2.1	2.10	100.00
8.2	11.3	3.1	3.10	100.00
11.3	14.3	3.0	3.00	100.00
14.3	17.4	3.1	3.00	96.77
17.4	20.4	3.0	3.00	100.00
20.4	23.5	3.1	3.10	100.00
23.5	26.5	3.0	3.00	100.00
26.5	29.6	3.1	3.10	100.00
29.6	32.6	3.0	3.00	100.00
32.6	35.7	3.1	3.10	100.00
35.7	38.7	3.0	3.00	100.00
38.7	41.8	3.1	3.00	96.77
41.8	44.8	3.0	2.95	98.33
44.8	47.9	3.1	2.85	91.94
47.9	50.9	3.0	2.60	86.67
50.9	53.9	3.0	2.60	86.67
53.9	57.0	3.1	3.05	98.39
57.0	60.0	3.0	3.00	100.00
60.0	63.1	3.1	3.10	100.00
63.1	66.1	3.0	2.85	95.00
66.1	69.2	3.1	2.95	95.16
69.2	72.2	3.0	2.90	96.67
72.2	75.3	3.1	3.10	100.00
75.3	78.3	3.0	3.00	100.00
78.3	81.4	3.1	3.05	98.39
81.4	84.4	3.0	3.00	100.00
84.4	87.5	3.1	3.10	100.00
87.5	90.5	3.0	3.00	100.00
90.5	93.6	3.1	3.10	100.00
93.6	96.6	3.0	3.00	100.00
96.6	99.7	3.1	3.10	100.00
99.7	102.7	3.0	3.00	100.00
102.7	105.8	3.1	3.10	100.00
105.8	108.8	3.0	3.00	100.00
108.8	111.9	3.1	3.10	100.00
111.9	114.9	3.0	2.90	96.67
114.9	118.0	3.1	0.80	25.81
118.0	121.0	3.0	1.75	58.33
121.0	124.1	3.1	3.00	96.77
124.1	127.1	3.0	2.90	96.67
127.1	130.1	3.0	2.75	91.67
130.1	133.2	3.1	0.40	12.90
133.2	136.2	3.0	0.35	11.67
136.2	137.8	1.6	0.10	6.25
137.8	139.3	1.5	1.15	76.67
139.3	140.8	1.5	0.55	36.67
140.8	142.3	1.5	0.85	56.67
142.3	143.9	1.6	0.55	34.38
143.9	145.4	1.5	1.45	96.67
145.4	146.9	1.5	1.50	100.00
146.9	148.4	1.5	1.50	100.00
148.4	150.0	1.6	1.50	93.75
150.0	151.5	1.5	1.50	100.00
151.5	153.0	1.5	1.50	100.00
153.0	154.5	1.5	1.50	100.00
154.5	156.1	1.6	1.60	100.00
156.1	157.6	1.5	1.50	100.00
157.6	159.1	1.5	1.50	100.00
159.1	160.6	1.5	1.50	100.00
160.6	162.2	1.6	1.50	93.75
162.2	163.7	1.5	1.50	100.00
163.7	165.2	1.5	1.50	100.00
165.2	166.7	1.5	1.45	96.67
166.7	168.3	1.6	1.10	68.75

168.3	169.8	1.5	1.40	93.33
169.8	171.3	1.5	1.30	86.67
171.3	172.8	1.5	1.50	100.00
172.8	174.3	1.5	1.40	93.33
174.3	175.9	1.6	1.50	93.75
175.9	177.4	1.5	1.35	90.00
177.4	178.9	1.5	1.40	93.33
178.9	180.4	1.5	1.40	93.33
180.4	182.0	1.6	0.80	50.00
6.1	182.0	175.9	157.70	89.65

## FIN DRILL HOLE 92-19

SAMPLE NO.	LAB#	FROM	TO	Cu(PPM)	Pb(PPM)	Zn(PPM)	Ag(PPM)	Cd(PPM)	Fe(%)	Mn(PPM)	V(PPM)	Ba(PPM)
68282	9211306	114.5	116.0	34	83	1923	0.4	9	2.40	410	42	1202
68283	9211307	116.0	119.0	30	105	2586	0.4	15	3.09	202	22	1752
68284	9211308	119.0	121.2	33	222	1281	0.4	13	3.01	162	22	1894
68285	9211309	121.2	121.9	31	149	2003	0.4	30	3.03	224	19	1806
68286	9211310	121.9	123.1	40	81	743	0.4	12	3.19	174	21	1789
68287	9211311	123.1	124.1	44	703	5538	0.8	103	3.17	155	26	3028
68288	9211312	124.1	125.8	33	109	1808	0.4	18	3.10	190	23	2049
68289	9211313	125.8	126.6	36	70	696	0.4	7	3.13	134	24	1713
68290	9211314	126.6	127.3	23	72	880	0.4	11	2.56	336	19	1325
68291	9211315	127.3	128.5	30	93	784	0.4	8	3.03	249	21	1909
68292	9211316	128.5	129.3	33	105	996	0.4	13	3.85	233	31	1868
68293	9211317	129.3	130.0	38	264	1373	0.4	20	3.41	254	33	2151
68294	9211318	130.0	137.8	40	108	561	0.4	5	3.00	337	32	3142
68295	9211319	137.8	139.3	42	153	1294	0.9	14	3.40	351	38	4606
		114.5	139.3	36	144	1393	0.5	15	3.06	265	28	2426
68296	9211320	139.3	140.8	36	54	391	0.7	3	3.09	245	26	4464
68297	9211321	140.8	142.4	44	25	260	0.4	2	3.25	194	36	4079
68298	9211322	142.4	143.9	43	18	439	0.4	5	2.40	96	47	4131
68299	9211323	143.9	144.5	51	28	332	0.4	2	3.25	112	27	3542

**DRILL HOLE RECORD**

**COMINCO LTD.**

Property: Fin  
 Commenced: July 10/92  
 Completed: July 15/92  
 Coordinates: 70+00W 46+70N  
 Objective: to test the S-dipping north central UTEM anomaly  
 Date: July 16/92  
 Logged by: P.A. MacRobbie

District: Watson Lake  
 Location: Yukon  
 Core size: NQ2  
 Tests at:

Hole No.: F92-20  
 Hole Length: 182.0 m  
 Cor. Dip: -70°  
 True Brg.: 0°  
 % Recovery.: 68.1  
 Horiz. Comp.:  
 Vert. Comp:

Metres From	To	Description
0.0	23.0	OVERBURDEN
0.0	30.5	CASING
23.0	29.5	FAULT Gouged and broken fine to medium-grained sandstone with abundant quartz-carbonate veins.
29.5	32.8	THIN TO THICK BEDDED, LAMINATED SANDSTONE Medium grey weathering unit of medium grey, bedded to massive, fine to medium-grained sandstone containing trace-1% fine disseminated pyrite and occasional quartz-carbonate veins. Sandstone is internally laminated; laminations are defined by carbonaceous partings. Medium green grey, fe-carbonate altered, 2-4cm thick interbeds contain 5% coarse-grained, euhedral disseminated pyrite. Sandstone may locally be feldspathic? (or alteration?).  31.8 trace mudstone/chert clasts. B/CA 70°. 36.8 grain of sphalerite disseminated in a quartz-calcite vein.
32.8	35.4	FAULT Very poor recovery; gouged and broken sandstone.
35.4	62.4	MASSIVE THICK BEDDED SILTY MUDSTONE WITH MINOR INTERBEDDED SILTSTONE Dark grey to black weathering unit consisting of massive, dark grey to black silty mudstone (90-95%) with minor medium to dark grey siltstone (trace-5%) and rare black carbonaceous mudstone interbeds. Pyrite (trace-2%) occurs as very fine-grained disseminations.  38.7 subrounded quartz-carbonate replaced crinoid fragments? (<0.5mm). Weakly laminated and blebby (<2mm) very fine pyrite (2-5%) begins; locally appears to replace the quartz-carbonate fossils? 39.1 trace sphalerite in a quartz-calcite vein. 39.2 few mudstone fragments in silty mudstone/siltstone. 39.3 - 57.5 broken interval with local zones of gouge and poor recovery. 39.3 - 41.6 fault; poor recovery and gouged mudstone. 41.6 - 41.8 silty mudstone with trace-3% pyrite. 41.8 - 49.9 fault; poor recovery and gouged and broken silty mudstone.

62.4

101.9

49.9 - 50.4 broken silty mudstone.  
 50.4 - 57.5 fault; poor recovery and gouged and broken silty mudstone. Silty mudstone contains trace-2% wispy and blebby pyrite from 52.0-57.5. From 55.6-57.5 black to dark grey, locally siliceous mudstone/silty mudstone predominates.  
 57.2 - 57.5 trace-1% fine sphalerite grains occur in quartz-carbonate veins and fractures.  
 57.5 - 62.4 thin interbedded dark grey, locally calcareous silty mudstone (75-80%), mudstone (10-20%) and medium to dark grey calcareous siltstone (5-10%) with trace-3% very fine-grained disseminated and locally blebby ( $\leq 1$ mm) pyrite. Foliation is the dominant fabric, transposing bedding.  
 59.8 1.5mm patch of very fine disseminated sphalerite.  
 59.9 B/CA 71°, foliation/CA 63°.  
 62.2 B/CA 81°, foliation/CA 64°.

MASSIVE TO THIN BEDDED SILTY MUDSTONE WITH MINOR INTERBEDDED SILTSTONE AND VOLCANICLASTIC SANDSTONE  
 As above, but includes numerous medium green, fine to medium-grained reworked volcanoclastic sandstone interbeds. Top and bottom of unit is defined by the first and last volcanoclastic interbed respectively.

62.4 - 62.6 medium green, weakly calcareous volcanoclastic sandstone containing 50-85% feldspar (carbonate/quartz? altered) crystal fragments ( $\leq 0.5$ mm) in a sericite/chlorite fine ash matrix. Unit is clearly a reworked epiclastic rock with weak normal grading and thin muddy interbeds and laminations in the top 5-7cm. B/CA 82°.  
 62.6 - 63.5 dark grey interval with a more defined thin bedded nature. Medium to dark grey siltstone interbeds are weakly calcareous and possibly tuffaceous.  
 63.2 trace sphalerite grains in quartz-calcite-chlorite veinlets.  
 63.5 - 67.8 fault; crushed and gouged zone.  
 67.8 - 76.8 dark grey, diffusely bedded silty mudstone/mudstone with trace crinoid fossil fragments and trace-5% wispy and blebby very fine-grained pyrite (locally appears to replace crinoid fragments).  
 69.7 trace sphalerite grains in quartz-calcite veinlets. Also at 70.2.  
 76.8 very thin (4cm) medium green volcanoclastic sandstone interbed. B/CA 65°, approx. parallel foliation.  
 76.8 - 77.3 dark grey mudstone/silty mudstone.  
 77.3 - 78.1 crushed and weakly gouged medium green volcanoclastic sandstone. Unit is perhaps spherulitic containing subrounded to rounded volcanic fragments  $\leq 1$ mm.  
 78.1 - 80.2 dark to medium grey silty mudstone and thin weakly calcareous siltstone interbeds containing 2-5% fine pyrite disseminations and blebs. B/CA 70°, foliation/CA 73° at 78.7.  
 78.3 - 80.2 fault; badly broken and poor recovery.  
 80.2 - 81.4 folded and locally crushed medium green, laminated to thin bedded volcanoclastic sandstone, as above.  
 81.4 - 86.4 dark grey to medium grey silty mudstone (60-70%), as

Property:

above, with thin weak to moderately calcareous, fossiliferous siltstone (10-30%) and minor volcanoclastic (5%) interbeds. Thin medium green volcanoclastic sandstone interbeds occur at 82.5, 84.3, 84.8 (B/CA 77°, foliation/CA 60°), 85.1-85.3 and 85.5-85.6 and are often very pyritic (10-25%, fine-grained disseminated). Abundant thin fossiliferous (crinoid? fragments) siltstone at 83.0. 81.4 - 82.9 fault; broken core, poor recovery.

86.4 - 86.7 medium green volcanoclastic sandstone.

86.7 - 88.5 dark grey locally thin to medium interbedded silty mudstone with minor calcareous and locally fossiliferous siltstone. Very thin volcanoclastic bed at 87.5.

88.5 - 88.9 fault; gouged and crushed medium green volcanoclastic sandstone. Upper contact B/CA 80°, foliation/CA 72°.

88.9 - 90.6 wispy dark grey silty mudstone/mudstone with thin siltstone (10-20%) interbeds and 2% quartz-carbonate altered crinoid fragments ( $\leq 4$ mm) scattered throughout. Pyrite (trace-3%) occurs as very fine-grained wispy disseminations and fossil replacements.

90.6 - 90.7 thin bedded to laminated medium green volcanoclastic sandstone.

90.7 - 95.3 silty mudstone (80%), as above, with thin bedded to laminated calcareous siltstone (20%) and trace-2% fine wispy disseminated pyrite.

95.3 - 95.7 weakly normally graded, thin bedded to laminated medium green volcanoclastic sandstone.

95.3 - 101.9 fault; broken core with abundant gouge zones, poor recovery.

95.7 - 101.9 silty mudstone (80%), as above, with thin bedded to laminated calcareous siltstone (20%) and trace-2% fine wispy disseminated pyrite. Thin volcanoclastic sandstone interbeds occur at 96.4-96.6 and at 101.9.

101.9

119.4

LAMINATED TO MEDIUM BEDDED SILTY MUDSTONE/MUDSTONE, SILTSTONE AND MINOR SANDSTONE

Dark grey, wispy laminated to medium bedded silty mudstone/mudstone (50-75%) and thin to medium bedded siltstone (25-50%) with minor medium grey, fine-grained sandstone (5-10%). Unit is weakly mineralized with trace-5% very fine-grained disseminated pyrite throughout, but, this interval does contain laminations to thin beds (up to 3cm) of 40-60% light creamy beige, very fine-grained sulphides (pyrite $\pm$ sphalerite) in a fine silty matrix. Interval differs with the units above with its lack of volcanoclastic debris, presence of fine-grained sandstone interbeds and increased sulphide mineralization.

101.9 - 102.7 fault; broken core with abundant gouge zones, poor recovery.

103.5 thin 1cm silty? interbed with 50-60% light creamy beige, very fine-grained sulphides (pyrite $\pm$ sphalerite?).

104.1 - 104.6 fault; gouge.

105.7 8mm thin interbed of very fine-grained sulphides, as above. Other laminations and thin beds of sulphides found at 106.2, 106.3-

Property:

	<p>106.35, 107.0, 107.5, 109.7, 110.6, 112.2, 113.0, 115.5-115.6, 115.7-115.75, 117.1, 117.5-117.6 and 118.05-118.1.                  113.35 trace-1% fine-grained sphalerite disseminated in a quartz-carbonate vein. Also at 113.5-113.7.                  117.7 trace-1% fine-grained sphalerite and trace galena found disseminated in a quartz-carbonate vein.                  118.5 - 119.4 unit becomes more carbonaceous and silty mudstone/mudstone dominated and contains numerous quartz-carbonate veinlets. Trace-2% fine-grained sphalerite is found disseminated in veinlets and along microfractures.</p>
<p>119.4                      123.8</p>	<p><b>LAMINATED TO THICK BEDDED SILICIFIED SANDSTONE</b>                  Medium grey interval of thin to thick bedded (locally laminated) fine to coarse-grained, strongly silicified sandstone, containing occasional mudstone and chert clasts, interbedded with minor fine conglomerate. Moderate fe-carbonate alteration of the matrix is evident below ~ 120.4. Occasional sphalerite and 1-5% pyrite occur as fine-grained disseminations within the matrix and quartz-carbonate veinlets.</p> <p>119.7 B/CA 65°.                  120.25 galena grain found within a quartz-carbonate vein.                  121.0-121.2 fine conglomerate interbed. Also at 121.6 and 122.1-122.3.                  122.6 B/CA 70°, foliation/CA 56°.                  123.6, 123.7 sphalerite grains disseminated in sandstone matrix.</p>
<p>123.8                      124.1</p>	<p><b>FAULT</b>                  Dark grey to black gouge zone with abundant quartz-carbonate veins.</p>
<p>124.1                      128.6</p>	<p><b>THIN TO MEDIUM BEDDED CARBONACEOUS SANDSTONE WITH INTERBEDDED SILTY MUDSTONE AND SILTSTONE</b>                  Dark grey, carbonaceous and calcareous fine to medium-grained internally laminated sandstone with interlaminated to thin bedded, noncalcareous silty mudstone and siltstone. Abundant blue grey stain and minor yellowy beige stain are present on fracture surfaces. Sandstones range from medium grey clean sandstone to a dark grey carbonaceous and weakly calcareous wacke (coarse-grained sand in a carbonaceous silty mudstone matrix).</p> <p>125.6 - 126.0 thin interbedded silty mudstone and siltstone.                  125.7 B/CA 58°, foliation/CA 50°.                  127.9 - 128.6 interval contains several carbonaceous wacke interbeds with a calcareous muddy matrix containing trace-3% disseminated pyrite.</p>
<p>128.6                      135.0</p>	<p><b>LAMINATED TO THIN BEDDED CARBONACEOUS SILTY MUDSTONE, SILTSTONE AND MINOR MUDSTONE</b>                  Laminated to thin bedded, dark grey carbonaceous interval consisting of silty mudstone (40-60%), siltstone (40-60%), minor black carbonaceous mudstone (&lt;5%) and rare carbonaceous wacke interbeds. Unit is weakly pyritic (trace-2%) as fine-grained</p>

Property:

		<p>disseminations and wisps.</p> <p>128.9 - 129.1 interval contains several carbonaceous wacke interbeds with a calcareous muddy matrix containing trace-3% disseminated pyrite.</p> <p>130.0 - 131.9 fault; gouge and numerous quartz-carbonate veins.</p> <p>131.9 - 132.9 interval contains several carbonaceous wacke interbeds with a calcareous muddy matrix containing trace-3% disseminated pyrite.</p> <p>132.9 - 133.3 fault; gouge and quartz-carbonate veins.</p>
135.0	139.0	<p><b>FAULT</b></p> <p>Gouged and crushed core with abundant quartz-carbonate-chlorite±pyrite veins.</p>
139.0	171.0	<p><b>LAMINATED TO THIN BEDDED CARBONACEOUS SILTY MUDSTONE, SILTSTONE AND MINOR SANDSTONE</b></p> <p>Dark grey to black, laminated to thin bedded unit, similar to above, consisting of interbedded dark grey to black silty mudstone (60-70%), dark to medium grey siltstone (20-40%) and minor medium grey fine-grained sandstone (5%) and dark grey carbonaceous wacke (5%) with 25-35% coarse sand chert and mudstone clasts (&gt;2mm) in a silty mudstone matrix. Unit generally contains 1-3% fine-grained disseminated pyrite; sandstone interbeds often contain 2-5% pyrite. Abundant blue green grey stain is found on fracture surfaces.</p> <p>145.2 - 151.1 broken and crushed zone; locally gouged.</p> <p>146.9 - 148.4 fault; gouge.</p> <p>151.6 - 157.6 broken and crushed zone; locally gouged.</p> <p>156.1 - 157.6 fault; gouge and poor recovery.</p> <p>159.2 very fine-grained, light creamy beige sulphide (pyrite±sphalerite?) laminations, 1-5mm, first appear. Also found at 161.8, 163.4, 164.4, 165.3, 165.9, 166.3 and 166.65-166.8.</p> <p>166.8 - 166.9 interval contains several thin dark grey limy mudstone interbeds (&lt;1.5cm).</p> <p>169.4 - 171.0 badly broken zone.</p>
171.0	175.7	<p><b>CARBONACEOUS AND PYRITIC MUDSTONE</b></p> <p>Black very carbonaceous, weak to moderately silicified mudstone with 2-20% laminated and disseminated very fine-grained sulphides.</p> <p>171.0 - 172.7 fault; crushed and gouged black carbonaceous mudstone with 2-5% very fine-grained pyrite.</p> <p>172.7 - 173.2 black very carbonaceous mudstone with 10-20% very fine-grained disseminated and laminated pyrite. Mudstone contains 5-25% bladed euhedral crystals (&lt;1-2.5mm) of witherite, becoming more elongate and subrounded down hole.</p> <p>173.2 - 173.9 fault; crushed and gouged black carbonaceous pyritic mudstone.</p> <p>173.9 - 174.2 black very carbonaceous and pyritic mudstone.</p> <p>174.2 - 174.3 black very carbonaceous mudstone with 10-40%</p>

**DRILL HOLE RECORD**

**COMINCO LTD.**

Page 6 of 6  
Hole No.: F92-20

Property:

175.7

182.0  
EOH

laminated pyrite±sphalerite? throughout.

174.3 - 175.6 black very carbonaceous mudstone with 10% pyrite and 5% pyrite±sphalerite laminations.

174.35 disseminated fine-grained galena and pyrite in mudstone.

175.6 - 175.7 fault; gouge and broken core.

LAMINATED TO THIN BEDDED CARBONACEOUS SILTY MUDSTONE, SILTSTONE AND MINOR SANDSTONE

Dark grey to black, laminated to thin bedded unit, similar to previous unit, consisting of interbedded dark grey to black silty mudstone (60-70%), dark to medium grey siltstone (20-40%) and minor medium grey fine-grained sandstone (5%). Unit generally contains 1-3% fine-grained disseminated pyrite. Very fine-grained pyrite±sphalerite laminations are present at 177.5, 177.6 and 178.1.

178.0 - 180.4 crushed and broken zone.

178.9 - 180.4 fault; gouge.

180.8 - 182.0 fault; gouge and broken core, poor recovery.

Hole stopped at 182.0 due to squeezing ground and loss of circulation.

FIN PROPERTY 1992  
 DRILL HOLE 92-20

FROM	TO	METRES	RECV'D	%
0.0	23.0	23.0	0.00	0.00
23.0	23.5	0.5	0.10	20.00
23.5	26.5	3.0	0.35	11.67
26.5	29.6	3.1	0.75	24.19
29.6	32.6	3.0	1.30	43.33
32.6	35.7	3.1	0.45	14.52
35.7	38.7	3.0	0.80	26.67
38.7	41.8	3.1	1.36	43.87
41.8	44.8	3.0	0.35	11.67
44.8	47.9	3.1	0.45	14.52
47.9	49.4	1.5	0.60	40.00
49.4	50.9	1.5	1.15	76.67
50.9	52.4	1.5	0.45	30.00
52.4	53.9	1.5	0.90	60.00
53.9	55.5	1.6	0.55	34.37
55.5	57.0	1.5	0.05	3.33
57.0	58.5	1.5	1.15	76.67
58.5	60.0	1.5	1.50	100.00
60.0	61.6	1.6	1.60	100.00
61.6	63.1	1.5	1.50	100.00
63.1	64.6	1.5	0.85	56.67
64.6	66.1	1.5	1.10	73.33
66.1	67.7	1.6	0.75	46.87
67.7	69.2	1.5	1.15	76.67
69.2	70.7	1.5	1.05	70.00
70.7	72.2	1.5	0.60	40.00
72.2	73.8	1.6	1.45	90.63
73.8	75.3	1.5	1.20	80.00
75.3	76.8	1.5	1.15	76.67
76.8	78.3	1.5	1.50	100.00
78.3	79.9	1.6	0.35	21.87
79.9	81.4	1.5	1.10	73.33
81.4	82.9	1.5	0.55	36.67
82.9	84.4	1.5	1.50	100.00
84.4	86.0	1.6	1.35	84.38
86.0	87.5	1.5	1.40	93.33
87.5	89.4	1.9	1.35	71.05
89.4	90.5	1.1	1.50	136.36
90.5	92.0	1.5	0.80	53.33
92.0	93.6	1.6	1.10	68.75
93.6	95.1	1.5	1.50	100.00
95.1	96.6	1.5	1.20	80.00
96.6	98.1	1.5	0.65	43.33
98.1	99.7	1.6	0.75	46.87
99.7	101.2	1.5	0.40	26.67
101.2	102.7	1.5	0.50	33.33
102.7	104.2	1.5	1.20	80.00
104.2	105.8	1.6	1.25	78.13
105.8	107.3	1.5	1.50	100.00
107.3	108.8	1.5	1.45	96.67
108.8	110.3	1.5	1.30	86.67
110.3	111.9	1.6	1.20	75.00
111.9	113.4	1.5	0.90	60.00
113.4	114.9	1.5	1.25	83.33
114.9	116.4	1.5	1.40	93.33
116.4	118.0	1.6	1.60	100.00
118.0	119.5	1.5	1.50	100.00
119.5	121.0	1.5	1.50	100.00
121.0	122.5	1.5	1.50	100.00
122.5	124.1	1.6	1.50	93.75
124.1	125.6	1.5	1.35	90.00
125.6	127.1	1.5	1.45	96.67
127.1	128.6	1.5	1.40	93.33
128.6	130.1	1.5	1.50	100.00
130.1	131.7	1.6	1.10	68.75

131.7	133.2	1.5	1.45	96.67
133.2	134.7	1.5	1.20	80.00
134.7	136.2	1.5	1.40	93.33
136.2	137.8	1.6	1.30	81.25
137.8	139.3	1.5	1.40	93.33
139.3	140.8	1.5	1.50	100.00
140.8	142.3	1.5	1.50	100.00
142.3	143.9	1.6	1.35	84.38
143.9	145.4	1.5	0.60	40.00
145.4	146.9	1.5	1.00	66.67
146.9	148.4	1.5	1.10	73.33
148.4	150.0	1.6	1.40	87.50
150.0	151.5	1.5	1.20	80.00
151.5	153.0	1.5	1.10	73.33
153.0	154.5	1.5	0.75	50.00
154.5	156.1	1.6	1.30	81.25
156.1	157.6	1.5	1.40	93.33
157.6	159.1	1.5	1.30	86.67
159.1	160.6	1.5	1.45	96.67
160.6	162.2	1.6	1.50	93.75
162.2	163.7	1.5	1.45	96.67
163.7	165.2	1.5	1.50	100.00
165.2	166.7	1.5	1.45	96.67
166.7	168.2	1.5	1.50	100.00
168.2	169.7	1.5	1.35	90.00
169.7	171.3	1.6	1.00	62.50
171.3	172.8	1.5	1.10	73.33
172.8	174.3	1.5	1.10	73.33
174.3	175.9	1.6	0.85	53.13
175.9	177.4	1.5	1.00	66.67
177.4	178.9	1.5	1.40	93.33
178.9	180.4	1.5	0.55	36.67
180.4	182.0	1.6	0.80	50.00
23.0	182.0	159.0	108.26	68.09

SAMPLE NO.	LAB#	FROM	TO	Cu(PPM)	Pb(PPM)	Zn(PPM)	Ag(PPM)	Cd(PPM)	Fe(%)	Mn(PPM)	V(PPM)	Ba(PPM)
68301	9211325	30.5	32.8	3	4	237	0.4	1	2.54	367	55	2137
68302	9211326	35.4	38.7	27	12	210	0.4	1	4.11	355	81	1419
68303	9211327	38.7	41.8	20	7	269	0.4	1	2.30	197	38	1623
68304	9211328	41.8	47.9	25	14	252	0.4	1	2.24	182	46	1399
68305	9211329	47.9	49.9	25	14	200	0.4	1	1.92	104	53	1580
68306	9211330	49.9	52.0	25	11	221	0.4	1	2.34	178	46	1443
68307	9211331	52.0	55.6	21	14	184	0.4	1	1.70	143	29	1388
68308	9211332	55.6	57.5	19	12	176	0.4	1	1.56	133	28	1392
68309	9211333	57.5	58.5	19	16	273	0.4	1	1.15	87	23	1501
68310	9211334	58.5	60.5	20	14	178	0.4	1	1.83	157	29	1472
68311	9211335	60.5	62.6	19	14	322	0.4	1	2.28	206	32	1402
68312	9211336	62.6	63.5	19	11	142	0.4	1	2.14	170	33	1533
68313	9211337	63.5	67.8	18	19	205	0.4	1	2.26	175	41	1473
68314	9211338	67.8	69.8	22	15	181	0.4	1	3.34	251	50	1267
68315	9211339	69.8	71.8	22	12	260	0.4	1	1.41	117	27	1448
68316	9211340	71.8	73.8	20	14	154	0.4	1	2.00	143	34	1378
68317	9211341	73.8	75.8	24	15	168	0.4	1	2.75	171	32	1460
68318	9211342	75.8	77.3	18	9	114	0.4	1	3.07	167	29	1503
68319	9211343	77.3	78.1	34	24	112	0.4	1	3.71	47	6	3064
68320	9211344	78.1	80.2	17	6	148	0.4	1	3.28	253	31	1275
68321	9211345	80.2	81.4	38	39	94	0.4	1	3.73	28	5	3079
68322	9211346	81.4	83.4	19	14	206	0.4	1	2.20	159	27	1313
68323	9211347	83.4	85.1	18	12	126	0.4	1	2.32	194	26	1396
68324	9211348	85.1	86.7	17	23	166	0.4	1	3.21	217	40	1148
68325	9211349	86.7	88.9	18	23	115	0.4	1	2.79	211	25	1328
68326	9211350	88.9	90.7	19	12	152	0.4	1	1.95	138	24	1428
68327	9211351	90.7	92.7	19	12	154	0.4	1	2.74	194	38	1131
68328	9211352	92.7	94.0	20	15	158	0.4	1	1.35	115	17	1361
68329	9211353	94.0	95.7	18	15	141	0.5	1	1.67	137	17	1368
68330	9211354	95.7	99.0	16	7	222	0.4	1	2.05	214	30	1091
68331	9211355	99.0	102.7	21	49	161	0.4	1	2.00	215	20	1354
68332	9211356	102.7	104.6	23	35	162	0.4	1	2.07	182	22	1304
68333	9211357	104.6	106.6	23	13	229	0.4	1	2.15	177	27	1282
68334	9211358	106.6	108.6	27	14	218	0.4	1	1.78	123	25	1446
68335	9211359	108.6	110.6	23	63	1228	0.4	5	2.24	261	27	1258
68336	9211360	110.6	113.6	22	18	191	0.4	1	1.82	177	23	1277
68337	9211361	113.6	115.6	21	33	218	0.4	1	1.69	177	18	1378
68338	9211362	115.6	117.6	23	20	194	0.4	1	1.95	171	23	1400
68339	9211363	117.6	118.1	26	54	277	0.4	1	5.67	439	58	920
68340	9211364	118.1	119.4	27	66	227	0.7	1	1.95	135	20	1672
68341	9211365	119.4	120.9	1	10	118	0.4	1	0.81	146	7	526
68342	9212320	120.9	122.5	9	26	99	0.4	1	1.17	140	13	670
68343	9212321	122.5	123.8	8	19	470	1.1	1	0.71	66	11	795
68344	9212322	123.8	125.5	15	31	84	0.8	1	1.13	211	4	1104
68346	9212323	125.5	127.1	20	24	55	0.8	1	2.23	220	10	1045
68348	9211366	130.0	131.9	35	57	105	0.6	1	2.70	174	12	1137
68349	9211367	131.9	133.3	29	26	71	0.4	1	2.58	190	11	1148
68350	9211368	133.3	135.0	34	37	112	0.4	1	3.28	163	20	1208
68351	9211369	135.0	137.0	28	117	218	0.4	2	3.72	242	25	934
68352	9211370	137.0	139.0	24	192	453	0.4	3	3.76	306	22	980
68353	9211371	139.0	141.0	31	298	628	0.4	6	4.64	304	22	1066
68354	9211372	141.0	143.0	27	130	505	0.4	6	4.22	363	25	964
68355	9211373	143.0	145.0	30	165	573	0.4	8	3.34	243	15	1295
68356	9211374	145.0	147.0	36	39	149	0.4	1	3.61	181	20	1545
68357	9211375	147.0	149.0	36	401	657	0.4	6	3.87	260	25	1560
68358	9211376	149.0	151.1	34	75	831	0.4	8	3.20	301	23	1916
		135.0	151.1	31	176	504	0.4	5	3.79	275	22	1286

SAMPLE NO.	LAB#	FROM	TO	Cu(PPM)	Pb(PPM)	Zn(PPM)	Ag(PPM)	Cd(PPM)	Fe(%)	Mn(PPM)	V(PPM)	Ba(PPM)
68359	9211377	151.1	153.0	36	33	96	0.4	1	2.91	217	15	2580
68360	9211378	153.0	155.0	37	22	327	0.4	2	3.21	225	18	2753
68361	9211379	155.0	157.0	41	58	517	0.4	5	3.02	205	22	2808
68362	9211380	157.0	159.0	36	54	281	0.4	2	3.38	241	21	2900
68363	9211381	159.0	161.0	32	71	1354	0.4	17	4.05	301	25	2939
68364	9211382	161.0	163.0	29	59	76	0.4	1	3.10	258	19	3523
68365	9211383	163.0	165.0	34	912	2662	0.4	51	2.56	266	12	3999
68366	9211384	165.0	166.6	33	175	3095	0.4	54	2.70	236	16	4522
68367	9211385	166.6	167.0	32	142	1213	0.4	22	2.56	217	18	4728
68368	9211386	167.0	169.0	35	41	496	0.4	6	2.74	230	17	4928
68369	9211387	169.0	171.0	37	96	1044	0.4	11	3.15	381	14	5022
68370	9211388	171.0	172.7	41	264	4123	0.7	37	2.75	220	25	5103
68371	9211389	172.7	173.2	44	572	2783	1.3	23	2.78	270	36	2878
68372	9211390	173.2	174.2	53	829	8695	1.7	79	1.78	149	62	2843
68373	9211391	174.2	174.4	59	2465	8472	3.2	76	5.25	371	18	3349
68374	9212324	174.4	175.7	71	201	1549	1.7	16	1.97	222	38	3237
68375	9212325	175.7	177.4	29	43	1674	0.7	13	2.81	263	14	4494
68376	9212326	177.4	178.9	42	97	1993	1.1	16	2.86	250	15	4309
68377	9212327	178.9	182.0	30	65	3299	0.9	27	2.64	362	17	4132
		159.0	182.0	37	236	2329	0.7	26	2.84	274	21	4117