

014428

1980 DRILLING REPORT

BNOB CLAIM GROUP

Watson Lake Mining District

Yukon Territory

N.T.S. 105-F-10

Latitude: 61°35' N

Longitude: 132°30' W

Pelmac Project

By:

L. C. Pigage

March, 1980

Field work completed from August 15 - August 24, 1980

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Table I

LIST OF CLAIMS

<u>Claims</u>	<u>Grant No.'s</u>	<u>Recording Date</u>
BNOB 1 - 16	YA 258 - YA 273	July 26, 1976

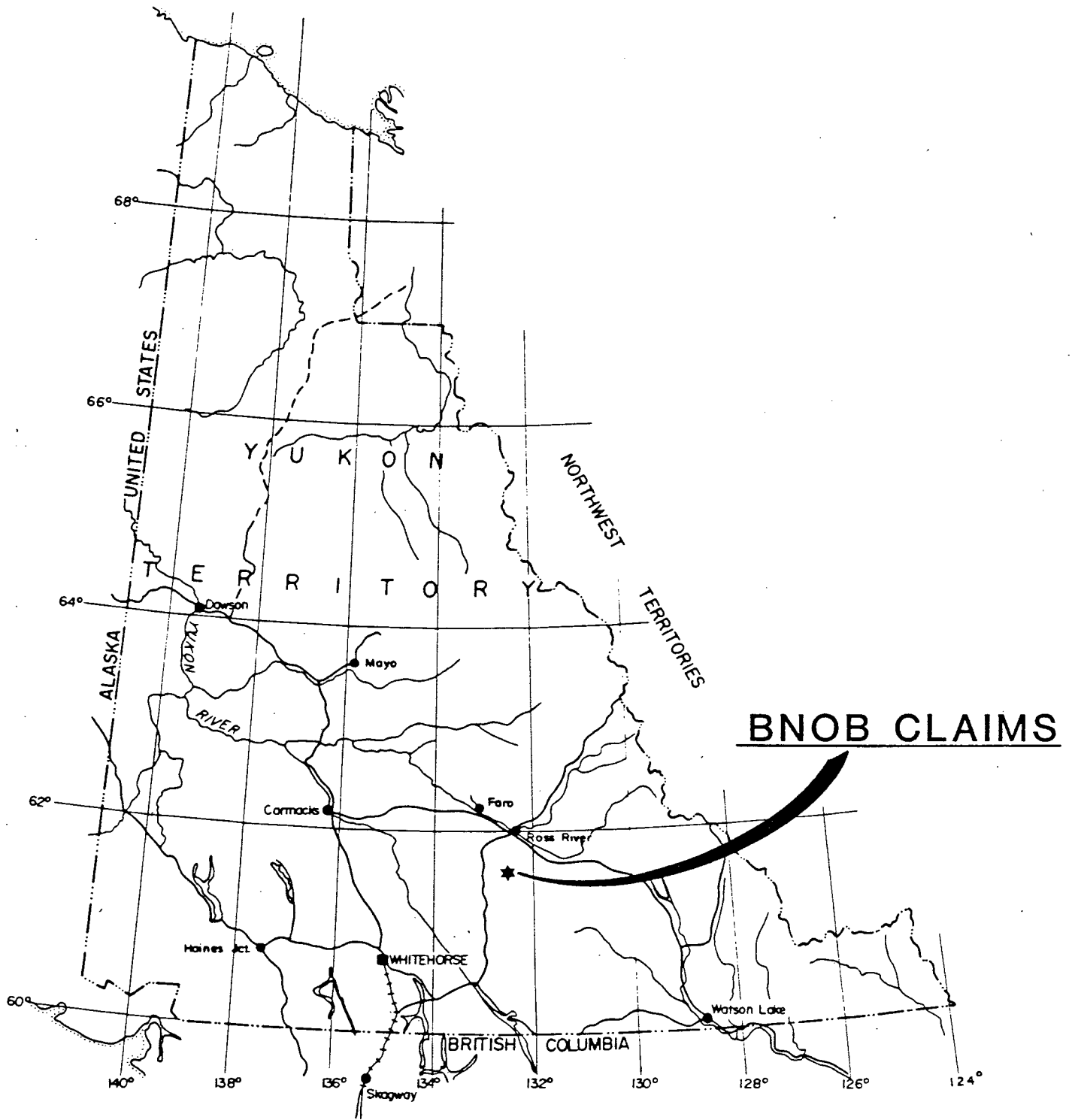
INTRODUCTION

The BNOB claim group consists of 16 contiguous claims (Table 1) located on the east side of the McConnell River valley, Yukon Territory (figure 1). The claims were staked in 1976 during a joint venture prospecting program with Hudson's Bay Oil and Gas Company Limited. The property covers a surface showing of massive sedimentary barite within a sequence of highly pyritic Mississippian felsic metavolcanics.

The claims cover a prominent knob which slopes steeply down to the valley floor. Total relief is slightly greater than 300 meters (1000 feet). Outcrop is relatively poor with less than 5% exposure. Access to the property is possible only by helicopter.

PREVIOUS WORK

Grid geochemical soil sampling was conducted concurrently with staking in 1976 (Dean 1977a). The sampling outlined strong Pb and Zn anomalies downslope from the surface barite showing. During 1977 magnetic and electromagnetic surveys and geologic mapping were completed on an extended picket grid (Dean 1977b). Results of the geophysical surveys were inconclusive and not particularly promising. In 1978 geologic mapping was extended and interpreted within a regional structural-stratigraphic framework (Mortensen 1979).



CYPRUS ANVIL MINING CORPORATION LOCATION MAP

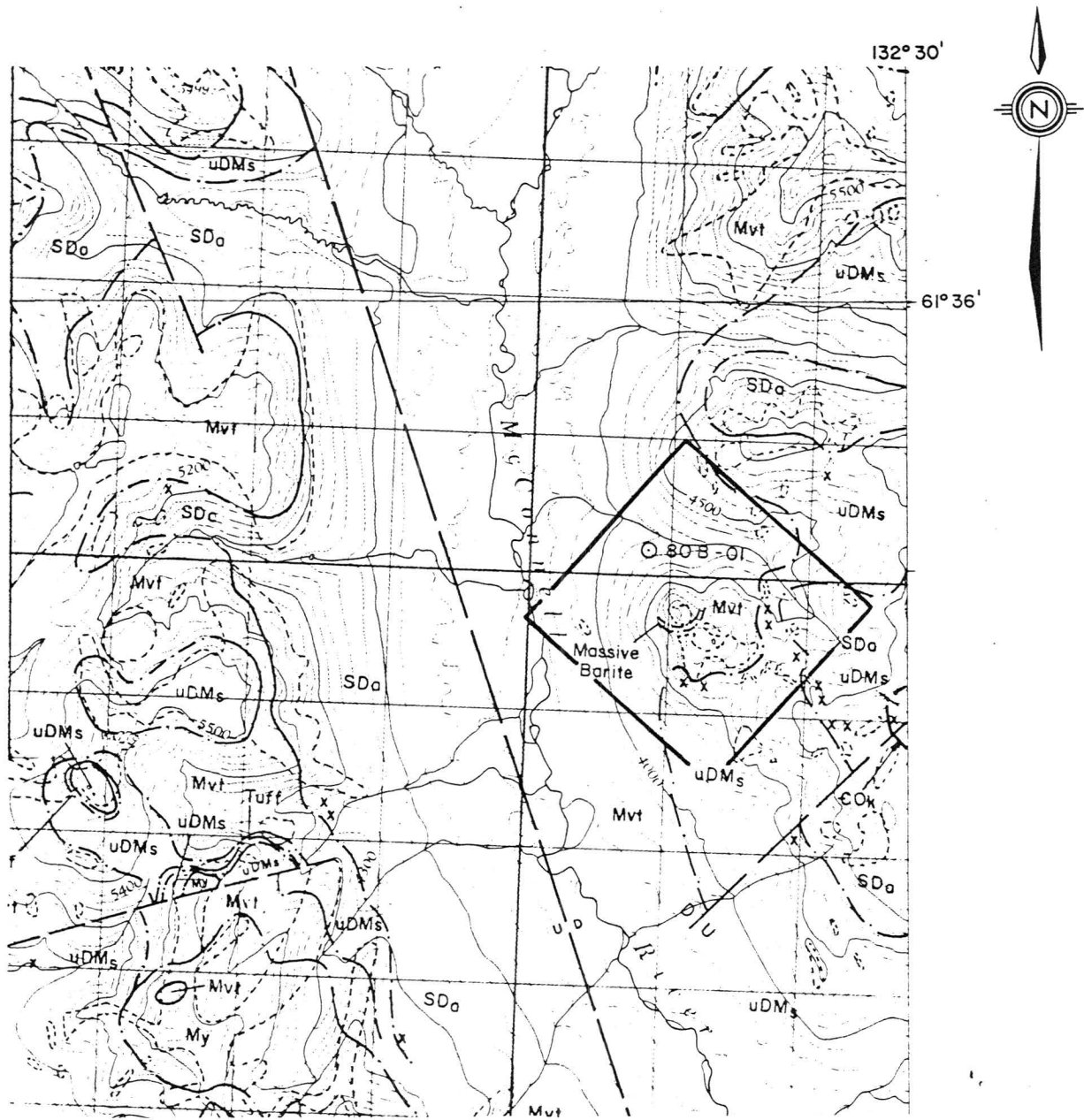
YUKON
SCALE : 1" = 100 MILES

GEOLOGY

The regional geology in the vicinity of the BNOB claims is shown in figure 2, and the regional stratigraphy is listed in table 2. The claim group is underlain by Silurian-Devonian quartzites and dolomites of the Askin Group (SD_a) and Devonian-Mississippian felsic metavolcanics (Mvt) and black phyllites (uDM_s). Contact relations between the Askin Group (SD_a) and the 'Black Clastic Unit' (uDM_s) are uncertain and will be discussed later.

All units have been metamorphosed to lower greenschist facies and contain foliation surfaces associated with at least two phases of deformation. So bedding and the pervasive S_1 schistosity dominantly dip steeply to the northwest or southeast.

Table 3 lists the detailed Devonian-Mississippian stratigraphy in the immediate vicinity of the main barite showing. The massive barite forms a 10 meter thick horizon within felsic tuffs and lapilli tuffs. The entire sequence is capped by a massive, medium to coarse-grained metavolcanic (flow or sill). Near the showing all lithologic units dip steeply to the northwest.



CYPRUS ANVIL MINING CORPORATION	
BNOB CLAIMS	
WATSON LAKE M.D.-Y.T.	
REGIONAL GEOLOGY	
NTS: 105-F-10	DATE: MAY 1981
SURVEY BY: LCP	FIGURE 2
DRAWN BY: rwr	

Scale 1:50,000 Échelle

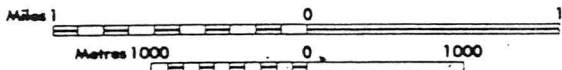


TABLE II

STRATIGRAPHIC COLUMN

LATE TRIASSIC

uR₁ BUFF TO GREY SILTY LIMESTONES. UNIT OCCURS ONLY IN THE VICINITY OF THE HOWRU CLAIMS.

PALEOZOIC

Pzu SERPENTINITES, ULTRAMAFICS, CHLORITIC PHYLLITES OF PALEOZOIC (?) AGE.

CARBONIFEROUS (?)

C_{sl} BUFF TO BROWN SILTSTONE AND SHALE. UNIT OCCURS ONLY IN THE VICINITY OF THE HOWRU CLAIMS.

MISSISSIPPIAN

My FINE TO COARSE-GRAINED HORNEBLLENDE SYENITE.

Mt TAN TO PALE GREY BEDDED CHERTS. MINOR DARK GREY CHERT, BLACK SHALE AND LIMESTONE.

Mvt PALE GREY, BROWN OR GREENISH FELSIC TO INTERMEDIATE TUFFS AND LAPILLI TUFFS. COMMONLY WEATHERS BROWN TO ORANGE BECAUSE OF DISSEMINATED PYRITE. MINOR DYKES, SILLS AND FLOWS. THIN INTERBANDS OF CHERT AND BLACK SHALE.

LATE DEVONIAN - MISSISSIPPIAN

uDM_s 'BLACK CLASTIC UNIT'
BLACK SHALE WITH CHERT GRANULE GRIT INTERBANDS. TYPICALLY SHALE CONTAINS THIN INTERBANDS OF MEDIUM GREY, SLIGHTLY PYRITIC SILTSTONE. MINOR INTERCALATED CHERT (Mt) AND FELSIC TO INTERMEDIATE TUFFS (Mvt).

SILURIAN - DEVONIAN

ASKIN GROUP

SDa PALE GREY TO BUFF SANDY DOLOMITE TO DOLOMITIC OR CALCAREOUS ORTHOQUARTZITE. MINOR INTERBANDS OF DARK BROWN TO BLACK SHALE.

ORDOVICIAN - SILURIAN

OS_{rr} ROAD RIVER FORMATION
BROWN TO BLACK SILTSTONE AND SHALE. LOCALLY UNIT IS SLIGHTLY TO MODERATELY CALCAREOUS. TYPICALLY PYRITIC.

LATE CAMBRIAN - ORDOVICIAN

€O_{kv} KECHIKA FORMATION - VOLCANICS
FOLIATED BASIC TO INTERMEDIATE VOLCANIC FLOWS AND TUFFS WITH MINOR INTERCALATED CALCAREOUS, SILVERY PHYLLITES. SOME FLOWS ARE HIGHLY AMYGDALOIDAL.

€O_k KECHIKA FORMATION
CALCAREOUS PHYLLITE AND SILTY LIMESTONE WITH MINOR BASIC TO INTERMEDIATE VOLCANIC FLOWS AND TUFFS. UNIT TYPICALLY WEATHERS TO A BUFF OR SILVERY COLOUR.

TABLE II (CONTINUED)

HADRYNIAN - CAMBRIAN

Hc_a

ATAN GROUP
INTERLAYERED LIMESTONE, DOLOMITE, ORTHOQUARTZITE, AND
PHYLLITE. NOT MAPPED IN DETAIL.

Table 3

Detailed Devonian-Mississippian stratigraphy on the BNOB claims

(Mortensen 1979)

Mvt ₂	>75 m	medium to coarse-grained, dark grey-green to brown flow or sill
Mvt ₁	30-40 m	rusty weathering felsic tuffs and lapilli tuffs
M _b	10 m	sucrosic bedded barite with trace amounts of pyrite, galena, and sphalerite
Mvt	360 m (?)	rusty weathering felsic tuffs and lapilli tuffs
uDMS	?	black phyllite with thin grey siltstone interbedded

1980 FIELD SEASON

Field inspection has shown that the only exploration potential associated with the barite horizon is in the down-dip direction to the northwest. During the 1980 field season a small drilling program was conducted to test the down-dip extent of the barite horizon and to determine if the barite was the marginal facies of a massive sulphide body. A single inclined DDH (80-B-01) was completed for a total depth of 258.5 meters (848 feet). The location of the DDH is indicated on figure 2. Drill core from the DDH is stored at Grum Camp, near Faro, Yukon.

1980 DRILLING RESULTS

The summary log for DDH 80-B-01 is presented in Table 4. The appendix contains a detailed lithologic log (Table 5).

DDH 80-B-01 was collared in Mississippian felsic tuffs and lapilli tuffs (Mvt). Many of the tuffs encountered in the drillholes are moderately to highly pyritic. At a depth of 203.3 meters (667 feet) the drillhole intersected the underlying uDM_s black phyllites (see Table 3). Neither the massive meta-volcanic capping the Mvt, nor the barite horizon were intersected by the drillhole.

SUMMARY LOG

80-B-01

Depth (in Metres)

1. 0.0 - 11.1 Triconed in overburden - no core.
 2. 11.1 - 169.6 Pale grey to greenish-grey felsic tuffs and lapilli tuffs. All tuffs are pyritic with pyrite locally occurring as fragmental clasts and/or in the matrix. Fragments are typically flattened in the S_1 foliation. Quartz±carbonate veins common locally.
 3. 169.6 - 203.3 Pale grey to greenish-grey tuffs as above with thin black, noncalcareous phyllite interbands. Irregular quartz-carbonate veins in both tuffs and phyllites.
 4. 203.3 - 258.5 Noncalcareous, black phyllite with abundant thin grey siltstone bands. Siltstones are locally slightly calcareous and commonly contain disseminated pyrite. Graded bedding in siltstones consistently indicates stratigraphic tops UP DDH. Minor thin grey to greenish-grey felsic tuff bands up to 6 m thick are present.
- 258.5 END OF HOLE

CYPRUS ANVIL MINING CORPORATION

DIAMOND DRILL CORE LOG

Hole Number: 80-B-01

Fabric Orientation Diagram:

Project: Pelmac

Location: BNOB Claims

Claim: BNOB 7

Terr. Plane
Co-ords.: 61° 35' N Latitude N

132° 32' W Longitude E

Grid
Co-ords.: B.L. 40 W/16 S

Inclination: -60° in direction 160°

All symmetry determinations looking
_____ with _____ dipping

Elevation: 4200 feet

_____ with dip azimuth _____.

Total Depth: 848 feet (258.5 m)

Purpose: Test for barite horizon

Logged by: L.C. Pigage,
J.K. Mortensen

Date(s) Logged: Aug. 16 - Sept. 1, 1980

Drilling Contractor: Arctic Core: Size From To Collar Cased and Capped: _____

BQ 0 ft. 848 ft.

Started: Aug. 16, 1980 Completed: Aug. 23, 1980

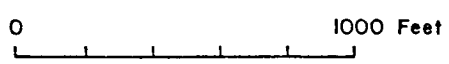
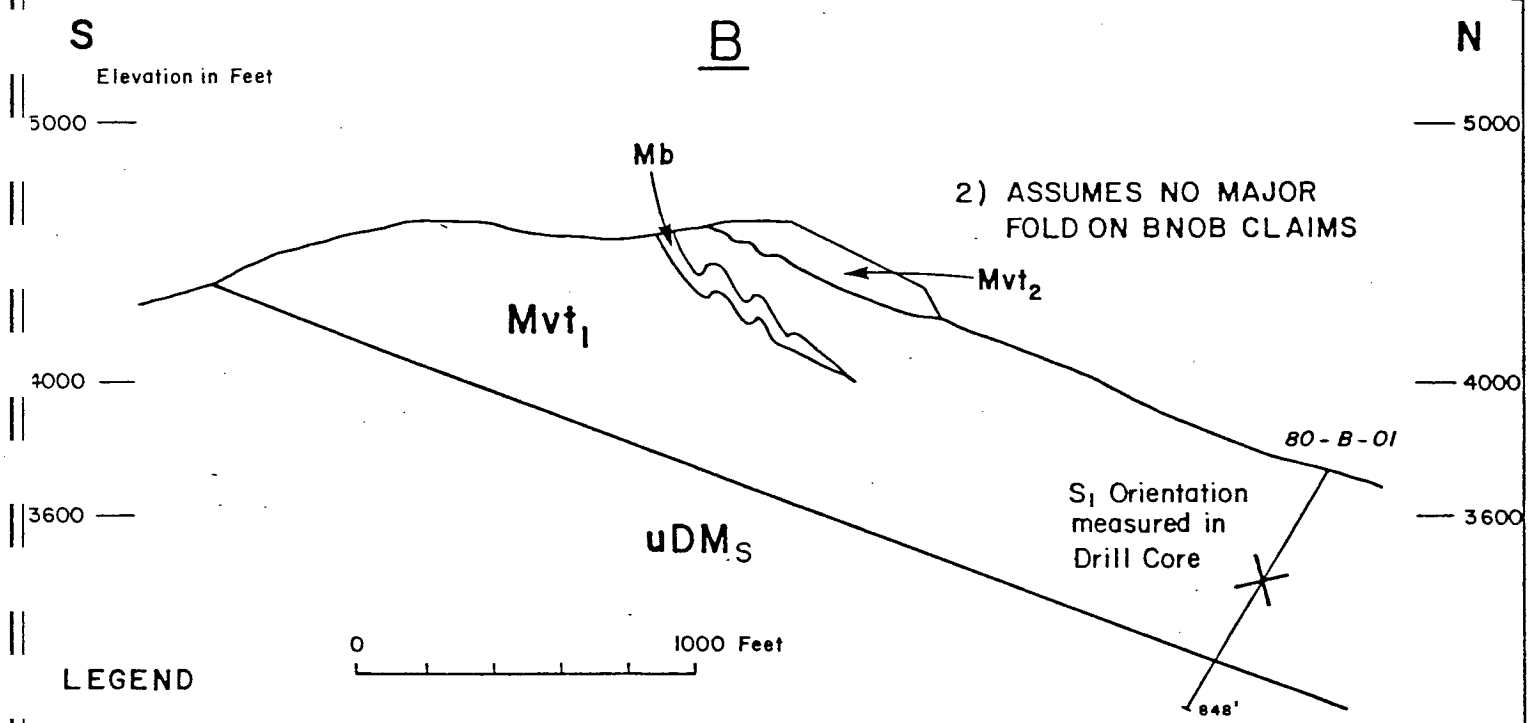
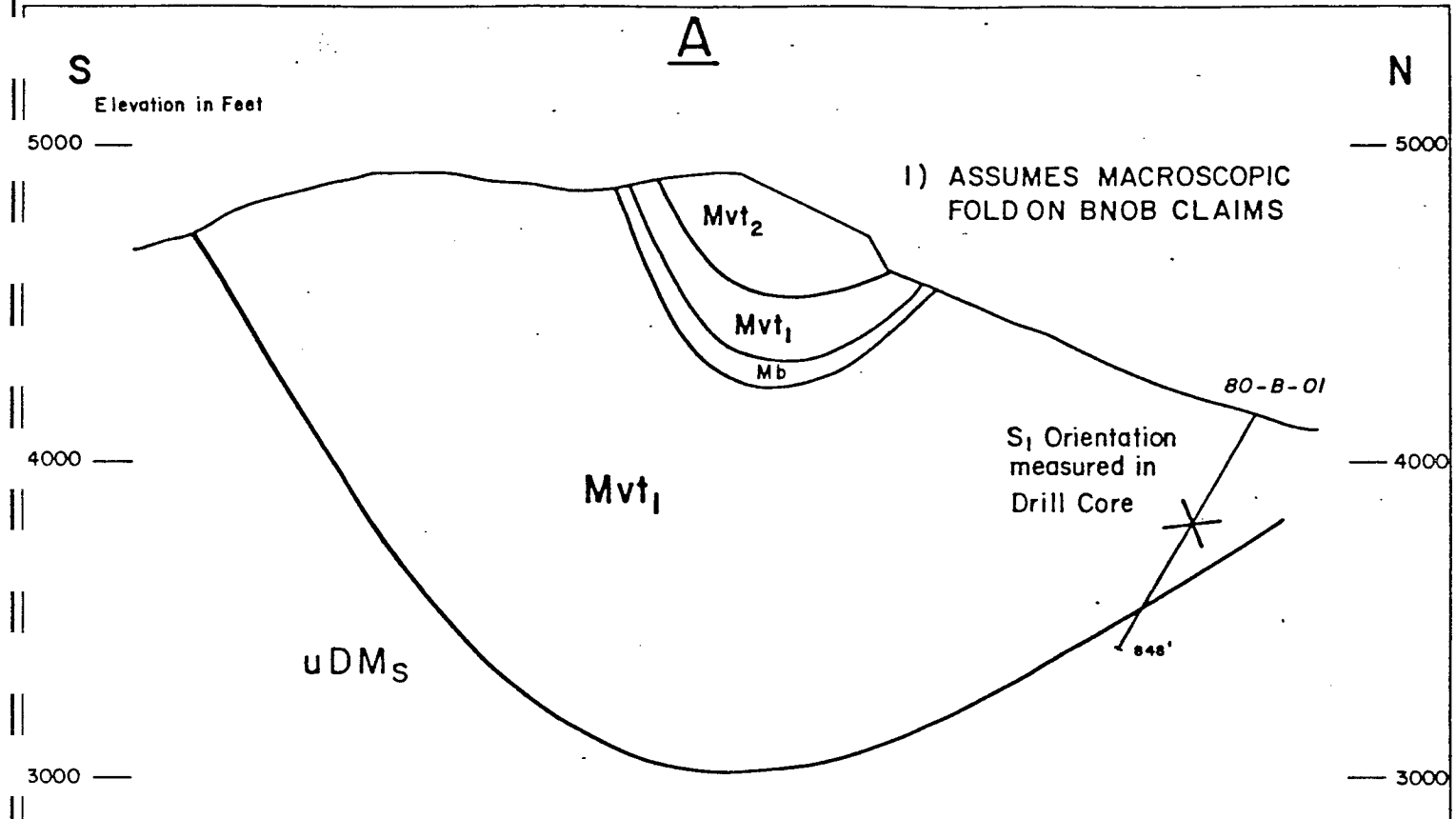
Figure 3 presents two North-South vertical cross-sections through the BNOB claims. The two sections represent alternative geologic interpretations of the drillhole results and surrounding regional geology.

In figure 3b all lithologic units are considered to dip gently to the northwest. Dips are approximately 20° in the plane of the cross-section. With this interpretation the massive flow/sill forms a small panel capping the knob containing the barite showing. The DDH does not contain this unit because it is collared in the tuffs underlying it.

The steep dips for S_0 near the barite surface showing result from mesoscopic to macroscopic minor folds with near-vertical axial planar surfaces. The enveloping surface for these folds is gently dipping northward.

With this interpretation the Askin Group outcrops on the eastern margin of the property form a thrust panel structurally overlying the Devonian-Mississippian sequence. These Askin outcrops are not continuous with the Askin outcrops located at lower elevations north of the property (see figure 2).

The massive barite horizon does not extend to DDH 80-B-01. Therefore the northward extension of this horizon must be less than 640 meters (2100 feet).



LEGEND

Mississippian

- Mvt₂ ···· dark grey - green to brown volcanic flow or sill
- Mvt₁ ···· rusty weathering felsic tuffs and lapilli tuffs
- Mb ···· sucrosic bedded barite

Devonian - Mississippian

- uDM_s ···· black phyllite with thin grey siltstone interbands

CYPRUS ANVIL MINING CORPORATION	
BNOB CLAIMS	
WATSON LAKE MINING DISTRICT, Y.T.	
VERTICAL SECTIONS SHOWING	
D.D.H. 80-B-01	
NTS: 105-F-10	DATE: February 1981
SURVEY BY:	FIGURE 3
DRAWN BY:	

In figure 3a, the surface showing and the location of DDH 80-B-01 are interpreted as being on opposing limbs of a macroscopic syncline. The core of the syncline occurs underneath the massive flow/sill which caps the Mississippian metavolcanics. The syncline trends in a general east-west direction (figure 2).

With this interpretation the Askin outcrops on the eastern margin of the BNOB property conformably underlie the Devonian-Mississippian sequence. These Askin outcrops are continuous with Askin outcrops farther north; they occur on opposite limbs of the inferred syncline.

Outcrops near the surface showing have steep dips because they are on the south limb of the syncline. The barite horizon returns to surface on the north limb of the syncline beneath the talus slopes of the massive flow/sill cliffs. The regional geology in figure 2 was compiled using this second interpretation.

With this interpretation DDH 80-B-01 was collared in the footwall. The northward unexposed lateral extent of the barite horizon (in the cross-section) is less than 460 meters (1500 feet). S_1 foliation measurements in the DDH are most consistent with this interpretation.

SUMMARY AND CONCLUSIONS

Drilling on the BNOB claims in 1980 was designed to test the down-dip extent of the massive barite surface showing. DDH 80-B-01 did not intersect the barite horizon and instead passed directly from Mvt felsic tuffs into the underlying uDM_s black phyllites. Consequently the down-dip extent of the barite horizon is less than 640 meters (2100 feet). This short interval and the absence of any geophysical anomalies suggest that the barite horizon is not associated with any significant massive sulphide bodies.

No further work is recommended for this property, and the claims should be allowed to lapse.

Selected References

- Dean, P. 1977a. Geochemical Report BNOB claim group.
Cyprus Anvil Mining Corporation internal report.
- Dean, P. 1977b. Geological and geophysical report BNOB claim group.
Cyprus Anvil Mining Corporation internal report.
- Mortensen, J. 1979. 1978 geological report on the BNOB claim group.
Cyprus Anvil Mining Corporation internal report.

A-P-P-E-N-D-I-X

CYPRUS ANVIL MINING CORPORATION

DIAMOND DRILL CORE LOG

Hole Number: 80-B-01

Fabric Orientation Diagram:

Project: Pelmac

Location: BNOB Claims

Claim: BNOB 7

Terr. Plane
Co-ords.: 61° 35' N Latitude N

132° 32' W Longitude E

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Total Depth: 848 feet (258.5 m)

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Logged by: L.C. Pigage,
J.K. Mortensen

Date(s) Logged: Aug. 16 - Sept. 1, 1980

Drilling Contractor: Arctic Core: Size From To Collar Cased and Capped: _____

80 0 ft. 848 ft.

Started: Aug. 16, 1980 Completed: Aug. 23, 1980

LITHOLOGIC LOG

DDH 80-B-01

Meters

- 0 - 11.1 Triconed in overburden.
1. 11.1 - 28.2 Pale to medium grey-green, non-calcareous, moderately pyritic felsic tuffs and lapilli tuffs. Pervasively altered (to varying degrees) to chlorite-muscovite ± clay assemblages. Lapilli fragments are subangular, to 4 cm in diameter. Pyrite is present throughout the rock, both disseminated in the lapilli fragments and as disseminations, nodules, and discrete fine-grained layers to 1 cm thick. Pyrite nodules locally have a narrow quartz shadow surrounding them. Core from 11.1 to 15.2 meters is broken and weathered; mud seams are present from 13.2 - 15.3.
Structural measurements:
16.3 m - S_1 at 20° to core axis
21.4 m - S_1 at 25°
25.6 - 28.0 m - S_1 parallel to axis
2. 28.2 - 33.6 Fine-grained variably epidotized (+ chloritized) pyritic felsic tuff. Pale to medium grey where unaltered. Locally shows a streaked or mottled light and medium grey appearance. Pyrite occurs as fine-grained disseminations and as very irregular crosscutting stringers. Minor interbeds of pale green metatuff as above are present. Locally extensive quartz veining S_1 poorly developed except in pale green metatuff bands.
Structural measurements:
31.1 m - S_1 at 40° to core axis
3. 33.6 - 36.6 Pale to medium green pyritic felsic metatuff. Lapilli size fragments are absent, otherwise the unit is similar to Unit 1. Pyrite occurs both as fine-grained disseminations and as bands (parallel to S_1) to 2 cm thick. Locally abundant quartz-carbonate (or quartz-altered feldspar) veining.
Structural measurements:
33.7 - F2 fold nose - no measurement possible
34.3 - S_1 at 40° to core axis
34.9 - S_2 at 64° to core axis
4. 36.6 - 39.0 Metatuff as in Unit 3 but with higher pyrite content. Pyrite content is 15 - 20% throughout, both as diffuse bands and nodules.
Structural measurements:
37.0 m - S_1 at 64°

Meters

5. 39.0 - 51.8 Pale green to grey green, non-calcareous, slightly pyritic highly altered (to chloritic-muscovite phyllite) felsic tuff with fine grained lapilli tuff interbands. Pyrite present throughout the matrix, and is locally present within tuff fragments as well. Some of the fragments are either slightly dolomitic or contain fine-grained carbonate as an alteration. Quartz-calcite veining is locally abundant.
Structural measurements:
39.3 m - S_0/S_1 at 57° to core axis
45.0 m - S_1 at 52° to core axis
48.2 m - S_0/S_1 at 53° to core axis
51.4 m - S_0/S_1 at 50° to core axis
6. 51.8 - 53.8 Highly altered tuff as above with abundant distinctive pyritic bands to 5 cm thick. Pyrite content in these bands is 50% to 60%. Fine grained tuff predominates with only minor coarse-tuff interbands. The altered tuff is slightly more yellowish-green than the previous unit.
Structural measurement:
53.7 m - S_1/S_0 at 45°
7. 53.8 - 55.7 Altered tuff as above (similar yellowish-green colour) but with narrower and less abundant pyrite bands. Some pyrite bands appear to be disrupted.
8. 55.7 - 61.9 Pale to medium grey, thinly laminated, non-calcareous moderately to highly pyritic felsic tuff with minor fine-grained lapilli tuff becoming increasingly abundant towards the bottom of the section. Pyrite occurs both in pervasive disseminations and as discrete bands.
Structural measurements:
56.2 m - S_0/S_1 at 56° to core axis
60.4 m - S_0/S_1 at 62° to core axis
9. 61.9 - 65.2 Medium grey moderately pyritic felsic lapilli tuff. Pyrite occurs in the matrix and as fine disseminations in some clasts, as well as in stringers.
10. 65.2 - 70.6 Pyritic lapilli tuff as above. Medium brownish grey (brown color due to fine-grained biotite in the matrix). Pyrite occurs predominantly as disseminations in the matrix but is also present in trace amounts in lapilli fragments. Most fragments are unaltered, but in some the feldspars are extensively sericitized. The matrix is distinctly grainy in appearance.
Structural measurement:
66.7 m - S_0/S_1 at 25°
1. 70.6 - 73.9 Lapilli tuff as above. Medium grey, with a very fine grained matrix. Clasts have very diffuse, indistinct borders.

Meters

12. 73.9 - 81.8 Lapilli tuff similar to Unit 10. Contains both very sharp, well-defined clasts and the more diffuse ones as in Unit 11. Fragments are poorly sorted. Structural measurement:
74.0 m - S_0 at 41°
13. 81.8 - 101.4 Medium to dark grey and grey brown lapilli tuff. Tuff fragments are pale to medium grey. Matrix is slightly biotitic. Pyrite occurs as fine cubes throughout the matrix. Fragments are all slightly flattened. Structural measurements:
81.9 m - flattening of fragments ($S_1?$) at 62°
84.4 m - flattening of fragments ($S?$) at 47°
85.1 - 90.0 m core badly broken
92.6 m - flattening of fragments ($S_1?$) at 37°
94.6 m - " " " ($S_1?$) at 35°
96.5 m - " " " ($S_1?$) at 36°
99.9 m - S_0/S_1 at 30°
14. 101.4 - 125.1 Pale to medium grey, slightly to moderately pyritic felsic lapilli tuff. Abundant quartz-carbonate veining from 109.7 to 112.3 m. Pyrite occurs primarily as disseminations throughout the groundmass, and less commonly as irregular stringers and deformed diffuse bands to 2 cm thick. Clasts are angular to subangular and are badly flattened in the plane of foliation. Structural measurement:
103.1 m - S_0/S_1 at 53° to core axis
107.4 m - S_0/S_1 parallel flattening of clasts at 58°
113.2 m - flattening of clasts ($S_1?$) at 54°
116.5 m - " " " " at 52°
120.4 m - " " " " at 52°
123.5 m - S_0/S_1 at 55°
15. 125.1 - 128.1 Felsic lapilli tuff as above with increased pyrite content (15 - 50%). Pyrite occurs as diffuse locally disrupted bands to 2 cm thick.
16. 128.1 - 144.1 Slightly pyritic fine-grained lapilli tuff. Unit is pale grey from 128.1 to 128.6, medium to dark green (variably chloritic) 128.6 to 141.4 and medium grey 141.4 to 144.1. Clast size is generally less than 0.5 cm, but fragments of felsic fine-grained volcanic to 3.0 cm diameter are present in the interval 136.0 to 138.0. Pyrite occurs disseminated in the matrix, as disrupted discrete bands and disseminated in clasts. Structural measurement:
129.5 m - S_0/S_1 at 61° to core axis
141.3 m - S_1 at 60°
144.0 m - S_1 at 40°

Meters

7. 144.1 - 146.1 Highly sheared pyritic felsic lapilli tuff. Mud seam from 144.6 to 145.1. Clasts are pyritic. Structural measurement:
145.7 m - S_1 parallel flattening of clasts at 52°
8. 146.1 - 152.4 Very highly pyritic fine-grained medium grey tuff or volcanic. Abundant quartz veining locally with drusy vugs-lined with quartz crystals. Pyrite comprises 30 to 70% of the unit, consisting of fine to medium grained stringers and broad diffuse bands and irregular zones. Single bleb of chalcopyrite occurs with a quartz vein at 152.1 m. Structural measurement:
152.7 m - S_1 at 65°
9. 152.4 - 159.4 Pyritic fine-grained medium grey volcanic. Very extensive quartz + chlorite and pyrite stringers. Chlorite occurs as discrete books and blebs to 0.8 cm diameter within the quartz stringers. Massive, unfoliated.
20. 159.4 - 161.6 Pale grey green to yellowish grey fine-grained felsic lapilli tuff. Moderately pyritic throughout. Clasts are fine to medium grained and contain relatively abundant free quartz. Rare black phyllite clasts (highly flattened). Structural measurement:
160.9 m - S_1 at 65°
1. 161.6 - 169.6 Highly pyritic (20 to 40% pyrite throughout) felsic lapilli tuff. Pyrite occurs as fine disseminations, stringers and diffuse bands. Locally slightly chloritic. Structural measurement:
164.8 m - S_1 at 65°
168.9 m - S_1 at 46°
2. 169.6 - 185.7 Highly pyritic, fine-grained, medium grey tuffs. Occasionally contains very thin black phyllite bands. Locally contains chlorite to give it a greenish tint. Intervals with white angular fragments; otherwise not obviously fragmental. Pyrite occurs as disseminated tiny grains in diffuse zones. Quartz-carbonate veins. Overall pyrite content ranges from 5 - 20%. Pyrite both in matrix and as clasts. Structural measurement:
Core axis angle:
172.7 m - S_1/S_0 at 35°
181.0 m - S_1 at 60°
184.4 m - S_1 at 53°
3. 185.7 - 187.6 Grey, fine-grained felsic tuff or metavolcanic. Both pyrite and chlorite occurs as thin irregular stringers. Core broken. Carbonate veins present. Unit has a waxy translucent appearance when wet.

Meters

24. 187.6 - 190.8 Grey to greenish grey tuffs interbanded with black phyllite. Tuffs are locally highly pyritic with fine-grained disseminated pyrite. Black phyllites typically have disseminated, fine-grained pyrite-quartz streaks about 2 mm in length. Quartz-carbonate veining common in both rock types. Individual units are 10 cm to 1.5 m in length. Structural measurement:
 190.8 m - S_0 at 57°
 189.6 m - S_1 at 62°
25. 190.8 - 203.3 Grey to greenish grey tuffs with minor black phyllite interbands. Black phyllite units become thicker near bottom of interval. Tuffs contain minor scattered white fragments; in some cases these are rectangular and look like zoned feldspar crystals. Fragments now altered to carbonate + clays. Pyrite in tuffs fine-grained or irregular nodules. Fine-grained pyrite disseminated in thin pyrite laminae. Irregular quartz-carbonate veining in both units. Interval affected by post - S_1 deformation. Core locally broken with minor gouge. Structural measurement:
 195.9 m - S_1 at 47°
 S_1 essentially parallel core axis with numerous folds (post- S_1) 197.7 - 200.6 m
 202.6 m - S_1/S_0 at 30°
26. 203.3 - 213.4 Black, noncalcareous phyllite with thin grey siltstone interbands. Siltstones are laminated with thin black laminae. Siltstones also contain fine-grained, disseminated pyrite and are slightly calcareous. Locally phyllite contains part- S_1 crenulation cleavage. Structural measurement:
 204.5 m - S_1/S_0 at 51°
 S_2 dips 30° away from S_1 S_1/S_0 205.2 m at 51°
 S_1/S_0 " at 54°
 207.0 m - S_1 at 69°
 208.4 m - 213.4 m - broken core S_2 and gouge
27. 213.4 - 219.1 Fine-grained grey to greenish grey felsic tuff. Locally can see small clasts. Abundant quartz-calcite veins. Pyrite occurs in minor amounts disseminated as small grains and as massive fine-grained bands. At 214.8 m quartz-calcite vein includes scattered pyrite and galena. Structural measurement:
 Core axis angle: S_1 90° 214.5 m
 S_2 58° " m
 S_1 64° 215.3 m
 S_2 61° "
 From 218.3 - 218.9 m S_1 is parallel core axis

28. 219.1 - 224.9 Noncalcareous black phyllite with numerous thin interbands of noncalcareous grey siltstone. Siltstones contain minor disseminated, fine-grained pyrite. Siltstone bands range up to 1 cm in thickness.
Structural measurement:
Core axis angle:
220.7 m - S_1/S_0 at 80°
222.2 m - S_1/S_0 at 80°
 S_2 " 65°
223.6 m - S_1/S_2 at 35°
 " 61°
29. 224.9 - 227.0 Fine-grained green-grey tuff. Noncalcareous. Scattered small angular clasts of ferroan calcite, blue white material, pyrite. Locally contains quartz-ferroan calcite veins.
30. 227.0 - 234.5 Black phyllite with numerous grey siltstone interbands. Same as Unit 28. Contains locally quartz-carbonate veins. Graded bedding in siltstone indicates stratigraphic tops UP DDH.
Structural measurement:
Thin zone of gouge and breccia at 228.6 m
Core axis angle:
230.3 m - S_1 at 58°
 " S_2 " 68°
 " S_0 " 90°
233.5 m - S_1/S_0 84°
 S_2 64°
234.1 m - S_1/S_0 at 80°
31. 234.5 - 235.6 Fine grained grey-green tuff. Like Unit 29. Abundant carbonate-quartz veins.
32. 235.6 - 239.7 Black phyllite with abundant grey siltstone interbands. Same as Unit 28. Disseminated pyrite occurs in only a few of the siltstone bands.
Structural measurement:
Core axis angle:
236.2 m - S_1/S_0 at 87°
 " S_2 at 60°
238.7 m - S_1/S_0 at 10°
 " S_2 at 60°
239.6 m - S_1/S_0 at 80°
 " S_2 at 53°
33. 239.7 - 240.2 Grey-green tuff. Same as Unit 29. 239.4 - 240.2 m consists of quartz-carbonate vein.
34. 240.2 - 258.5 Black, noncalcareous phyllite with diffuse grey siltstone bands. Siltstones are not as common as in previous phyllite units. Pyrite is not present. Minor quartz \pm carbonate veins. Core is broken.

Meters

240.2 - 258.5 (cont.) Structural measurement:

241.5 m - S_1/S_0 at 54^0
244.3 m - S_1 at 75^0
" S_1 at 54^0
250.2 m - S_2^2/S_0 at 75^0
254.8 m - S_1 at 64^0
257.1 m - S_1/S_0 at 73^0

258.5 End of hole.