
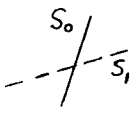


LITHOLOGIC LOG

DDH 80-DW-04

1. 0.0 - 13.5 Triconed - no core.
2. 13.5 - 15.8 Dark grey to black noncalcareous graphitic phyllite. Very minor siltstone bands. Locally contains thin bands with disseminated pyrite. Calcite in fractures - one small interval is breccia with phyllite clasts in calcite-rich matrix. S_0 only poorly and locally visible. Core locally broken and fractured.
Core Axis angle S_1 55° 13.7 m
 S_1 and S_0 70° 14.4 m
3. 15.8 - 21.3 Slightly calcareous, dark grey to black, graphitic phyllite. S_0 not readily visible. Minor amounts of disseminated pyrite in thin bands. Calcite fills fractures.
Core Axis angle S_1 70° 15.8 m
 S_1 68° 21.0 m
4. 21.3 - 22.6 Finely laminated, grey, calcareous siltstone with phyllite partings. Locally laminae are indistinct and slightly irregular. Minor disseminated pyrite in thin bands. Generally S_0 is subparallel to S_1 .
Core Axis angle S_1 and S_0 65° 21.9 m
5. 22.6 - 64.2 Dark grey to black, graphitic, calcareous, phyllitic siltstone. Ribbon-banded appearance with dark grey phyllite intercalated with medium-dark grey siltstone. Layers on a scale of about 10 mm. Siltstone more calcareous than phyllite. Disseminated pyrite locally present - most commonly nodular - associated with siltstone. Calcite fills fractures. S_0 strongly folded - delineated by the ribbon-banding. Nodular pyrite also associated with white calcite filling fractures - commonly looks broken and brecciated with calcite "pressure shadow". Interbanded phyllite is siliceous. Core locally broken and brecciated with minor gouge developed.

5. (Continued)	Core Axis angle	S_1 and S_0	74°	24.3 m
		S_1 and S_0	70°	35.2 m
		S_1 and S_0	70°	38.4 m
S_0 dips $\sim 90^\circ$ to S_1		$\left\{ \begin{array}{l} S_1 \\ S_0 \end{array} \right.$	70°	38.6 m
ZX symmetry to microlithons		S_1	74°	40.2 m
M symmetry to minor folds		S_1 and S_0	75°	42.0 m
S symmetry		S_1	70°	43.6 m
		S_1 and S_0	69°	47.9 m
S symmetry		S_1 and S_0	63°	51.0 m
S symmetry		S_1	63°	53.3 m
S symmetry		S_1 and S_0	63°	54.0 m
S_1 fold trends 90° to dip of S_1		S_1	75°	56.4 m
		$\left\{ \begin{array}{l} S_1 \\ S_0 \end{array} \right.$	60°	57.0 m
		S_1	03°	
		S_1	67°	58.7 m
		S_1 and S_0	70°	62.5 m
		S_1 and S_0	59°	63.2 m

6. 64.2 - 74.8

Core very broken with breccia and fault gouge. Upper part of interval like Unit #5. Lower part of interval like Unit #7. Calcite \pm quartz veins common. S_1 schistosity very disturbed and folded.

Core Axis angle $\begin{matrix} S_0 \\ S_1 \end{matrix} \begin{matrix} \{ \\ \} \end{matrix} \begin{matrix} S_1 & 67^\circ & 66.8 \text{ m} \\ S_0 & 41^\circ & \end{matrix}$

Disseminated pyrite in siltstone/greywacke

S_1 64° 69.6 m
 S_0 folded and disturbed
 S_1 27° 70.4 m
 S_1 75° 70.8 m
 S_1 0° 72.2 m
 S_1 80° 74.7 m

7. 74.8 - 92.6

Dark grey noncalcareous phyllite. Variably laminated with thin light grey phyllite bands - these range up to 2 - 3 cm thick. Minor siltstone/greywacke bands - these bands contain disseminated pyrite. Two thin bands are calcareous. In places light grey bands are boudinaged to form discontinuous ovals in S_0 plane. Quartz-calcite veins present - veins are very abundant and thick from 74.8 - 78.4 m. Phyllite forms angular fragments in the quartz-calcite veins.

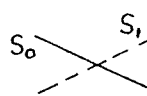
Core Axis angle S_1 and S_0 78° 74.8 m

Graded bedding indicates Tops Up DDH.

S_1 and S_0 40° 78.4 m
 S_1 and S_0 45° 80.0 m
 S_1 and S_0 65° 83.5 m
 S_0 75° 86.4 m
 S_1 70°
 S_1 and S_0 75° 87.5 m
 S_1 and S_0 70° 89.4 m


Note - get boudinage-type texture of S_0 (disrupted) when S_0 and S_1 are not subparallel.

7. (Continued)

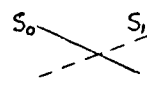
	$\left\{ \begin{array}{l} S_1 \\ S_0 \end{array} \right.$	60°	91.0 m
	$\left\{ \begin{array}{l} S_1 \\ S_0 \end{array} \right.$	75°	
	$\left\{ \begin{array}{l} S_1 \\ S_0 \end{array} \right.$	72°	92.0 m

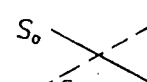
8. 92.6 - 108.4

Light grey phyllite with thin dark grey phyllite bands. Banding on a scale of a few mm. Contains thin light grey siltstone bands. Nodular to disseminated pyrite in siltstone. Siltstone layers are calcareous - light grey phyllite is locally slightly calcareous but usually noncalcareous. This unit looks like footwall of barite horizon. Pyritic nodules also present. Thin calcite veins \pm quartz.

Core Axis angle 	$\left\{ \begin{array}{l} S_1 \\ S_0 \end{array} \right.$	82°	92.6 m
	$\left\{ \begin{array}{l} S_1 \\ S_0 \end{array} \right.$	47°	

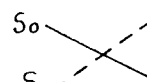
$\left\{ \begin{array}{l} S_1 \\ S_0 \end{array} \right.$	77°	93.7 m
$\left\{ \begin{array}{l} S_1 \\ S_0 \end{array} \right.$	46°	

	$\left\{ \begin{array}{l} S_1 \\ S_0 \end{array} \right.$	73°	94.4 m
	$\left\{ \begin{array}{l} S_1 \\ S_0 \end{array} \right.$	82°	

	$\left\{ \begin{array}{l} S_1 \\ S_0 \end{array} \right.$	75°	95.1 m
	$\left\{ \begin{array}{l} S_1 \\ S_0 \end{array} \right.$	85°	

Graded bedding shows Tops UP DDH

S_1 and S_0	76°	95.9 m
S_1 and S_0	83°	99.3 m

	$\left\{ \begin{array}{l} S_1 \\ S_0 \end{array} \right.$	80°	101.2 m
	$\left\{ \begin{array}{l} S_1 \\ S_0 \end{array} \right.$	75°	

Graded bedding shows Tops UP DDH.

$\left\{ \begin{array}{l} S_1 \\ S_0 \end{array} \right.$	64°	101.4 m
$\left\{ \begin{array}{l} S_1 \\ S_0 \end{array} \right.$	90°	

Graded bedding shows Tops DOWN DDH.

8. (Continued)

Core Axis angle

S_0 dips gently at 90° to S_0 } S_1 77° 102.7 m
 S_0 dips West } S_0 86°

Graded bedding shows TOPS DOWN DDH.

S_1 and S_0 78° 103.3 m

Graded bedding shows TOPS DOWN DDH.

S_1 and S_0 68° 104.8 m

Graded bedding shows TOPS UP DDH.

S_1 and S_0 75° 106.0 m

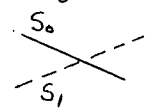
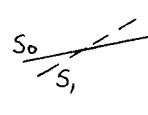
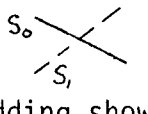
S_1 and S_0 41° 108.2 m

9. 108.4 - 128.6

Same as Unit #8. Core more broken with minor fault gouge developed. Only a few thin siltstone layers. Unit only locally slightly calcareous - most commonly noncalcareous. Abundant calcite veins along fractures.

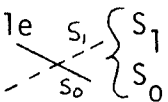
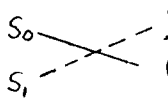

Core Axis angle S_1 and S_0 80° 108.8 m
 } S_1 70° 112.5 m
 } S_0 77°

Graded bedding shows TOPS DOWN DDH.

 } S_1 56° 114.9 m
 } S_0 85°
 } S_1 48° 118.0 m
 } S_0 84°
 } S_1 50° 118.6 m
 } S_0 75°



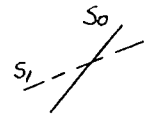
Graded bedding shows TOPS DOWN DDH.

9. (Continued)


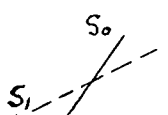
Core Axis angle		55°	119.8 m
		70°	
		52°	122.4 m
		78°	
	S ₁ and S ₀	68°	124.3 m
S ₀ dips to E 90° to		50°	126.8 m
		55°	

10. 128.6 - 142.3

Same as Unit #8. Core less broken than Unit #9. During part of interval dark grey/light grey banding is not present (although generally characteristic for this unit).

Core Axis angle		74°	130.0 m
		63°	
		73°	131.7 m
		65°	
		70°	132.4 m
		62°	

Graded bedding shows TOPS UP DDH.

S ₀ dips W at 45° to		62°	135.6 m
		67°	
		66°	137.2 m
		73°	139.3 m
		62°	

Graded bedding shows TOPS UP DDH.

S ₁	69°	142.1 m
S ₀ subparallel S ₁		

11. 142.3 - 147.4

Dark grey to black noncalcareous graphitic phyllite. Minor thin laminations. Contains thin silty layers with abundant nodular pyrite. Minor quartz-carbonate veins fill fractures. Minor intervals where core much broken.

Core Axis angle $\begin{cases} S_1 & 78^\circ \\ S_0 & 70^\circ \end{cases}$ 143.8 m
 S_0 dips E $\sim 40^\circ$ from S_1

Graded bedding shows TOPS UP DDH.

12. 147.4 - 169.7

Similar to Unit #8. Again the silty layers are slightly calcareous.

Core Axis angle $\begin{matrix} S_0 / \\ S_1 \end{matrix} \begin{cases} S_1 & 87^\circ \\ S_0 & 64^\circ \end{cases}$ 148.5 m
 $\begin{cases} S_1 & 65^\circ \\ S_0 & 70^\circ \end{cases}$ 150.0 m

Graded bedding shows TOPS DOWN DDH.

$\begin{cases} S_1 & 64^\circ \\ S_0 & 60^\circ \end{cases}$ 152.7 m
 $\begin{cases} S_1 & 75^\circ \\ S_0 & 60^\circ \end{cases}$ 155.1 m

Graded bedding shows TOPS DOWN DDH.

$\begin{cases} S_1 & 70^\circ \\ S_0 & 75^\circ \end{cases}$ 158.6 m
 $\begin{cases} S_1 & 70^\circ \\ S_0 & 65^\circ \end{cases}$ 160.2 m
 S_1 and S_0 65° 161.1 m
 $\begin{cases} S_1 & 75^\circ \\ S_0 & 70^\circ \end{cases}$ 164.5 m
 S_1 65° 165.9 m

13. 169.7 - 176.6 Dark grey graphitic noncalcareous phyllite. Minor thin laminations delineate S_0 . Abundant quartz + minor calcite veins. Thin layers in phyllite consist of disseminated pyrite (massive).
- | | | | |
|-----------------|-----------------|------------|---------|
| Core Axis angle | S_1 and S_0 | 85° | 171.3 m |
| | S_1 | 75° | 174.6 m |
14. 176.6 - 187.4 Same as Unit #13 only does not contain abundant quartz-calcite veins. Thin veins along fractures. Again massive disseminated pyrite in thin layers in the graphitic phyllite. Minor colour laminations delineate S_0 .
- | | | | |
|-----------------|-----------------|------------|---------|
| Core Axis angle | S_1 and S_0 | 40° | 177.5 m |
| | S_1 and S_0 | 65° | 178.8 m |
- Graded bedding shows TOPS UP DDH.
- | | | | |
|--|-----------------|------------|---------|
| | S_1 and S_0 | 80° | 182.9 m |
| | S_1 | 75° | 185.0 m |
| | S_1 | 85° | 187.0 m |
- 187.4 END OF HOLE