ABMINCO N.L.
CLEVELAND MINE

CATEGORY: P/2.

HOLE No.: C1393 REF No 18561

GENERAL DATA

Objective: Henry's Lens ~~23~~ level.

Area of Operation: D Section Decline Cuddy. Location: 18/19 Decline

Collar R.L.: 104.53m Co-ordinates: 15593.723 N, 10946.443 E.

Bearing of Hole: 134° 26' 09" (132) Angle of Hole: -43° 54' 38" (-45) Final Depth: 184.30

Drilling Commenced: 18/5/79 Completed: 17/8/79 Logged by:

DRILLING DATA

Drilled by: Philpott.

Drilling Rig: E500: M30

Driller(s): G. Philpott.

Non Coring:

Coring: AQ.

Core Recovery:

HOLE SURVEYS

HOLE No.: C1393

23 464

NWB 24164

ABMINCO N.L.
CLEVELAND MINE

CATEGORY

HOLE No.: C1393

GENERAL DATA

Objective: Henry's lens [redacted] Level.

Area of Operation: D-Section Decline Cuddy Location: 18/19 Decline

Collar R.L.: 104.53m Co-ordinates: 15593.723 N, 10946.443 E.

Bearing of Hole: 134° 26' 09" Angle of Hole: -43° 54' 38" (-45) Final Depth: 18430

Drilling Commenced: 18/5/79 Completed: 17-8-79 Logged by:

DRILLING DATA

Drilled by: Philpott

Drilling Rig: E500 : M30

Driller(s): G. Philpott

Non Coring:

Coring: AQ.

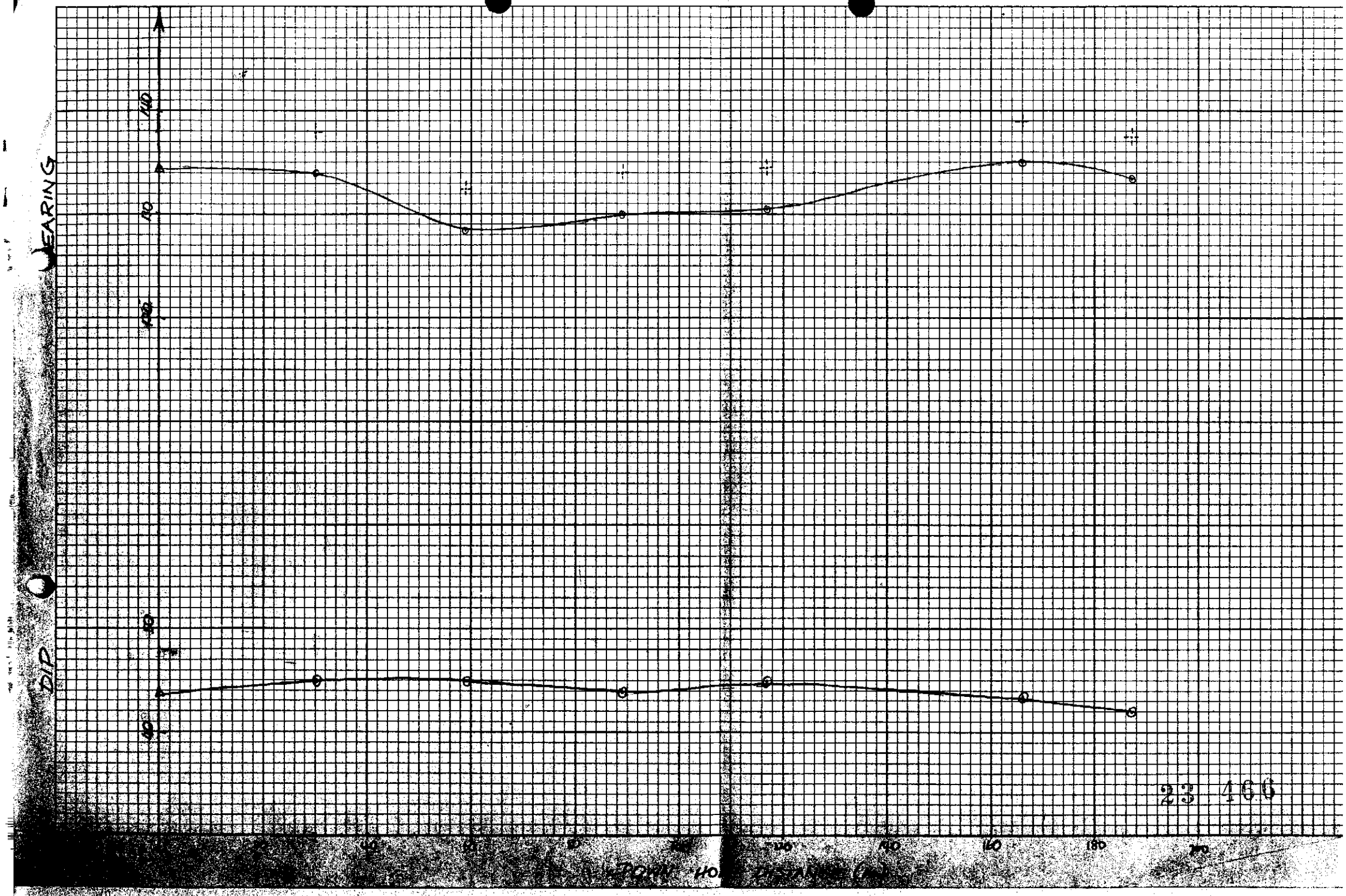
Core Recovery:

HOLE SURVEYS

23 465

HOLE No.: 1393

C 1393 PhilPott



23 166

HOLE No.: 1393

SAMPLE DATA

SHEET No.: .....

LENS	SAMPLE No.	ROCK TYPE	Σ	INTERVAL From	INTERVAL To	Length (L)	Assays (A) % Snt	Assays (A) % Sns	Assays (A) % Cu	Product (A x L) P. Snt	Product (A x L) P. Sns	Product (A x L) P. Cu
	223771	mixed chaotic Sandstone.		129.09	129.65	0.56	.07	.21	.11			
x	223772	LODE		129.65	130.64	0.99	1.74	.02	1.56			
	223773	"		130.64	131.75	1.11	1.07	.02	.93			
	223774	LODE		133.96	135.07	1.11 *	0.19	.02	.15			
	223775	"		135.07	136.14	1.07	.19	.02	.15			
Upstream	223776	"		136.14	137.12	0.98	.25	.02	.19			
	223777	mixed shale		137.92	139.24	1.32	.11	.02	.06			
x	223778	LODE		139.24	139.88	0.64	.03	.02	.40			
	~~223779~~		Σ	129.65	139.88	10.23	0.37	0.02	0.33			
	223779	LODE		142.30	143.28	0.98	1.63	.02	.17			
	223780	"		143.28	144.33	1.05	.18	.03	.79			
	223781	"		144.33	145.30	0.97	.23	.03	.19			
	223782	"		145.30	146.54	1.24	.64	.03	.25			
	223783	LODE		147.07	148.30	1.23	.77	.02	.18			

23 467

N.W.P.E.

HOLE No.: 1393

SAMPLE DATA

SHEET No.: .....

LENS	SAMPLE No.	ROCK TYPE	Σ	INTERVAL From	INTERVAL To	Length (L)	Assays (A) % Snt	Assays (A) % Sns	Assays (A) % Cu	Product (A x L) P. Snt	Product (A x L) P. Sns	Product (A x L) P. Cu
	223771	mixed chlastic Sandstone		129.09	129.65	0.56	.07	.01	.11			
	223772	LODE		129.65	130.64	0.99	1.74	.02	1.56			
	223773	"		130.64	131.75	1.11	1.07	.02	.73			
	223774	LODE		133.96	135.07	1.11 +		.02				
	223775	"		135.07	136.14	1.07	.19	.02	.15			
	223776	"		136.14	137.12	0.98	.25	.02	.19			
	223777	mixed shale		137.92	139.24	1.32	.11	.02	.06			
	223778	LODE		139.24	139.88	0.64	.03	.02	.40			
	~~223779~~											
	223779	LODE		142.30	143.28	0.98	1.63	.02	.17			
	223780	"		143.28	144.33	1.05	.15	.03	.79			
	223781	"		144.33	145.30	0.97	.23	.03	.19			
	223782	"		145.30	146.54	1.24	.64	.03	.25			
	223783	LODE		147.07	145.30	1.23	.77	.02	.18			

23 468

HOLE No.: 1393

SAMPLE DATA

SHEET No.: 2

LENS	SAMPLE No.	ROCK TYPE	Σ	INTERVAL From	INTERVAL To	Length (L)	Assays (A) % Snt	Assays (A) % Sns	Assays (A) % Cu	Product (A x L) P. Snt	Product (A x L) P. Sns	Product (A x L) P. Cu
	223784	LODE		148.60	149.00	0.40	~~.00~~ .08	.03	~~.00~~ .35			
	223785	LODE		150.46	150.80	1.34	~~.00~~ .10	.02	~~.00~~ .14			
	223786	LODE		152.85	153.94	1.09	~~.00~~ .59	.02	~~.00~~ .14			
	223787	"		153.94	154.99	1.05	~~.59~~ .34	.02	~~.14~~ .14			
	223788	"		154.99	156.10	1.11	~~2.34~~ 2.30	.02	~~.21~~ .21			
	223789	"		156.10	157.15	1.05	~~2.30~~ 1.37	.01	~~.21~~ .15			
	223790	"		157.15	158.17	1.02	~~1.57~~ 1.57	.02	~~.25~~ .21			
	223791	"		158.17	159.05	0.85	~~1.57~~ .54	.02	~~.21~~ .22			
			Σ	142.30	159.05	16.75	0.65	0.02	0.19			

23 469

N.W.P.S.

HOLE No. : [illegible]

SAMPLE DATA

SHEET No. : [illegible]

LENS	SAMPLE No.	ROCK TYPE	Σ	INTERVAL From	INTERVAL To	Length (L)	Assays (A) % Snt	Assays (A) % Sns	Assays (A) % Cu	Product (A x L) P. Snt	Product (A x L) P. Sns	Product (A x L) P. Cu
	[illegible]	Lens		[illegible]	[illegible]	0.40	.03	.03	.35			
	[illegible]	Lens		150.44	151.78	1.34	.10	.02	.14			
	[illegible]	Lens		152.35	153.94	1.09	.59	.02	.14			
	[illegible]	"		153.94	154.99	1.05	.34	.02	.14			
	[illegible]	"		154.99	156.10	1.11	.30	.02	.21			
	[illegible]	"		156.10	157.15	1.05	.37	.01	.15			
	[illegible]	"		157.15	158.17	1.02	.57	.02	.21			
	[illegible]	"		158.17	159.05	0.85	.54	.02	.22			
											23	470

ABMINCO N.L. - Cleveland Mine

DIAMOND DRILL HOLE DATA

Hole No. C1393

Sheet No.

PROGRAM DATA				SURVEY DATA				INTERPOLATED DATA		
				Instrument Type	Depth	Dip	Azimuth	Depth	Dip	Azimuth
1	Attitude	—	(+) (-)	SURVEY	Ø	−44°	134½	2½	-44¼°	134½°
				CAMERA	30m	−45°	134 (138)	37½	-45°	135¼°
2	Hole No.	1393			59m	-45°	128½ (132½)	62½	-44½°	128½°
					89m	-44°	130° (134)	87½	-44°	129½°
3	Down Hole Interval	25			117m	-45°	130½° (134½)	112½	-44½°	130½°
					163m	-43½°	135° (139)	137½	-44¼°	132½°
4	Collar Co-ords.	15593.723	N		184m	-42°	133½° (137½)	162½	-43½°	135°
								187½	-42	133½°
5		10946.443	E							
6	Collar R.L.	104.53								
7	Halls Sect. Ø Intersect Point	15610.619	N							
8		10923.640.	E							
9	Battery Sect. FA Intersect. Point	15409.213	N							
10		10838.117	E							
11	Start Plot (Depth)	Ø	Ø = Collar							

DOWN HOLE PLOT

Hole No: C1395

Sheet No:

	PLAN			CROSS SECTION		LONG SECTION					PLAN			CROSS SECTION		LONG SECTION		
DEPTH	N	E	RL	Dist.from H.R.P.	Dist.from B.R.P.	Dist. from Halls	Sect. Q	Dist from Batt.	Sect. FA	Depth	N	E	RL	Dist.from H.R.P.	Dist. from B.R.P.	Dist from Halls	Sect.	Dist from Batt
Ø	15593·72	10946·44	104·53	28·24	37·57	2·84		210·63										
25	15581·17	10959·22	87·09	46·13	53·90	2·14		203·30										
50	15569·17	10972·20	69·41	63·81	70·24	1·99		196·55										
75	15558·12	10986·09	51·81	81·53	87·11	3·16		191·00										
100	15546·62	10999·92	34·44	99·49	104·87	3·95		185·02										
125	15535·08	11013·51	16·92	117·31	120·82	4·56		178·91										
150	15522·92	11026·66	-0·53	135·22	137·37	4·41		172·07										
175	15510·10	11039·48	-17.74	153·33	153·85	3·55		164·50										
200	15497·31	11052·96	-34·46	171·91	170·92	3·15		157·18		184·3								

23 472

Feature — Bedding, Foliation, Fragment (size & shape), Shearing, Fault (F), Vein (c carbonate, q quartz)

Mineralization — Trace 1-5%, Common 5-15%, Abundant 15-50%, Massive > 50%

CORE REC'D	DEPTH m	GEOLOGY	DEPTH m	MINERALIZATION
3.66 — 3.37		SANDSTONE	5.12	qtz, carb vein
6.71 — 2.86		Predominantly medium grained	5.68	" " vivianite vein 50° to c.a.
9.75 — 2.69	10	mid grey qtz ss. variable feldspar	5.60	open qtz, carb, fluorite vein.
12.80 — 3.02		and mica content. Minor local	6.71	qtz, fluorite, clpy, vein
15.85 — 3.08		tone variation to pale grey, reflects higher	7.46	qtz, chl vein c po, clpy
18.93 — 3.26		feldspar content.	7.86	qtz, carb, chl, po, clpy vein.
21.94 — 3.07	20	Irregular thin shaly partings.	11.56	qtz vein c carb, clpy.
24.97 — 2.80		Shale 31.09 to 31.24.	20.70	thin FAULT. 35°
28.04 — 3.13		Feldspar can vary up to 0.5 mm.	29.77	qtz vein c carb, fluorite, chl.
31.09 — 3.24	30	Minor clpy, po, segregations.	30.09	qtz, carb, fluorite vein.
35.03 — 2.97		chaotic ss/sh - mottled texture 52.02-54.63		
38.10 — 3.05		ss is bleached to tan colour.		
43.70 — 4.73	40	Shale 61.49 - 62.62.		
46.26 — 2.96		Shale f.g. dark brown 66.22 - 66.90.		
49.30 — 3.01		" 69.95 - 70.07	54.07	qtz, carb, sericite vein.
52.56 — 3.01	50	" 75.39 - 75.54	57.02	qtz vein
55.39 — 3.03		" 82.80 - 83.06	58.41	qtz vein
58.44 — 3.10		" 85.44 - 85.51	60.65	qtz, fluorite, amphibole vein.
61.49 — 3.09	60	" 87.93 - 88.07	63.80	qtz sericite vein 60°
64.54 — 3.14		Little variation in ss - minor c.g.	64.20	" " " 60°
3.11		sections c coarse feldspar. negligible	66.68	" " " 45°
3.02	70	alteration	67.26	45°
72.7 — 3.13		From 125 on the ss becomes, [illegible]	69.58	qtz vein c vivianite.
75.74 — 3.05		locally recrystallized.	79.63	qtz vein minor carb, chl.
78.79 — 2.94	80		87.17	20 cm qtz, carb, sericite vein. 55°
81.84 — 3.05			97.30	qtz vein c minor carb. 45°
84.89 — 2.93			100.40	open textured qtz, carb vein / FAULT 50°
87.93 — 3.02			101.16	qtz, sericite vein c arsenopy. 40°
2.13	90		103.0	qtz, sericite vein 40°
91.30 — 2.88			104.23	carb vein c po 35°
94.30 — 3.03			117.30	qtz, carb vein c po.
97.30 — 2.93	100		119.95	" " " c fluorite tour.
100.30 — 3.02			120.30	qtz vein, 10 cm c flu, carb, sid. 65°
103.30 — 2.93				
106.30				
110.30 — 3.04				
113.30 — 3.05				
116.30 — 3.04				
119.30 — 3.06				
121.30 — 3.05				
124.30 — 3.06	125			
3.03			127.4	15 cm qtz, tour. vein. 50° to c.A.
127.30 — 3.02	127.01	Contact sharp. 80° to c.A.		
	127.65	ALTERED / CHAOTIC MIN'GD SST - irregular blebs of ss in a fluorite qtz, tour. gangue		irregular up to 1% sulphides. po, clpy.
130.3	130	LODE 25% sulphides occurring as banded, locally submassive to veiny po, clpy closely intergrown with po - in aggregates of py - host is chaotic, locally banded carbonate, qtz, [illegible]. Becomes chaotic over last 20 cms.		po. 20% py 3% clpy 2% carb 30%, tour 20%, qtz 15% fluorite 5%, chl 5%.
	131.95			patchy cass. in chaotic lode.
3.05		SHALE / CHERT Fine grained massive. Dark brown shale or cherty shale - sections are silicified. Very fine scale fracturing common. locally [illegible] chaotic [illegible]. Becomes more altered over final 20cm. coarser grained. Contact. 20°		trace sulphides, po, clpy. less than 1%.
133.3	133.2	LODE 5% sulphides in a medium grained dark blackish green matrix. The sulphides consist of: fine grained patchy to veiny py irregular clots and veinlets of po/clpy aggregates. Fine disseminations of [illegible].		py 3% po 1.5% clpy 0.5% qtz 20% tour 35% carb 25% chl 10%, fluorite 5%
3.03	135			

Feature: Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization: Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive > 60%

CORE REC'D	DEPTH m	GEOLOGY	DEPTH m	MINERALIZATION
136.30	137.12	Host is a m.g. qtz/tourmaline with irregular closely associated carbonate. Minor chlorite and fluorite. Irregular siderite veinlets are common. Minor thin < 10 cm chert bands. Contact sharp 65°		
2.98	137.42	CHERT - f.g. off white to grey brown finely fractured massive to locally well bedded 60°		
	139.24	MIXED SHALE Fine grained dark brown siliceous shale - locally altered to chlorite and mineralized - minor chert bands. Chaotic in parts with blebby fractured texture.		1% sulphides occurring as irregular po, cpy aggregates and veinlets.
139.30	140 / 139.88	LODE 15% sulphides - py, cpy, po in m.g. qtz tourmaline carbonate minor fluorite, chl.		py 10% po 4% cpy 1%. qtz 30% tour 40% carb 10% fluorite 3% chl 2%
3.06	142.30	SHALE fine grained dark brown massive to weakly foliated. Fine scale fractures common, local intense silicification. Minor irregular less than 10 cm alteration zones with trace sulphides.		Minor trace po, cpy.
142.30 / 3.06 / 145.30	145 / 146.54	LODE. 25% sulphides occurring massive irregular patches of py, fine grained disseminated py with lesser po, cpy. Fine aggregates of po/cpy. py, cpy vuggy veinlets. Matrix is dark green/black tourmaline amphibole with zones of m.g. qtz carbonate. Fine grained fluorite and chlorite occur locally. Irregular streaks and blebs of pale yellow siderite.		py 10%, po 3%, cpy 2%. tour 30% qtz 20%, amphibole 20%, carb 10% fluorite 3%, chl 2%
3.00	147.07	SHALE - f.g. siliceous dark brown, massive		
148.30	148.32	LODE - 10% irregular aggregates of po, cpy patchy to veiny py in a m.g. qtz, tourmaline carbonate (siderite) amphibole chlorite host.		po 7% py 2% cpy 1% tour 30% qtz 25% carb 15% fluorite 5%, amph 10%, chl 5%
	148.86	CHERT. - f.g. dark grey black massive		
	149.06	LODE - 5% dissem, patchy po, py, cpy.		tour qtz, carbonate, chlorite host.
3.07	150 / 150.46	SHALE - Massive f.g. dark brown - black minor alteration and carbonate segregations locally off grey white chert band. variably silicified. contact gradational.		
151.30	151.80	LODE 10% f.g. po, py, cpy in a m.g. qtz tourmaline, carbonate, minor chlorite fluorite host		py 7%, po 3%, cpy 1%, qtz 30% tour 40% carb 10%, fluorite 5% chl 5%
	[illegible]	SHALE - f.g. dark brown massive siliceous		
2.96 / 154.30 / 3.05 / 157.30 / 2.86	155 / 159.05	LODE 15% sulphides - irregular patchy fine grained po - cpy/po aggregates. fine disseminations of po, py, cpy. Po is locally submassive. Py occurs as irregular aggregates, veinlets and finely disseminated. Host rock is composed of medium grained qtz, chlorite aggregates with variable amounts of dark black c.g. tourmaline, carbonate/fluorite aggregates. Irregular crystalline amphibole is common. Minor rex'ed qtz/chert zones locally banded. Intensely tourmalinized over last 40 cm. Contact sharp - 60° to c.A.		po 10%, py 4%, cpy 1%, chl 35%, carb 20%, qtz 15%, tour 5%, fluorite 5% amph 5%
	159.15 / 159.81 / 160	BASALT. Dark brown chaotic basalt [illegible] minor shale locally greenish chlorite - f.g. texture.		
160.30		SHALE		

Feature Bedding / Foliation / Fragment (size & shape) / Shearing / Fault / Vein (c carbonate, q quartz)

Mineralization Trace 1-5% · Common 5-15% · Abundant 15-60% · Massive > 60%

	CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
	3.02	162.00	SHALE - f.g. massive dark brown shale. fine scale fracturing common. locally silicified. Contact 70°							f.g. euhedral py and streaky py, less than 1%.
163.30		164.17	SST. - m.g. mid grey massive qtz ss c fine micas. locally carbonate alteration. Thin calcite veinlets common. Contact 75							
		165	SHALE - f.g. massive grey/brown shale. fine interstitial carbonate. Contact 60°.							
166.30	3.01	165.52	SST. M.g. massive brown to mid grey qtz ss. with fine abundant mica. Minor chloritic alteration fine interstitial carbonate. contact 60							23 475
	2.99	167.24 / 168.33	SHALE - f.g. massive brown to grey. rare py blebs. contact 65°.							
169.30 / 172.30	2.88 / 3.06	177.35	SST m.g. massive mid grey to grey brown in colour, qtz sandstone - fine micas common though absent occasionally. fine interstitial carbonate. Minor feldspar. Minor clastic shale. Contact 65°							
175.30		176.40	SHALE - f.g. massive grey to brown in colour. fine carbonate spotting common							
181.30 / 184.30 / 187.30	3.01 / 3.01 / 2.86	187.30	SST medium grained massive dark grey to brown qtz ss. Fine micas and minor feldspar. Minor up to 10cm shale intervals. Rare carbonate veining.							

End of hole 21/8/79

Logged A. Eadie