

ABMINCO N.L.
CLEVELAND MINE

CATEGORY

P/A

HOLE No.: C 1450

REF No 18565

GENERAL DATA

Objective: TEST B & C LENS 20-21 LEVEL

Area of Operation: 20 LEVEL X CUT

Location: LSECTION

Collar R.L.: 85.235

Co-ordinates: 15436.864

N, 10952.568 E.

Bearing of Hole: 122° 16' 40"

^{122°} Angle of Hole: -46° 13' 14"

-45 Final Depth: 155.00 m

Drilling Commenced: 30-10-79

Completed: 15-11-79

Logged by:

DRILLING DATA

Drilled by: PHILPOTT

Non Coring:

Drilling Rig: M 30

Coring: AQ, AXT

Drillers: K. DENBY, W. MOLLISON

Core Recovery:

HOLE SURVEYS

HOLE No.: C1450

ABMINCO N.L. - Cleveland Mine

Hole No. C45

DIAMOND DRILL HOLE DATA

Sheet No.

PROGRAM DATA				SURVEY DATA				INTERPOLATED DATA		
			(+) (-)	Instrument Type	Depth	Dip	Azimuth	Depth	Dip	Azimuth
1	Attitude	±		SURVEY CAMERA	∅	-46 $\frac{1}{4}$	122 $\frac{1}{4}$	12 $\frac{1}{2}$	47 $\frac{1}{4}$	120 $\frac{1}{4}$
2	Hole No.	1450			8 m	-47°	120 $\frac{1}{2}$ (125 $\frac{1}{2}$)	37 $\frac{1}{2}$	47	119 $\frac{1}{2}$
3	Down Hole Interval	25			44 m	-46 $\frac{2}{3}$ °	119 $\frac{1}{2}$ (121 $\frac{1}{2}$)	62 $\frac{1}{2}$	45 $\frac{2}{3}$	120 $\frac{1}{2}$
					88 m	-43 $\frac{1}{2}$ °	123 $\frac{1}{2}$ (129 $\frac{1}{2}$)	87 $\frac{1}{2}$	43 $\frac{1}{4}$	123 $\frac{1}{4}$
					125 m	-39 $\frac{1}{2}$ °	125 $\frac{1}{2}$ (130 $\frac{1}{2}$)	112 $\frac{1}{2}$	40 $\frac{1}{2}$	125
4	Collar	15436.864	N					155 m	-40°	125 $\frac{1}{2}$ (130 $\frac{1}{2}$)
5	Co-ords.	10952.568	E					162 $\frac{1}{2}$	40 $\frac{1}{2}$	125
6	Collar R.L.	85.235								
7	Halls Sect.	15533.665	N							
8	Intersect Point L	10853.682	E							
9	Battery Sect.	15409.213	N							
10	Intersect. Point FA	10838.117	E							
11	Start Plot (Depth)	∅	∅ = Collar							

23 515

HOLE No. : 1450

SAMPLE DATA

LENS	SAMPLE No.	ROCK TYPE	Σ	INTERVAL		Length (L)	Assays (A)				Product (A x L)			
				From	To		% Snt	% Sns	% Cu		P. Snt	ANAL PAN	ANAL Bucket	
	242564	Lode		50.83	50.97	0.14						93	50.5	2.86
	565	Very fine		57.69	58.50	0.81						530.5	353.5	3.00
	566	chert		92.88	94.58	1.70						1349	900	3.00
	567	Lode		95.28	96.85	1.57						1287.5	886	3.21
	568	"		96.85	97.77	0.92						748.5	504.5	3.07
	569	"		97.77	99.17	1.40						1141.5	791.5	3.26
	570	"		99.17	100.67	1.50						1238.5	863.5	3.30
	571	Lode		103.17	104.27	1.10						872.5	589.5	3.08
	572	Min. chert		104.27	106.76	0.49						355.5	234.5	3.08
	573	Lode		106.42	107.70	1.28						1138.5	808	3.44
	574	Lode		108.20	109.27	1.07						735	651.5	3.30
	575	Lode		109.27	111.16	1.89						1529.5	1045.5	3.16
	576	Lode		111.16	111.87	0.71						611.5	420	3.19

Σ 95.76 115.87 16.59 629 609 636

N.W.P.S.

HOLE No.: 1235

SAMPLE DATA

SHEET No.: 1 of 2

LENS	SAMPLE No.	ROCK TYPE	Σ	INTERVAL		Length (L)	Assays (A)				Product (A x L)			
				From	To		% Snt	% Sns	% Cu		P. Snt	AVG PAN	AVG Bucket	
	242564	lens		50.53	50.97	0.14	.52	.02	.02			93	60.5	5.6
	565	vol. shale		57.64	58.20	0.81	.24	.02	.02			630.5	353.5	2.1
	566	lens		92.55	94.55	1.70	.13	.02	.02			134.9	900	2.5
	* 567	lens		95.25	96.55	1.57	.15	.02	.02			1287.5	886	2.1
	↑ 568	"		96.55	97.77	0.92	.14	.03	.02			742.5	504.5	2.2
	↑ 569	"		97.77	99.17	1.40	.26	.02	.02			1141.5	791.5	2.5
	↑ 570	"		99.17	100.67	1.50	.25	.02	.02			1238.5	863.5	2.5
	↓ 571	lens		103.17	104.77	1.10	.24	.02	.02			872.5	589.5	2.1
	↓ 572	thin chert		104.27	104.76	0.49	.3	.02	.02			355.5	234.5	2.9
	↓ 573	lens		106.25	107.70	1.28	.25	.02	.02			1138.5	808	2.1
	↓ 574	lens		108.20	109.27	1.07	.17	.02	.02			735	651.5	2.5
	↓ 575	lens		109.27	111.16	1.89	.12	.02	.02			1529.5	1045.5	2.5
	↓ 576	lens		111.16	111.57	0.71	.10	.02	.02			611.5	420	2.19

HOLE No. : 1456

SAMPLE DATA

SHEET No. : 28/2

LENS	SAMPLE No.	ROCK TYPE	Σ	INTERVAL		Length (L)	Assays (A)				Product (A x L)			
				From	To		% Snt	% Sns	% Cu		P. Snt	PAW	Basket	
	242578	hose		113.20	113.94	0.74						610	423	3.26
↓	580	Lode	*	114.41	115.65	1.24						1011	705.5	3.31
	581	chert		129.87	130.59	0.72						592	381.5	2.81
	582	Lode		130.59	131.37	0.78						673	456	3.10
	583	Lode		132.86	134.00	1.14						895.5	600	3.03
	584	"		134.00	135.22	1.22						971.5	663.5	3.15
	585	"		135.22	136.40	1.18						935.5	638.5	3.15
	586	"		136.40	137.54	1.14						820	569.5	3.27
	587	"		137.54	138.89	1.35						1142	795.5	3.30
	588	"		138.89	140.10	1.21						919	631.5	3.20
	589	"		140.10	141.16	1.06						891.5	612.5	3.22
6.4			Σ				0.30	0.02	0.14					

Feature

Bedding
Foliation
Fragment
size & shape



Shearing
Fault
Vein



Mineralization

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

521
23

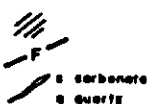
CORE RECD	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
2.35	1.64	Sandstone - light fawn brown - fine grained - massive - sharp contact with distorted zone	30' ft					vis 20	60x70° gfs, Tm, Fl, cpy
2.48	2.48	Chaotic Shale/Sandstone - light to med greenish gray - distorted	10' ft					vi 30	gfs, Fl, Sn
2.64	4.76	Shale - mid to dark green - massive Chaotic Sandstone/Shale - light to med brownish gray - dominantly sandy - distorted zones - sharp contacts on veins	40' ft					vis 40	gfs, Fl, Tm
6.0	6.66	Shale - med to dark gray with some brownish tinges - massive - sharp contacts	40' ft					vi 40	coarse gfs, Tm, Fl, some sulphides
2.64	7.41	Sandstone - light grey to mid grey with a greenish tinge overall - laminarized between 10.27 & 11.73m - fine grained	40' ft					vi 40	gfs, Fl, cpy
3.00	11.73	- some shaly zones in the broken area at 19.3m - 19.8m - chaotic zone at 23.6m - fault? - another at 24.8m - massive	50' ft					vi, vi 12	60, 30, 60° gfs, Tm, Fl, carb pyrite
2.78	14.86		10' ft					vi 50	gfs with Tm, Fl, carb - with pyrite
3.11	17.97		50' ft					vi 60	gfs, Tm, Fl, with some carb
2.70	21.07		40' ft					vi 60	gfs, Tm, Fl
2.30	24.37		30' ft					vi 15	gfs, Fl, Tm
2.26	26.63	sharp contact - no veins or shales	60' ft					vi 40	gfs, Fl, Tm, cpy
2.26	28.89	Shale - dark grey - massive Chaotic Sandstone/Shale - light to med grey	20' ft					vi 20	gfs, Fl, Tm, carb - also includes some distorted shales
3.05	31.99	Shale - dark grey - massive - sharp contacts Sandstone - med to light greenish gray - some laminarized - massive - fine grained Chert/Shale/Sandstone - chaotic - mainly chert - some sandstone and shale bands	50' ft					vi 30-50	gfs, Tm, Fl, carb - distorted - kension - some cpy
2.76	34.75	Sandstone - generally light grey - some darker zones - fine grained - massive	50' ft					vi 40	gfs, Tm, Fl, sulphides Sn
2.72	37.47		30' ft					vi 50	gfs, Fl, Tm, cpy, As, carb
2.78	40.25		40' ft					vi 30	gfs, Fl, Tm, cpy, As, carb
2.78	43.03		40' ft					vi 40	gfs, Tm, Fl, carb, chl, Sn
3.15	46.18		70' ft					vi 40	gfs, Tm, Fl, chl, py, cpy, Sn
4.0	49.28	Shale - dark grey to black - massive Sandstone - med grey, fine grained massive - contact on this vein	15' ft					vi 70	gfs, Fl, Tm, carb sulphides chl, Sn
4.7	54.03		30' ft					vi 40	gfs, Fl, Tm, chl sulphides
3.05	57.08	Shale - dark grey, massive - includes a 12cm sandstone at top and a 13cm chert at base	30' ft					vi 50	gfs, Tm, Fl, chl, cpy, py, Sn
3.05	60.13		30' ft					vi 50	gfs, Tm
3.05	63.18		30' ft					vi 50	gfs, Fl, Tm, carb, As, cpy, po
3.05	66.23		30' ft					vi 30	gfs, Fl, Tm, chl
3.05	69.28		30' ft					vi 30	gfs, Tm, Fl, minor sulphides & pyrite

Feature

Bedding
Foliation
Fragment
size & shape



Shearing
Fault
Vein



Mineralization

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

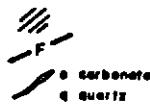
CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3-04	50-83	Shale cont Shale - dark grey - thin chert at top - massive Sharp contact						V1 40 V2 30	qtz, Fl, Tm, Py, cpy qtz, Fl, Tm, sulphides qtz, arsenic, pyrites
3-01	52-78	Sandstone - mid grey - some black fossiliferous zones and also greenish tinged zones - fine grained - massive						V5 50 V4 40 V2 70 V1 60	qtz, Fl, Tm, cpy qtz, Tm, Fl, cpy, chl qtz, Tm, Fl, cpy, py, po qtz, Fl, Tm, cpy sp po
2-48	57-59	- ss altered near contact - bleached to 15cm						V2 30	qtz, Fl, Tm
9-0	59-60	Sandstone - mid grey - some greenish tinged zones and iron mineralized zones - chert at 60.4m - vein at 60.46 to 61.25 m - ultraf. mass - bleached at large veins at top and at 60.96 & 61.25 m. - shaly band at 61.45 to 64.28 - vein at 64.92 - 65.12 - fine grained - massive	chert vein 65 ft Fl sh silicified sand vein					V2 40 V4 30 V2 50	qtz, Fl, Tm, Fe sulphides & Sn, chl qtz, Tm, Fe central zone Tm, cpy, po Sn outer zones qtz, Fl, Tm
2-48	66-67	Sandstone - mid grey - some greenish tinged zones and iron mineralized zones - chert at 60.4m - vein at 60.46 to 61.25 m - ultraf. mass - bleached at large veins at top and at 60.96 & 61.25 m. - shaly band at 61.45 to 64.28 - vein at 64.92 - 65.12 - fine grained - massive	chert vein 65 ft Fl sh silicified sand vein					V2 40 V4 30 V2 50	qtz, Fl, Tm, Fe sulphides & Sn, chl qtz, Tm, Fe central zone Tm, cpy, po Sn outer zones qtz, Fl, Tm
3-00	66-67	shaly contact						V4 30 V1 20	qtz, Fl, Tm, chl, cpy - minor sulphides qtz, Fl, Tm, cpy
2-46	67-81	Shale - dark grey to black - massive - sharp contact - no veins or faults	50 ft					V4 50 V1 50	qtz, Fl, Tm qtz, Fl, Tm, cpy
3-04	67-81	Sandstone - light to mid grey - some darker fossiliferous zones - fine grained - massive	30 ft					V3 50 V7 10	qtz, Fl, Tm, cpy qtz, Tm, Fl, chl, cpy
2-44	74-77	- just above here - thin bands of shale 3mm thick with ss between - at 50° then sharp contact with shale	more ss - 20ft down by 95 massive beds 30 ft					V4 30 V4 40	qtz, Fl, Tm, cpy - distorted qtz, Fl, Tm
3-02	74-77	Shale - mid to dark grey - massive - sandstone bands at 78.4, 78.4, 78.5, 79.4 - some bedding with sandstone bands	40 ft					V4 50 V4 40 V4 40 V1 40 V4 20	qtz, Fl, Tm, cpy, some sulphides qtz, Fl, Tm, cpy, po, ps qtz, Fl, Tm, cpy, po cpy, po, cpy, qtz, Fl, Tm qtz, Tm, Fl, chl, po, py
2-48	80-81	Sandstone - light to mid grey - some darker zones - fine grained - massive - shale band at 83.24 - 83.63 - sharp contact	40 ft					V3 40 V2 20 V4 50 V3 40	qtz, Fl, Tm qtz, Tm, cpy, chl, Fl, sulphides, Sn qtz, Tm, Fl, cpy qtz, Tm, Fl, cpy
6-34	84-78	Shale - dark grey to black - massive - zones of cpy replacement spots - sandstone at 87.4m - distorted at 90.4m	50 ft					V1 30 V2 40	qtz, Fl, Tm qtz, Fl, Tm
3-01	92-88	Chert - light to mid greenish grey - minor mineralization - gradual contact	40 ft						
3-01	94-58	Shale - mid to dark grey - some lighter silicified chert pieces							
3-01	95-28	Lode - 10 to 70% sulphides (ave 40%) - fairly massive down to 96.85m then generally disseminated							

Feature

Bedding
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Shearing
Fault
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Mineralization

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

2
3
5
6

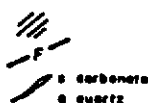
CORE RECD	DEPTH m 96	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
2-99	97	Lode cont -banded at 97.2m -minor barren bands -below 97.77 m tends to be greenish							Po(25%) Cpy(15%) qtz(25%) Tm(15%) Fl(5%) carb(10%) access(5%) chl(5%)
	98.0								
	99								
3-02	100	④ 95.28 - 96.85 ⑤ 96.85 - 97.77 ⑥ 97.77 - 99.17 ⑦ 99.17 - 100.67							
	100.67								
	101.0								
	102								
3-00	103.17	Chert/shale - generally light to med gray and light greenish gray - silicified							qtz, Fl, Tm chl veins with minor sulphides & carb common
	104.0								
	104.27	Lode 20-50% sulphides (ave 30%)							Po(15%) Cpy(15%) qtz(30%) Tm(20%) Fl(5%) chl(5%) carb(5%) access(5%)
	104.76	Mineralized chert - greenish gray with sulphides in patches							
	105								
3-00	106.42	Chert - mid to dark greenish gray generally chert but some small dark gray shale bands. 104.96 - 105.42 mineralized - sparse							
	107.0								
	107.70	Lode 30-70% sulphides (ave 45%) - generally massive							Po(30%) Cpy(15%) qtz(15%) Tm(20%) chl(5%) Fl(5%) access(5%)
	108								
	108.10	Chert - light to med green brown gray							
2-99	109	Lode 10-60% sulphides (ave 35%) carb, chl rich at top - generally disseminated although from 111.16 down abundant to massive							Po(20%) Cpy(15%) qtz(15%) Tm(15%) Fl(15%) carb(10%) chl(5%) access(5%) Sn
	110								
	111	⑪ 108.20 - 109.27 m (carb, chl) ⑫ 109.27 - 111.16 (barren patches) ⑬ 111.16 - 111.87 (massive)							
3-02	111.87								
	112								
	113								
	113.20	Chert silicified shale - mid to dark gray - some greenish zones							
	114								
	114.94	Lode 30-70% sulphides (ave 40%)							Po(25%) Cpy(15%) qtz(15%) Tm(20%) chl(5%) Fl(5%) access(5%)
	115								
3-07	115.41	Chert - light to med gray patches with yellow or purplish tinge							
	115	Lode 10-50% sulphides (ave 30%) - generally disseminated							Po(15%) Cpy(15%) qtz(20%) Tm(10%) chl(10%) Fl(10%) carb(5%) access(5%)
	116								
	115.65	Chert - light gray tending to med gray - upper portion has greenish matrix							
2-98	117								
	118								
	118.38	Shale - mid to dark gray - sandy bands at 123.0 m to 30cm - very fine grained							
	119.0								
	120								
3-05	121								
	122								
	122.80								qtz, stained red - tension fill
	123								
3-10	124								qtz, Fl
	125								
	125.30								qtz, Fl, Tm, py

Feature

Bedding
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size & shape



Shearing
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Vein



Mineralization

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

524

CORE RECD	DEPTH m	GEOLOGY	VISUAL LOG	TRACE COMMON ABUNDANT MASSIVE	DEPTH m	MINERALIZATION
1280	126-43	Shale cont.				
	127-73	Sandstone (shale interbedded) - dominantly ss with thin shale bands. (up to 20cm) - mid grey - both ss & shale massive - ss fine grained	chaotic		30	qtz, Fl, Tm, Sn.
	128-71	Sandstone - light to mid greyish grey - fine grained massive - sharp contacts.			30	qtz, Fl, Tm, some cob & Sn
	129-87	Shale - mid to dark grey - massive - sharp contact.	30 ft			
	130-54	Chert - light to mid greenish - thin shale bands at 130.0m & 130.3m - contains minor sulphides	(16)			
	131-37	Lode 10-50% sulphides (ave 30%) - disseminated	(17)			Po (15%) Cpy (15%) qtz (20%) Tm (10%) Fl (5%) chl (15%) cob (10%) access (5%)
	132-86	Chert/shale - mid to dark grey silicified shale - generally massive - some chaotic chert/shale bands				
	133-86	Lode - generally low sulphides but high chl & cob. - sulphides 10-40% ave (25%) - low barren shale bands from 135.22 to 135.32m " 137.62 to 137.72m				Po (15%) Cpy (10%) cob (15%) chl (20%) qtz (25%) Tm (5%) Fl (5%) access (5%)
	134-00	(18) 132.86-134.00 chl, cob.				
	134-00	(19) 134.00-135.22 sulphides				
	135-22	(20) 135.22-136.40 coarse.				
	136-40	(21) 136.40-137.54 low.				
	137-54	(22) 137.54-138.84 massive				
	138-84	(23) 138.84-140.10 dark-low sulphides				
	140-10	(24) 140.10-141.16 massive				
	141-16	Chert with chaotic sandstone light greenish grey.				
	142-57	Sandstone - light grey with greenish tinge - darker at base - fine grained - massive - gradational contact				
	144-15	Shale - mid to dark grey - massive			30	qtz, Tm, Fl
	144-61	Chert - light grey - greenish tinge - disseminated - sharp contact.	vertical bed			
	145-50	Shale - mid brownish grey to 145.5m - appears bleached in parts - then mid to dark grey except for last 8.0m which has greenish tinge - massive - chert band at 152.80m.			30	qtz, Tm, Fl, cob, chl, - appears shear zone - tension cracks - qtz fill
	149-0					many qtz filled tension gaps at 30-40°
	151-0					
	152-0					
	153-0					
	155-0					

END OF HOLE AT 155.0M.

40° ft
20° ft