60000731

Mining District File Summary Sheet

DISTRICT	Rosebud
DIST_NO	4010
COUNTY If different from written on document	Pershing
TITLE If not obvious	Rosebud Drill Hole File - Hole No. 95-355
AUTHOR	A. Davidson
DATE OF DOC(S)	1995-1996
MULTI_DIST Y / N? Additional Dist_Nos:	
QUAD_NAME	Sulphur 7.5'
P_M_C_NAME (mine, claim & company names)	Rosebud Mine; Hecla Mining Co.; Rosebud Project Rosebud - Far East Zone
COMMODITY If not obvious	gold; silver
NOTES	drill logs; geology; [redacted]; total depth 798' handwritten notes 20p.

Keep docs at about 250 pages if no oversized maps attached (for every 1 oversized page (>11x17) with text reduce the amount of pages by ~25)

SS: DD 4/20/08
Initials Date

DB:
Initials Date

SCANNED:
Initials Date

Revised: 1/22/08

95-355 Far East Zone

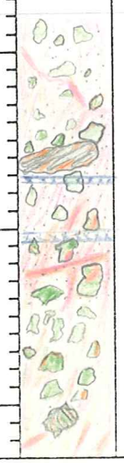
6000 0731
4010

6000 0731

Hecla
MINING COMPANY

ROSEBUD PROJECT
DIAMOND DRILL LOG

HOLE NUMBER	95-355	LOCATION	Rosebud - Far East Zone	REMARKS	
PAGE 1 OF 12		NORTHING			
DATE	12/27/95	EASTING			
LOGGED BY	Alex Davidson	ELEVATION			
SCALE	1" = 10'	AZIMUTH	213°		
TOTAL DEPTH	797.5	INCLINATION	-70°		

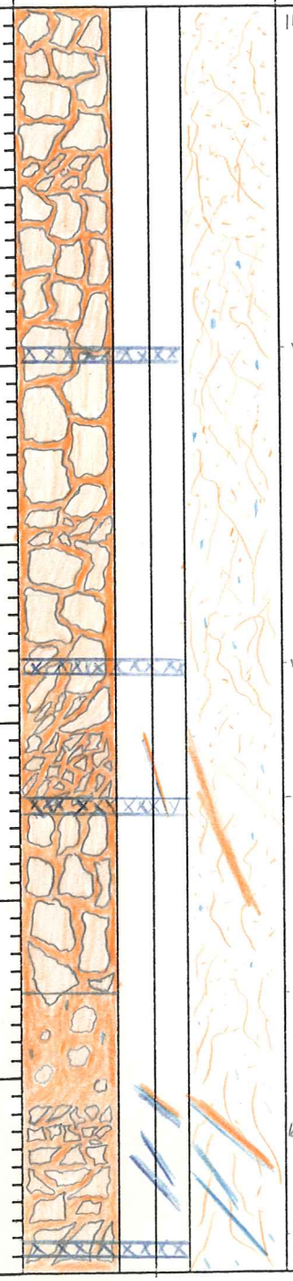
%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
		0-28' No recovery											
		28' to 73.7' Soft to mod soft. Bleached pink & green matrix w/ greenish colored clasts. Matrix supported breccia w/ dominantly lapilli clast size w/ rare blocks. Rx appears to be monolithic. Clast composition is aphanitic, latitic? to Andesitic? to Ash flow tuff?? Core from Chocolate Fm.	10 20 30 40 50		28'-73.7' Fxs filled w/ Fe Ox 7.6 Fx/ft at 0-20° to C.A. 4.1 Fx/ft at 20-30° to C.A. 5.7 Fx/ft at 40-50° to C.A. 5.1 Fx/ft at 60-70° to C.A. 15.3 Fx/ft at 70-90° to C.A. 36.3 to 36.7 Flow banding?, Alteration? 37.6' to 37.8' Rubble Zn Fx 30° to C.A. 40.6' to 41' Rubble Zn Fx 15° to C.A.	28' to 73.7' Clasts have been argilized & propylitically Altered. Matrix contains potassic Alt, and some propylitic Alt. Fxs contain FeOx	28	30					
		periodically clasts exibit a banding structure, possible squawshing?, or alteration? or flow banding? As seen at 36.3' to 36.7' & 51.5' to 52'					30	35					
							35	40					
							40	45					
							45	50					

HOLE NUMBER 95-355 PAGE 2 OF 12

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		28 to 73.7' continued 73 to 73.7' crackle Breccia type texture, Possible fractured flow lamination. Fx have been argilized w/strings of FeOx. Clasts show liesgang banding. Clast are propylitically and potassically Altered. 73.7 to 78.6' Same composition as Rx described in 28 to 73.7' Mod soft to Mod hard. Bleached Pink and green matrix. Texture has shifted from brecciated to flow laminated. Laminations are at 75° to 80° to C.A. Isolated unlaminated clasts are strongly propylitically altered also contain pyrite mineralization. 78.6 to 80.8 Same Rx composition described in 28 to 73.7'. Mod to Mod hard, Lapilli to coarse breccia w/rare blocks. Clasts are limonitically altered? to duck butter clay altered?, and are subangular to angular. Matrix is potassically to propylitically altered. Fxs are lined w/FeOx 80.8 to 89.0 Mod to mod hard. Hematite Perv w/ Limonite filling Fxs. Matrix supported breccia, size ranges from lapilli to coarse w/rare blocks. Clasts are subrounded to subangular. Rx composition is same as described in 28 to 73.7'. 89 to 105.2 Mod soft to mod hard, Ducks butter color, pink and buff colored. Clast supported coarse and blocky breccia, grades to a lapilli, Matrix supported breccia, to massive flow w/ flow banding (at 98.9 to 100.1.) Then grades back to a coarse, blocky breccia at 103.3. Clasts have been prop. altered? to limonite? to Ducks Butter Clay? Matrix has been potassically and FeOx altered. Rx composition same as described 28-73.7'	50 60 70 80 90 100 110 120		63.2' Fx filled FeOx, MnOx? & blebs of gypsum 70.3 to 70.8 Rubble zn, Fx at 60° to C.A. 73.7 to 74.1' Fxs follow lamination at ~80° to CA lined w/FeOx and gypsum 78.6 to 80.8' Fxs are 75° to 90° to C.A., lined w/ FeOx 80.8 to 81.1 Fx at 20° to CA 82.9 to 89 Rubble zn <50% recovery of run 89 to 105.2 .24 Fx/ft 0° to 10° C.A. .12 Fx/ft 30 to 40° C.A. .55 Fx/ft 50 to 60° C.A. 92.2 to 92.6 Rubble zn 94.5 Fx 40° C.A. filled w/FeOx & Chloritic Clay 100.6 to 102 Rubble zn 98.6 to 100.1 Flow lamination ~65° to C.A. 104.3 to 104.9 Fx 10° C.A. lined w/FeOx, prop. clay & Sulfides (ie pyrite) 107.3 to 115.7 1.2 Fx/ft 30°-40° CA .98 Fx/ft 60° CA Fxs lined w/ 50% to 75% pyrite, propylized clay & FeOx	73.7 to 78.6' - clasts propylitically Altered w/pyrite. 80.8 to 81.1 Fx lined w/slight prop. alteration w/pyrites. 96.6 to 97.2 blebs of pyrite 1½" x ½" in size 104.3 to 104.6 Dissemenated pyrite 116.4 to 117.2 blebs of pyrite dissemenated into matrix from Fxs. Fx are 40° and 60° to C.A.

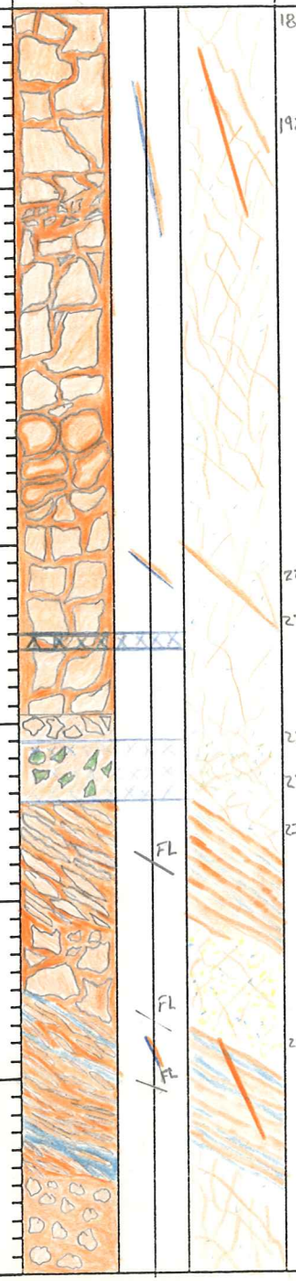
ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	Ag2
50	55					
55	60					
60	65					
65	70					
70	73.7					
73.7	78.6					
78.6	80.8					
80.8	85					
85	89					
89	95					
95	100					
100	105.2					
105.2	107.3					
107.3	112					
112	115.7					
115.7	120					

HOLE NUMBER 95-355 PAGE 3 OF 12

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		105.7 to 107.3 shear/Rubble zn. Probably same Rx composition as described at 89-105.7. Breccia - lapilli to coarse, angular to subangular. Clasts propylitically alterd, matrix potassically/FeOx alterd. Pyrite dissemanated along fxs.	120		115.7 to 175.2 - .08 ft/ft 0° to 20° CA. .31 ft/ft 30° to 48° CA. .10 ft/ft 50° to 60° CA .02 ft/ft 70° to 80° CA	
		107.3 to 115.7 Mod to mod hard, Breccia lapilli to coarse, Subrounded to subangular. Bleached light green color. Mostly clast supported. Zones of imbricated to flow laminated at 109' & 110' to ~111'. Clasts are perv. propylitic Matrix is potassically & FeOx alterd. Fxs are filled w/ 50% to 75% pyrite, propylitic clay & FeOx Rx composition same as described at 28-73.7'	130			
		115.7 to 175.2 Latitic to Andesitic flow breccia as described at 28-73.7'. Breccia is coarse to blocky, subangular to subrounded. Zones of lapilli to coarse, angular to subangular breccias appear perodically. Clasts a grey to bleach color. Matrix is perv. hematite. <5% of clasts have argillic halos. Liesgang banding begin to appear after 160'. Blebs of $CaCO_3$ begin to appear in matrix after 130.7'. Breccia is clast supported.	140		139-139.4 - Rubble zn	
		175.2 to 181.4 Same Rx compostion as described above. Breccia is now matrix supported. Clasts are well rounded to subrounded. Clasts range from lapilli to coarse size w/ <5% blocks. Clasts are darker grey in color. matrix is perv hematite. <5% of clasts have argillic halos.	150		156.9 to 157.3 - Rubble zn	
		181.4 to 230. Mod. to Mod hard Latitic to Andesitic autobreccia, good euhedral to subeuhedral xls of hornbled & plagioclase in clasts. Clasts supported, angular to subangular, coarse to blocky. Zones of Matrix supported, lapilli to coarse clasts. Matrix has been altered to perv. hematite clay, w/ blebs of $CaCO_3$. <10% of clasts have argillic halos. weak liesgang banding. Matrix is reddish brown in color. Clasts are bleach red, brown. Core is slightly argillic in nature	160		164.5 to 165.2 Rubble zn	165' Fxs at 15° CA fill w/ FeOx
			170		175.2 to 181.4 .16 ft/ft 30-40° CA. .16 ft/ft 50-60° CA	
			180		182.4 Fx surface slicked, Fx at ~5° CA	181.4 Fx filled w/ $CaCO_3$ & FeOx Fx at 50° to CA. 183.6 Fx w/ perv $CaCO_3$, Fx at 25° to CA. 184.7 Fx w/ perv $CaCO_3$, Fx at 10° to CA.
			190		189.3 to 190 - Rubble zn	

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	Ag2
120	125					
125	130					
130	135					
135	140					
140	145					
145	150					
150	155					
155	160					
160	165					
165	170					
170	175					
175	180					
180	185					
185	190					

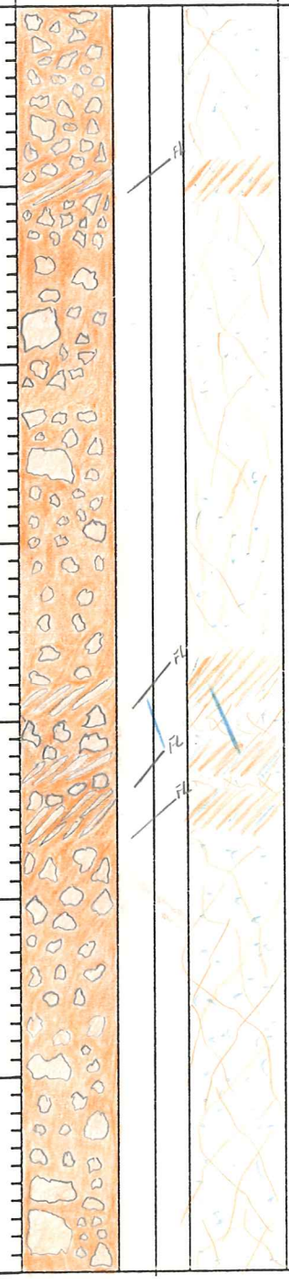
HOLE NUMBER 95-355 PAGE 4 OF 12

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		201 to 201.5 Zone of matrix supported breccia - subangular to surounded lapilli to coarse. matrix is hematite clay w/ $CaCO_3$ 210.5 to 211.2 Zone of matrix supported breccia - angular to subangular, lapilli to coarse 212.9 to 246 Breccia is subrounded to rounded, clast supported, coarse to blocky in size 230 to 280 Same as 181.4 to 230 242 to 248.8 Interval is slightly silicified - and slightly harder than the rest of the interval 246 to 255.5 Flow lamination - laminations are ~ 60°-70° to CA 255.5 to 268.1 Breccia - rounded to subrounded clast supported Lapilli to coarse w/ few blocks	190 200 210 220 230 240 250 260		181.4 to 229.4 - .04 ft/ft 0-20° CA .33 ft/ft 30-40° CA .31 ft/ft 50-60° CA .02 ft/ft 70-90° CA 192.5 Fx surface slicked, Fx at 10° to CA. Lined w/ FeOx 221.4 Fx surface slicked, Fx at 50° CA. Fx lined w/ FeOx 225-226 Rubble zn. 231.1 to 234.5 Fault zn? material is mostly clay gouge 234.5 to 242 Flow lamination laminations are ~60° CA. 238.1 to 242 Rubble zn. 248.3 Fx w/ FeOx, slicked - 20° CA.	181.4 to Blebs of $CaCO_3$ and graphitic blebs occur intermittently through out interval. Graphite bleb become more prevalent after 400. Fxs are lined w/ FeOx and/or $CaCO_3$ 234.5 to 242 FeOx, argillization & $CaCO_3$ follow lamination 245.2 Clasts are propylitically alter'd and slightly silicified

ANALYTICAL DATA

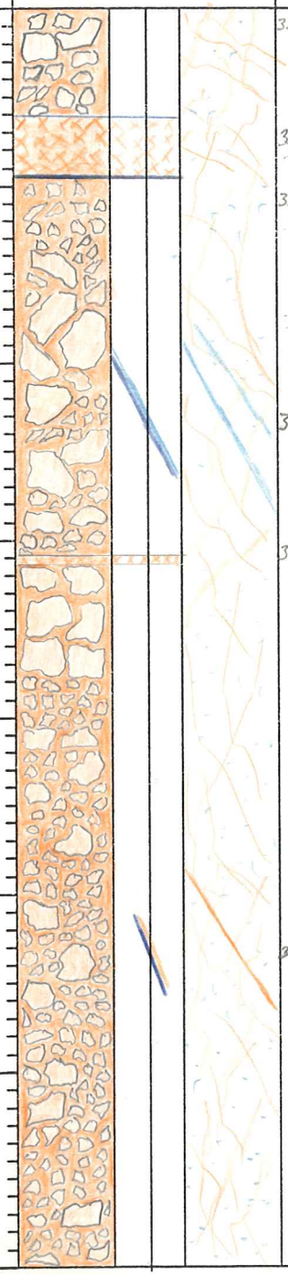
FROM	TO	W	Au	Ag	Au2	Ag2
190	195					
195	200					
200	205					
205	210					
210	215					
215	220					
220	225					
225	230					
230	235					
235	240					
240	245					
245	250					
250	255					
255	260					

HOLE NUMBER 95-355 PAGE 5 OF 12

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		268.1 to 271.5 Flow laminations 50° to 60° to CA. 271.5 to 298.2 Breccia - rounded to subrounded, matrix to Clast supported. lapilli to coarse w/rare blocks 280 to 330 same as 181.4 to 230 - color of Rx changes slightly to a more bleached grey color at 30%. Hematitic staining is pervasive particularly in matrix and along fractures. 298.2 to 299.5 Flow lamination - at ~40° to CA 299.5 to 302.9 Breccia - Rounded to subangular, matrix supported lapilli to coarse 302.9 to 303.5 Flow lamination at 40° to 50° to CA. 303.5 to 305.9 Breccia - rounded to subrounded, clast supported lapilli to coarse 305.9 to 307 Flow lamination at ~40° to CA 307 to 367 Breccia - varies from matrix supported to clast supported lapilli to coarse w/ blocks. mostly subangular to subrounded w/ angular clasts.	260 270 280 290 300 310 320 330		Txs at 301 - 20° CA lined w/ $CaCO_3$	301.5 to 326.4 heavy lissegang banding.

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	Ag2
260	265					
265	270					
270	275					
275	280					
280	285					
285	290					
290	295					
295	300					
300	305					
305	310					
310	315					
315	320					
320	325					
325	330					

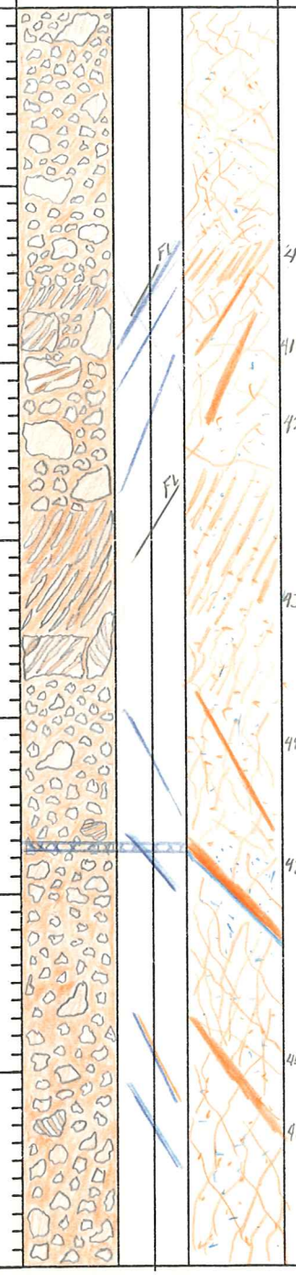
HOLE NUMBER 95-355 PAGE 6 OF 12

REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		330 to 380 Same as 181.4 to 230	330		330.9 Post mineralization Fx (liesegang bands offset) possibly extension to Fault at 336.2-339.5 Fx at 0°-10° to CA.	
					336.2 to 339.5 Rubble zn/Fault zn — mostly gouge	
			340		339.8 Post mineralization Fx (L Bands offset) - extension to Flt? Fx at 0°-10° to CA.	346.2 to 347.4 heavy liesegang banding
			350		351.1 to 353.5 Fxs lined w/ $CaCO_3$ at 20° to 25° CA.	
			360		360.9 to 361.4 Rubble zn	
		367 to 416.3 Breccia - Clast supported, lapilli to coarse in size, w/ blocks. Subangular to subrounds				
			370			
		380 to 430 Same as 181.4 to 230	380		383.7 Fx w/ FeOx - surface slicked Fx 20° CA.	
			390			
			400			

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
330	335					
335	340					
340	345					
345	350					
350	355					
355	360					
360	365					
365	370					
370	375					
375	380					
380	385					
385	390					
390	395					
395	400					

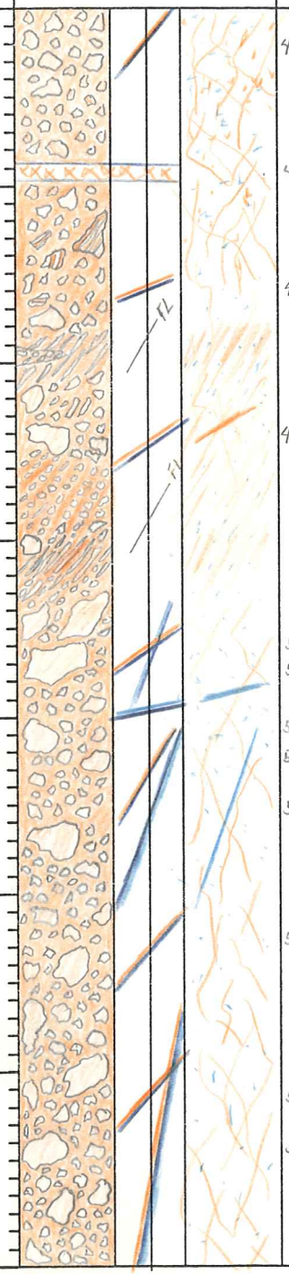
HOLE NUMBER 96-355 PAGE 7 OF 12

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		416.3 to 417.3 Flow lamination - Laminations at 20°-30° to C.A. 417.3 to 421.5 Weakly laminated blocks slightly Brecciated 421.5 to 428.2 Breccia - Clast supported, lapilli to coarse size w/frequent blocks. Subangular to subrounded 428.2 to 435.3 Flow laminated - laminations at 30°-40° to C.A. 430 to 480 Same Rx as described at 181.4 to 230 435.3 to 436.8 Massive blocks weakly laminated 436.8 to 440 Breccia - Blocky to coarse, clast supported subangular to subrounded. 440 to 488.6 Breccia - lapilli to coarse w/ few blocks. Matrix supported < 5% of clasts exibit flow laminations, becomes more prevalent towards end of interval.	400 410 420 430 440 450 460 470		416.3 Fx @ 30° to CA, preferentially following flow lamination 417.3 Fx @ 30° to CA, preferentially following flow lamination 423.9 Fx @ 20° to CA. 435.6 Fx @ 30° to CA Lined w/ hematite and $CaCO_3$ 442.9 Fx line w/ FeOx at 25° CA 437.3 to 437.7 Rubble zn, fault gouge w/ $CaCO_3$ and FeOx, at ~40° to CA 459.4 Fx @ 25° to CA. Lined w/ FeOx and slicked 463.4 Fx @ 30° to CA., filled w/ $CaCO_3$	

ANALYTICAL DATA

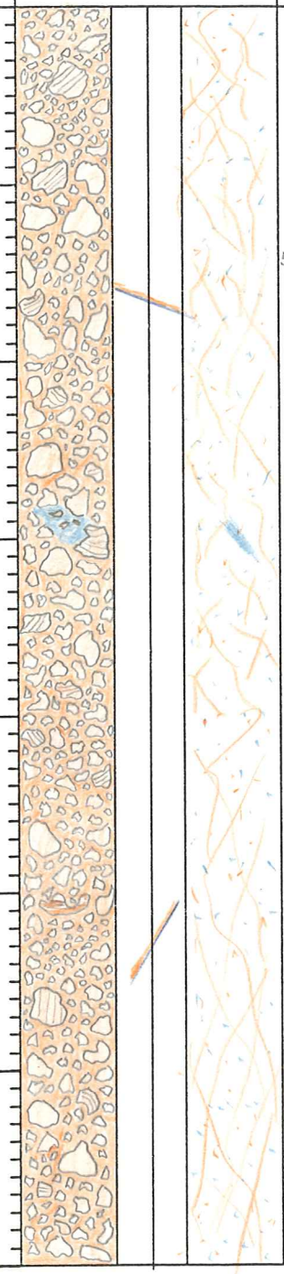
FROM	TO	W	Au	Ag	Au2	Ag2
400	405					
405	410					
410	415					
415	420					
420	425					
425	430					
430	435					
435	440					
440	445					
445	450					
450	455					
455	460					
460	465					
465	470					

HOLE NUMBER 95-355 PAGE 8 OF 12

REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		480 to 530 Same Rx described at 181.4 to 230.	470, 480, 490, 500, 510, 520, 530, 540		472.7 Fx @ 40° to CA - Lined w/FeOx 478.8 to 479.6 Rubble Zn 486.1 Fx @ 70° to CA - Lined w/FeOx 497.8 Fx @ 30° CA - Lined w/FeOx 507 Fx @ 55° to CA - Lined w/FeOx 507.6 Fx @ ~20° to CA - Lined w/calcite and Graphite 510 Fx @ 80° to CA - Lined w/calcite 512.7 Fx @ 30 to CA - Lined w/FeOx & slicked. 515.2 Fx @ 20° to CA - Lined w/$CaCO_3$ and graphite - strongly slicked 523.9 Fx @ 40° to CA - Lined w/FeOx and slicked. 531.5 Fx @ 40° to CA - Lined w/FeOx 535.6 Fx @ 10° to CA - Lined w/FeOx and $CaCO_3$	
		488.6 to 491 Flow lamination - laminations at 30° to CA				
		491 to 496.1 Breccia - lapilli to coarse, subangular to subrounded, clast supported.				
		496.1 to 503.6 Breccia - lapilli sized w/few coarse clasts and rare blocks - Well rounded to subrounded. Clast are aligned in a laminar fashion. Interval has intermitent flow lamination. "pseudo" laminations are ~ 30° to CA.				
		503.6 to 7035 Breccia - lapilli to coarse w/frequent Blocks, subround to subangular. >50% of clasts are flow laminated. <20% of clast have argillic halors. Breccia is primarily clast supported w/small intermitent matrix supported zones. Graphitic blebs appear sporadicly throughout interval.				
		530 to 580 Same Rxs described at 181.4 to 230				

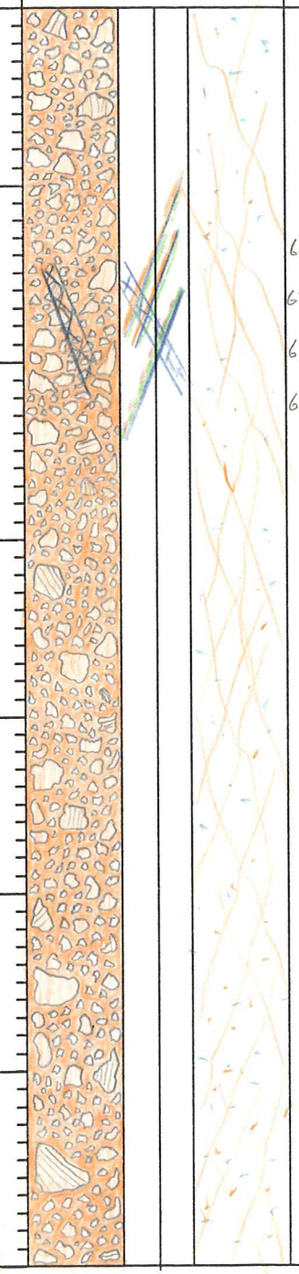
ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	Ag2
470	475					
475	480					
480	485					
485	490					
490	495					
495	500					
500	505					
505	510					
510	515					
515	520					
520	525					
525	530					
530	535					
535	540					

HOLE NUMBER 95-355 PAGE 9 OF 12

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		580 to 630 Same Rxs described at 181.4 to 230	540, 550, 560, 570, 580, 590, 600, 610		556.5 Fx at 70° to CA - Lined w/ FeOx 569.6 - Vug filled w/ Calcite 592.8 - Fx at 30° to CA - Lined w/ FeOx and slickled.	

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	Ag2
540	545					
545	550					
550	555					
555	560					
560	565					
565	570					
570	575					
575	580					
580	585					
585	590					
590	595					
595	600					
600	605					
605	610					

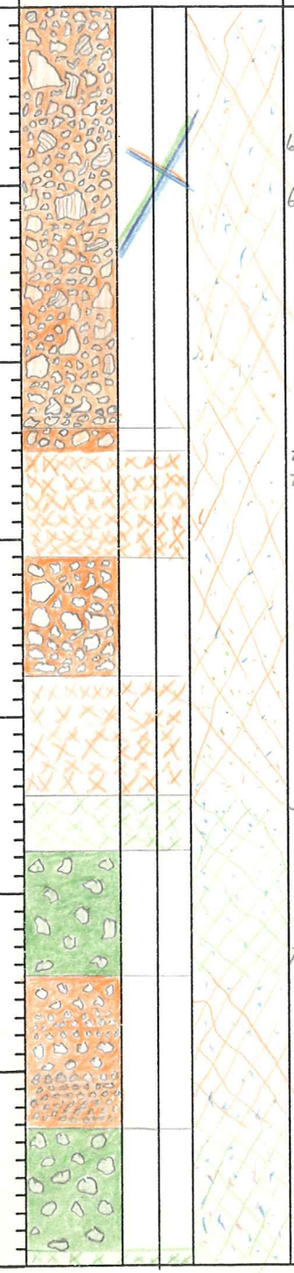
HOLE NUMBER 95-355 PAGE 10 OF 12

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		630 to 680 Same Rxs described at 181.4 to 230	610, 620, 630, 640, 650, 660, 670, 680		623.3 Fxs at 20° to CA Lined w/FeOx and propylitic clay 626.4 Fxs at 70° to CA- Lined w/FeOx and propylitic clays. 626.5-627.5- Rubble zn- Fx surfaces Line w/FeOx-slicked 628 - Fx at 20° to CA- lined w/propylitic clay, FeOx and small disseminated pyrites.	

ANALYTICAL DATA

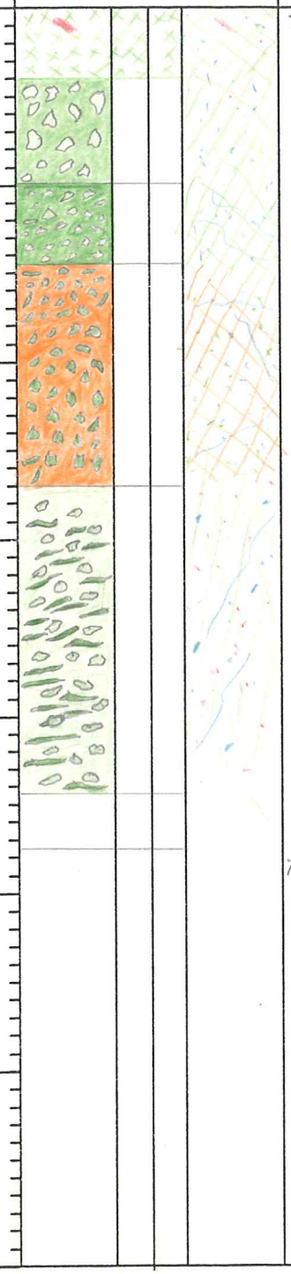
FROM	TO	W	Au	Ag	Au2	Ag2
610	615					
615	620					
620	625					
625	630					
630	635					
635	640					
640	645					
645	650					
650	655					
655	660					
660	665					
665	670					
670	675					
675	680					

HOLE NUMBER 95-355 PAGE 11 OF 12

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		680 to 703.5 Same Rxs described at 181.4 to 230 703.5 to 794.5 EOH - Soft - Intitic to Andesitic Ash flow? Volcanic porphyry. Good euhedral to subeuhedral xls of hornbled & plagioclase (replaced w/clays). Interval is an auto breccia w/ Tectonic breccia componet. Large intermittent rubble zones, Interval is mostly fault gouge. Alteration varies from perv. hematitic to perv. propylitic. ? 703.5 to 703.8 - mod soft autobreccia - clasts are well rounded to subrounded. Dark red color. Matrix supported - lapilli to coarse size. 703.8 to 711 - Rubble zone - slicks present - strings of calcite - 711 to 716.9 - soft, auto breccia - Fxs are lined w/ propylitic clay & Calcite - Fxs are slicked. Rx is dark red - clasts are lightly bleached. - Matrix supported, coarse to lapilli sized clast w/ few blocks - subangular to subrounded 716.9 to 724.3 - Rubble zone - strings of chloritic clay and $CaCO_3$ along Fxs. Clasts & matrix is dark red-brown in color <20% of clasts are prop. altered. Rx is very soft. 724.3 to 727.8 - Very soft - fault gouge - perv propylitic - matrix is dark green in color, clasts are light green in color - matrix supported clast - lapilli to coarse - subrounded to subangular. 727.8 to 735.7 - Soft - perv. prop. Light bleached green. Clasts are grey to tan color. Fxs are lined chloritic clay - Fxs are slicked. 735.7 to 743.3 - Soft - perv. hematite, matrix is dark red. clasts are bleached red - grey - clasts are mod hard - Breccia is matrix supported coarse to lapilli in size and grades to fine sizes <2mm. sub-angular to subrounded. 743.3 to 759.9 - same breccia as above, grades back to a coarse to lapilli size. matrix supported - interval is perv propylitic - matrix is green, clasts vary from light green to white and tan. possible fiamme within matrix.	680 690 700 710 720 730 740 750		688 - Fx at 60° to CA. - Lined w/ FeOx & $CaCO_3$. 689.1 Fx at 30° to CA - Lined w/ $CaCO_3$ and propylitic clay 703.8 to 711 Rubble zn 703.5 to 794.5 Fx density .11 f/ft 0° to 20° to CA .12 f/ft 30° to 40° to CA .04 f/ft 50° to 60° to CA .10 f/ft 70° to 90° to CA 717.9 to 724.3 Rubble zone 727.8 to 735.7 Fxs are slicked	711 to 717.9 Fxs filled w/ chloritic clays $CaCO_3$. Matrix and clasts perv. altered to FeOx clays 717.9 to 724.3 Fxs filled w/ chloritic clays, $CaCO_3$. 724.3 to 735.7 Rx is prop altered 735.7 to 743.3 Rx is perv. FeOx Altered 743.3 to 759.9 Rx is perv. propylitically Altered - with few disseminated pyrite xls Rare pyrite bleb.

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	Ag2
680	685					
685	690					
690	695					
695	700					
700	703.5					
703.5	711					
711	716.9					
716.9	724.3					
724.3	727.8					
727.8	735.7					
735.7	740					
740	743.3					
743.3	748.8					

HOLE NUMBER 95-355 PAGE 12 OF 12

REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		759.9 to 765.5 - Breccia - coarse to lapilli size, angular to subangular clast supported. Breccia is perv. prop. altered. Matrix is dark green - clasts are bleached light green. Possible tectonic Breccia - Moderatly soft.	750		748.8 to 754.1 - Rubble zn.	751 - Bleb of dissemanated pyrite
		765.5 to 777 - Breccia - lapilli size w/few coarse clasts - angular to subangular. Matrix supported. Matrix perv. FeOx Altered. Clast are prop. altered. Calcite stings and blebs throughout - Interval is soft to mod. soft - Dark red-brown in color.	760			759.9 to 765.5 $CaCO_3$ stringers throughout Interval.
		777 to 794.7 - Breccia - lapilli to coarse, subangular to subrounded, matrix supported. Matrix & clasts have been altered to perv. prop. clays. Interval is soft to mod soft. Fiamme present throughout interval. Strings & blebs of $CaCO_3$ and sparsly dissemenated pyrites throughout	770			
		794.7 to 797.5 - Breccia - Matrix supported - clast angular to subangular - coarse to blocky - interval is hard - highly silic. matrix is perv prop. w/ Graphite? or Fine grained Sulfides? and chalcedony in fx also strings of pyrite, chalcopyrite, and bladed Marcicite. Interval is vuggy - vugs filled w/ Chalcedony and Dicite? or Sericite? clays. EOH	780			
			790			
			800		794.7 - contact at 70° to CA	794.7 to 797.5 - Strings of Pyrite, chalcopyrite, Marcicite.
			810			

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
748.8	754.1					
754.1	759.9					
759.9	765.5					
765.5	770					
770	777					
777	782					
782	787					
787	794.5					

DRILLHOLE DIP AND DIRECTION MEASUREMENTS WITH REFLEX FOTOBOR DDI

CUSTOMER: HECLA
CUSTOMER REFERENCE: ROSEBUD
SURVEYOR: KURT ALLEN
DATE: 10-02-
DRILL HOLE: 95-355
NO CASING

COLLAR POSITION

X(FT)	Y(FT)	Z(FT)	DIP (DEG.)	DIR. (DEG.)
483722.8	2204243	5365.65	70	212.99

POSITION AT 710 FT

X(FT)	Y(FT)	Z(FT)	DIP (DEG.)	DIR. (DEG.)
483530.3	2204112	4695.25	71.51	215.29

LOCAL COORDINATES AT 710 FT
Y-LOC= 5.05 FT TO THE RIGHT
Z-LOC= -10.53 FT DOWNWARDS

N

RESULTS

STATION (FT)	X(FT)	Y(FT)	Z(FT)	DIP (DEG.)	DIR. (DEG.)
0	483722.8	2204243	5365.65	70	212.99
20	483717	2204240	5346.85	70.09	213.31
40	483711.4	2204236	5328.04	70.2	213.64
60	483705.7	2204232	5309.22	70.33	214.03
80	483700.2	2204229	5290.38	70.44	214.31
100	483694.6	2204225	5271.53	70.45	214.2
* 100	33.65	.14	-.57		
120	483689.1	2204221	5252.69	70.29	214.2
140	483683.5	2204218	5233.86	70.53	214.03
160	483678	2204214	5215	70.37	214.34
180	483672.4	2204210	5196.17	70.34	214.37
200	483666.9	2204207	5177.34	70.4	214.48
* 200	66.96	.52	-1.48		
220	483661.4	2204203	5158.49	70.4	214.41
240	483655.8	2204199	5139.65	70.49	214.38
260	483650.3	2204195	5120.8	70.53	214.36
280	483644.8	2204192	5101.94	70.57	214.32
300	483639.3	2204188	5083.08	70.66	214.25
* 300	100.14	.97	-2.54		
320	483633.8	2204184	5064.2	70.76	214.2
340	483628.4	2204181	5045.32	70.88	214.3
360	483623	2204177	5026.42	70.96	214.43
380	483617.6	2204173	5007.51	70.96	214.5
400	483612.3	2204170	4988.6	70.94	214.6
* 400	132.89	1.71	-4.08		
420	483606.9	2204166	4969.7	70.93	214.53

440	483601.5	2204162	4950.8	70.98	214.42
460	483596.1	2204159	4931.88	71	214.62
480	483590.8	2204155	4912.97	70.99	214.74
500	483585.4	2204151	4894.06	71.02	215.06
* 500	165.43	2.58	-5.84		
520	483580.1	2204147	4875.15	71.01	215.01
540	483574.8	2204144	4856.24	71.05	215.23
560	483569.5	2204140	4837.32	71.12	215.28
580	483564.2	2204136	4818.39	71.2	215.43
600	483559	2204133	4799.45	71.25	215.47
* 600	197.66	3.66	-7.91		
620	483553.8	2204129	4780.52	71.29	215.54
640	483548.5	2204125	4761.57	71.29	215.38
660	483543.3	2204122	4742.63	71.33	215.47
680	483538.1	2204118	4723.68	71.34	215.45
710	483530.3	2204112	4695.25	71.51	215.29
* 710	232.8	5.05	-10.53		

FIELD NOTE SHEET

DRILLHOLE 95-355 M

REFLEX–FOTOBOR DDI

LOCATION

BY KDA

DIP -70 DATE 10/2/95

TIME MIN	DEPTH	NOTES	DEPTH	NOTES	TIME MIN	DEPTH	NOTES	DEPTH	NOTES
1	Setup				31	500			
2	setup				32	520			
3	Setup				33	540			
4	Setup				34	560			
5	BLURRED				35	580			
6	0'				36	600			
7	20'				37	620			
8	40'				38	640			
9	60'				39	660			
10	80'				40	680			
11	100				41				
12	120				42				
13	140				43				
14	160				44				
15	180				45				
16	200				46				
17	221				47				
18	240				48				
19	260				49				
20	280				50				
21	300				51				
22	320				52				
23	340				53				
24	360				54				
25	380				55				
26	400				56				
27	420				57				
28	440				58				
29	460				59				
30	480				60				

Hole 797
Bottom 90
707

Core Barrel Ø
707

Survey 680

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # 95-355 DATE 1/2/96 LOGGED BY: Alex Davidson PAGE 1 OF 8

DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY /FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
28	34.5	97	97	26										
34.5	44	87	100	32										
44	55	87	95	36							48.7	615.5	300	2.05
55	61.5	87	90	32										
61.5	71.5	87	100	28										
71.5	82	88	94	47										
82	89	21	57	9							85.2	351.8	160	2.20
89	92	83	93	80										
92	102	75	91	62							93.1	430.2	180	2.40
102	110	68	99	45										
110	120	98	99	72							114.1	545.5	240	2.30

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # 95-355 DATE 1/2/95 LOGGED BY: Alex Davidson PAGE 2 OF 8

DRILL RUN FROM	DRILL RUN TO	SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH DOWNHOLE DEPTH	ROCK STRENGTH POINT LOAD INDEX (psi)	FRACTURE DATA FRACTURE DENSITY/FT.	FRACTURE DATA AVG. ANGLE TO C.A.	FRACTURE DATA ROUGHNESS	FRACTURE DATA INFILL	DENSITY DATA DOWNHOLE DEPTH	DENSITY DATA SAMPLE WEIGHT (g)	DENSITY DATA DISPLACEMENT (cc)	DENSITY DATA DENSITY (g/cc)
120	130	92	99	72							121.7	525.2	240	2.20
130	140	97	99	92										
140	150	97	99	83										
150	160	97	100	80										
160	170	94	100	69										
170	180	95	100	90							172.2	527.8	240	2.20
180	190	90	99	73										
190	200	99	100	84										
200	210	92	100	67							203	693.5	320	2.20
210.5	220.5	99	100.01	88										
220.5	226	69	96	64										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # 95-355 DATE 1/8/96 LOGGED BY: Alex B Davidson PAGE 3 OF 8

DRILL RUN FROM	DRILL RUN TO	SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH DOWNHOLE DEPTH	ROCK STRENGTH POINT LOAD INDEX (psi)	FRACTURE DATA FRACTURE DENSITY (/FT.)	FRACTURE DATA AVG. ANGLE TO C.A.	FRACTURE DATA ROUGHNESS	FRACTURE DATA INFILL	DENSITY DATA DOWNHOLE DEPTH	DENSITY DATA SAMPLE WEIGHT (g)	DENSITY DATA DISPLACEMENT (cc)	DENSITY DATA DENSITY (g/cc)
226	234.5	52	74	32										
234.5	242	47	79	27										
242	244	115	120	100										
244	250	55	85	40							252.2	648.1	280	2.31
250	260	84	100	60										
260	272	98	100.03	97										
272	282	93	100	81										
282	292	100	100	94										
292	302	98	99	91										
302	312	97	98	93							302	502	240	2.10
312	322	98	100	73										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # 95-355 DATE 1/8/96 LOGGED BY: Alex B Davidson PAGE 4 OF 8

DRILL RUN FROM	DRILL RUN TO	SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH DOWNHOLE DEPTH	ROCK STRENGTH POINT LOAD INDEX (psi)	FRACTURE DATA FRACTURE DENSITY (FT.)	FRACTURE DATA AVG ANGLE TO C.A.	FRACTURE DATA ROUGHNESS	FRACTURE DATA INFILL	DENSITY DATA DOWNHOLE DEPTH	DENSITY DATA SAMPLE WEIGHT (g)	DENSITY DATA DISPLACEMENT (cc)	DENSITY DATA DENSITY (g/cc)
322	332	95	100	86										
332	339.5	44	100	40										
339.5	349.7	93	100	90										
349.7	359.7	93	99	83							351.5	619.3	300	2.06
359.7	370	79	99	64										
370	380	94	99	83										
380	390.5	94	96	82										
390.5	400.5	97	100	92							394.3	445.5	200	2.23
400.5	410.7	96	98	93										
410.7	420.7	94	100	88										
420.7	431	92	98	85										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # 95-355 DATE 1/16/96 LOGGED BY: Alex Davidson PAGE 5 OF 8

DRILL RUN FROM	DRILL RUN TO	SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH DOWNHOLE DEPTH	ROCK STRENGTH POINT LOAD INDEX (psi)	FRACTURE DATA FRACTURE DENSITY (FT.)	FRACTURE DATA AVG. ANGLE TO C.A.	FRACTURE DATA ROUGHNESS	FRACTURE DATA INFILL	DENSITY DATA DOWNHOLE DEPTH	DENSITY DATA SAMPLE WEIGHT (g)	DENSITY DATA DISPLACEMENT (cc)	DENSITY DATA DENSITY (g/cc)
431	441	84	101	66										
441	451.5	94	95	71										
451.5	462	95	100	88							455.5	660.7	300	2.20
462	472	97	100	90										
472	482	90	100	85										
482	492	98	100	95										
492	502	95	100	95										
502	512	94	100	91							511.3	505.1	240	2.10
512	522	86	99	82										
522	532	88	99	78										
532	542	91	101	86										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # 95-355 DATE 1/16/96 LOGGED BY: Alex Davidson PAGE 6 OF 8

DRILL RUN FROM	DRILL RUN TO	SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH DOWNHOLE DEPTH	ROCK STRENGTH POINT LOAD INDEX (psi)	FRACTURE DATA FRACTURE DENSITY/FT.	FRACTURE DATA AVG. ANGLE TO C.A.	FRACTURE DATA ROUGHNESS	FRACTURE DATA INFILL	DENSITY DATA DOWNHOLE DEPTH	DENSITY DATA SAMPLE WEIGHT (g)	DENSITY DATA DISPLACEMENT (cc)	DENSITY DATA DENSITY (g/cc)
542	552	95	100	91										
552	562	95	100	95							554.7	508.8	240	2.12
562	572	96	100	92										
572	582	94	98	91										
582	592	92	98	83										
592	602	90	99	88										
602	612	97	100	97										
612	622	93	97	90							612.2	443.6	200	2.22
622	632	73	100	68										
632	642	92	97	88										
642	652	97	100	89										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # 95-355 DATE 22 Jan 96 LOGGED BY: Alex B Davidson PAGE 7 OF 8

DRILL RUN FROM	DRILL RUN TO	SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH DOWNHOLE DEPTH	ROCK STRENGTH POINT LOAD INDEX (psi)	FRACTURE DATA FRACTURE DENSITY (FT.)	FRACTURE DATA AVG. ANGLE TO C.A.	FRACTURE DATA ROUGHNESS	FRACTURE DATA INFILL	DENSITY DATA DOWNHOLE DEPTH	DENSITY DATA SAMPLE WEIGHT (g)	DENSITY DATA DISPLACEMENT (cc)	DENSITY DATA DENSITY (g/cc)
652	662	94	98	86										
662	672	93	98	91							666.7	679.6	320	2.12
672	682	96	100	90										
682	692	93	100	87										
692	702	89	99	83										
702	712	29	63	20							707.7	361.6	160	2.26
712	718	62	140	54							714.5	521	240	2.17
718	732	17	107	5							720.9	134.2	60	2.23
732	742	49	96	17							727.3	287.7	120	2.40
											729.9	294.7	140	2.10
742	752	53	108	37							737.6	263.2	120	
											747	289.2	120	2.41
752	762	52	106	39							259.4	294.8	120	2.46

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # 95-355 DATE 22 Jan 95 LOGGED BY: Alex R. Davidson

DRILL RUN FROM	DRILL RUN TO	SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH DOWNHOLE DEPTH	ROCK STRENGTH POINT LOAD INDEX (psi)	FRACTURE DATA FRACTURE DENSITY (FT.)	FRACTURE DATA AVG ANGLE TO C.A.	FRACTURE DATA ROUGHNESS	FRACTURE DATA INFILL	DENSITY DATA DOWNHOLE DEPTH	DENSITY DATA SAMPLE WEIGHT (g)	DENSITY DATA DISPLACEMENT (cc)	DENSITY DATA DENSITY (g/cc)
											771.8	289.1	120	2.41
762	782	36	65	28							775.8	344.8	140	2.46
782	792	30	73	18							784	413.35	180	2.30
792	794.5	11	100	3										