60001228

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 D-328-98
AUTHOR	S. King; K. Allen; A. Niles
DATE OF DOC(S)	1998
MULTI_DIST Y / (N?) Additional Dist_Nos:	
QUAD_NAME	Sulphur 7.5'
P_M_C_NAME (mine, claim & company names)	Rosebud Mine; Rosebud Project; Rosebud Mining Co. LLC Hecla Mining Co.
COMMODITY If not obvious	gold; silver
NOTES	Drill log; geology; assay; photographs; total depth 380' receipt; handwritten notes; downhole camera images 49p. 3 down hole camera images

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: DP 5/14/08
Initials Date
DB: mah
Initials Date
SCANNED: NVBlue
Initials Date

Revised: 1/22/08

D-328-98

60001228 4010

6000|228

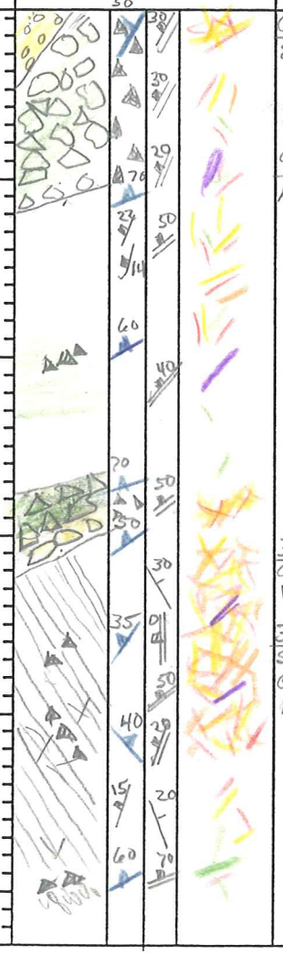
- quartz, chalcedony, silicification
- faults, fractures
- FeOx
- BARITE
- sulfide
- calcite, carbonate
- argillization, white clays
- propylitization
- potassic alteration
- chlorite, chloritic clays

Hecla
MINING COMPANY

ROSEBUD PROJECT
DIAMOND DRILL LOG

HOLE NUMBER	D-328-98	LOCATION	STOPE 50 NORTH SEC 1500
PAGE	1 OF 6	NORTHING	
DATE	11/9-12/98	EASTING	
LOGGED BY	ALLYN NILES	ELEVATION	
SCALE	1" = 10'	AZIMUTH	125
TOTAL DEPTH	380	INCLINATION	22

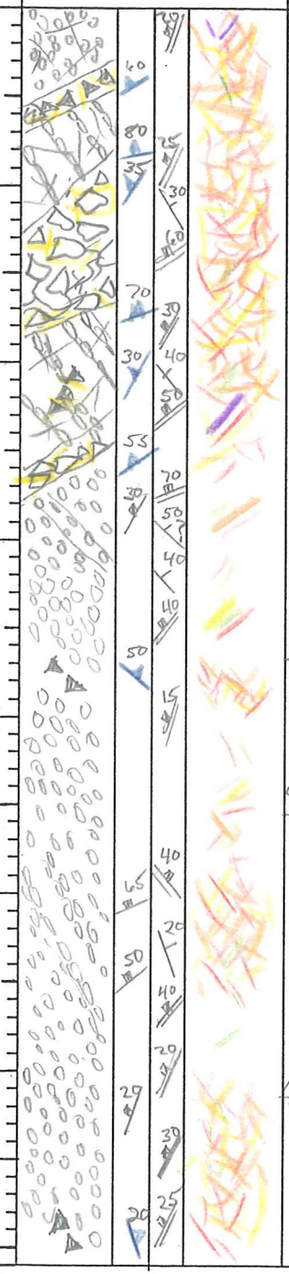
REMARKS

LITH	OX/RE	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
0.0 – 9.5 FAULT ZONE (F.G. MASS)		0.0 – 1.0 HEALED FAULT GOUGE, SMALL ROUND PINK → GREEN MILLED CLASTS IN A PINK CLAY MATRIX W/ VARIABLE SILICA REP. 1.0 – 9.5 BXA OF ANGULAR F.G. MASS. CLASTS, MOSTLY CLAST SUPPORT W/ PROPYL. CLAY CEMENT.			0.0 – 9.5 MOD. VEINING & OPEN FRACTURES 10.0 – 10.5 BXA CEMENTED W/ PYRITE, MINOR MARC. 9.5 – 30.0 MOD. VEINING, MINOR OPEN FRACTS.	0.0 – 9.5 VEINS FILLED W/ PYRITE, QUARTZ, WHITE CLAY. VUGS LINED W/ DRUZY QUARTZ, BLADED MARC., SOME BARITE.
9.5 – 31.4 FINE GRAIN MASSIVE		9.5 – 27.8 ALTERNATING GREEN TO PINK; VERY FINE GRAIN TO FINE GRAIN FLOW.	PIMA → 10			9.5 – 30.0 VEINS FILLED W/ PYRITE, OPEN FRACTS LINED W/ DRUZY QUARTZ, BLADED MARC. WHITE CLAY LOCALIZED BARITE. 13.0 – 15.0 MOD. DISSEM. MARC. BLADES.
		27.8 – 31.4 BXA, ANGULAR FRAGS OF F.G. MASS TO 30', HETERO-LITHIC W/ PLANAR CLASTS 30.0 – 31.4. PART IS PRE-MIN, 30 – 31.4 IS MINERALIZED	20 30		30.0 – 31.4 REACTIVATION OF OLDER FAULT, MOD. VUGS.	30.0 – 31.4 CEMENTED W/ QUARTZ, BLADED MARC. DRUZY QUARTZ, PYRITE.
31.4 – 174.0 PLANAR LAMINAR		31.4 – 166.0 PINK, FINE GRAIN, FLOW BANDED TO 48.0', VESICULAR W/ VARIABLE VESICLE TRAINS AFTER 48.0'.	40 50		33.5 – 42.5 MOD. → STRONG VEINING & OPEN FRACTURES, THIN BXA'S.	33.5 – 42.5 VEINS FILLED W/ QUARTZ & HARD LT. GRN. CLAY, PYRITE. OPEN FRACTS LINED/FILLED W/ SOFT WHITE CLAY, DRUZY QUARTZ, BLADED MARC., LOCAL BARITE, BXA'S CEMENTED W/ VARIABLE AMOUNTS OF ALL ABOVE.

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag
0.0	2.0					
2.0	5.0					
5.0	7.5					
7.5	10.0					
10.0	12.5					
12.5	15.0					
15.0	20.0					
20.0	25.0					
25.0	30.0					
30.0	32.0					
32.0	35.5					
35.5	39.0					
39.0	42.5					
42.5	45.5					
45.5	48.5					

HOLE NUMBER D-328-98 PAGE 2 OF 6

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
31.4 - PLANAR LAMINAR	176.0 NAR	31.4 - SEE DESCRIPTION PAGE 1	60, 70, 80, 90, 100, 110, 120		49.0 – 76.0 STRONG VEINING, VUGS ASSOC W/SEVERAL BXA'S IN CLOSE SEQUENCE. 61.2 – 68.0 THICK BXA - CRACKLE ZONE 85.5 – 89.0 MOD. VEINS & OPEN FRACTURES. 95.5 – 104.5 MOD → STRONG VEINING/OPEN FRACTS 110.0 – 122.0 STRONG VEINING, VUGS, OPEN FRACTS	49.0 - 76.0 VEINS FILLED W/ QUARTZ, PYRITE HARD GREEN → LT. GRN. CLAY, SOFT WHITE CLAY, BLADED MARC, BXA'S CEMENTED W/SAME, VUGS/OPEN FRACTURES LINED W/ DRUZY QUARTZ BLADED MARC., VARIABLE WHITE CLAY, LOCAL BARITE. 85.5 - 89.0 VEINS FILLED W/ QUARTZ, PYRITE, SOME MARC. OPEN FRACTS LINED W/ DRUZY QUARTZ, BLADED MARC., WHITE CLAY. 95.5 - 104.5 VEINS OPEN FRACTS FILLED/LINED W/ DRUZY QUARTZ WHITE CLAY, BLADED MARC MINOR PYRITE POSSIBLE ELECTRUM @96.0. 110.0 - 122.0 VEINS FILLED W/ QUARTZ, MARC., MINOR PYRITE & WHITE CLAY. VUGS/OPEN FRACTS LINED W/ DRUZY QUARTZ, BLADED MARC., WHITE CLAY. PROP. STAIN IN FRACTS. COMMON.

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	A
48.5	51.0					
51.0	54.0					
54.0	57.0					
57.0	60.0					
60.0	63.0					
63.0	66.5					
66.5	70.0					
70.0	73.0					
73.0	76.0					
76.0	80.0					
80.0	85.0					
85.0	88.7					
88.7	91.7					
91.7	94.4					
94.4	98.0					
98.0	101.0					
101.0	104.0					
104.0	107.3					
107.3	110.0					
110.0	112.5					
112.5	115.0					
115.0	118.0					
118.0	120.0					

HOLE NUMBER D-328-98 PAGE 3 OF 6

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
31.4 - 174.0 PLANAR LAMINAR		31.4 - 166.0 SEE DESCRIPTION PAGE 1 PIMA →	130, 140, 150, 160, 170, 180, 190		134.3 - 137.5 HEALED BXA. MINOR VEINING OPEN FRACTS.	134.3-137.5 CEMENTED W/ HARD LT. GREEN, QUARTZ, OPEN FRACTS LINED W/ DROZY QUARTZ, BLADED MARC., SOME QUARTZ BLADES AFTER MARC., WHITE CLAY, MINOR PYRITE
					144.0 - 155.5 HEALED FAULT ZONE, STRONG VEINS & OPEN FRACTS/ VUGS.	144.0 - 155.5 QUARTZ IS PRIMARY CEMENTING AGENT, VEINS FILLED W/ HARD LT. GREEN CLAY OR QUARTZ. QUARTZ DRUSY W/ MARC. PYRITE. OPEN FRACTS/ VUGS LINED W/ DROZY QUARTZ, BLADED MARC., WHITE CLAY, STRONG SILICA FLOODING OF CLASTS & MATRIX 152 - 155.5.
					155.5 - 162.5 MOD. VEINING & OPEN FRACTS.	155.5-162.5 VEINS FILLED W/ PYRITE / SOME MARC. MINOR QUARTZ. VUGS LINED W/ DROZY QUARTZ, BLADED MARC., BARITE WHITE CLAY.
		166.0 - 174.0 SPOTTED TUFF-LIKE BEDS. LT. GREEN ROUND → IRREGULAR SHAPE VESICLES, SOME FILLED W/ DK. GREEN CLAY, IN A PINK FINE GRAIN VOLCANIC CLAY			162.5 - 166.0 HEALED FAULT BXA. VERY STRONG OPEN FRACTURES TO 164.5 HETEROLITHIC W/ CLASTS OF PLANAR & F.G. MASS. LIKE ROCK.	162.5-166.0 CEMENTED W/ QUARTZ TO 164.5, HARD LT. GRN. CLAY OR QUARTZ TO 166.0. VUGS LINED W/ DROZY QUARTZ, BLADED MARC., QUARTZ AFTER MARC. WHITE CLAY WASHED OUT.
174.0 - 193.0 F.G. MASS?		174.0 - 193.0 WORMY SPLAT. FLATTENED, ELONGATED, PINKISH VESICLE TRAINS IN A LT. GREEN, VERY FINE GRAIN VITROPHYRE-LIKE MATRIX W/ BROKEN GLASS FRACTURE PATTERN.			174.0 GRADATIONAL CONTACT	166.0 - 174.0 MOD. → STRONG PERVASIVE DISSEM. PYRITE WEAK → MOD. VEINING
					175.5 - 177.0 VERY STRONG VUGS, HEALED BXA	175.5 - 177.0 VUGS LINED W/ HARD LT. GRN CLAY, BLADED MARC.
					184.0 - 193.0 STRONG VUGS/ OPEN FRACTS ASSOC. W/ CLOSE SPACED HEALED BXA'S	184.0 - 193.0 VUGS/ OPEN FRACTS LINED W/ FINE DROZY QUARTZ, BLADED MARC, MINOR PYRITE, LOCAL BARITE & WHITE CLAY

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	A
120.0	122.0					
122.0	126.0					
126.0	130.0					
130.0	133.0					
133.0	135.8					
135.8	139.0					
139.0	143.5					
143.5	146.5					
146.5	149.0					
149.0	151.5					
151.5	154.5					
154.5	157.7					
157.7	160.0					
160.0	162.5					
162.5	164.5					
164.5	167.5					
167.5	170.0					
170.0	174.5					
174.5	177.0					
177.0	180.0					
180.0	184.0					
184.0	186.5					
186.5	190.0					

HOLE NUMBER D-328-98 PAGE 4 OF 6

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
174.0 - 193.0		FINE GRAIN MASS.				
193.0 - 216.0		193.0 - 216.0			193.0 CONTACT ARBITRARY	
VITROPHYRE		GREEN, EXTREEMLY FINE GRAIN W/ PERLITIC & CRACKED GLASS TEXTURE/ FRACTURE PATTERNS. VERY RARE, SMALL VESICLE TRAINS.	200		193.0 - 212.0 STRONG VEINING & VUG FORMATION	193.0-212.0 VEINS FILLED W/ MARC., SOME PYRITE. VUGS LINED. VUGS LINED W/ DROZY QUARTZ, BLADED MARC., QUARTZ BLADES AFTER MARC., RARE WHITE CLAY, LOCALIZED BARITE.
			210		212.0-216.0 MINOR PYRITE/ QUARTZ VEINS.	212.0 - 214.0 WEAK ARGILLIC ALT.
216.0 - 233.0		216.0 - 227.0			216.0 - 216.5 FAULT CONTACT, HEALED, SMALL ANGULAR CLASTS	216.0 - 216.5 CEMENTED W/ QUARTZ, CLASTS SILICA REP.
F.6. MASSIVE		GREEN, VERY FINE GRAIN W/ COMMON AUTO BXA FRAGS, ROUND, OF SAME F.6. MASS. & VITROPHYRE-LIKE ROCK.	220		216.5 - 224.5 MOD VEINING FRACT. FILLINGS.	216.5 - 224.5 VEINS/FRACTS FILLED W/ WHITE CLAY, BLADED MARC., MINOR QUARTZ.
					224.5 - 233.0 MOD → STRONG VEINING, OPEN FRACTS & VUGS	224.5 - 233.0 VUGS OPEN FRACTS LINED W/ BARITE, BLADED MARC., DROZY QUARTZ, WHITE CLAY.
		227.0 - 233.0 GREEN, EXTREEMLY FINE GRAIN W/ PERLITIC TEXT & CRACKED GLASS FRACT. PATTERN.	230		232.3 - 233.0 HEALED BXA	232.3 - 233.0 SPOTTY ARGILLIC ALT. OF SOME CLASTS. CEMENTED W/ BARITE, WHITE CLAY, BLADED MARC., QUARTZ.
					233.0 SHARP FAULT CONTACT	
233.0 - 252.0		233.0 - 252.0			233.0 - 250.0 STRONG VEINING & OPEN FRACT. FILLING ASSOC. W/ BXA'S & HIGH FRACT. ZONES	233.0 - 250.0 VEINS FILLED W/ WHITE QUARTZ, HARD DK. → LT. GRN. CLAY, HARD WHITE CLAY, MINOR MARC / BLADED MARC., OPEN FRACTS ARE LEACHED VEINS W/ MOD. BLADED MARC. & BARITE.
PLANAR LAMINAR		GREEN, GRADING INTO PINKISH W/ GREEN VESICLE TRAINS @ 237'.	240			
					248.5 - 249.0 FAULT GOUGE	248.5 - 249.0 MILLED FRAGS CEMENTED W/ ROCK FLOUR & BARITE.
			PIMA 250		250.0 - 259.6 MOD. VEINING	250.0 - 259.0 VEINS FILLED W/ WHITE → DOCKS BUTTER CLAY W/ LOCAL BARITE, MINOR MARC. & PYRITE.
					252.0 GRADATIONAL CONTACT	
252.0 - 270.0		252.0 - 270.0				
SPOTTED TUFF		PINK → GREEN; VESICLES IN A FINE GRAIN MEDIUM. COLOR PATTERN IS CHANGABLE. VESICLES USUALLY IRREGULAR IN SHAPE, SOMETIMES FILLED W/ DK. GREEN CLAY.	260			

ANALYTICAL DATA

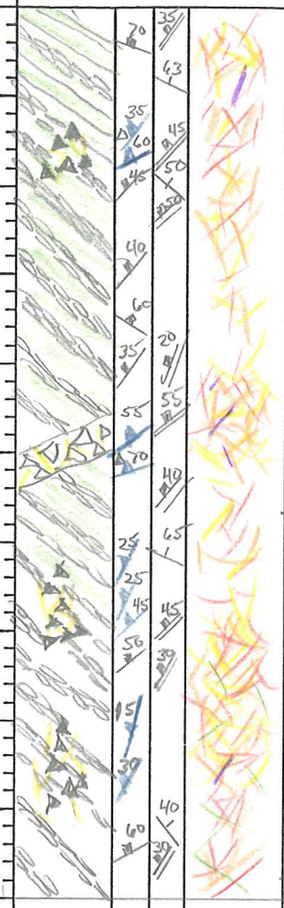
FROM	TO	W	Au	Ag	Au2	A
190.0	193.0					
193.0	196.5					
196.5	200.0					
200.0	203.0					
203.0	206.3					
206.3	209.0					
209.0	212.0					
212.0	216.0					
216.0	219.0					
219.0	222.0					
222.0	225.0					
225.0	229.0					
229.0	231.0					
231.0	233.0					
233.0	234.5					
234.5	236.5					
236.5	240.0					
240.0	244.0					
244.0	247.0					
247.0	250.0					
250.0	252.0					
252.0	255.0					
255.0	258.0					

HOLE NUMBER D-328-98 PAGE 5 OF 6

ITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
252.0-270.0 SPOTTED TUFF		252.0-270.0 SEE DESCRIPTION PAGE 4			259.0-277.0 MOD. → STRONG VEINING, BXA'S & VUGS.	259.0-277.0 VEINS FILLED W/ QUARTZ, PYRITE & BLADED MARC. BXA'S CEMENTED W/ & VUGS LINED W/ QUARTZ, BLADED MARC, DRUZY QUARTZ, WHITE CLAY, LOCAL BARITE.
270.0-296.5 PLANAR LAMINAR		270.0-296.5 OLIVE GREEN → GREENISH BROWN → BROWN, FINE GRAIN FLOW W/ COMMON VESICLE TRAINS.	270		270.0 GRADATIONAL CONTACT	
			280		277.0-292.0 STRONG FRACTURES, VEINING, BXA'S, FRACT. FILLINGS, VUGS IN BXA'S.	277.0-292.0 FRACTS FILLED W/ QUARTZ, WHITE CLAY, PYRITE & MARC. VEINS SAME. BXA'S & VUGS FILLED / LINED W/ DRUZY QUARTZ, QUARTZ, BLADED MARC., WHITE CLAY, HARD LT. GRN → GREEN CLAY, LOCAL BARITE.
			290			
296.5-315.0 F.G. MASSIVE.		296.5-315.0 GREEN, VERY FINE TO EXTREMELY FINE GRAIN FLOW MATERIAL W/ FRACTURE PATTERN RESEMBLING VITROPHYRE.	300		296.5 FAULT CONTACT 297.0-301.5 HEALED BXA.	296.5 CEMENTED W/ QUARTZ BLADED MARC., BARITE, PYRITE. 297.0-301.5 BXA CEMENTED W/ SAME AS 296.5 + SOME HARD LT. GRN CLAY.
					301.5-308.5 MOD VEINING MINOR OPEN FRACTS.	301.5-308.5 MOD → STRONG ARGILLIC ALT. MOD. PYRITE VEINS, SOME OPEN FRACTS LINED W/ WHITE CLAY, BARITE & BLADED MARC.
			310		308.5-315.0 STRONG VEINING & OPEN FRACTS, ASSOC. W/ BXA.	308.5-315.0 VEINS FILLED W/ MARC. & PYRITE WHITE CLAY, OPEN FRACTS LINED FILLED W/ DRUZY QUARTZ, BLADED MARC., WHITE CLAY, BARITE.
315.0-380.0 PLANAR LAMINAR?		315.0-330.0 GRAY, WEAKLY ARGILLIC ALT., MOSTLY FEATURELESS OR W/ VAGUE OUTLINES OF AUTOBXA. MAY BE PART OF F.G. MASSIVE BUT GRAIN SIZE SEEMS TO BE MORE LIKE PLANAR LAMINAR UNIT.	320		315.0-330.0 MOD. VEINING, OPEN FRACTS & VUGS. 321.5-322.5 HEALED FAULT GOUGE W/ CRUSHED VEINS & MILLED ROCK FRAGS.	315.0-330.0 VEINS FILLED W/ QUARTZ & PYRITE, VUGS LINED W/ DRUZY QUARTZ, BLADED MARC., MINOR WHITE CLAY, TRACE BARITE PERVASIVE, WEAK ARGILLIC ALT.
			330			

ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2
258.0	261.0				
261.0	264.5				
264.5	267.5				
267.5	270.0				
270.0	273.5				
273.5	276.5				
276.5	279.3				
279.3	281.7				
281.7	285.0				
285.0	288.0				
288.0	290.0				
290.0	293.0				
293.0	296.5				
296.5	298.5				
298.5	301.5				
301.5	304.5				
304.5	308.5				
308.5	311.5				
311.5	314.0				
314.0	317.0				
317.0	320.0				
320.0	323.0				
323.0	326.0				
326.0	328.0				
328.0	330.0				

HOLE NUMBER D-328-98 PAGE 6 OF 6

ITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
315.0-380.0 PLANAR LAMINAR		330.0 - 380.0 GREEN → GRAY-GREEN, FINE GRAIN FLOW W/ BANDS & COMMON VESICLE TRAINS RARE LAMINAR PARTING ALONG FABRIC PLANES.	340 350 360 370 380		330.0 GRADATIONAL ? CONTACT 330.0 - 339.0 STRONG VEINING, OPEN FRACTS. ASSOC. W/ BXA'S & CRACKLE ZONES. 339.0 - 351.0 MOD. VEINING, ISOLATED VUGS. 351.0 - 357.0 STRONG, THICK VEINS, MOD. VUGS, ASSOC. W/ BXA'S & CRACKLE ZONES. 357.0 - 363.0 MOD. VEINING WEAK OPEN FRACTS. 363.0 - 374.5 SERIES OF CLOSE SPACED HEALED BXA'S TO 1' ø, STRONG VEINING & VUGS ASSOC. W/ BXA'S. 374.5 - 380.0 MOD. VEINING MINOR OPEN FRACTS	330.0 - 339.0 VEINS FILLED W/ QUARTZ, PYRITE, MARC. OPEN FRACTS/VUGS LINED W/ DRUZY QUARTZ, BLADED MARC., LOCAL BARITE, MINOR WHITE CLAY. 339.0 - 351.0 VEINS FILLED W/ WHITE CLAY, PYRITE, VUGS LINED W/ DRUZY QUARTZ, BLADED MARC. 351.0 - 357.0 VEINS FILLED W/ MIXED CLAY, QUARTZ & BARITE W/ BLADED MARC. & SOME PYRITE. VUGS LINED W/ SAME. 357.0 - 363.0 VEINS FILLED W/ WHITE CLAY, PYRITE & MARC., OPEN FRACTS LINED W/ DRUZY QUARTZ, BLADED MARC. 363.0 - 374.5 BXA'S CEMENT W/ VEINS FILLED W/ QUARTZ, BLADED MARC., MINOR PYRITE & WHITE CLAY. VUGS LINED W/ DRUZY QUARTZ, BLADED MARC., PYRITE, RARE DRUZY QUARTZ BEING ALT. TO SATIN-LIKE ADULARIA? SOFT, CLAYEY. LOCAL BARITE 374.5 - 380.0 VEINS FILLED W/ WHITE CLAY, BLADED MARC. SOME QUARTZ & HARD GRN. CLAY. VARIABLE PYRITE. VUGS LINED W/ DRUZY QUARTZ, BLADED MARC.

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2
330.0	333.0				
333.0	336.0				
336.0	339.0				
339.0	343.0				
343.0	346.0				
346.0	351.0				
351.0	353.6				
353.6	355.2				
355.2	357.0				
357.0	360.0				
360.0	362.7				
362.7	365.7				
365.7	367.5				
367.5	370.0				
370.0	372.2				
372.2	374.4				
374.4	377.0				
377.0	380.0				

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-328-98 DATE: 11/9/98 LOGGED BY: ALLYN NILES PAGE 1 OF 4

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)
0.0	5.0	100.0	100.0	48.0										
5.0	10.0	100.0	100.0	52.0										
10.0	20.0	100.0	100.0	60.0										
20.0	30.0	98.0	98.0	72.0										
30.0	40.0	100.0	100.0	94.0										
40.0	50.0	98.0	98.0	33.0										
50.0	60.0	102.0	102.0	78.0										
60.0	70.0	100.0	100.0	67.0										
70.0	80.0	100.0	100.0	70.0										
80.0	90.0	100.0	100.0	87.0										
90.0	100.0	100.0	100.0	80.0										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-328-98 DATE: 11/10/98 LOGGED BY: _____ PAGE 2 OF 4

DRILL RUN		SOLID CORE	TOTAL CORE	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO	RECOVERY (%)	RECOVERY (%)		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)
100.0	110.0	100.0	100.0	74.0										
110.0	120.0	92.0	96.0	68.0										
120.0	130.0	100.0	100.0	51.0										
130.0	140.0	100.0	100.0	57.0										
140.0	150.0	100.0	100.0	83.0										
150.0	160.0	100.0	100.0	79.0										
160.0	170.0	100.0	100.0	68.0										
170.0	180.0	100.0	100.0	69.0										
180.0	190.0	100.0	100.0	84.0										
190.0	200.0	100.0	100.0	80.0										
200.0	210.0	100.0	100.0	90.0										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-328-98 DATE: 11/11/98 LOGGED BY: _____ PAGE 3 OF 4

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)
210.0	220.0	100.0	100.0	70.0										
220.0	230.0	100.0	100.0	48.0										
230.0	240.0	100.0	100.0	50.0										
240.0	250.0	92.0	100.0	15.0										
250.0	258.0	87.5	100.0	5.0										
258.0	265.0	91.4	100.0	10.0										
265.0	275.0	100.0	100.0	57.0										
275.0	283.0	77.5	100.0	30.0										
283.0	290.0	74.3	100.0	35.7										
290.0	300.0	102.0	100.0	65.0										
300.0	310.0	90.0	100.0	64.0										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-328-98 DATE: 11/12/98 LOGGED BY: ALLYN WILES PAGE 4 OF 4

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)
310.0	320.0	90.0	100.0	40.0										
320.0	330.0	85.0	100.0	20.0										
330.0	340.0	100.0	100.0	80.0										
340.0	350.0	100.0	100.0	44.0										
350.0	360.0	90.0	100.0	23.0										
360.0	370.0	94.0	100.0	53.0										
370.0	380.0	98.0	98.0	55.0										

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP051570

PO BOX 11530
RENO NV,USA
Ph.(702) 356-0606, Fax.(702) 356-1413

HECLA MINING COMPANY

COPIES TO : KURT ALLEN

:

:

:

CLIENT REFERENCE No: D-328-98 RECEIVED : 17 NOV 1998

No. SAMPLES : 128 REPORTED : 3 DEC 1998

MAIN SAMPLE TYPE : DRILL CORE

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
AuGRAV	GRAV	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Susan King M.S.

12/03/1998 13:33 7023561413 AMERICAN ASSAY LABS PAGE 01

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP051570

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-328-98

REPORTED : 3 DEC 1998

SAMPLES		Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)	
D-328-98 0-2		0.006			0.03	
D-328-98 2-5		0.003			<0.02	
D-328-98 5.0-7.5		0.006			0.05	
D-328-98 7.5-10.0		0.005			0.06	
D-328-98 10.0-12.5		0.002			0.04	
D-328-98 12.5-15.0		0.004			0.04	
D-328-98 15-20		0.008			0.04	
D-328-98 20-25		0.008			0.07	
D-328-98 25-30		0.004			0.06	
D-328-98 30-32		0.007			0.03	
D-328-98 32.0-35.5		0.006			0.06	
D-328-98 35.5-39.0		0.014			0.05	
D-328-98 39.0-42.5		0.006			0.05	
D-328-98 42.5-45.5		0.002			0.02	
D-328-98 45.5-48.5		0.004			0.03	
D-328-98 48.5-51.0		0.158		0.159	0.16	
D-328-98 51-54		0.035			0.03	57-70' =
D-328-98 54-57		0.006			0.03	13' @
D-328-98 57-60	3	0.436		0.471	1.01	
D-328-98 60-63	3	0.266		0.322	0.53	0.323 Au
D-328-98 63.0-66.5	3.5	0.290		0.347	0.33	0.49 Ag
D-328-98 66.5-70.0	3.5	0.309		0.339	0.16	
D-328-98 70-73		0.026			0.14	
D-328-98 73-76		0.015			0.07	
D-328-98 76-80		0.021			0.12	

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP051570

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-328-98

REPORTED : 3 DEC 1998

SAMPLES		Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)	85-120' =
D-328-98 80-85		0.008			0.05	35' @
D-328-98 85.0-88.7	3.7	0.433		0.514	0.28	
D-328-98 88.7-91.7	3.0	0.271		0.262	0.39	0.255 Ag
D-328-98 91.7-94.4	2.7	0.184		0.198	0.12	0.24 Ag
D-328-98 94.4-98.0	3.6	0.368		0.434	0.22	
D-328-98 98-101	3	0.183		0.142	0.27	
D-328-98 101-104	3	0.427		0.424	0.72	
D-328-98 104.0-107.3	3.3	0.006			0.08	
D-328-98 107.3-110.0	2.7	0.015			0.08	
D-328-98 110.0-112.5	2.5	0.405		0.311	0.25	
D-328-98 112.5-115.0	2.5	0.212		0.229	0.13	
D-328-98 115-118	3	0.186		0.193	0.11	
D-328-98 118-120	2	0.351		0.369	0.21	
D-328-98 120-122		0.060		0.067	0.09	
D-328-98 122-126		0.013			0.05	
D-328-98 126-130		0.099		0.062	0.42	130-135.8 = 5.8' @
D-328-98 130-133	3	0.338		0.279	0.63	
D-328-98 133.0-135.8	2.8	0.246		0.354	0.08	0.294 Au 0.36 Ag
D-328-98 135.8-139.0		0.135		0.109	0.05	
D-328-98 139.0-143.5		0.099		0.069	0.12	
D-328-98 143.5-146.5		0.094		0.134	0.15	
D-328-98 146.5-149.0		0.121		0.135	0.12	
D-328-98 149.0-151.5		0.133		0.124	0.12	
D-328-98 151.5-154.5		0.139		0.136	0.13	
D-328-98 154.5-157.7		0.069		0.085	0.20	

12/03/1998 13:33 7025614113 AMERICAN ASSAY LABS PAGE 03

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP051570

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-328-98

REPORTED : 3 DEC 1998

SAMPLES	Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)	
D-328-98 157.7-160.0	0.071		0.065	0.09	
D-328-98 160.0-162.5	0.376		0.352	0.15	
D-328-98 162.5-164.5	0.121		0.163	0.82	
D-328-98 164.5-167.5	0.025			0.11	
D-328-98 167.5-170.0	0.022			0.10	174.5-184 =
D-328-98 170.0-174.5	0.061	0.039		0.09	9.5'
D-328-98 174.5-177.0 2.5	0.242		0.262	0.25	
D-328-98 177-180 3	0.152		0.169	0.99	0.248 Au
D-328-98 180-184 4	0.324		0.348	0.80	0.72 Ag
D-328-98 184.0-186.5	0.071		0.055	0.41	
D-328-98 186.5-190.0	0.068		0.084	0.10	
D-328-98 190-193	0.031	0.030		0.08	
D-328-98 193.0-196.5	0.017			0.10	
D-328-98 196.5-200.0	0.017			0.10	
D-328-98 200-203	0.086		0.078	0.18	
D-328-98 203.0-206.3	0.036			0.44	
D-328-98 206.3-209.0	0.032			0.11	
D-328-98 209-212	0.032	0.033		0.09	
D-328-98 212-216	0.021			0.07	
D-328-98 216-219	0.028			0.09	
D-328-98 219-222	0.038			0.10	
D-328-98 222-225	0.046			0.10	
D-328-98 225-229	0.046			0.13	
D-328-98 229-231	0.071		0.091	0.16	
D-328-98 231-233	0.101		0.107	0.17	

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP051570

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-328-98

REPORTED : 3 DEC 1998

233-236.5' E
3.5' @

SAMPLES		Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)	
D-328-98 233.0-234.5	1.5	0.148		0.136	0.27	0.350 Au
D-328-98 234.5-236.5	2	0.502		0.439	0.51	0.41 Ag
D-328-98 236.5-240.0		0.139		0.164	1.19	
D-328-98 240-244		0.046			0.19	
D-328-98 244-247		0.099		0.071	0.22	
D-328-98 247-250		0.044			0.18	
D-328-98 250-252		0.016			0.12	
D-328-98 252-255		0.103		0.105	0.15	
D-328-98 255-258		0.046			0.16	
D-328-98 258-261		0.110		0.087	0.19	
D-328-98 261.0-264.5		0.122		0.138	0.19	
D-328-98 264.5-267.5		0.103		0.120	0.27	
D-328-98 267.5-270.0		0.124		0.124	0.17	
D-328-98 270.0-273.5		0.132		0.125	0.15	
D-328-98 273.5-276.5		0.022			0.09	
D-328-98 276.5-279.0		0.073		0.113	0.17	
D-328-98 279.3-281.7		0.039	0.043		0.15	
D-328-98 281.7-285.0		0.039			0.16	
D-328-98 285-288		0.044			0.26	
D-328-98 288-290		0.053		0.061	0.29	
D-328-98 290-293		0.043			0.17	
D-328-98 293.0-296.5		0.034			0.20	
D-328-98 296.5-298.5		0.031			0.15	
D-328-98 298.5-301.5		0.035			0.16	
D-328-98 301.5-304.5		0.016			0.12	

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP051570

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-328-98

REPORTED : 3 DEC 1998

SAMPLES	Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)
D-328-98 304.5-308.5	0.015			0.21
D-328-98 308.5-311.5	0.011			0.15
D-328-98 311.5-314.0	0.012			0.15
D-328-98 314-317	0.016			0.18
D-328-98 317-320	0.008			0.17
D-328-98 320-323	0.039			0.36
D-328-98 323-326	0.020			0.25
D-328-98 326-328	0.024			0.18
D-328-98 328-330	0.018			0.16
D-328-98 330-333	0.012			0.18
D-328-98 333-336	0.010			0.12
D-328-98 336-339	0.034	0.031		0.14
D-328-98 339-343	0.024			0.21
D-328-98 343-346	0.021			0.15
D-328-98 346-351	0.022			0.12
D-328-98 351.0-353.6	0.009			0.17
D-328-98 353.6-355.2	0.029			0.24
D-328-98 355.2-357.0	0.023			0.15
D-328-98 357-360	0.008			0.16
D-328-98 360.0-362.7	0.030			0.22
D-328-98 362.7-365.7	0.084		0.052	0.20
D-328-98 365.7-367.5	0.112		0.107	0.21
D-328-98 367.5-370.0	0.029			0.16
D-328-98 370.0-372.2	0.024			0.17
D-328-98 372.2-374.4	0.017			0.16

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP051570

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-328-98

REPORTED : 3 DEC 1998

SAMPLES	Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)
D-328-98 374.4-377.0	0.012			0.18
D-328-98 377-380	0.021			0.22
46607	0.119			2.34

American Assay Laboratories

INVOICE

Remit To: P.O. Box11530
Reno, Nevada 89510
Phone NO.: 702-356-0606
Fax No.: 702-356-1413

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431-5902

(702) 356-0606

INVOICE NO: SP 0051570-IN
INVOICE DATE: 12/04/98

INVOICE TO:
THE ROSEBUD MINING CO., LLC
HECLA MINING COMPANY, OPERATOR
P.O. BOX 2610
WINNEMUCCA NV 89446

THE ROSEBUD MINING CO., LLC
HECLA MINING COMPANY, OPERATOR
P.O. BOX 2610
WINNEMUCCA NV 89446

CUSTOMER P.O.	PROJECT	TERMS
D-328-98	DEVELOPMENT	NET 30 - DUE IN U.S. DOLLARS

QUANTITY	DESCRIPTION	PRICE	AMOUNT
128	SAMPLES RECEIVED	.00	.00
127	DRYING	1.00	127.00
127	JAW CRUSHING CHARGE	1.30	165.10
127	COARSE MILLING CHARGE	4.50	571.50
127	SPLITTING CHARGE	2.40	304.80
127	RING MILLING CHARGE	2.00	254.00
128	Au (1 A.T. FIRE ASSAY)	8.00	1,024.00
51	Au ANALYSES/GRAVIMETRIC	8.75	446.25
128	HYDROCHLORIC/NITRIC DIGESTION	2.00	256.00
128	Ag ANALYSES	1.00	128.00

86-5110-477

NET INVOICE:	3,276.65
LESS DISCOUNT:	655.33
FREIGHT:	.00
INVOICE TOTAL:	2,621.32

xAMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP051570

American Assay Laboratories

PO BOX 11530
RENO NV,USA
Ph.(702) 356-0606, Fax.(702) 356-1413

HECLA MINING COMPANY

COPIES TO : KURT ALLEN

:

:

:

CLIENT REFERENCE No: D-328-98 RECEIVED : 17 NOV 1998

No. SAMPLES : 128 REPORTED : 3 DEC 1998

MAIN SAMPLE TYPE : DRILL CORE

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
AuGRAV	GRAV	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Susan King M.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP051570

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-328-98

REPORTED : 3 DEC 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-328-98 0-2	0.006			0.03
D-328-98 2-5	0.003			<0.02
D-328-98 5.0-7.5	0.006			0.05
D-328-98 7.5-10.0	0.005			0.06
D-328-98 10.0-12.5	0.002			0.04
D-328-98 12.5-15.0	0.004			0.04
D-328-98 15-20	0.008			0.04
D-328-98 20-25	0.008			0.07
D-328-98 25-30	0.004			0.06
D-328-98 30-32	0.007			0.03
D-328-98 32.0-35.5	0.006			0.06
D-328-98 35.5-39.0	0.014			0.05
D-328-98 39.0-42.5	0.006			0.05
D-328-98 42.5-45.5	0.002			0.02
D-328-98 45.5-48.5	0.004			0.03
D-328-98 48.5-51.0	0.158		0.159	0.16
D-328-98 51-54	0.035			0.03
D-328-98 54-57	0.006			0.03
D-328-98 57-60	0.436		0.471	1.01
D-328-98 60-63	0.266		0.322	0.53
D-328-98 63.0-66.5	0.290		0.347	0.33
D-328-98 66.5-70.0	0.309		0.339	0.16
D-328-98 70-73	0.026			0.14
D-328-98 73-76	0.015			0.07
D-328-98 76-80	0.021			0.12

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP051570

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-328-98

REPORTED : 3 DEC 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-328-98 80-85	0.008			0.05
D-328-98 85.0-88.7	0.433		0.514	0.28
D-328-98 88.7-91.7	0.271		0.262	0.39
D-328-98 91.7-94.4	0.184		0.198	0.12
D-328-98 94.4-98.0	0.368		0.434	0.22
D-328-98 98-101	0.183		0.142	0.27
D-328-98 101-104	0.427		0.424	0.72
D-328-98 104.0-107.3	0.006			0.08
D-328-98 107.3-110.0	0.015			0.08
D-328-98 110.0-112.5	0.405		0.311	0.25
D-328-98 112.5-115.0	0.212		0.229	0.13
D-328-98 115-118	0.186		0.193	0.11
D-328-98 118-120	0.351		0.369	0.21
D-328-98 120-122	0.060		0.067	0.09
D-328-98 122-126	0.013			0.05
D-328-98 126-130	0.099		0.062	0.42
D-328-98 130-133	0.338		0.279	0.63
D-328-98 133.0-135.8	0.246		0.354	0.08
D-328-98 135.8-139.0	0.135		0.109	0.05
D-328-98 139.0-143.5	0.099		0.069	0.12
D-328-98 143.5-146.5	0.094		0.134	0.15
D-328-98 146.5-149.0	0.121		0.135	0.12
D-328-98 149.0-151.5	0.133		0.124	0.12
D-328-98 151.5-154.5	0.139		0.136	0.13
D-328-98 154.5-157.7	0.069		0.085	0.20

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP051570

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-328-98

REPORTED : 3 DEC 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-328-98 157.7-160.0	0.071		0.065	0.09
D-328-98 160.0-162.5	0.376		0.352	0.15
D-328-98 162.5-164.5	0.121		0.163	0.82
D-328-98 164.5-167.5	0.025			0.11
D-328-98 167.5-170.0	0.022			0.10
D-328-98 170.0-174.5	0.061	0.039		0.09
D-328-98 174.5-177.0	0.242		0.262	0.25
D-328-98 177-180	0.152		0.169	0.99
D-328-98 180-184	0.324		0.348	0.80
D-328-98 184.0-186.5	0.071		0.055	0.41
D-328-98 186.5-190.0	0.068		0.084	0.10
D-328-98 190-193	0.031	0.030		0.08
D-328-98 193.0-196.5	0.017			0.10
D-328-98 196.5-200.0	0.017			0.10
D-328-98 200-203	0.086		0.078	0.18
D-328-98 203.0-206.3	0.036			0.44
D-328-98 206.3-209.0	0.032			0.11
D-328-98 209-212	0.032	0.033		0.09
D-328-98 212-216	0.021			0.07
D-328-98 216-219	0.028			0.09
D-328-98 219-222	0.038			0.10
D-328-98 222-225	0.046			0.10
D-328-98 225-229	0.046			0.13
D-328-98 229-231	0.071		0.091	0.16
D-328-98 231-233	0.101		0.107	0.17

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP051570

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-328-98

REPORTED : 3 DEC 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-328-98 233.0-234.5	0.148		0.136	0.27
D-328-98 234.5-236.5	0.502		0.439	0.51
D-328-98 236.5-240.0	0.139		0.164	1.19
D-328-98 240-244	0.046			0.19
D-328-98 244-247	0.099		0.071	0.22
D-328-98 247-250	0.044			0.18
D-328-98 250-252	0.016			0.12
D-328-98 252-255	0.103		0.105	0.15
D-328-98 255-258	0.046			0.16
D-328-98 258-261	0.110		0.087	0.19
D-328-98 261.0-264.5	0.122		0.138	0.19
D-328-98 264.5-267.5	0.103		0.120	0.27
D-328-98 267.5-270.0	0.124		0.124	0.17
D-328-98 270.0-273.5	0.132		0.125	0.15
D-328-98 273.5-276.5	0.022			0.09
D-328-98 276.5-279.0	0.073		0.113	0.17
D-328-98 279.3-281.7	0.039	0.043		0.15
D-328-98 281.7-285.0	0.039			0.16
D-328-98 285-288	0.044			0.26
D-328-98 288-290	0.053		0.061	0.29
D-328-98 290-293	0.043			0.17
D-328-98 293.0-296.5	0.034			0.20
D-328-98 296.5-298.5	0.031			0.15
D-328-98 298.5-301.5	0.035			0.16
D-328-98 301.5-304.5	0.016			0.12

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP051570

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-328-98

REPORTED : 3 DEC 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-328-98 304.5-308.5	0.015			0.21
D-328-98 308.5-311.5	0.011			0.15
D-328-98 311.5-314.0	0.012			0.15
D-328-98 314-317	0.016			0.18
D-328-98 317-320	0.008			0.17
D-328-98 320-323	0.039			0.36
D-328-98 323-326	0.020			0.25
D-328-98 326-328	0.024			0.18
D-328-98 328-330	0.018			0.16
D-328-98 330-333	0.012			0.18
D-328-98 333-336	0.010			0.12
D-328-98 336-339	0.034	0.031		0.14
D-328-98 339-343	0.024			0.21
D-328-98 343-346	0.021			0.15
D-328-98 346-351	0.022			0.12
D-328-98 351.0-353.6	0.009			0.17
D-328-98 353.6-355.2	0.029			0.24
D-328-98 355.2-357.0	0.023			0.15
D-328-98 357-360	0.008			0.16
D-328-98 360.0-362.7	0.030			0.22
D-328-98 362.7-365.7	0.084		0.052	0.20
D-328-98 365.7-367.5	0.112		0.107	0.21
D-328-98 367.5-370.0	0.029			0.16
D-328-98 370.0-372.2	0.024			0.17
D-328-98 372.2-374.4	0.017			0.16

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP051570

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-328-98

REPORTED : 3 DEC 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-328-98 374.4-377.0	0.012			0.18
D-328-98 377-380	0.021			0.22
46607	0.119			2.34

xAMERICAN ASSAY LABORATORIES
ANALYSIS REPORT / SP051570

American Assay Laboratories

PO BOX 11530
RENO NV,USA
Ph.(702) 356-0606, Fax.(702) 356-1413

HECLA MINING COMPANY

COPIES TO : KURT ALLEN
:
:
:

CLIENT REFERENCE No: D-328-98 RECEIVED : 17 NOV 1998

No. SAMPLES : 128 REPORTED : 3 DEC 1998

MAIN SAMPLE TYPE : DRILL CORE

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
AuGRAV	GRAV	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Susan King M.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP051570

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-328-98

REPORTED : 3 DEC 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-328-98 0-2	0.006			0.03
D-328-98 2-5	0.003			<0.02
D-328-98 5.0-7.5	0.006			0.05
D-328-98 7.5-10.0	0.005			0.06
D-328-98 10.0-12.5	0.002			0.04
D-328-98 12.5-15.0	0.004			0.04
D-328-98 15-20	0.008			0.04
D-328-98 20-25	0.008			0.07
D-328-98 25-30	0.004			0.06
D-328-98 30-32	0.007			0.03
D-328-98 32.0-35.5	0.006			0.06
D-328-98 35.5-39.0	0.014			0.05
D-328-98 39.0-42.5	0.006			0.05
D-328-98 42.5-45.5	0.002			0.02
D-328-98 45.5-48.5	0.004			0.03
D-328-98 48.5-51.0	0.158		0.159	0.16
D-328-98 51-54	0.035			0.03
D-328-98 54-57	0.006			0.03
D-328-98 57-60	0.436		0.471	1.01
D-328-98 60-63	0.266		0.322	0.53
D-328-98 63.0-66.5	0.290		0.347	0.33
D-328-98 66.5-70.0	0.309		0.339	0.16
D-328-98 70-73	0.026			0.14
D-328-98 73-76	0.015			0.07
D-328-98 76-80	0.021			0.12

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP051570

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-328-98

REPORTED : 3 DEC 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-328-98 80-85	0.008			0.05
D-328-98 85.0-88.7	0.433		0.514	0.28
D-328-98 88.7-91.7	0.271		0.262	0.39
D-328-98 91.7-94.4	0.184		0.198	0.12
D-328-98 94.4-98.0	0.368		0.434	0.22
D-328-98 98-101	0.183		0.142	0.27
D-328-98 101-104	0.427		0.424	0.72
D-328-98 104.0-107.3	0.006			0.08
D-328-98 107.3-110.0	0.015			0.08
D-328-98 110.0-112.5	0.405		0.311	0.25
D-328-98 112.5-115.0	0.212		0.229	0.13
D-328-98 115-118	0.186		0.193	0.11
D-328-98 118-120	0.351		0.369	0.21
D-328-98 120-122	0.060		0.067	0.09
D-328-98 122-126	0.013			0.05
D-328-98 126-130	0.099		0.062	0.42
D-328-98 130-133	0.338		0.279	0.63
D-328-98 133.0-135.8	0.246		0.354	0.08
D-328-98 135.8-139.0	0.135		0.109	0.05
D-328-98 139.0-143.5	0.099		0.069	0.12
D-328-98 143.5-146.5	0.094		0.134	0.15
D-328-98 146.5-149.0	0.121		0.135	0.12
D-328-98 149.0-151.5	0.133		0.124	0.12
D-328-98 151.5-154.5	0.139		0.136	0.13
D-328-98 154.5-157.7	0.069		0.085	0.20

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP051570

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-328-98

REPORTED : 3 DEC 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-328-98 157.7-160.0	0.071		0.065	0.09
D-328-98 160.0-162.5	0.376		0.352	0.15
D-328-98 162.5-164.5	0.121		0.163	0.82
D-328-98 164.5-167.5	0.025			0.11
D-328-98 167.5-170.0	0.022			0.10
D-328-98 170.0-174.5	0.061	0.039		0.09
D-328-98 174.5-177.0	0.242		0.262	0.25
D-328-98 177-180	0.152		0.169	0.99
D-328-98 180-184	0.324		0.348	0.80
D-328-98 184.0-186.5	0.071		0.055	0.41
D-328-98 186.5-190.0	0.068		0.084	0.10
D-328-98 190-193	0.031	0.030		0.08
D-328-98 193.0-196.5	0.017			0.10
D-328-98 196.5-200.0	0.017			0.10
D-328-98 200-203	0.086		0.078	0.18
D-328-98 203.0-206.3	0.036			0.44
D-328-98 206.3-209.0	0.032			0.11
D-328-98 209-212	0.032	0.033		0.09
D-328-98 212-216	0.021			0.07
D-328-98 216-219	0.028			0.09
D-328-98 219-222	0.038			0.10
D-328-98 222-225	0.046			0.10
D-328-98 225-229	0.046			0.13
D-328-98 229-231	0.071		0.091	0.16
D-328-98 231-233	0.101		0.107	0.17

AMERICAN ASSAY LABORATORIES
ANALYSIS REPORT SP051570

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-328-98

REPORTED : 3 DEC 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-328-98 233.0-234.5	0.148		0.136	0.27
D-328-98 234.5-236.5	0.502		0.439	0.51
D-328-98 236.5-240.0	0.139		0.164	1.19
D-328-98 240-244	0.046			0.19
D-328-98 244-247	0.099		0.071	0.22
D-328-98 247-250	0.044			0.18
D-328-98 250-252	0.016			0.12
D-328-98 252-255	0.103		0.105	0.15
D-328-98 255-258	0.046			0.16
D-328-98 258-261	0.110		0.087	0.19
D-328-98 261.0-264.5	0.122		0.138	0.19
D-328-98 264.5-267.5	0.103		0.120	0.27
D-328-98 267.5-270.0	0.124		0.124	0.17
D-328-98 270.0-273.5	0.132		0.125	0.15
D-328-98 273.5-276.5	0.022			0.09
D-328-98 276.5-279.0	0.073		0.113	0.17
D-328-98 279.3-281.7	0.039	0.043		0.15
D-328-98 281.7-285.0	0.039			0.16
D-328-98 285-288	0.044			0.26
D-328-98 288-290	0.053		0.061	0.29
D-328-98 290-293	0.043			0.17
D-328-98 293.0-296.5	0.034			0.20
D-328-98 296.5-298.5	0.031			0.15
D-328-98 298.5-301.5	0.035			0.16
D-328-98 301.5-304.5	0.016			0.12

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP051570

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-328-98

REPORTED : 3 DEC 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-328-98 304.5-308.5	0.015			0.21
D-328-98 308.5-311.5	0.011			0.15
D-328-98 311.5-314.0	0.012			0.15
D-328-98 314-317	0.016			0.18
D-328-98 317-320	0.008			0.17
D-328-98 320-323	0.039			0.36
D-328-98 323-326	0.020			0.25
D-328-98 326-328	0.024			0.18
D-328-98 328-330	0.018			0.16
D-328-98 330-333	0.012			0.18
D-328-98 333-336	0.010			0.12
D-328-98 336-339	0.034	0.031		0.14
D-328-98 339-343	0.024			0.21
D-328-98 343-346	0.021			0.15
D-328-98 346-351	0.022			0.12
D-328-98 351.0-353.6	0.009			0.17
D-328-98 353.6-355.2	0.029			0.24
D-328-98 355.2-357.0	0.023			0.15
D-328-98 357-360	0.008			0.16
D-328-98 360.0-362.7	0.030			0.22
D-328-98 362.7-365.7	0.084		0.052	0.20
D-328-98 365.7-367.5	0.112		0.107	0.21
D-328-98 367.5-370.0	0.029			0.16
D-328-98 370.0-372.2	0.024			0.17
D-328-98 372.2-374.4	0.017			0.16

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP051570

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-328-98

REPORTED : 3 DEC 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-328-98 374.4-377.0	0.012			0.18
D-328-98 377-380	0.021			0.22
46607	0.119			2.34

SP

SUBMITTAL FORM

American Assay Laboratories

Geochemical • Environmental • Metallurgical

Sparks Office
1500 Glendale Ave.
Nevada 89431
Box 11530
Reno, NV 89510
Telephone
(702) 356-0606
Fax
(702) 356-1413

Tucson Office
2775 E. Ganley
Tucson, AZ 85706
Telephone
(520) 294-8078
Fax
(520) 294-6352

Elko Office
2320 Last Chance Rd.
Nevada 89801
Box 2908
Elko, NV 89801
Telephone
(702) 738-9100
Fax
(702) 738-2594

Mazatlan Office
Telephone/Fax
011-52-69-170035

Other Offices
Lima, Peru
Santiago, Chile
Mendoza, Argentina

Company: Rosebud Mining LLC

Address: Box 2610

City Winnemucca State NV Zip 89445

Telephone Number: (702) 623-6912 Fax Number: (702) 623-6967

Project Name: Development Purchase Order Number:

Date Submitted: 11/12/98 Number of Samples: 127

RESULTS REPORTED IN: ppm [ ] ppb [ ] opt [ ] Au-Ag According to Rosebud Mine Protocol

D-328-98 SAMPLE IDENTIFICATION	TYPE	ELEMENTS REQUIRED
0-2 48.5-51 98-101 143.5-146.5 186.5-190		233-234.5 276.5-279.3 320-323 362.7-365.7
2-5 51-54 101-104 146.5-149 190-193		234.5-236.5 279.3-281.7 323-326 365.7-367.5
5-7.5 54-57 104-107.3 149-151.5 193-196.5		236.5-240 281.7-285 326-328 367.5-370
7.5-10 57-60 107.3-110 151.5-154.5 196.5-200		240-244 285-288 328-330 370-372.2
10-12.5 60-63 110-112.5 154.5-157.7 200-203		244-247 288-290 330-333 372.2-374.4
12.5-15 63-66.5 112.5-115 157.7-160 203-206.3		247-250 290-293 333-336 374.4-377
15-20 66.5-70 115-118 160-162.5 206.3-209		250-252 293-296.5 336-339 377-380 TO
20-25 70-73 118-120 162.5-164.5 209-212		252-255 296.5-298.5 339-343
25-30 73-76 120-122 164.5-167.5 212-216		255-258 298.5-301.5 343-346
30-32 76-80 122-126 167.5-170 216-219		258-261 301.5-304.5 346-351
32-35.5 80-85 126-130 170-174.5 219-222		261-264.5 304.5-308.5 351-353.6
35.5-39 85-88.7 130-133 174.5-177 222-225		264.5-267.5 308.5-311.5 353.6-355.2
39-42.5 88.7-91.7 133-135.8 177-180 225-229		267.5-270 311.5-314 355.2-357
42.5-45.5 91.7-94.4 135.8-139 180-184 229-231		270-273.5 314-317 357-360
45.5-48.5 94.4-98 139-143.5 184-186.5 231-233		273.5-276.5 317-320 360-362.7

COARSE REJECTS (Normally Discarded After 60 Days)

[ ] Return COD after analysis complete

PULPS (Normally Stored Free For One Month)

[ ] Discard after one month

[ ] Return COD after one month

RESULTS AND INVOICES TO BE SENT TO:

Invoice to:

Results to:

Comments:

CLIENT FILE COPY

D-328-98	30	20	124.7
	190	20.5	123.2
	380	20.5	124.7

10
D-328-98 BOX 2
DEPTH 9 - 17_5

5
D-328-98 BOX 1
DEPTH 0 - 9

20
D-328-98 BOX 3
DEPTH 17_5 - 26

40
D-328-98 BOX 5
DEPTH 36 - 45

30
D-328-98 BOX 4
DEPTH 26 - 36

60
D-328-98 BOX 7
DEPTH 54 - 63

D-328-98 BOX 8
DEPTH 63 - 73
70

D-328-98 BOX 6
DEPTH 45 - 54
50

D-328-98 BOX 9
DEPTH 73 - 82
80

100
D-328-98 BOX 11
DEPTH 91 - 100

90
D-328-98 BOX 10
DEPTH 82 - 91

D-328-98 BOX 12
DEPTH 100 - 109_5

120
D-328-98 BOX 14
DEPTH 119 - 129

110
D-328-98 BOX 13
DEPTH 109_5 - 119

D-328-98 BOX 15
DEPTH 129 - 138
130

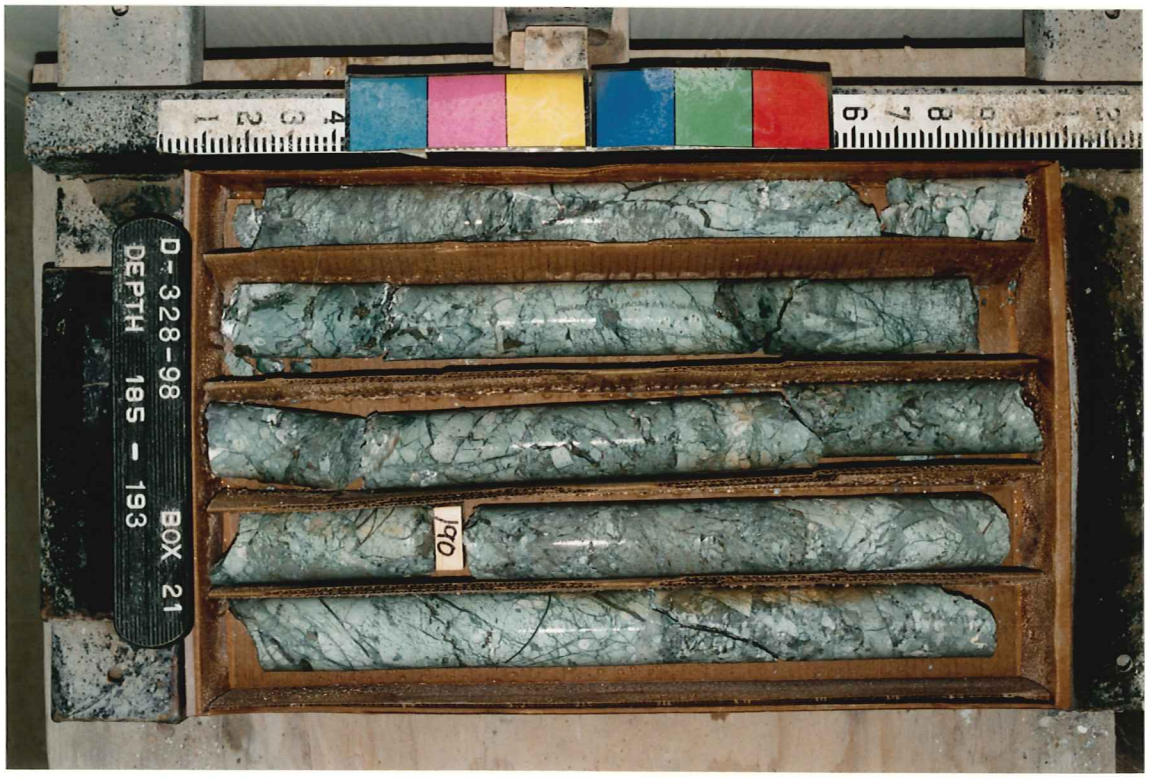
150
D-328-98 BOX 17
DEPTH 148 - 157

140
D-328-98 BOX 16
DEPTH 138 - 148

160
D-328-98 BOX 18
DEPTH 157 - 166

180
D-328-98 BOX 20
DEPTH 175 - 185

170
D-328-98 BOX 19
DEPTH 166 - 175


D-328-98 BOX 21
DEPTH 185 - 193
190

D-328-98 BOX 23
DEPTH 202 - 212
210

D-328-98 BOX 22
DEPTH 193 - 202
200

D-328-98 BOX 24
DEPTH 212 - 221.5
220

240
D-328-98 BOX 26
DEPTH 231 - 240_5

230
D-328-98 BOX 25
DEPTH 221_5 - 231

D-328-98 BOX 27
DEPTH 240_5 - 250

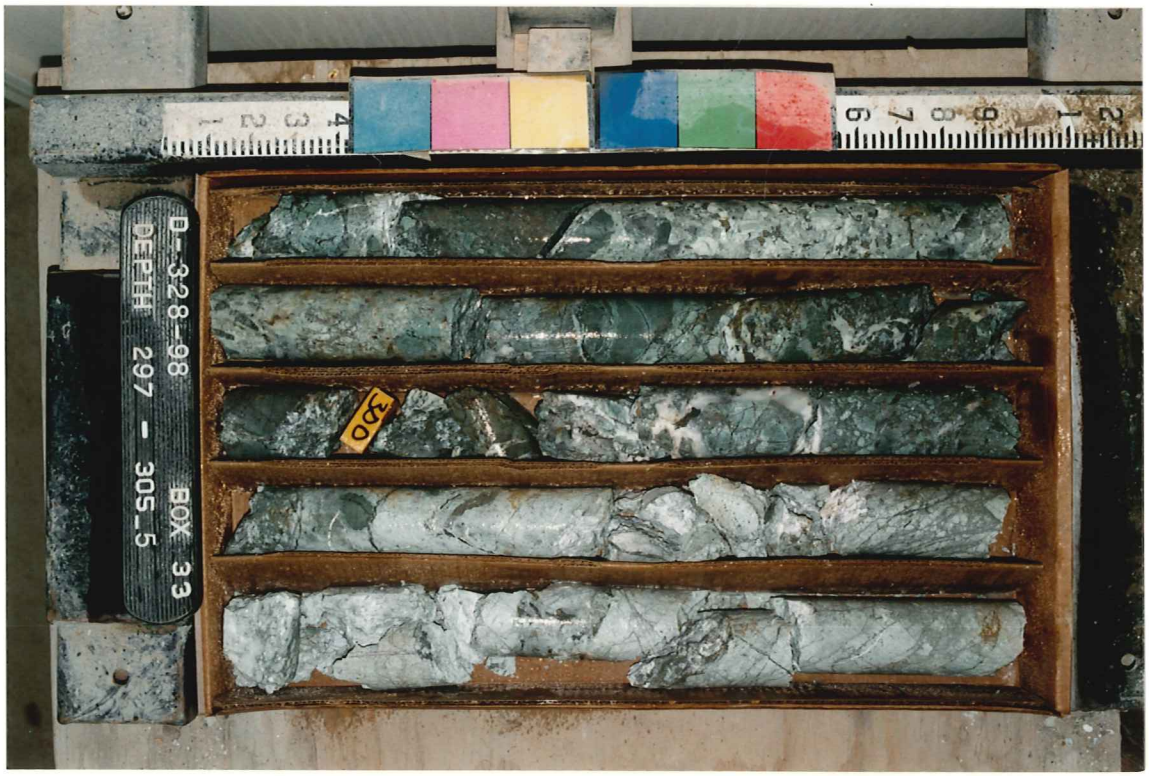
D-328-98 BOX 29
DEPTH 259 - 268_5
265

D-328-98 BOX 28
DEPTH 250 - 259
250
258

D-328-98 BOX 30
DEPTH 268_5 - 278
275

290
D-328-98 BOX 32
DEPTH 287 - 297

283
D-328-98 BOX 31
DEPTH 278 - 287


300
D-328-98 BOX 33
DEPTH 297 - 305.5

320
D-328-98 BOX 35
DEPTH 314 - 323

D-328-98 BOX 34
DEPTH 305_5 - 314

D-328-98 BOX 36
DEPTH 323 - 332
330

D-328-98 BOX 38
DEPTH 341 - 350

340
D-328-98 BOX 37
DEPTH 332 - 341

350
D-328-98 BOX 39
DEPTH 350 - 357.5

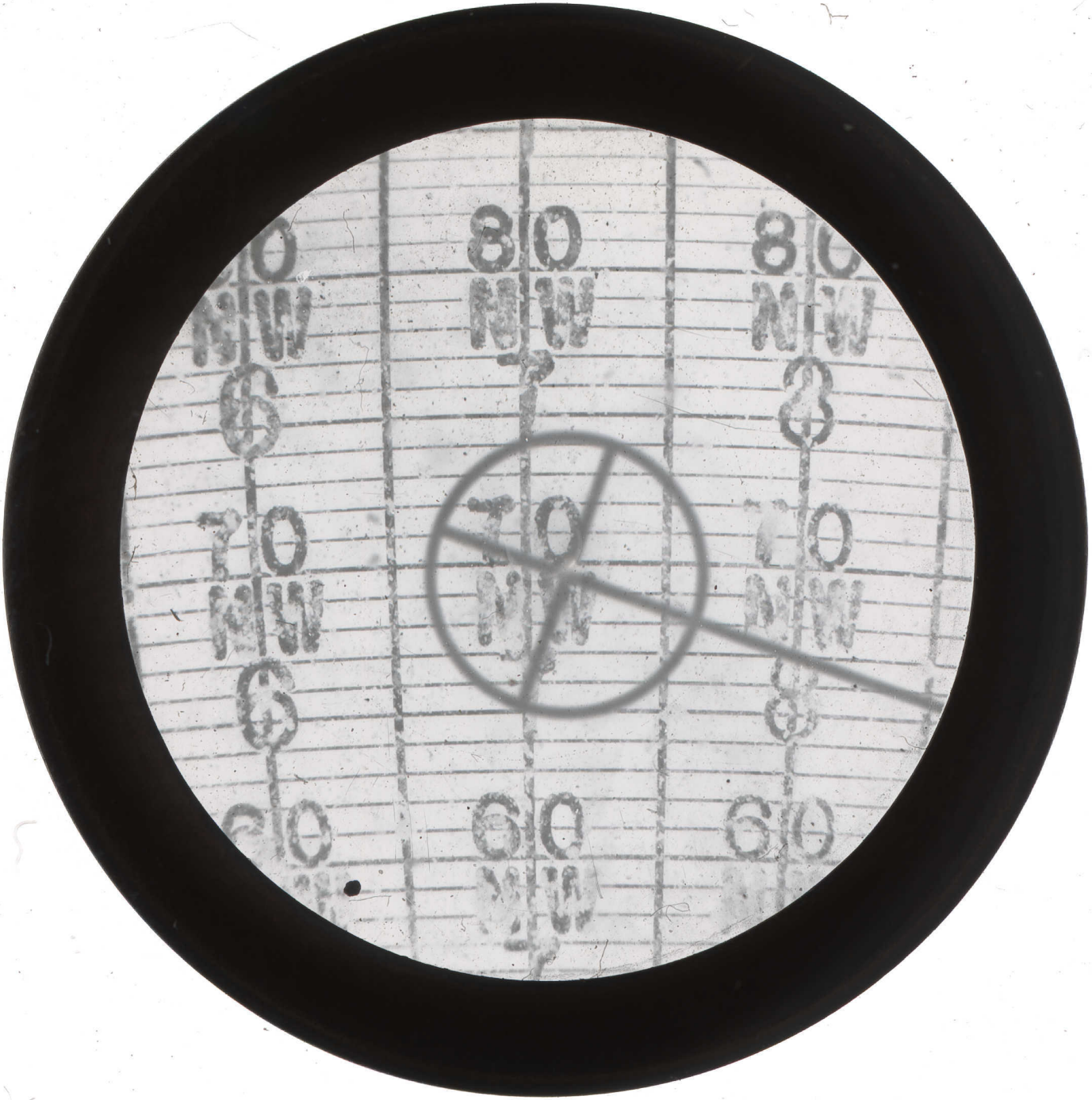
D-328-98 BOX 41
DEPTH 368_5 - 377_5

360
D-328-98 BOX 40
DEPTH 357_5 - 368_5

D-328-98 BOX 42
DEPTH 377_5 - 380 TD
TD
380

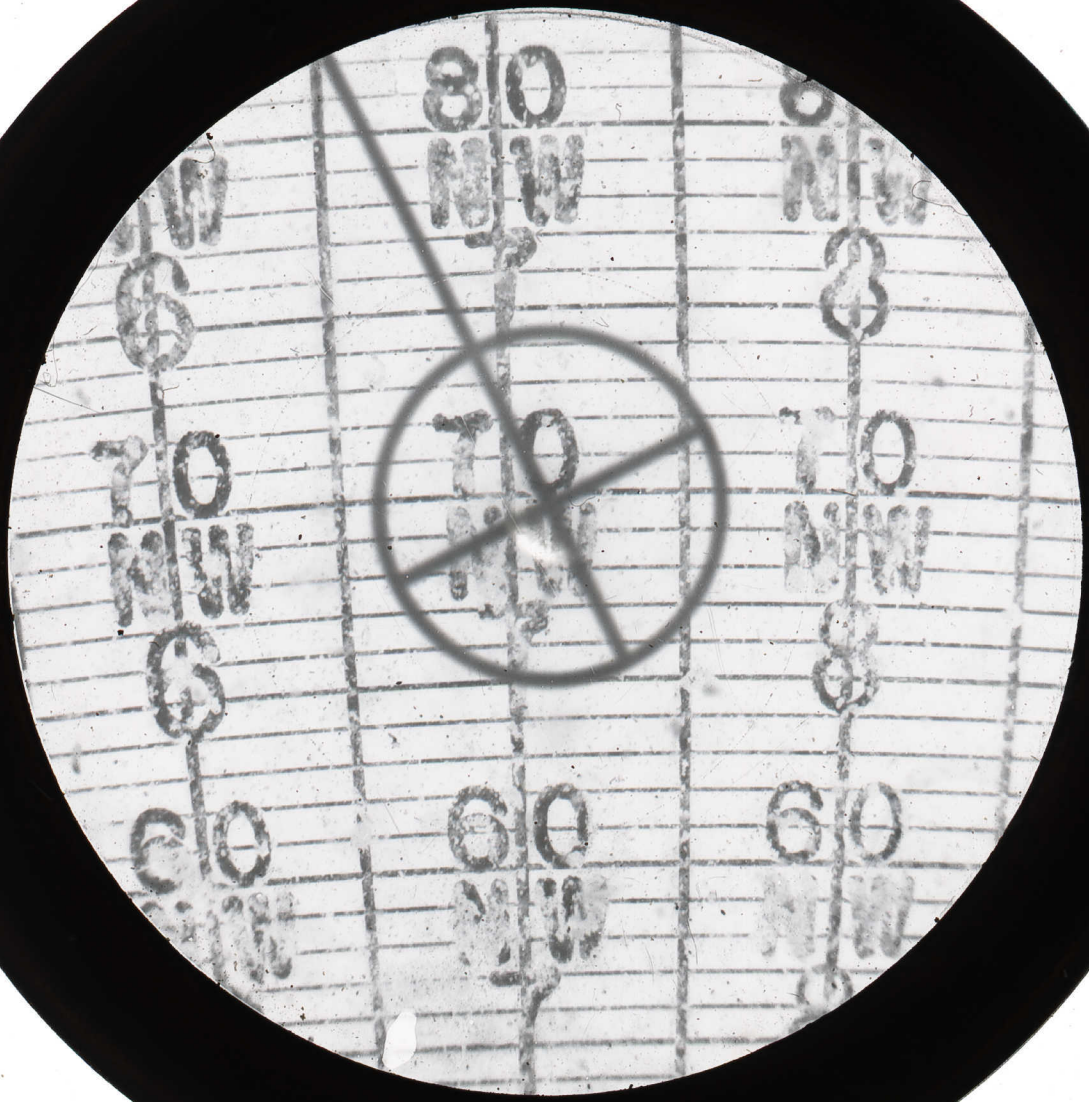
SINGLE SHOT
PHOTO DISC RECORD

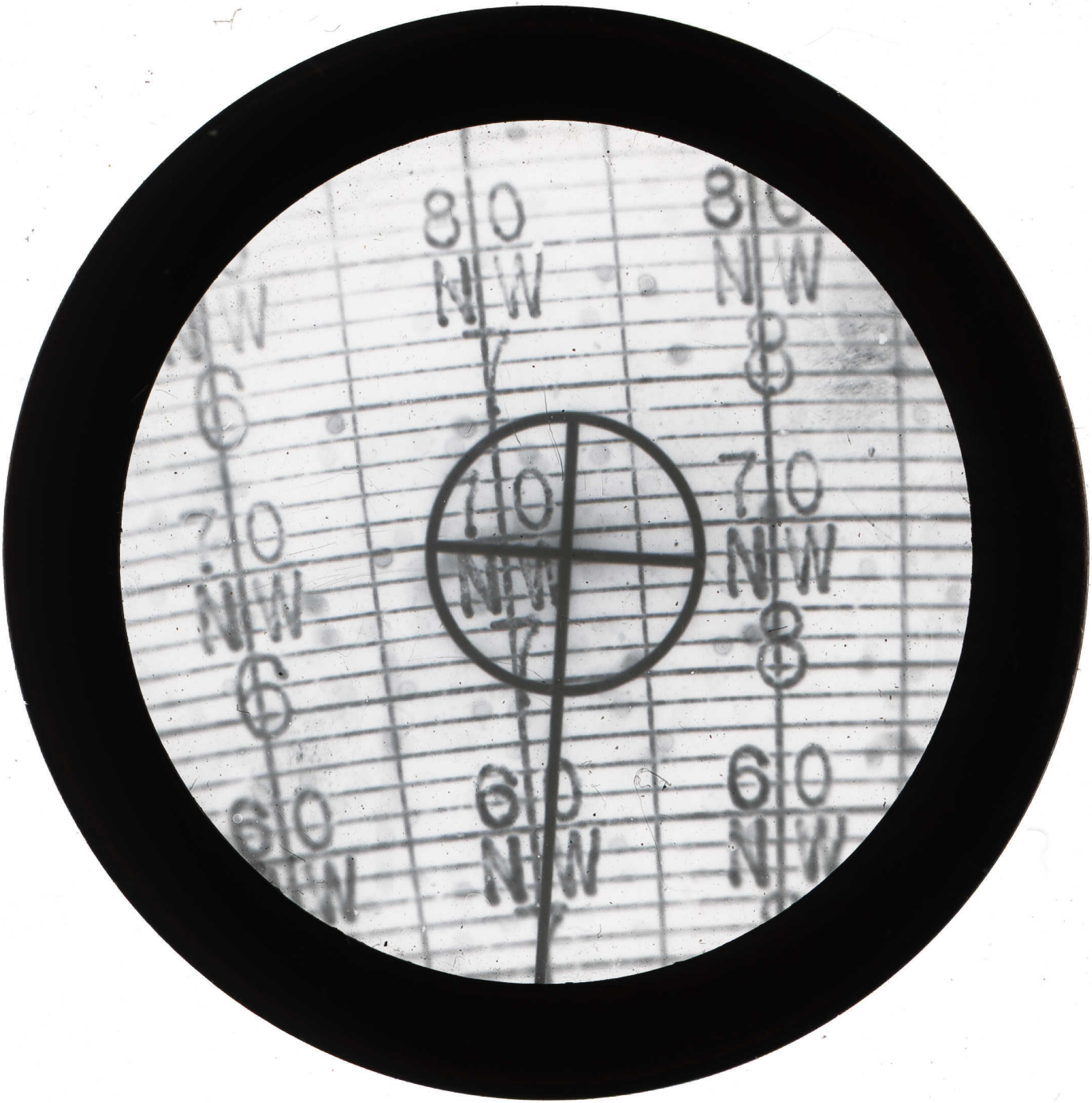
COMPANY Hecla
WELL NAME D-328-58
LEASE
TAKEN BY Jerome
DEPTH 30'
DATE 10-15-98
DRIFT ANGLE
DIRECTION
TYPE
JOB NO.
HI-1408


80
NW
80
NW
80
NW
70
NW
70
NW
70
NW
60
60
60

SINGLE SHOT
PHOTO DISC RECORD

COMPANY Hecla
WELL NAME D-328-98
LEASE
TAKEN BY Jerome
DEPTH 380'
DATE 10-15-98
DRIFT ANGLE
DIRECTION
TYPE
JOB NO.
HI-1408



SINGLE SHOT
PHOTO DISC RECORD

COMPANY Hecla
WELL NAME D-328-98
LEASE
TAKEN BY Jerome
DEPTH 790'
DATE 10-15-98
DRIFT ANGLE
DIRECTION
TYPE
JOB NO.
HI-1408