60000805

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-2-94
AUTHOR	C. Winteer; C. Muerhoff; S. Fairclotb
DATE OF DOC(S)	1994
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
COMMODITY If not obvious	gold; silver
NOTES	drill logs; geology; assay; total depth 260 receipt; hand written notes underground drilling 12p

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 4/30/08
Initials Date
DB:
Initials Date
SCANNED:
Initials Date

Revised: 1/22/08

UNDER GROUND DRILLING D-2-94

60000805
4010

60000805

Hecla
MINING COMPANY

ROSEBUD PROJECT
DIAMOND DRILL LOG

HOLE NUMBER	D-2-94	LOCATION	South Zone	REMARKS	ORIENTATIONS STATED
PAGE 1 OF		NORTHING	2203348.3		AS ∡ TO CORE AXIS; CORE PHOTO-
DATE	7-3-94	EASTING	481281.7		GRAPHED; WHOLE CORE ASSAY
LOGGED BY	CB. WINETEER	ELEVATION	4758.9		SAMPLING
SCALE	1" = 5'	AZIMUTH	124.5°		
TOTAL DEPTH	260'	INCLINATION	31°		

%REC	RQD	HARDNESS	COLOR	LITHOLOGY	FT	GRAPHIC LOG (LITH / STX / ALT/MINZ)	STRUCTURE	ALTERATION AND MINERALIZATION
80%	.34 7>4" 5	MOD HD – HD	MED. GRN GRY	0–52' Fine-grained, well-sorted, thinly laminated to medium-bedded, dense, calcareous (waterlain) tephra. Tectonic brecciation as noted to right.			frac-slip @ 30' w/ c. xln open-space (water course) $CaCO_3$ at 10', 45', 60'; w/very minor smec/ill con's. set of frac's @ opposing 40° bedding/laminations 60°	0–23' Med. g. py + $CaCO_3$ + grn chl. clay on frac's
107%	.70 3>4" 8		S.A.A. w/pink tint		5		6-7' crackle bx	
93%	.75 9>4" 13		MED GRN GRY		10		8.5–9.5' crackle-to fault bx w/ controlling frac's @ 50' 12.5–13' fault bx w/ $CaCO_3$ + c. g. sulf. ± clay matrix	
82%	.45 5>4" 18		S.A.A. w/weak pink tint		15		bdd/lam's 50' 15–16' Crackle to fault bx	
95%	.58 5>4" 23				20		bdd/lam's 45'	
93%	.67 5>4"				25		23–25' Fault bx w/ c. xln calcite matrix 25–26.5' fault bx w/ clay ± $CaCO_3$ matrix 26.5–32' Crackle bx w/ clay/± $CaCO_3$ frac's	23–26 $CaCO_3$ flooded fault bx w/ sulf-rich frags (vults) c. xln $CaCO_3$ + minor sulf.

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
0	5	5.0'	0.015	0.03		
5	10	5.0'	0.073	0.13	0.068	
10	15	5.0'	0.008	0.08		
15	20	5.0'	0.004	0.16		
20	25	5.0'	0.016	0.46		

HOLE NUMBER D-2-94 PAGE 2 OF

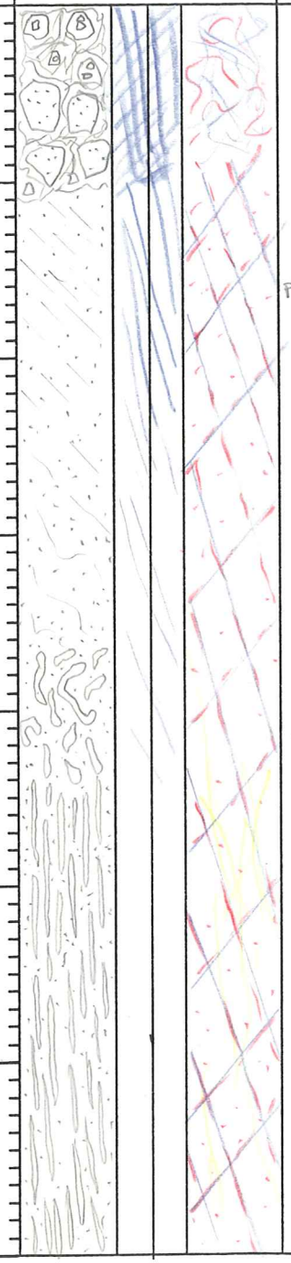
%REC	RQD	LITHOLOGY			FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
	28	MOD HD – HD	S.A.A., w/ inter. pink tint					26–32' Crackle bx w/ 20, 40, 70° $CaCO_3$ + py + chl, microstkwk very minor smec/ill; predom. pale to med grn waxy clay.
90%	.56 6>4" 33	MOD			30		32–36' fault bx w/ angular clasts in clay + $CaCO_3$ matrix 20–30° frac's	32–36' sulf clasts angular to rounded in $CaCO_3$-rich fault matrix
94%	.55 8>4" 43	MOD HD – HD			35		bd / lam's @ 80–90' 36–45.5 frac'd to loc. crackle bx	36–45.5' $CaCO_3$ + py + pale grn waxy sliched clay in 0–30° (predom) frac's.
					40		bd / lam's @ 30–35'	
80%	.32 7>4" 53	MOD SOFT – MOD MATRIX & MOD HD FRAGS	pink & gry w/ pale to med sage grn matrix	52–62.5' Poorly-sorted, matrix-supported, coarse (fragment size) grained tuff breccia w/ angular to subrounded clasts of f. g. tephra in a f. g. matrix of similar composition. Tectonic brecciation as noted to right	45		45.5–65.5 fault bx w/ angular frag's (matrix & clast-supported) in clay ± loc. $CaCO_3$ matrix principal frac's @ 15'	45.5–65.5' Clayey gouge matrix ± $CaCO_3$ w/ minor smec/ill discond. sulf-bearing str.
74%	.17 7>4"				55			
					60			

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
25	30	5.0'	0.004	0.09		
30	35	5.0'	0.001	0.05		
35	40	5.0'	0.003	0.04		
40	45	5.0'	0.007	0.13		
45	50	5.0'	0.004	0.05		
50	55	5.0'	0.004	0.04		
55	60	5.0'	0.004	0.04		

HOLE NUMBER D-2-94 PAGE 3 OF

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
	63	S.A.A. / S.A.A. / banded gry & pink to tan / Mod HD - HD	65		planar lam's @ 45°	65.5-111.5' $CaCO_3$ + py (as pseudo morphs after f. to c. xln marc.) ± chl clay + << smec/ill @ 20', 40' & < 80-70°; <1 to 2% diss. v.f.g. cubic py
	72	62.5-78.5' Planar-laminated, fine-grained, well-sorted, rhythmically graded bedding, dense, calcareous (waterlain) tephra. / banded & mottled pale grn gry & pink	70			
	81	78.5-111.5' Thin, wavy laminated and bedded, soft-sediment deformed, contorted, folded streached fine-grained clayey (pale green) and fine-grained siliceous (pinkish grey) waterlain tephra	75			78.5' ↓ weakly silic & carbonate flooded
	91		80			
			85			
			90			
			95			



ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
60	65	5.0'	0.002	0.02		
65	70	5.0'	0.002	0.03		
70	75	5.0'	0.002	0.03		
75	80	5.0'	0.007	0.03	0.008	
80	85	5.0'	0.006	0.03		
85	90	5.0'	0.003	0.03		
90	95	5.0'	0.002	0.03		

HOLE NUMBER D-2-94 PAGE 4 OF

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
	101	MOD HD — HD; banded to mottled pinks/pale grn	100			
	111	MOD HD; PALE PINK MATRIX w/ CREAM CLASTS	105		frac's @ 30'	
95.5%	.84 11 > 4"	111.5'–135' Coarse-grained, poorly-sorted, matrix-supported tuff breccia, w/ a siliceous fine-grained matrix and angular weakly clay altered clasts from ash to >>core axis diam. Pervassive clear SiO_2 micro hairline stockwork w/ thin SiO_2 reaction rims on clasts. v.Fine-grained cubic py diss. thru-out. Clasts composed predom. of fine-grained tephra, loc. displaying planar lam. & bedding as noted:	110		111.5–135' weak frac's @ 40' & 5' w/ v.v. minor smec/ill	111.5–135' $CaCO_3$ stkwk @ 20 & 50' (co-eval) w/ massive f.g. py + Tr spl. hairline up to 0.2" hairline - discont. SiO_2 w/in matrix/clasts 2-3% total py, w/ loc. concentrations of diss py in bx clasts.
	121		115		118-120' Lam's @ 15'	
93%	.66 10 > 4"		120		123-126' lam's in clasts @ 50'	
			125			
			130			

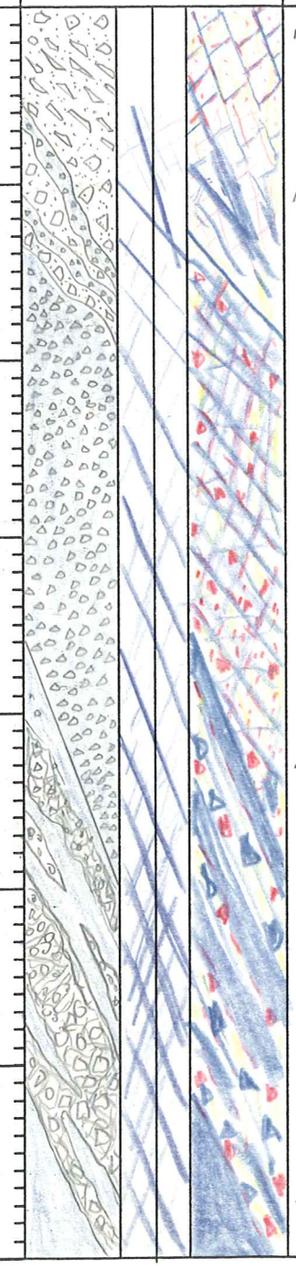
ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
95	100	5.0'	0.004	0.03		
100	105	5.0'	0.004	0.03		
105	110	5.0'	0.006	0.03		
115	120	5.0'	0.007	0.04		
120	125	5.0'	0.007	0.04		
125	130	5.0'	0.002	0.04		
135	140	5.0'	0.003	0.04		

HOLE NUMBER D-2-94 PAGE 5 OF

%REC	RQD	LITHOLOGY	FT	STRUCTURE	ALTERATION AND MINERALIZATION
	131	MOD HD S.A.A. ↓ MED GRY MATRIX & V. LT GRY CLASTS		131-134' Fabrix w/in tuff bx w/ elongated clasts flow-aligned @50° slicked $CaCO_3$+py hairline @15-20'	
98.5%	.925 12>4"	135-151' SAME AS ABOVE w/ Carbonate flooded fault breccia - healed fault bx - matrix (carbonate) to clast-supported; clasts appear to be heterolithic	135	135' bx contact @ 15° + $CaCO_3$ healed fault bx w/ princ. frac's @40°	135-151' $CaCO_3$ ±py stkwk w/ princ. vns @ 40° diss. f. g. py w/in clasts & $CaCO_3$ unlts. & as sml clasts minor SiO_2 microhairline unlt & kwk w/in clasts. v. wk clay alt. of clasts
	141	PALE PINK-GRY MATX W/ PALE GRY CREAMS GRY CLASTS	140		
99%	.955 9>4"		145		147± Incr. diss. f. g. py up to 2-3%
	151	151-166' Fault breccia w/ $CaCO_3$ veins. Fine-grained clast-supported ↓ 155'; coarse-grained clast-supported 155-166' Angular clasts of tuff bx & tuff ± $CaCO_3$ & sulf. in carbonate ± clay gouge matrix	150	151' Fault contact w/ c. xln open-space $CaCO_3$ @20° → f. to c. grd. angular frags & in clay gouge ± $CaCO_3$ matrix, Clast-supported	151-166' Coarse-grained open-space (water course) dog's tooth Calcite ± minor py; sulfide clotts / clasts, $CaCO_3$ * clasts,
72%	.265 6>4"	MOD SOFT-MOD W/ MOD HD $CaCO_3$ VNS; WHT $CaCO_3$ + CREAM, PINK, GRY BX	155	153-156' Fault occupied by c. xln open-space Calcite. loc. $CaCO_3$ as clasts w/in fault bx	155± Marked incr. in smec/ill w/in fault bx on discont. n&n & frac's
	161	MOD + MOD HD $CaCO_3$	160		* smec/ill + marc + py ± minor f. g. Q
71%	.285 6>4"		165	163-166 Fault zone filled w/ c. xln open-space white barren Calcite	

GRAPHIC LOG



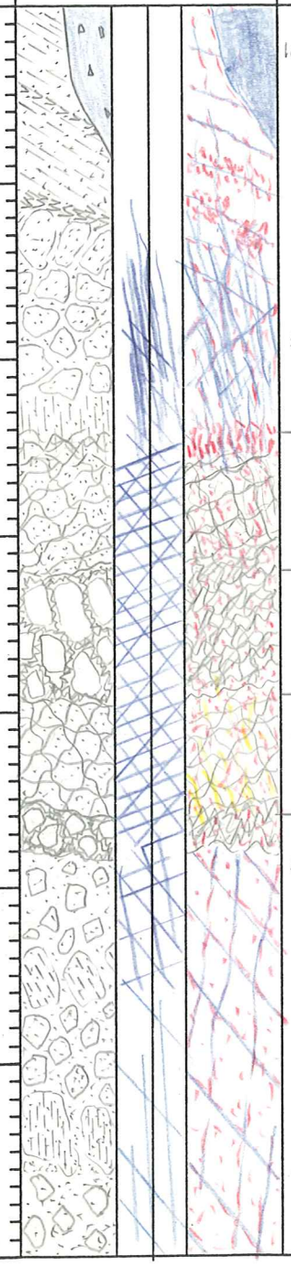
ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
130	135	5.0'	0.003	0.04		
135	140	5.0'	0.003	0.03		
140	145	5.0'	0.008	0.02		
145	150	5.0'	0.005	0.04		
150	155	5.0'	0.015	0.05		
155	160	5.0'	0.009	0.06		
160	166	6.0'	0.007	0.06		

HOLE NUMBER D-2-94 PAGE 6 OF

%REC	RQD	LITHOLOGY	FT	STRUCTURE	ALTERATION AND MINERALIZATION
78.5%	.66 10>4"	MOD+ MOD HD CaCO3 / S.A.A. w/ CREAM DOM. — 166-177' Fine-grained, well-sorted, planar-laminated, trough-cross-laminated (ripple marks) and soft-sediment deformation & kink folding: 167.5 – 60° planar; trough x-lam.; 60° planar; chevron-kink folded; 168' – 60° planar. breccia 172-176'	170	166' Fault contact @ 5° w/ C. xln. open-space $CaCO_3$ above & frac'd Carb. flooded tuff below; frac's @ 40° & 70°	$CaCO_3$ + py ± minor spl. @ 60° (coincident w/ lam's) and @ 5-15'; loc. concentrations of f.g. diss. py
51%	.00 0>4"	MOD SOFT + MOD / GRY w/ DK GRY TO BLK MATRIX — 177-189' Fault breccia w/ dark grey to black clayey organic carbon-rich matrix 177-181' & 184.5-188' w/ smec/ill rich matrix 181-184.5'. Host-rock is f.g. laminated tephra a.a.	175, 180	organic carbon + smec/ill + high Z yellow py-ohedrons; smec/ill (argillic alt) + high Z yellow py-ohedrons; organic carbon + smec/ill + high Z yellow py-ohedrons + minor v.f.g. open-space Q + tarnished soft py bands	C. xln marc. → black sooty clayey pseudomorphs, O.C. → repl. marc → oxide + clay; 177-188' dk grey to blk organic carbon + smec/ill + bright (high Z) yellowish py-ohedrons (abund); mod. to intensely clay altered groundmass, minor SiO_2 w/ organic carbon - smec/ill matrix; 181-184.5 strong argillic alteration.
80.5%	.55 8>4"	MOD HD & LOC. MOD (CLAY ALT) / Lt. PINKISH GRY — 189-210.5' Sandy textured, fine-grained, planar-laminated well-sorted pink tephra and tuff breccia composed of tephra fragments; clast-supported at top & ing ↓ to matrix-supported and apparently heterolithic ↓, incr. reaction rims w/in clasts ↓.	185, 190, 195, 200	Slicks on frac's @ 40, 70, 5'	189-210.5 $CaCO_3$ + py at 40-50°; 5-10° ± microbx; 191-193' C. xln. cubic py in $CaCO_3$ vnlts + pale grn waxy → smec/ill clay. 2-4% diss. py incr. ↓ Slicks on 40-50° & 5-10° w/in $CaCO_3$ + py ± marc.

GRAPHIC LOG



ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
166	170	4.0'	0.004	0.06		
170	173	3.0'	0.004	0.04		
173	177	4.0'	0.014	0.20		
177	181	4.0'	0.037	1.21		
181	184.5	3.5'	0.024	0.40	0.025	
184.5	188	3.5	0.039	2.88		
188	193	5.0'	0.245	4.45	(grav) 0.210	.184 2.44
193	198	5.0'	0.165	0.42	(grav) 0.157	
198	203	5.0'	0.095	0.60	(grav) 0.090	

HOLE NUMBER D-2-94 PAGE 7 OF

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
95.5%	.675 14 > 4" 208	S.A.A. / S.A.A / Lt. GRY / PINKISH GRY	205			
77%	.475 6 > 4" 217	SOFT / MOD SOFT / MOD; banded HD & MOD; GRY, BLK WHT 210.5 - 222.5' Fault breccia w/in f.g. tephra and tuff breccia above. strongly sheared w/ princ. orient. @ 30°, 80°, 30°, 20° bounding stx's @ 30°; silicified stkwork (SiO_2 healed fault) 216 - 218.6'; black organic-carbonaceous material 217.5 - 222.5' - commonly slicked and assoc. w/ wht smec/ill.	210 215			210-212' py repl. of c.xln marc. in $CaCO_3$ + smec/ill vnlts 210.5 - 222.5 pervassive clay alteration + mod. sulfid atm. (no carbonate) discont. sulf & smec/ill vnlts,
85%	.55 9 > 4" 226	MOD SOFT; MOD - MOD HD; CREAM / Lt Pink GRY 222.5 - 224' Strong clay alteration and fracturing w/in tuff breccia as below. w/ smec/ill ± Q ± marc ± minor py on 20° & 60 stkwk ± blk carbonaceous coatings on marc.	220 225		organic carbon + smec/ill + cubic py ± marc.	216 - 218.6' Clear to lt. blue chalc. Q & open-space Q stkwork on 15-20° princ. orient. + py + marc + py repl. of marc.
84.5%	.54 10 > 4"	MOD SOFT; MOD - MOD HD; MOD HD - TO HD w/ LOC. MOD 224 - 260' Coarse-grained, poorly-sorted, matrix- & clast-supported tuff-breccia, strongly frac'd and silica healed 224-253' w/ SiO_2 micro & vnlt stkwk;	230 235		probably fault bx that is healed w/ SiO_2 flooding ↓ 230 - 245 Hydrothermal bx after tectonic bx	222.5 - 224' smec/ill > marc > Q > py + Tr sphl
						230 - 249 Pervassive Silic. open-space - vuggy w/ SiO_2 + marc + py + smec/ill frac-filling matrix, composed of clear chalc. & open-space Q

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
203	206.5	3.5	0.046	0.88		
206.5	210.5	4.0'	0.082	4.19	(grav) 0.088	
210.5	215	4.5'	0.023	0.64	0.016	
215	219	4.0'	0.068	1.74	(grav) 0.066	
219	222.5	3.5'	0.026	0.81		
222.5	225	2.5'	0.015	1.26		
225	230	5.0'	0.014	0.81		
230	235	5.0'	0.007	0.53		

HOLE NUMBER D-2-94 PAGE 8 OF

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
	235.5	S.A.A. MED PINKISH GRY				
	.85					
98%	12 >4"		240			241-243' @40-50° 8-10/ft Q > smec/ill > marc > py > cpy > sulfosalts may have been pyrr cbn
	244.5		245			
	.87					
94%	10>4"		250			Minor smec/ill > Q > sulf @ 30 & 80°
	253	MED TO DK PINK W/PALE GRN CLASTS				
	.71	MOD-MOD HD	255			
93%	9>4"					
	260		260			
		END OF HOLE @ 260'				

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
235	240	5.0'	0.009	0.46		
240	245	5.0'	0.009	1.74		
245	250	5.0'	0.008	0.15		
250	255	5.0'	0.004	0.08		
255	260	5.0'	0.012	0.12		

ANALYSIS REPORT

American Assay Laboratories Inc.

P.O. BOX 71060
RENO, NV,,U.S.A.,
Ph.1-702-356-0606, Fax.1-702-356-1413
Telex:

HECLA MINING CO.

COPIES TO : CHARLIE MUERHOFF

:

:

:

POSTED

CLIENT REFERENCE No: D-2-94

LABORATORY JOB No. : SP029879

SAMPLE TYPE :

RECEIVED : 7/07/94

REPORTED : 15/07/94

No. SAMPLES : 55

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au(OZ)	FA60	15%	OPT	0.001
Au(RZ)	FA60	15%	OPT	0.001
AuGRAV	GRAV	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Sue Faircloth M.S.

AMERICAN ASSAY LABORATORIES
ANALYSIS REPORT

American Assay Laboratories Inc.

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : D-2-94
JOB NUMBER : SP029879
REPORTED : 15/07/94

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-2-94 000-005	0.015			0.03
D-2-94 005-010	0.073	0.068		0.13
D-2-94 010-015	0.008			0.08
D-2-94 015-020	0.004			0.16
D-2-94 020-025	0.016			0.46
D-2-94 025-030	0.004			0.09
D-2-94 030-035	0.001			0.05
D-2-94 035-040	0.003			0.04
D-2-94 040-045	0.007			0.13
D-2-94 045-050	0.004			0.05
D-2-94 050-055	0.004			0.04
D-2-94 055-060	0.004			0.04
D-2-94 060-065	0.002			0.02
D-2-94 065-070	0.002			0.03
D-2-94 070-075	0.002			0.03
D-2-94 075-080	0.007	0.008		0.03
D-2-94 080-085	0.006			0.03
D-2-94 085-090	0.003			0.03
D-2-94 090-095	0.002			0.03
D-2-94 095-100	0.004			0.03
D-2-94 100-105	0.004			0.03
D-2-94 105-110	0.006			0.03
D-2-94 110-115	0.007			0.04
D-2-94 115-120	0.007			0.04
D-2-94 120-125	0.007			0.04

POSTED

AMERICAN ASSAY LABORATORIES
ANALYSIS REPORT

American Assay Laboratories Inc.

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : D-2-94
JOB NUMBER : SP029879
REPORTED : 15/07/94

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-2-94 125-130	0.002			0.04
D-2-94 130-135	0.003			0.04
D-2-94 135-140	0.003			0.03
D-2-94 140-145	0.008			0.02
D-2-94 145-150	0.005			0.04
D-2-94 150-155	0.015			0.05
D-2-94 155-160	0.009			0.06
D-2-94 160-166	0.007			0.06
D-2-94 166-170	0.004			0.06
D-2-94 170-173	0.004			0.04
D-2-94 173-177	0.014			0.20
D-2-94 177-181	0.037			1.21
D-2-94 181-184.5	0.024	0.025		0.40
D-2-94 184.5-188	0.039			2.88
D-2-94 188-193	0.245		0.210	4.45
D-2-94 193-198	0.165		0.157	0.42
D-2-94 198-203	0.095		0.090	0.60
D-2-94 203-206.5	0.046			0.88
D-2-94 206.5-210.5	0.082		0.088	4.19
D-2-94 210.5-215	0.023	0.016		0.64
D-2-94 215-219	0.068		0.066	1.74
D-2-94 219-222.5	0.026			0.81
D-2-94 222.5-225	0.015			1.26
D-2-94 225-230	0.014			0.81
D-2-94 230-235	0.007			0.53

POSTED

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT

American Assay Laboratories Inc.

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : D-2-94
JOB NUMBER : SP029879
REPORTED : 15/07/94

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-2-94 235-240	0.009			0.46
D-2-94 240-245	0.009			1.74
D-2-94 245-250	0.008			0.15
D-2-94 250-255	0.004			0.08
D-2-94 255-260	0.012			0.12

POSTED