6000 0826

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-23-94
AUTHOR	C. Wireteer; C. Muerhoff; S. Fairclotk
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 South Zone
COMMODITY If not obvious	gold; silver
NOTES	Drill logs; geology; assay; total depth 199'; receipt; handwritten notes 11 p.

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 5/1/08
Initials Date

DB:
Initials Date

SCANNED:
Initials Date

Revised: 1/22/08

D-23-94

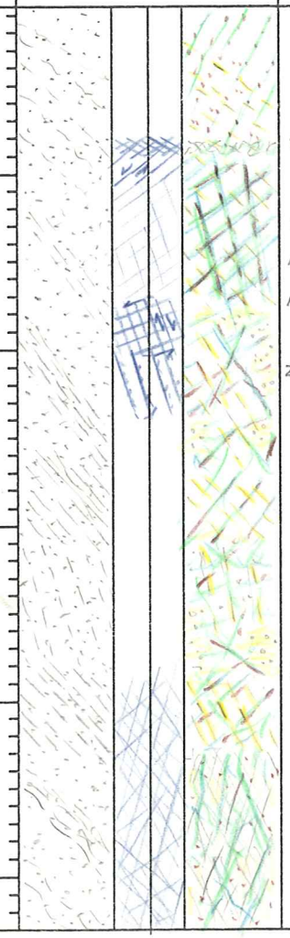
60000826
4010

6000 0826

Hecla
MINING COMPANY

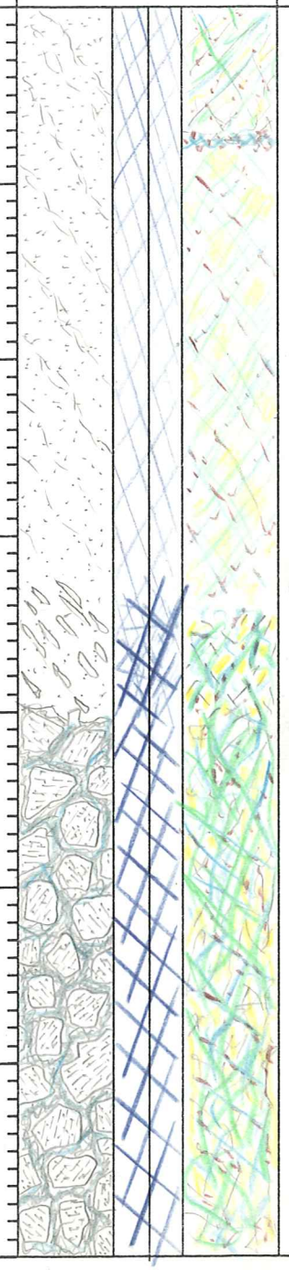
ROSEBUD PROJECT
DIAMOND DRILL LOG

HOLE NUMBER	D-23-94	LOCATION	South Zone	REMARKS	ORIENTATIONS STATED AS
PAGE 1 OF 4		NORTHING	2203563.8		∡ TO CORE AXIS; CORE PHOTO'D;
DATE	8-30-94	EASTING	481481.4		WHOLE CORE ASSAY SAMPLES; COLLAR
LOGGED BY	CB WINETEER	ELEVATION	4705.5		LOC. DRILL STA. No. 8; SECTION
SCALE	1" = 10'	AZIMUTH	125.0°		450 N;
TOTAL DEPTH	199'	INCLINATION	+0°		

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		0-83' Fine to medium grained, well-sorted planar & wavy laminated, well indurated, greenish grey, pinkish grey waterlain tephra/tuff. 0-10 faint planar & wavy lam. @ 60°; 10-26' generally massive w/ loc. 45° planar lam's.; 26-31' planar-lam. @ 45°; 31-38' Faint planar-lam. @ 20°; 38-48' planar-lam. @ 43°; 43-83' med. bd w/ crude to faint wavy lam's @ 40°	10, 20, 30, 40, 50		4.5-7.0' Minor red hem stn w/ chl-calcite vnlts @ 20° 8-9' Crackle & fault bx w/ angular frags in clay gouge matrix on 55°, 60° stx's 9-10.5' slicks & microbx on 50° stxs. 10.5-17' Dense frac's @ 55° & 20° w/ $CaCO_3$ + chl + py coatings 17-20.5' Crackle bx & fault bx w/ grey & green clayey slicks @ 20° & 70° 20.5-24' slicks & microfault bx on 20° stx's 38-90+ healed crackle and fault breccia w/ $CaCO_3$ flooding & pale green gouge clays principal stx's @ 15°; 30°, & parallel to bdd. plane high density of frac's 20 to +50/ft. w/ variety of frac-filling	0-9' discont. microhairline SiO_2 bd plane str. w/ clayey alt. halo's; $CaCO_3$ + chl + py microstringers roughly ⊥ to bdd.; wk py-ir. Tr to loc. 2%; wk arg.; wk silic. $CaCO_3$ x-cut's SiO_2 (early diagenetic SiO_2) 8-9' wk arg. + ill on frac's. 9-17' S.A.A. in 0-9' 17-43' silic. incr. slightly in bd plane parallel bands alternating w/ weak arg. alt. or as weakly silic. g.m. w/ irreg shaped ⇧ arg. clotts in massive bedded tuff, silic. x-cut by chl/$CaCO_3$/sulf. micro str. roughly ⊥ wk py-ir (Tr-1%) 43-57' $CaCO_3$ + chl ± ill ± py flooded crackle/fault bx w/ wk silic.; wk py-ir (1%) wk to mod. arg.; illitic clay w/ v.f.g. cubic py

FROM	TO	W	Au	Ag	Au2	Ag2
0	5	5.0'	<.001	<.03		
5	9	4.0'	<.001	<.02		
9	14	5.0'	<.001	<.02		
14	20	6.0'	<.001	<.02		
20	25	5.0'	<.001	<.02		
25	30	5.0'	.009	<.02		
30	35	5.0'	<.001	<.02		
35	40	5.0'	<.001	<.02	<.001	
40	45	5.0'	<.001	.02		
45	50	5.0'	.001	.02		

HOLE NUMBER D-23-94 PAGE 2 OF 4

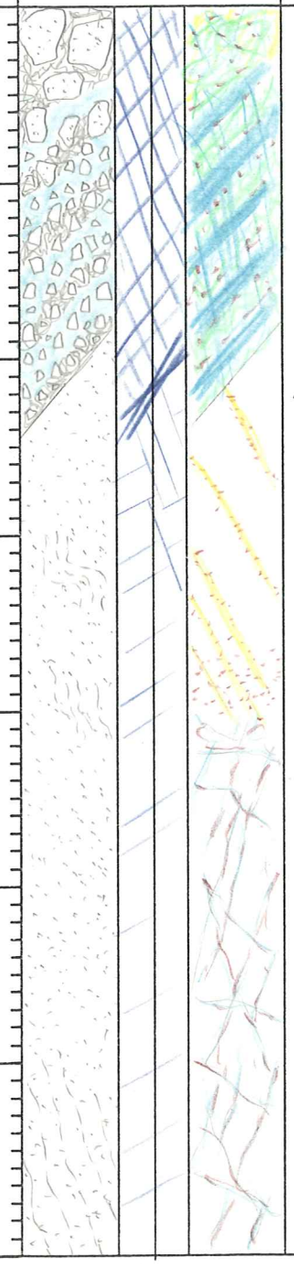
%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		83-90' Fault breccia & crackle breccia w/in lithic tuff, flow-laminated, coarse grained (clasts) in a fine-grained tuffaceous matrix; elongated lithic fragments of planar & wavy laminated fine-grained, well-sorted tephra/tuff. 90-125' Fault breccia w/ planar, wavy, and planar cross-laminated fine-grained, well-sorted, waterlain tephra/tuff. Orientation of lamination variable, DRILL NOTE: H_2O @ 115' UNKNOWN QUANTITY	60 70 80 90 100 110 120		83-90' Crackle & fault bx w/ principal stx's 15-20° & 50° 90-125' Clasts-supported crackle-fault bx w/ princ. stx's @ 20° & 50° w/ pale green slicked clay gouge in stkwk in part flooded by C. xln $CaCO_3$	57-58' $CaCO_3$ + brassy py + ill clay flooded tectonic bx 58-83' wkly silic. pink g.m. w/ x-cutting chl/$CaCO_3$ ± py micro stkwk w/ clay (chl) alt. halo's - silvaages weak py-i? (Tr-1%); wk arg.; minor illitic frac-coatings; minor $CaCO_3$ + brassy py ⊥ to bd & ∥ to bd. 83-90' incr. $CaCO_3$ + chl flooding of fault bx's; patchy-spotty silic. & arg. of g.m.; wk py-i? (Tr-1%); discont. irreg. ill ± v.f.g. cubic py; $CaCO_3$ + f.g. cubic py ± py f.d. marc ± Tr ga. 90-125' Mod. silic. + mod arg. g.m. (alternating); wk py-i? (Tr); mod. intense discont. ill stringer cut by frac's w/ pale green gouge & late-stage $CaCO_3$; loc. py clots pred. on bd. planes, sugary sandy pink texture

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
50	55	5.0	<.001	.02		
55	60	5.0	.001	.03		
60	65	5.0	<.001	.02		
65	70	5.0	<.001	<.02		
70	75	5.0	<.001	.02		
75	80	5.0	<.001	<.02		
80	85	5.0	<.001	.02		
85	90	5.0	<.001	<.02		
90	95	5.0'	<.001	<.02		
95	100	5.0'	<.001	<.02		
100	105	5.0'	<.001	<.02		
105	110	5.0'	<.001	<.02		
110	115	5.0'	<.001	.03		
115	120	5.0'	.003	.03		

HOLE NUMBER D-23-94 PAGE 3 OF 4

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		125-141.5' Fault breccia w/ chloritized angular fragments in a chloritic clay gouge matrix w/ coarse-grained late-stage calcite veinlets up to 4.0" in true thickness.	130			125-141.5' Similar to above w/ $CaCO_3$ in 0.5 to 4.0" units ? incr. in size? abundance ↓. material below $CaCO_3$ uns is fault bx w/ angular chloritized clasts & green clay gouge w/ incr. py-fg. 1-2% f. to m.g. cubic py
		Dover Tuff. 141.5 - 199' Fine-grained, dense, siliceous, massive to crudely-faintly flow-laminated aphanitic, grey to greenish-grey tuff	140		141.5-142 Slicks w/ micro bx @ 30°, 30° & 45° sparse slicks @ 20° & 65° w/ chl + py .3 to .5/ft. to TD.	141.5-159' Minor to mod. hairline frac's w/ SiO_2 + py salvages @ 30°
		DRILLER NOTE: 50 gpm H_2O @ 159' Redrill 159-159.5'	150			
			160			159-199' Minor to mod. microvnlts of $CaCO_3$ ± py ± hanc ± ill @ 30-65° in stkwk
			170			
			180			
			190			



ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
120	125	5.0'	.033	.02	.055	
125	130	5.0'	.068	.12	.070 (g)	
130	135	5.0'	.002	<.02		
135	141.5	6.5'	.003	<.02		
141.5	146	4.5'	<.001	<.02		
146	151	5.0'	<.001	<.02		
151	154	3.0'	<.001	<.02		
154	159	5.0'	<.001	<.02		
159	164	5.0'	.001	<.02		
164	169	5.0'	<.001	<.02		
169	174	5.0'	<.001	<.02		
174	179	5.0'	<.001	<.02		
179	184	5.0'	<.001	<.02		
184	189	5.0'	<.001	<.02		

HOLE NUMBER D-23-94 PAGE 4 OF 4

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
							189	194	5.0'	<.001	<.02		
							194	199	5.0'	<.001	<.02		
		END OF HOLE @ 199'											

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-23-94 DATE: 8-30-94 LOGGED BY: RK. PAGE 1 OF 3

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	10	70	88	.47	3.8'	1925	3.5	15'/80'	K-S	.05" $CaCO_3$ + py				
10	20	77	89	.65	14.9'	3300	3.0	15'/30'	S	.05-.01" $CaCO_3$+chl+ py				
20	28	55	75	.33	23.7'	3000	3.0	55'	R	.01-.05" $CaCO_3$+ chl +py				
28	38	80	91	.63	36.9'	1950	3.0	65'/5'	S	.01-.05" $CaCO_3$+ chl+ py				
38	48	52	79	.43	46'	1500	3.3	55'/30'	S	.01" py + $CaCO_3$ +chl.				
48	58	52	82	.28	49'	1950	4.5	70'/40'/10'	S	.01-.05" $CaCO_3$+chl+py ill+py				
58	61	26	77	0	No Mat	Suitable	+10	70'/30'/15'	S-R	.01-.05 $CaCO_3$+ chl+ py ± ox				
61	70	22	64	.09	No Mat	Suitable	+10	50'/15'	S	.01" $CaCO_3$+chl+py				
70	80	59	78	.16	71	2325	4.7	25'	K-S	.01" $CaCO_3$+chl±py				
80	90	36	77	.18	89.2	1425	+10	50'/25'	S/R	.01-0.5" chl+py				
90	95	10	61	0		0	8	55'/15'	S/R	.01-.05" green chl. clay				

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-23-94 DATE: 8-31-94 LOGGED BY: RK PAGE 2 OF 3

DRILL RUN FROM	DRILL RUN TO	SOLD 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)
95	105	67	83	.49	98.7'	1200	5.0	55'/15'	S/S	.01-.05" pale green wavy clay/ illite clay				
105	115	42	78	.20		0	3.5	50/25'	S/S	.01" chl clay/ ill clay				
115	125	39	78	.15		0	7.3	35'	S	.01 chl/ill clay				
125	135	23	74	.14		0	+5	35'	R	Fault bx .05-+1.0" green chl clay gouge				
135	139	15	67	0		0	+2	30'	R	Fault bx 1-3" grn gouge-clay				
139	142	15	47	0		0	+2	30'	R	$CaCO_3$ vns in fault bx green clay gouge				
142	147	96	100	.76	145.8'	8025	2.0	20-30' ↓ 65'	S	.01" $CaCO_3$+chl.				
147	155	98	98	.92	152'	6000	0.4	65'	S	.01" ill + py				
155	159	60	70	.33	156.4'	5100	1.0	35'	R	.01" ill + $CaCO_3$				
159	169	105	110	.99	165.8'	5475	0.5	60'	S	.01" ill + $CaCO_3$+py				
169	178	86	86	.78	171.5'	5400	0.3	50'	S	.01-.05" $CaCO_3$ +ill+py				

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-23-94 DATE: 8-31-94 LOGGED BY: RK PAGE 3 OF 3

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)
178	189	85	85	.75	181.2'	4200	0.5	30°	S	.005" py + chl				
189	199	95	96	.89	194'	5250	.03	65°	R	.005" py				

SAMPLE SUBMITTAL FORM

American Assay Laboratories Inc.

Sparks Office
1500 Glendale Ave.
Nevada 89431
Box 71060
Reno, NV. 89570
Telephone
(702) 356-0606
Fax
(702) 356-1413

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

Company: HECLA MINING CO.

Address:

Telephone Number: ( ) Fax Number: ( )

Project Name: ROSEBUD Purchase Order Number:

Transport Company: Waybill Number:

Date Shipped: Number of Packages: 40 [ ] Prepaid [ ] Collect

8-31-94

ANALYSIS REQUIRED

SAMPLE			TYPE	ELEMENTS REQUIRED
D-23-94 0-5	75-80	151-154	CORE	2 AT FIRE ASSAY Ag & Au
5-9	80-85	154-159		w/ HECLA ROSEBUD
9-14	85-90	159-164		CUSTOM PREP
14-20	90-95	164-169		
20-25	95-100	169-174		
25-30	100-105	174-179		* GRAV FINISH ON ALL
30-35	105-110	179-184		Au ≥ 0.05 opt
35-40	110-115	184-189		
40-45	115-120	189-194		
45-50	120-125	194-199		
50-55	125-130			
55-60	130-135			
60-65	135-141.5			
65-70	141.5-146			
70-75	146-151			

COARSE REJECTS (Normally Discarded)

[ ] Return COD after analysis complete
[ ] By prior arrangements

PULPS (Normally Stored Free For One Month)

[ ] Discard after one month
[ ] Return COD after one month
[ ] By prior arrangements

RESULTS AND INVOICES TO BE SENT TO:

Please mark invoice person and address [I]

(1) Charlie Muerhoff

(2)

(3)

Comments:

GB / sf

CLIENT FILE COPY

ANALYSIS REPORT

American Assay Laboratories

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
:
:
:

CLIENT REFERENCE No: D-23-94
LABORATORY JOB No. : SP030770
SAMPLE TYPE :

RECEIVED : 6 SEP 1994
REPORTED : 14 SEP 1994
No. SAMPLES : 40

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

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : D-23-94
JOB NUMBER : SP030770
REPORTED : 14 SEP 1994

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-23-94 0-5	<0.001			0.03
D-23-94 5-9	<0.001			<0.02
D-23-94 9-14	<0.001			<0.02
D-23-94 14-20	<0.001			<0.02
D-23-94 20-25	<0.001			<0.02
D-23-94 25-30	0.009			<0.02
D-23-94 30-35	<0.001			<0.02
D-23-94 35-40	<0.001	<0.001		<0.02
D-23-94 40-45	<0.001			0.02
D-23-94 45-50	0.001			0.02
D-23-94 50-55	<0.001			0.02
D-23-94 55-60	0.001			0.03
D-23-94 60-65	<0.001			0.02
D-23-94 65-70	<0.001			<0.02
D-23-94 70-75	<0.001			0.02
D-23-94 75-80	<0.001			<0.02
D-23-94 80-85	<0.001			0.02
D-23-94 85-90	<0.001			<0.02
D-23-94 90-95	<0.001			<0.02
D-23-94 95-100	<0.001			<0.02
D-23-94 100-105	<0.001			<0.02
D-23-94 105-110	<0.001			<0.02
D-23-94 110-115	<0.001			0.03
D-23-94 115-120	0.003			0.03
D-23-94 120-125	0.033	0.055		0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : D-23-94
JOB NUMBER : SP030770
REPORTED : 14 SEP 1994

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-23-94 125-130	0.068		0.070	0.12
D-23-94 130-135	0.002			<0.02
D-23-94 135-141.5	0.003			<0.02
D-23-94 141.5-146	<0.001			<0.02
D-23-94 146-151	<0.001			<0.02
D-23-94 151-154	<0.001			<0.02
D-23-94 154-159	<0.001			<0.02
D-23-94 159-164	0.001			<0.02
D-23-94 164-169	<0.001			<0.02
D-23-94 169-174	<0.001			<0.02
D-23-94 174-179	<0.001			<0.02
D-23-94 179-184	<0.001			<0.02
D-23-94 184-189	<0.001			<0.02
D-23-94 189-194	<0.001			<0.02
D-23-94 194-199	<0.001			<0.02