60000849

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-4794
AUTHOR	C. Wineteer; C. Muerhoff; S. Fairchild
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 317' receipt; hand written notes 14p.

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-47-94

60000849
4010

66660849

Hecla
MINING COMPANY

ROSEBUD PROJECT
DIAMOND DRILL LOG

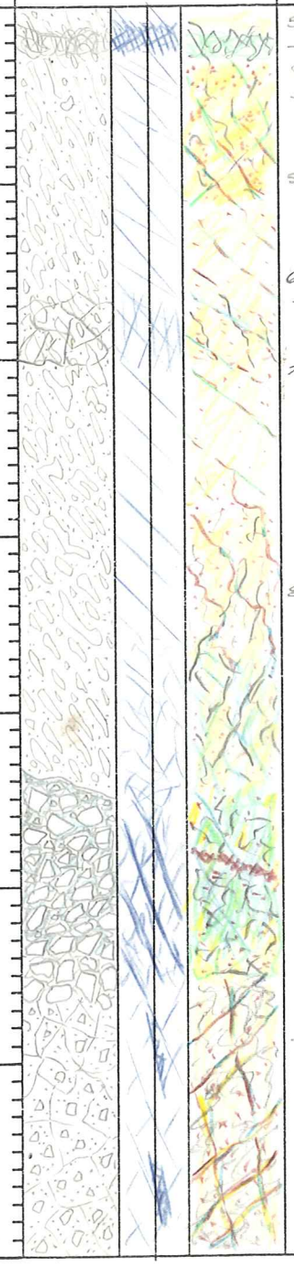
HOLE NUMBER	D-47-94	LOCATION	South Zone	REMARKS	ORIENTATIONS STATED AS
PAGE 1 OF	5	NORTHING	2,203,745.3		∡ TO CORE AXIS; CORE PHOTO'D;
DATE	9-13-94	EASTING	481,651.9		WHOLE CORE ASSAY SAMPLES;
LOGGED BY	CB WINETEER	ELEVATION	4669.4		COLLAR LOC. DRILL STA. 13; SECTION
SCALE	1" = 10'	AZIMUTH	122°		700N; NQ CORE
TOTAL DEPTH	317'	INCLINATION	-1.0°		

FROM ~~%REC~~	TO RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
0	8'	Hydrothermal breccia w/ pink chalcedonic silica matrix that x-cuts clear calcite at 30°; matrix-supported w/ argillized & wkly chloritized & pyritized fine-grained tephra fragments.			0-8.0' Fault breccia, partly healed by clear med. cxl. $CaCO_3$ & pink f.g. chalcedonic SiO_2	0-8' f.g. chalc. SiO_2 stkwk surrounding arg. wkly py-T. tephra frags.; SiO_2 x-cuts wk to mod. chl-T;
8	31'	Fine-grained tephra/tuff. Planar-laminated, well-sorted, siliceous, crackle-breccia locally. Flow-laminations at 40° 15-20'; clast-rotation evident from variable flow-lamination orientation. Apparent contact @ 35° @ 31'.	10		8-15' healed crackle bx w/ carbonate matrix - clast-supported angular frags w/ local clast-rotation.	8-31' weak to loc. mod intense silic. (in bands @ 20-30'); wk py-T (Tr-1%); wk to mod. chl-T; clean to pale grn & blue $CaCO_3$ ± chl ± py stkwk.; wk to mod. intense arg.-T.; minor py-rich micro str's
31	94'	Lithic tuff. Flow-laminated elongated fine-grained tephra/tuff fragments in a siliceous, fine-grained, tuffaceous matrix. Poorly-sorted, matrix & clast-supported flow-lamination fabric @ 15-20'	20 30 40 50		31-51' post-sulfide slicks @ 35-45' 1-2/ft.	31-51' wk silic of g/m; mod. arg-T & py-T & chl-T of clasts; py-T 1-4% loc. 3-5/ft. py + $CaCO_3$ ± ill @ 80° & 40°

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
0	8	8'	<.001	.02		
8	15	7'	<.001	.02		
15	20	5'	<.001	<.02		
20	25	5'	<.001	<.02		
25	31	6.0'	.002	.04		
31	37	6.0'	.001	.07		
37	42	5.0'	.002	.07		
42	47	5.0'	.002	.06		
47	51	4.0'	.009	.11		

HOLE NUMBER D-47-94 PAGE 2 OF 5

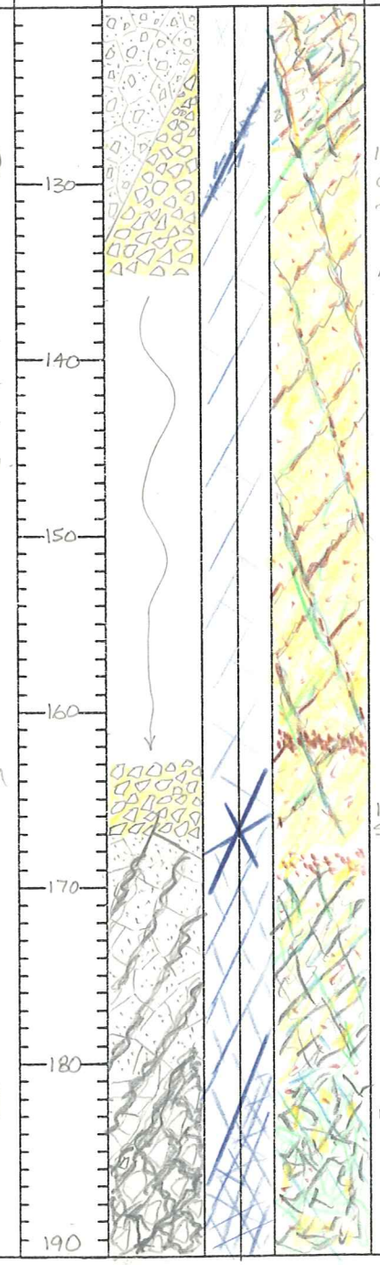
%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
			60		51-52.5' fault bx rounded to angular fragments in pale grn clay gouge & frag's of pale grn clay gouge; multiple generation tectonic movement; princ. stx's @20° 52.5-67' 2-3/ft. post-sulf. slicks @ 60, 70° & 40°	51-52.5' Arg. + chl.; wk py-T; v. wk silic.
			70		67-70' S.A.A. + 5° & 20° stx's to crackle bx 70-86' pale grn clay + py on slicks @ 45° @ 1-3/ft.	52.5-61' Mod. / intense silic - s/m; mod intense Arg + py-T of clasts; pink matrix w/ grey to pale grn clasts.; chl on frac's.; py-T 2 to 7% loc. minor disc. ill + py microst's bright diss. cubic, dimorf. py-oxidation py ± T. spl. minor 30-40° $CaCO_3$ + py ft marc. 61-78' weak silic. s/m; wk - mod. arg-T & py-T of clasts, wk chl-T.; pale to med. grn clay + py 2-4/ft @ 40-60°; <1/ft. $CaCO_3$ + py/marc.; incr. py & ill 67-70'
			80		86-94' Crackle bx w/ carbonate flooded matrix.	78-94' S.A.A. w/ incr. arg-T; py-T; silic; py-T (3-6%) carbonate flooded crackle bx + incr. discont. ill str. 86-94' - w/ bright high z dist. orted twinned py w/ ill.
			90			
94	106.5'	Fault breccia. In part flooded by fine-grained carbonate. Clast-supported, poorly-sorted w/ angular fragments of lithic tuff in a carbonate, chloritic clay gouge sulfide-rich matrix.				94-96' 0.05" $CaCO_3$ + marc. pseudomorphs w/ exsolved ss + V.G. + V.E. cloths of cpy intergrown w/ spl. 94- Mod. silic and wk arg-T of frags.; chl - Ca rich matrix; wk py-T. w/ loc. massive repl. in matrix (98.5-99') - consisting of py + py ft marc. + ss + < Rby Ag + < spl + V.G. + ill + chl.; in bands @ 45°
			100			
106.5	128	Crackle breccia. Clast-supported w/in lithic tuff breccia w/ illitic clay matrix; discontin. illitic frac-fill & fragmented sulf-carbonate-illite stringers. Siliceous pink (alun.) matrix w/ white argillized - pyritized tephra clasts. Matrix-supported, poorly-sorted lithic tuff breccia w/ a siliceous tuffaceous matrix. Thin intervals of fault bx w/ clay gouge matrix, on 10° stx's.	110		106.5-128' weak silic of pink (alun) matrix; mod intense to intense arg-T; mod intense py-T (3-10%); ND chl-T.; 4-10/ft. 0.05" discont. Q → ill + marc. ± ss ± cpy ± spl ± $CaCO_3$ (minor)	97.5-98.5' bx frag's w/ $CaCO_3$ vnlts w/ py ft marc. + cpy + spl + v. f. g. pinkish bronze color V.G. - in $CaCO_3$ & exsolved from marc. pseudomorphs. 99-106.5' mod. silic & mod to intensely arg- fragments in a chl-ic + ill-ic
			120			

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
51	52.5	1.5'	.006	.14		
52.5	57	4.5'	.005	.12		
57	62	5.0'	.006	.22		
62	67	5.0'	.006	.22		
67	71	4.0'	.002	.11		
71	74.5	3.5'	.003	.10		
74.5	78	3.5'	<.001	.16		
78	83	5.0'	.002	.05		
83	88	5.0'	.013	.10		
88	94	6.0'	.023	.63		
* 94	97	3.0'	.403	11.80	.480(g)	
* 97	100	3.0'	.413	15.60	.511(g)	
100	104	4.0'	.100	4.10	.088(g)	
104	110	6.0'	.111	.46	.102(g)	
110	115	5.0	.065	1.52	.062(g)	
115	120	5.0	.046	.86		

HOLE NUMBER D-47-94 PAGE 3 OF 5

%REC	RQD	LITHOLOGY	STRUCTURE	ALTERATION AND MINERALIZATION
128	167	silicified clast-supported hydrothermal breccia w/in fine-grained massive bedded and locally planar-laminated tephra/tuff. Angular fragments of tuff either intensely argillized or silicified in a clear finely crystalline chalcedonic SiO_2 matrix. Clast-size is generally small (<1.0cm) but frag's > core diam. occur loc..	128' dark grey sulf-rich clay gouge w/angular to rounded frags incl. c. grd. sulf. 128-167' post-sulf-ill slicks at 60' & 25-30'	128-128.3' chlorite alt on str 128-167 Hydrothermal bx w/clear SiO_2 matrix & silic. or ang. frags; py-T 2-4%; chl-T. wk on frac's & patchy in frags. 10-20/ft. frac's w/ $CaCO_3$ + py + marc.; Q → ill + marc + py; ↳ + chl + 161-161.5 Intense py-T up to 75%
167	182	Crackle to fault breccia w/in fine-to medium grained, massive to planar-laminated pink to tan and pale green tephra/tuff.	167' Sharp, fault contact w/ 25' & 60' intersecting str's	167-182' wk to mod. silic frag's mod. intense to intensely arg. frag's in a ill-chl-sulf-clay gouge matrix (bx), loc. matrix $CaCO_3$ flooded; min. frac's 10-30/ft. dom. by ill + marc/py ± $CaCO_3$ ± open-space f.s.-Q; py-T mod. 2-4% (168-168.5' @ +10%)
182	203	Fault breccia w/in fine-to medium grained massive to planar-laminated pink to tan tephra/tuff. Angular tuff fragments in a illitic-chloritic-sulfide rich matrix w/smaller rounded tuff fragments	182' high ∡ fault contact @ 20-25' & 203' fault bx w/ 15', 30', 45' & 60' slicks	182-203' crackle & fault bx w/ frag's that are wk silic; mod. to intensely arg. ± chl-ill & wk py-T.; discont. ill + py/marc >30/ft.; chl-ill-c.g. sulf-clayey gouge matrix; occ. slicked $CaCO_3$-sulf veins @ 20'



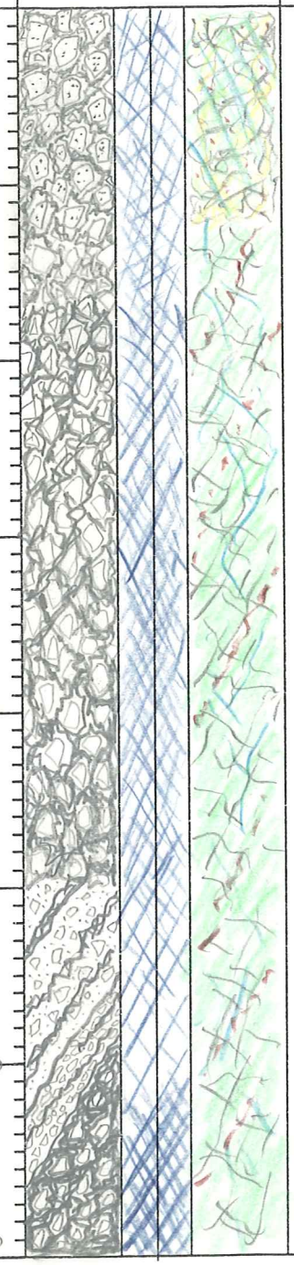
ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
120	125	5.0'	.048	.31		
* 125	128	3.0'	.223	3.26	.247(g)	
128	132	4.0'	.014	.07		
132	137	5.0'	.008	.11		
137	142	5.0'	.011	.18		
142	147	5.0'	.006	.12		
147	152	5.0'	.005	.10		
152	157	5.0'	.005	.07		
157	161	4.0'	.010	.10		
161	167	6.0'	.007	.15		
167	172	5.0'	.005	.09		
172	177	5.0'	.008	.10	.008	
177	182	5.0'	.005	.11		
182	187	5.0'	.005	.13		
187	192	5.0'	.006	.10		

HOLE NUMBER D-47-94 PAGE 4 OF 5

%REC	RQD	LITHOLOGY	FT
203	206'	Fault breccia w/ mixed lithology fragments of fine-grained (LBT) tephra/tuff and medium green chloritized lapilli tuff (Bud); clayey w/ pale green to grey sulfide-rich gouge matrix.	200
206	241'	Fault breccia w/in chloritized lapilli tuff breccia (Bud) and epiclastic reworked tuff; clast to matrix-supported, angular to rounded fragments in a chloritic-sulfide-rich green gouge matrix.	210, 220, 230
241	253'	Alternating intervals of fault breccia and lithic tuff breccia and (249-253') epiclastic reworked tuffs. Controlling stx's at 30°. Lithic tuffs are slightly porphyritic w/ clay altered feldspar x/ frags and appear to be latitic in composition.	240
253	274'	Fault breccia w/ a pyrite-chlorite-glauconite? rich clayey gouge matrix w/ angular to rounded lithic tuff breccia and carbonate-flooded fault breccia clasts: ie multiple generation tectonic movement. Sulfide-chlorite incr. ↓.	250, 260

GRAPHIC LOG



STRUCTURE

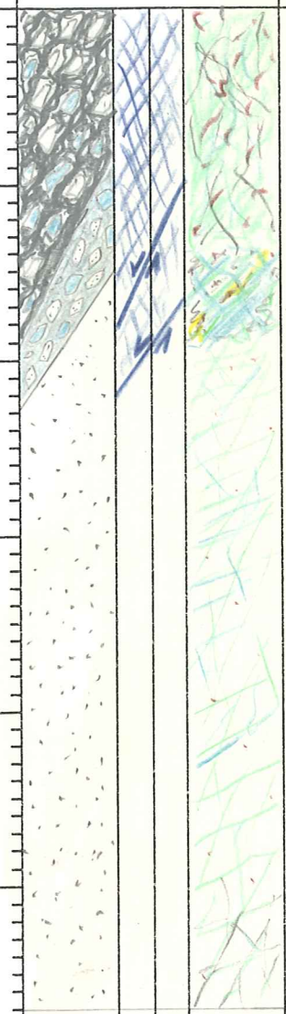
ALTERATION AND MINERALIZATION

203–274' ND. silic.; intense chl-T; mod. arg-T; w/k py-T (Tr-2%); discont. ° fragm. ill ± sulf.; loc. $CaCO_3$-barren m. to c. xln.

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
192	197	5.0'	.008	.08		
197	203	6.0'	.016	.10		
203	208	5.0'	.012	.12		
208	213		.006	.07		
213	218		.008	.04		
218	223		<.001	.03		
223	228		<.001	.03		
228	233		<.001	<.02		
233	238		<.001	<.02		
238	243		<.001	<.02	<.001	
243	248		<.001	<.02		
248	253		<.001	.02		
253	258		.001	.02		

HOLE NUMBER D-47-94 PAGE 5 OF 5

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
274	279.4	Carbonate-flooded fault breccia w/rounded fragments of fine-grained siliceous tuff (Dozer) and coarse-grained carbonate clasts. Late-stage chloritic slicks at 55°	270 280		274.0' sharp slick w/ R&G stx's @ 25° clay gouge & bx hanging; $CaCO_3$ flooded fault bx foot 279.4' Sharp slick-fault contact @ 35°	274-279.4' Fault bx w/ $CaCO_3$ - stkwk matrix ± clay/sulfide/chl. gouge. wk py-T (Tr-1%); mod arg-T of frags. minor chalc. SiO_2 banded stkwk matrix.
279.4	317'	DOZER TUFF. Fine-grained, siliceous, hard very slightly porphyritic tuff. occassional sericitized feldspar & biotite phenocrysts; very fine anhedral SiO_2 grains/phenos; very fine devitrified pumice lapilli.	290 300 310			279.4-317 siliceous (dep-diag) wk arg. + wk chl. w/ green-grey chl clay stkwk @ 80°; 30°; minor $CaCO_3$ ± FeS_2 @ 80° wk py-T (Tr-1%) f. cubic py 311-317' frac's w/ill ± py
		END OF HOLE @ 317' PLANNED TO GO TO 360'; but bad ground promted driller to quit (15' for shift). No apparent harm done.	320 330			

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
258	267	9.0'	<.001	<.02		
267	274	7.0'	<.001	.02		
274	279.4	5.4'	<.001	<.02		
279.4	287	7.6'	<.001	<.02		
287	293	6.0	<.001	<.02		
293	302	9.0'	<.001	<.02		
302	309	7.0'	<.001	<.02		
309	317	8.0'	<.001	<.02		

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-47-94 DATE: 9-13-94 LOGGED BY: CBW / RK PAGE 1 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)
0	5	24	74	.14	3	R2	>10	35°	R	micro-fault bx	3	250.5	105	2.38
5	10	88	98	.80	8	R2	1.0	60°	R	PY	8	306.5	125	2.45
10	17	98	98	.81	15	R3	0.8	85°	R	chl-py	15	253.5	105	2.42
17	27	92	97	.76	22	R3	1.9	75°	R	chl-py	22	212	80	2.65
27	37	69	94	.61	32	R1	3.2	30°/60°	R/S	PY-chl	32	249	100	2.49
37	47	78	78	.78	42	R2	1.8	30°	S	Ca-py-chl	41	286	115	2.49
47	52	62	82	.56	49	R2	3.2	30°/60°	R	microbx & Ca	49	261	110	2.37
52	57	20	75	.00	54	R1	8.6	30°	R	chl-Ca	53	324.5	135	2.41
57	67	75	93	.59	62	R2	2.5	45°	S	PY	63	241.5	100	2.42
67	77	72	93	.60	72	R2	2.2	40°	R	chl-py-Ca	72	293	120	2.44
77	87	84	94	.68	82	R2	2.0	30°	S	py-Ca	82	268	110	2.44

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-47-94 DATE: 9-13-94 LOGGED BY: CBW PAGE 2 OF 4

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)
87	97	35	89	.35	92	R1	4.2	30°	K	chl-py-ca-ill	92	216	90	2.40
97	107	38	95	.19	102	R1	3.3	30°	K	bx-clay gouge-chl.	102	1655	70	2.36
107	117	77	93	.65	112	R2	1.4	30°	R	py-chl-ill	112	3065	130	2.36
117	127	42	62	.32	120	R1	1.4	30°	R	py-ill-ca	120	281.5	120	2.35
127	131	15	73	.00	129	R1	5.1	30°	S	ill-py	129	189	80	2.36
131	137	37	94	.32	134	S5	2.8	30°/60	S	ill-py	134	2685	110	2.44
137	147	78	87	.59	142	R1	1.6	30°	R-stepped	ca-py-ill	142	218.5	90	2.43
147	157	47	85	.40	152	S5	5.2	60°	S	ill-py	152	227	95	2.39
157	163	17	67	.10	160	S5	>10	ALL	R	bx-ill	160	2235	95	2.35
163	166	0	33	.00	164	S5	>10	ALL	R-	ill-bx	164	278	110	2.53
166	175	50	59	.38	170	S5	6.0	70°	R	ill-py	170	242	100	2.42

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-47-94 DATE: 9-13-94 LOGGED BY: CBW / RK PAGE 3 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)
175	177	0	59	.00	176	54	>10	ALL	S	ill	176	142.5	60	2.38
177	182	32	52	.14	179	54	3.2	70°	S	ill-py	179	290	120	2.42
182	187	42	72	.27	184	54	>10	ALL	S	ill-py	184	233	100	2.33
187	197	00	39	.00	192	54	>10	ALL	S	ill-py	192	154	65	2.37
197	207	7	84	.07	202	54	>10	ALL	S→R	ill→bx-gouge	202	190	80	2.38
207	217	00	50	.00	212	51	>>10	ALL		fault bx	212	sample saturated 400	160	2.5
217	227	00	40	.00	222	51	>>10	ALL		fault bx	222	316.5	130	2.43
227	237	23	53	.10	232	53	>10	ALL		fault bx	232	229	100	2.29
237	241	00	54	.00	239	53	>5	ALL		fault bx	239	257.5	110	2.34
241	247	50	80	.20	244	54	3.0	30°	K-S	chl.-slicks	244	216.5	90	2.41
247	257	.34	.59	.17	252	54	2.6	40°	K	chl-ic clay gouge	252	257	110	2.34

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-47-94 DATE: 9-14-94 LOGGED BY: RK PAGE 4 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)
257	267	08	33	.04	262	S3	>5	ALL	K	fault bx chlic clay gouge	262	291.5	120	2.43
267	272	22	54	.12	269	S4	3.7	40°	R	fault bx	269	357	145	2.46
272	277	42	74	.22	274	R2	3.3	25°	K	grey sulf-rich clay	274	339.5	140	2.43
277	287	92	92	.52	282	R3	2.0	45°	R	Py-chl-Ca	282	292.5	130	2.25
287	292	66	82	.12	289	R3	5.0	60°	R	Py ± Ca	289	345	140	2.46
292	302	27	43	.15	297	R3	+3.0	15°/80°	R	Py ± Ca	297	434	170	2.55
302	305	08	27	.12	305	R3	+5.0	15°/80°	K	Py-chl-Ca	305	273	110	2.48
305	309	88	98	.33	307	R3	3.8	40°	R	Py-chl.	307	273	110	2.48
309	311	25	65	0	310	R3	+10	15°/40	R	Py-chl	310	332.5	135	2.46
311	317	13	38	0	314	R3	4.8	15°/40	R	Py-ill	314	234	100	2.34

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 COMPANY

Address:

Telephone Number: ( ) Fax Number: ( )

Project Name: ROSEBUD Purchase Order Number:

Transport Company: Waybill Number:

Date Shipped: Number of Packages: 61 [ ] Prepaid [ ] Collect

9-14-94

ANALYSIS REQUIRED

SAMPLE			TYPE	ELEMENTS REQUIRED
D-47-94 0-8	74.5-78	142-147	CORE	2 AT FIRE ASSAY Au & Ag
8-15	78-83	147-152		W/ HECLA ROSEBUD
15-20	83-88	152-157		CUSTOM PREP
20-25	88-94	157-161		
25-31	94-97	161-167		
31-37	97-100	167-172		
37-42	100-104	172-177		* GRAV FINISH ON ALL
42-47	104-110	177-182		Au ≥ 0.05 opt
47-51	110-115	182-187		
51-52.5	115-120	187-192		
52.5-57	120-125	192-197		
57-62	125-128	197-203		
62-67	128-132	203-208		
67-71	132-137	208-213		
71-74.5	137-142	213-218		
		218-223		
		223-228		
		228-233		
		233-238		
		238-243		
		243-248		
		248-253		
		253-258		
		258-267		
		267-274		
		274-279.4		
		~~279.4-287~~		
		287-293		
		293-302		
		~~302-309~~		
		309-317		

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)

(2)

(3)

Comments:

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-47-94
LABORATORY JOB No. : SP030954
SAMPLE TYPE :

RECEIVED : 20 SEP 1994
REPORTED : 4 OCT 1994
No. SAMPLES : 61

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-47-94
JOB NUMBER : SP030954
REPORTED : 4 OCT 1994

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-47-94 0-8	<0.001			0.02
D-47-94 8-15	<0.001			0.02
D-47-94 15-20	<0.001			<0.02
D-47-94 20-25	<0.001			<0.02
D-47-94 25-31	0.002			0.04
D-47-94 31-37	0.001			0.07
D-47-94 37-42	0.002			0.07
D-47-94 42-47	0.002			0.06
D-47-94 47-51	0.009			0.11
D-47-94 51-52.5	0.006			0.14
D-47-94 52.5-57	0.005			0.12
D-47-94 57-62	0.006			0.22
D-47-94 62-67	0.006			0.22
D-47-94 67-71	0.002			0.11
D-47-94 71-74.5	0.003			0.10
D-47-94 74.5-78	<0.001			0.16
D-47-94 78-83	0.002			0.05
D-47-94 83-88	0.013			0.10
D-47-94 88-94	0.023			0.63
D-47-94 94-97	0.403		0.480	11.80
D-47-94 97-100	0.413		0.511	15.60
D-47-94 100-104	0.100		0.088	4.10
D-47-94 104-110	0.111		0.102	0.46
D-47-94 110-115	0.065		0.062	1.52
D-47-94 115-120	0.046			0.86

AMERICAN ASSAY LABORATORIES
ANALYSIS REPORT

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : D-47-94
JOB NUMBER : SP030954
REPORTED : 4 OCT 1994

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-47-94 120-125	0.048			0.31
D-47-94 125-128	0.223		0.247	3.26
D-47-94 128-132	0.014			0.07
D-47-94 132-137	0.008			0.11
D-47-94 137-142	0.011			0.18
D-47-94 142-147	0.006			0.12
D-47-94 147-152	0.005			0.10
D-47-94 152-157	0.005			0.07
D-47-94 157-161	0.010			0.10
D-47-94 161-167	0.007			0.15
D-47-94 167-172	0.005			0.09
D-47-94 172-177	0.008	0.008		0.10
D-47-94 177-182	0.005			0.11
D-47-94 182-187	0.005			0.13
D-47-94 187-192	0.006			0.10
D-47-94 192-197	0.008			0.08
D-47-94 197-203	0.016			0.10
D-47-94 203-208	0.012			0.12
D-47-94 208-213	0.006			0.07
D-47-94 213-218	0.008			0.04
D-47-94 218-223	<0.001			0.03
D-47-94 223-228	<0.001			0.03
D-47-94 228-233	<0.001			<0.02
D-47-94 233-238	<0.001			<0.02
D-47-94 238-243	<0.001	<0.001		<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT

American Assay Laboratories

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JOB NUMBER : SP030954
REPORTED : 4 OCT 1994

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-47-94 243-248	<0.001			<0.02
D-47-94 248-253	<0.001			0.02
D-47-94 253-258	0.001			0.02
D-47-94 258-267	<0.001			<0.02
D-47-94 267-274	<0.001			0.02
D-47-94 274-279.4	<0.001			<0.02
D-47-94 279.4-287	<0.001			<0.02
D-47-94 287-293	<0.001			<0.02
D-47-94 293-302	<0.001			<0.02
D-47-94 302-309	<0.001			<0.02
D-47-94 309-317	<0.001			<0.02