66001543

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-95-95
AUTHOR	C. Muerhoff; S King
DATE OF DOC(S)	1995
MULTI_DIST Y / N? Additional Dist_Nos:	
QUAD_NAME	Sulphur 7.5'
P_M_C_NAME (mine, claim & company names)	Rosebud Mine; Rosebud Project; Hecla Mining Co.; South Zone
COMMODITY If not obvious	gold silver
NOTES	Drill log; geology; assay; total depth 150' handwritten notes 6 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)

	Initials	Date
SS:	DD	5/29/08
DB:	mah	
SCANNED:	NV Blue	

Revised: 1/22/08

D-95-95 ; SOUTH ZONE ; 975 N

60001543 4010

60001543

Hecla MINING COMPANY

- Faults, structure
- FeOx
- sulfide
- qtz, chalc., silicification
- calcite, carbonates
- argillization, clay
- propylitic alteration
- potassic alteration
- chlorite, chloritic clays

ROSEBUD PROJECT
DIAMOND DRILL LOG

HOLE NUMBER	D-95-95	LOCATION	South Zone / 975 N	REMARKS	
PAGE 1 OF	3	NORTHING	2,203,980.697	Drilled from underground @ 975N	
DATE	9-29-95	EASTING	481,797.639	Hagby On-ram 1000 drill rig	
LOGGED BY	C. Muerhoff	ELEVATION	4649.025	Core size NDBGM (2.2" diameter)	
SCALE	1" = 10'	AZIMUTH	124° (S56°E)	Sampled whole core	
TOTAL DEPTH	150'	INCLINATION	-11° (downhole survey @ collar only)		

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		0'-93.1' LBT. Heterolithic tuff breccia. Variable alteration downhole as described at right. Generally matrix-supported with sub-rounded to angular clasts of propylitized to weakly argillized very finely flow laminated, very fine-grain ash, propylitized lithic tuff, & relatively unaltered massive ash flow tuff; all floating in a fine- to medium-grained tuffaceous groundmass (relatively unaltered to 36')	10, 20, 30, 40, 50	silicification overprinting potassic alt. 15°; 15°	36' fault @ 10°-15° to core axis with 1½" silicified gouge followed by 4" (true width) pervasively silicified tuff breccia. Cut by ¼" black chalcedony vein also @ 15° to core axis.	0-16' Occassional thin (⅛" to ½") calcite ± sulfide (py ± marc) stringers. generally @ 35°-50° to core axis. @ 0.8' open-space calcite crystals engulfing marcasite blades. 0'-93.1' Entire breccia unit is cut by fine, discontinuous stockwork of pyrite ± chlorite
		another parallel shear @ 45.4' down hole. Tuff breccia block inbetween faults is extremely altered w/ clasts → clay				past fault @ 36', pyrite stockwork/stringers commonly @ 70°-90° to core axis. Also clasts & groundmass are weakly silica-flooded.
						Past fault @ 36', groundmass of breccia becomes strongly potassic-altered (alunite ?). Argillization, propylitization, & chloritization in breccia clasts increases by an order of magnitude. Also begin increase in pyrite stockwork density & zones of pyrite disseminated in both clasts & groundmass.

ANALYTICAL DATA

FROM	TO	W	Au opt	Ag opt	Au2 opt	Ag2 opt
0'	5'	5'	0.012	0.07		
5'	10'	5'	0.003	0.07	0.004	
10'	15'	5'	0.001	0.04		
15'	20'	5'	<0.001	0.03		
20'	25'	5'	0.001	0.03		
25'	30'	5'	0.002	0.05		
30'	36'	6'	0.002	0.06		
36'	37.3'	1.3'	0.031	0.17		
37.3'	41'	3.7'	0.001	0.05		
41'	45.4'	4.4'	0.002	0.04		
45.4'	50'	4.6'	<0.001	0.05		

HOLE NUMBER D-95-95 PAGE 2 OF 3

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		Heterolithic tuff breccia continues. @ 60', breccia begins to contain large sub-angular clasts of breccia w/ small (≤ 1/4") angular, argillized frags floating in light green vfg matrix. @ 93.1' fault or contact? Rapid change into bedded pumice fiamme tuff (weakly welded). Fiamme are slightly flattened & completely altered to white powdery clays. Entire unit is strongly brecciated by grey to black chalcedony to the point where the tuff is matrix-supported by the chalcedony. Extremely vugy with open-space mineralization: drusy qtz with large pyrite/marcasite blades — drusy qtz often coats the blades. Vugs contain abundant white clay (halloysite - dickite) All cut by chlorite ± pyrite stockwork. Tuff fragments are not silicified. Continues to 117'. Last 3' contain large clasts of leopard skin tuff.	60 70 80 90 100 110 120	70° 70° irregular cannot determine ∡ to core axis of flow bedding. All clasts appear to be rotated see next page	69.6' 2" chalcedony breccia vein w/ open space qtz + sulfide @ 70° to core axis post 70', faults/fractures have a preferred orientation of ±70° to core axis; usually coated w/ white clay + pyrite blades (after marcasite?) 93.1'-117' 2 distinct sets of mineralized fractures @ 70° & 80°-85° to core axis.	@70', begin to pick up occassional occurrences of white clay (halloysite?) as fracture filling & breccia matrix. Increases with depth. Also, breccia displays increasing zones of open space mineralization: euhedral pyrite + marcasite + drusy qtz Also, qtz + pyrite ± marc ± chlorite stockwork intensifies down hole @ random orientations to core axis. 93.1' see lithology comments ↓

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
50'	55'	5'	0.044	0.15		
55'	60'	5'	0.056	0.09	(grav) 0.032	
60'	65'	5'	0.165	0.10	(grav) 0.142	60'-75' 15' @ 0.171, 0.58
65'	70'	5'	0.240	0.73	(grav) 0.233	
70'	75'	5'	0.100	0.90	(grav) 0.145	
75'	80'	5'	0.005	0.07	.	
80'	85'	5'	0.068	0.13	(grav) 0.082	
85'	90'	5'	0.005	0.06		
90'	93.1'	3.1'	0.006	0.05		
93.1'	98'	4.9'	0.032	0.07		
98'	102'	4'	0.024	0.18		
102'	106'	4'	0.012	0.08	0.013	
106'	110'	4'	0.023	0.10		
110'	114.5'	4.5'	0.011	0.07		
114.5'	117'	2.5'	0.012	0.06		
117'	120'	3'	0.013	0.11		

HOLE NUMBER D-95-95 PAGE 3 OF 3

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		@117' 6" of total silica-replacement (vugy with euhedral pyrite after drusy quartz) followed by weakly brecciated laminated pumice fiamme tuff (same unit as above). Bedding/foliation @ ± 35° to core axis. Flow planes mineralized with chlorite (bleeding out along selvages) or chlorite + white clay + pyrite ± chalcedony. 124.8' Rapid gradation into "Leopard skin tuff" Appears to have been a weakly-welded, pumice-rich tuff. Pumice fiamme are totally replaced by green chloritic/pyritic clays. Strong potassic to argillic alteration of vfg groundmass. Foliation generally @ 20°-30° to core axis. Cut by qtz/chalcedony stringers ± 40° to core axis; in turn x-cut by pyrite/marcasite veinlets @ 40° to core axis. White clays & yellow "duck's butter" clays along fracture surfaces. Continues to 143.4' 143.4'-151' Interbedded zones of "Leopard skin tuff" & fine-grained flow-laminated tuff. Strong chloritic to argillic alteration, cut by, & locally flooded by, grey chalcedony. Vugs contain white clays. Minor diss. pyrite & pyrite stringers @ 25° to core axis. Hairline chloritic stockwork.	130 140 150		117'-124.8' Mineralized fractures with open space filling of white clay (halloysite-dickite) + large marcasite blades, up to 1/2" in diameter, often with small pyrite crystals coating blades. Fractures @ 35° (bedding plane) & 70° to core axis. 124.8' - EOH. Distinct fracture set @ 70° to core axis. ~ 1/ft. @ 133', one-foot zone of clayey fragments. Not sure if fault or just extreme alteration. LST continues past zone. Fault @ 151' - 45° to core axis w/ 4" white clay gouge & rock flour of same composition as LST T.D. 151'	124.8 - 143.4 see lithology comments 143.4' - EOH see lithology comments.

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
120'	124.8'	4.8'	0.027	0.10		
124.8'	130'	5.2'	0.021	0.11		
130'	135'	5'	0.022	0.08		
135'	140'	5'	0.009	0.07	0.010	
140'	143.4'	3.4'	0.003	0.05		
143.4	147'	3.6'	0.003	0.05		
147	151'	4'	0.006	0.06		

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT : $P035776

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American Assay Laboratories

HECLA MINING CO.

COPIES TO : CHARLIE MUERHOFF

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CLIENT REFERENCE No: D-95-95 RECEIVED : 3 OCT 1995

No. SAMPLES : 34 REPORTED : 24 OCT 1995

MAIN SAMPLE TYPE : DRILL CUTTINGS

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 King M.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT : $PO35776

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : D-95-95

REPORTED : 24 OCT 1995

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-95-95 00-05	0.012			0.07
D-95-95 05-10	0.003	0.004		0.07
D-95-95 10-15	0.001			0.04
D-95-95 15-20	<0.001			0.03
D-95-95 20-25	0.001			0.03
D-95-95 25-30	0.002			0.05
D-95-95 30-36	0.002			0.06
D-95-95 36-37.3	0.031			0.17
D-95-95 37.3-41	0.001			0.05
D-95-95 41-45.4	0.002			0.04
D-95-95 45.4-50	<0.001			0.05
D-95-95 50-55	0.044			0.15
D-95-95 55-60	0.056		0.032	0.09
D-95-95 60-65	0.165		0.142	0.10
D-95-95 65-70	0.240		0.233	0.73
D-95-95 70-75	0.100		0.145	0.90
D-95-95 75-80	0.005			0.07
D-95-95 80-85	0.068		0.082	0.13
D-95-95 85-90	0.005			0.06
D-95-95 90-93.1	0.006			0.05
D-95-95 93.1-98	0.032			0.07
D-95-95 98-102	0.024			0.18
D-95-95 102-106	0.012	0.013		0.08
D-95-95 106-110	0.023			0.10
D-95-95 110-114.5	0.011			0.07

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT : SP035776

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : D-95-95

REPORTED : 24 OCT 1995

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-95-95 114.5-117	0.012			0.06
D-95-95 117-120	0.013			0.11
D-95-95 120-124.8	0.027			0.10
D-95-95 124.8-130	0.021			0.11
D-95-95 130-135	0.022			0.08
D-95-95 135-140	0.009	0.010		0.07
D-95-95 140-143.4	0.003			0.05
D-95-95 143.4-147	0.003			0.05
D-95-95 147-151	0.006			0.06