66001498

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. 94-320
AUTHOR	L. Bernard; C. Muerhoff; S. Fairclotl
DATE OF DOC(S)	1994; 1997
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., East Zone
COMMODITY If not obvious	gold silver
NOTES	Drill log; geology; assay; total depth 800' handwritten notes; Also referred to as 94-320C 37 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 5/29/08
Initials Date
DB: mah
Initials Date
SCANNED: NV Blue
Initials Date

Revised: 1/22/08

94-320 EAST ZONE

6000 1498 4010

6000 1498

Hecla
MINING COMPANY

ROSEBUD PROJECT
DIAMOND DRILL LOG

HOLE NUMBER	94-320	LOCATION	East Zone	REMARKS	
PAGE 1 OF 12		NORTHING	2,204,040.1		
DATE	9/3/94	EASTING	482,635.2		
LOGGED BY	L.J. BERNARD	ELEVATION	5299.0		
SCALE	1" = 10 ft	AZIMUTH	343.5°		
TOTAL DEPTH	800'	INCLINATION	-89.5°		

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au (ppb)	Ag (ppb)	Au2 (ppb)	Ag2
0	1	7-34 Volcaniclastic tuff: sub-angular to angular clasts in a soft brown matrix. Clasts are lt gray, brown, + greenish gray - heterolithic 1/8" to 2" in diameter, matrix + point supported [0-7 gravel?]					(geochem chips)						
94	.56 12		10		7-12 3-5 frac/ft	7-34 str FeOx	10	20	10	24			
49	.00 22		20		12-15 >>10 frac/ft 15-34 3 frac/ft @ ~80°		20	30	10	20			
98	.48 32	tuna fish	30			34-44 mod FeOx	30	40	10	144			
98	.35 42	34-53 soft volcaniclastic tuff as above but with a green/gray chloritic matrix ± hematite/limonite FeOx Rock strongly fractured >10 frac/ft	40		34-53 >>10 frac/ft		40	50	10	14		10	
100	.0 49					44-85 wk-mod FeOx							
100	.0 53		50				50	60	10	162			

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%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
	53	tuna fish			53-85 3 frac/ft @ 60	44-85 wk-mod FeOx wk sil
100	.33 62	53-87 mod soft Volcaniclastic Tuff w/ a green chloritic and white (patchy) illitic matrix. 1/8-1" heterolitic clasts are sub-rounded to sub angular supported by both point & matrix. Fractures + some clast are orange due to FeOx of FeS dissol	60			
100	.25 64					
100	.52 73		70			
100	.22 83		80			
		tuna fish				
100	.63 93	87-99 Volcaniclastic tuff as above but with pink/brown matrix. mod hard hemititic orange frac filling + red hemitite along larger fractures	90		85 3" of orange/br gage + crushed rock sandy 85-106 2-6 frac/ft @ 5°	85 - strong FeOx 85-106 wk-mod FeOx matrix mod sil
100	.36 103	99-114 SAB w/ bk-purple matrix	100			
100	.88 113		110		106-190 1-2 frac/ft @50-60	106-115 purple matrix hem-goe FeOx of matrix + frac.
		tuna fish				
100	.88	114-132 heterolitic volcaniclastic tuff brown FeOx + green chl matrix. sub angular to sub rounded clasts Some chloritic, hemititic, or wk argillized. wallal tuff pink w/ white feldspar. FeOx + chl inner reaction rims	120			115-142 mod sil matrix + clasts, mod hem of matrix chloritic + calcareous clasts wk-mod @30,50 py @ 40

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	Ag2
60	70	10	14			
70	80	10	<5			
80	90	10	61			
90	100	10	11			
100	110	10	<5			
110	120	10	<5			
120	130	10	<5			

HOLE NUMBER 94-320 PAGE 3 OF 12

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
97	.88 123	SEE Above			106-190 1-2 frac/ft @ 50-60								
99	.72 133	132-143 SAB green chloritic matrix clast mainly chloritic, some hem. mod soft	130				130	140	10	<5			
100	.80 143		140				140	150	10	104		101	
100	.95 153	143-159 mod soft V.C. tuff with mixed chl + hem (green > brown) matrix	150			142-153 SAB with minor drusy qtz vnlets + py and py vnlets discontinous 2" long V. wk calcareous 153-156 str clay alt	150	160	10	597			
100	.88 169	159-173 mod hard re tuff: brown hemitistic matrix with soft green chl clasts & harder pink + tan clasts. Tan clasts have white illitic feldspars + green alt ferromags. wk welded text common though most are eph.	160			156-173 wk-mod sil, hem matrix. Clasts wk-mod argillic with chl, some totaly chloritic, some mod sil Rare py-qtz vnlets	160	170	10	70			
100	.96 173		170				170	180	10	86			
98	.78 187	173-211 volcaniclastic tuff as above w/ predominatly chloritic matrix and chl clasts > non chl clasts. large 1" diam py blaches not preferential to any clast or frac.	180			173-185 chloritic matrix and more chl clasts Minor py-qtz vnlets @ 5-10, 40	180	190	10	10			
98	.77		190			185-205 SAB but wkly calcareos (matriv)	190	200	10	10			

HOLE NUMBER 94-320 PAGE 4 OF 12

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
	193	SEE Above			190 - 193 >10 frac/ft Poss fault	
100	.93 203		200		193 - 216 1-2 frac/ft @60	
100	.99 213	211-240 Blocky mod soft tuna fish volcaniclastic tuff with chl matrix and predominantly chl clasts. Rounded to sub-Angular clast 1/8" to 2 ft in diam py replace of pink clast along rims 1" py blocks, notable qtz-py vnlets heterolithic	210			205 - 233 green chloritic matrix wk-sil clasts are mainly chloritic or partially chl and argillic + calc.
100	.84 223		220		216 - 224 2 frac/ft @60	
100	.86 233		230		224 - 280 12 frac/ft @ 70,60	233 - 239.5 SAb w/ minor qtz-py vnlets @45, 70
100	.92 243	240-279 lithic bx tuff as above w/ predominantly 1" to 5" size clasts. Clasts are soft (green chlorite/clay) while the matrix is hard due to wk-mod sil but still wk chloritic + v. wk Reoxed.	240			(335-339 + marcasite) 239.5 - 240 gray qtz cemented hydro bx @50 w/ PY + Marcasite
100	8.4 253		250			240 - 283 chloritic matrix + clast Calcite in minor vugs wk calc in general
100	.92	Clast are often rectangular + sub angular, some clast are laminated or welded - heterolithic	260			

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
200	210	10	80			
210	220	10	8			
220	230	10	180			
230	240	10	164			
240	250	10	10			
250	260	10	<5			
260	270	10	<5			

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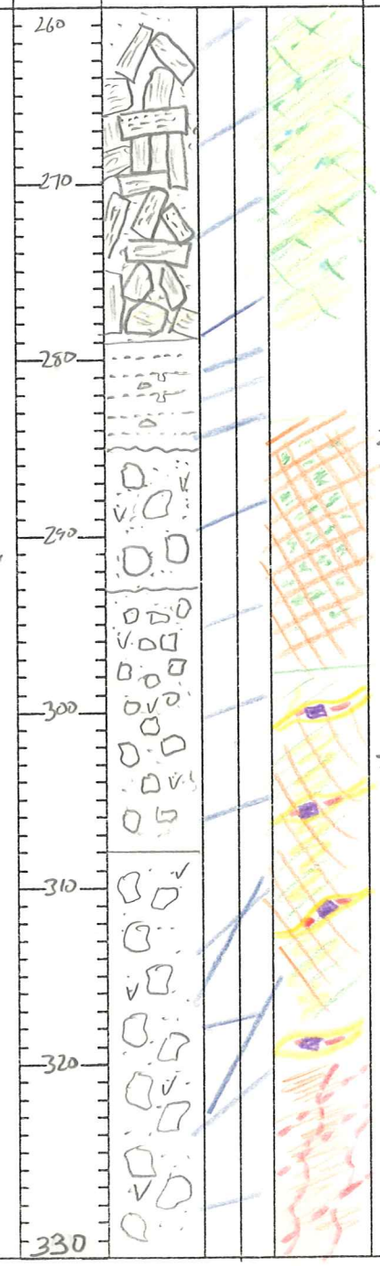
%REC	RQD	LITHOLOGY	STRUCTURE	ALTERATION AND MINERALIZATION
	263	SAB		SEE Above
100	.90			
	273			
100	.87	279-285 laminated volcanic lastic w/ load casts & 1/4" fragments, slumps	280-283 3 frac/ft @ 70	283-298.5 Mod chl, v.wk flox matrix w/ predominely chl clasts, minor white clay, wk calc.
	283		283-303 1-2 frac/ft @ 70	
100	.95	285-293 2-3" clasts (mod soft) in floating in a (mod soft) aph, more massive matrix sub rounded clasts heterolithic		
	293			298.5-322 qtz lined vugs wh ± chl haloes 1/8" barite fillings & white illitic clays. 0.5 vugs/ft minor marcasite fills
100	.80	293-308 smaller 1/4 to 2" hetero lithic clasts in a brown/green wk sil + chl matrix heterolithic bx tuff. clay/chl alt of clasts	303-353 1 frac/ft @ 50, 70, 80	
	303			
SEE ENG. LOG ↓		308-370 SAB 1/4-4" heterolithic lithic clast in lt brown matrix clast & matrix supported		317-369 1/10" py veinlets @ 50, 20 ± qtz undulating 1-3/ft



ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
270	280	10	6			
280	290	10	68			
290	300	10	23			
300	310	10	205			
310	320	10	178			
320	330	10	162			

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%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
		308-370 1/4" to 4" heterolithic clasts in a matrix and clast supported lt. brown matrix. clast are rounded to angular. Rounded clast are usually chloritic while angular are argillic + chloritic (w/illitic clay)	340			SEE Above	330	340	10	236			
						335.5 qtz-lined vug w/ corroded barite crust, pyrohotite pyrite crystals (small)	340	350	10	101			
						(grey wh) clay + dissem py fills							
			350				350	360	10	241			
					353-380 1 frac/ft @ 80	353.5 1/4 bk qtz vn w/ dissem py							
		357-358 minor laminated ash bed @ 70	360			(355-357 white qtz filled vugs w/ marc.	360	370	10	41			
						369-397 mainly chl alt.	370	380	10	56	81		
		370-386 Transition zone Mainly massive aph med grain tuff and minor clastic zones w/ brown matrix material vitriphyric textures	370										
							380	390	10	6			
			380		380-384 1-3 frac/ft @ 80								
		386-404 aph chloritic tuff. w/ minor wedge shaped clasts			384-397 1 frac/ft @ 70-80		END Geochem whole rock assays						PROBABLY SHOULD ASSAY SOME INTV. ABOVE
			390				390	395	5	0.000	0.00		
							395	400	5	.004	.06		
					397-403 2 frac/ft @ 60	397-							
			400										

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%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
		404-414 fine grain aph pink/brown tuff textures masked by pre mineral rubble bx and mineralized crackle bx chlorite alt feldspar(?) 10%	410		403 6" sheared rock @40?? 60??? 405-438 1.5 frac/ft @ 30-40, 60 clay on frac ± py/chl	397-403 1/8" py vn @40, str chl alt soft rock 1-2/ft 403-419 qtz-py-marc (massive) veins surround by thin films of chl.	400	405	5	0.000	.04		
		414-422 SAB w/ mottled foliation @50 ⊥ to py vn	420			Part of a mod crackle bx main vnlets @ 0,50 2 vn/ft + fine vnlets	405	410	5	.003	.11		
		422-437 SAB w/ interbeds of a sil-chl alt glossy rock (poss v. wk welding), some white clay altered zones surrounded by sil-chl	430		438-448 2 frac/ft @ 50 chlorite films illite clay films	419-437 fine py-qtz vn @40 2vn/ft and 1/4", vugy qtz-sulf vn @5, 40: 1-2/ft barite cryst illite fills [white qtz vn 1/4 @70 w/marc 444ft]	410	415	5	.003	.08		
		437-464 Vuggy wk-mod welded tuff w/ dissem py & marc. foliation @70	440		448-468 1 frac/ft @ 30,60 vn qtz, chl & clay films	437-454 SAB larger silica/barite vugs + qtz-py vnlets (545-545.5) qtz cemented rubble bx @40	415	420	5	.002	.07		
		464- fine grain gray green aph tuff w/ crackle bx poss flow lam @60	450		463 464 > slicks 468-476 3-4 frac/ft @ 50 ⊥ 40 ⊥ 40	554-466 qtz-py-marc vnlets @ 0, 20 hairline choloritic crackle fills 466- fine green hairline crackle bx contacts & chloritic halos, qtz-py vnlets @ 10, 40, vugs w/ etched or corroded casts chl on poss flow lam	420	425	5	.002	.07		
			460				425	430	5	.001	.05		
			470				430	435	5	.004	.07		
							435	440	5	.004	.07		
							440	445	5	.004	.05		
							445	450	5	.003	.05		
							450	455	5	.010	.05		
							455	460	5	.003	.04		
							460	465	5	.002	.03		
							465	470	5	.006	.05		
							470	475	5	.001	.04		

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%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		464-476 SEE Above			476-480 2 frac/ft @ 40	466-478 SEE ABOVE
		476-489 gray brown aph tuff with altered feldspar phenos 5% and chloritic and clay altered interbeds of spherulitic glass (2-3" wide).	480		480-486 1 frac/ft @ 60, 50 ± 25	481-484 sil hydro bx zone w/ drussy qtz, barite crst, white-gray qtz fillings, chlorite fillings,
		489-516 chloritic altered Tuff breccia Angular to sub angular clasts in a fine med grain matrix 1/8" - 1" clasts, matrix supported	490		486-516 1 frac/ft @ 70 + 30, 45, 50	484-539 minor qtz-py veinlets @ 50, 30 484-489.5 30% py disseminated 489.5-538 minor qtz-py veinlets @ 40, 50, 60 Mod chl, sil 1 vn/ft
			500			
			510			
		516-527 epiclastics 1/8-2" angular-sub-angular Point supported clasts in a sandy, py disseminated matrix	520		516-563 1 frac/ft @ 70 + 60,	
		527-531 well sorted and bedded clastics < 1/8" alt to white clay + chl, wk sil @ 60	530			
		531-568 SAb but Mod sorted & poorly bedded 1/8-1/4" clasts med grain matrix w/ Ashy components	540			539—

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	Ag2
475	480	5	.001	.04		
480	485	5	.002	.06		
485	490	5	0.000	.05		
490	495	5	0.000	0.00		
495	500	5	0.000	0.00		
500	505	5	0.000	0.00		
505	510	5	0.000	.02		
510	515	5	.001	.04		
515	520	5	.001	.03		
520	525	5	.002	.03		
525	530	5	.002	.03		
530	535	5	.010	.03		
535	540	5	0.000	.05		

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%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		SEE Above				539-592 qtz-py veinlets as above 1/ft @ 50 Plus white qtz vn w/ marcasite and py + white clay 1/ft @ 70, 20, 40 1/8 - 1/4"
			550			553 → Vug w/ barite
			560		563 - 584 1 frac/ft @ 70, +30, 40	
		568 - 574 Ashy horizon w/ wk foliation of chlorite @ 60	570			
		574 - 589 clast supported epiclastic bx clasts 1/4 - 3" chl & py Alt, greenish chl matrix - Ash	580		584 - 587.5 3 frac/ft @ 60 ±50 4" crush zone @ 588, 587	
		589 - Matrix supported clastics 1/4 - 3" chl Alt clasts w/ Ashy matrix foliated @ 60 chl, musil	590		587 - .5 frac/ft @ 50	592b 1/2" vuggy qtz vn w/ py + marc.
			600			592-605 white qtz vn some vuggy 1/8, 1/4 + 1/2" ± py + marc. @ 60, 80 1-2 vn/ft-1 qtz-py veinlets @ 80 1-2 vn/ft.
			610		1/4-1" →	605-611 white/gray vuggy veining + marcasite blades, py and white clay fillings @ 0-10, silica flood matrix (Part)

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	Ag2
540	545	5	.007	.03		
545	550	5	.005	.04		
550	555	5	.002	.03		
555	560	5	.006	.05		
560	565	5	.003	.04		
565	570	5	.003	.04		
570	575	5	.001	.03		
575	580	5	.002	.04		
580	585	5	.002	.04		
585	590	5	.002	.03		
590	595	5	.003	.04		
595	600	5	.009	.04		
600	605	5	.003	.06		
605	610	5	.012	.08		
610	615	5	.004	.05		

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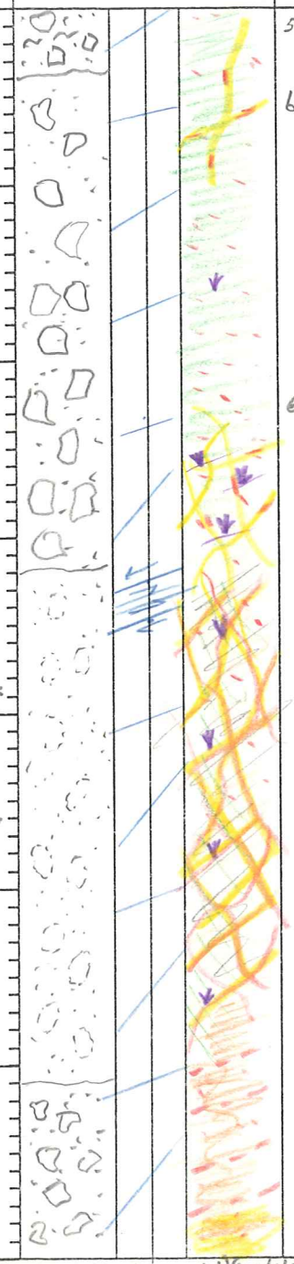
%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
		598 - 613.5 Matrix supported clastics 1/4 - 3" sil, chl alt clasts Angular to sub-Angular w/ Ashy matrix foliated @ 60			587 - 605 0.5 frac/ft @ 50	611 - 624 1/10" qtz-clay vn w/blebs of py-marc @ 50, 20, 5 .5 /ft	615	620	5	.003	.05		
		613.5 - 642 Matrix and point contacts clasts 1/8 - 1/2", matrix fine (Ash) to med grain hetero lithic clasts dk green + med gy/brown are sil, lt green are soft chloritic, matrix is chlorite w/ minor (<5%) illite dissem py in matrix	600		605 - 633 1 frac/ft @ 80, 60	stronger py-qtz vn @ 80, 50, 10 1/ft	620	623	3	.003	.03		
			620			624 - 632 Zone with open space vug and vn fillings of bedded silicified clay, small barite crystals, white clay, trace stibnite poss tr carbon qtz vn w/ py-marc	623	628	5	.002	.06		
							628	633	5	.002	.04		
					633 - 683 .9 frac/ft @ 70-80, 40 clay films, drussy qtz clay filled vugs, barite	open-space filling up to 3" wide, poss blk sulfosalts	633	638	5	.001	.14		
			640		(643 - 645 6 slicken joints @ 70) South ridge Sault	632 - 641 minor white qtz ± py-marc crackle vn and qtz-sulf vn.	638	641	3	.002	.05		
		642 - 671 Hydrobx gray-brown-green aph tuff V. fine alt feldspar → chl, dissem py w/ soft-like heterolitic clasts 1/4" - 6" matrix supported				fractures with notable stibnite	641	645.5	4.5	.002	.14		
			650*			641 - 671 rubble + crackle bx qtz cements w/ py-marc., pastey barite crystals strong clays @ 546 - 547 poss sulfosalts in clays abundant late stage stibnite in open spaces and in white clay sulfides not particularly abundant.	645.5	648	2.5	.009	6.42		
							648	653	5	.002	.83		
			*				653	658	5	.002	.09		
			660				658	663	5	.001	.05		
						671 - 678 minor qtz-sulf vnlets 1/20 - 1/10" @ 0, 70, 80, 20 2-3 vnlets/ft	663	668	5	.003	.13		
			670				668	671	3	.006	.59		
		671 - 677 Volcaniclastic Angular to subrounded heterolitic clasts matrix and point contacts 1/8 - 1" clasts brown med grain matrix, mod sil, chl					671	676	5	.003	.07		
			680			678 - 692 silica floated clastic matrix	676	681	5	.011	.12		



* MET Samples 649-649.5, 654.5-655.

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%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		677-684 SAb, but with sil-chloritic matrix increasing silica floading 684-692 Silica floaded Volcaniclastic green/gray rk silica replaced matrix + clasts 692-693.2 black +SY qtz vein w/ fine dissem sulfide 693.2-697 V. Str sil hydrobx, greenish 697-709 V. str sil hydrobx w/white cement blending to green last 2ft 709-713 dk SY-bk sulfidized bx + vein material 713-783 lt gray + brown v. sil rock Poss a glassy tuff with minor lithic clasts. Devitrification texture. Spherulitic in places	690 700 * 710 * 720 * 730 * 740 750		683-703 1.5 frac/ft @50 703-711.5 1 frac/ft @ 60, 50, 20 711.5-713 broken ground w/ cavities 713-753 1 frac/ft @60-70, 50, 30 743-783 1.8 frac/ft @ 60, 50-40	678-692 silica saturated clastic matrix w/ 1/4" long blebs of PY/marc (2% of core) 692-693.2 bk/SY qtz vn w/ fine dissem sulfide 693.2-697 silica saturated clastic matrix 697 dk si-sulf vn 1/4" 697-706 breccia with sub-rounded-rounded clasts in white qtz vn, marcasite + py dissem (198-199 zone w/ clasts of dk sulfide) 706-707.5 SAb w/ dk sulfide rounded fragments 707.5-711 SAb w/ dk sulfides bk and green matrix frambroidal py covered by colloidal silica, white-tan-yellow/green, contains qtz + ba 711-713 med gray-dk bk qtz vn similar to above, but more dk sulf. dk barite, tr stibnite 712-713 has block marked CAVE, looks like a zone with soft green clay + med grain, 2" of brown FeOx sulf dissem, sand & gravels up to 1/4" clasts 713-754 wk crackle + robble bx w/ qtz-sulf vn, white clays, , qtz-chl? Mica unlocks (greenish).

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	Ag2
681	683	2	.032	1.87		
683	688	5	.003	.19		
688	692	4	.006	.44		
692	693	1	.013	.38		
693	697.5	4.5	.004	.13		
697.5	700	2.5	.027	.94	E	
700	705	5	.107	.22		
705	710	5	.093	1.83	.105(g)	
710	713	3	.018	1.11	E	
713	718	5	.076	.18	.079(g)	
718	723	5	.008	.19	.045	
723	728	5	.008	.08	.014	
728	733	5	.022	.05		
733	738	5	.011	.05		
738	743	5	.006	.03		
743	748	5	.005	.05		
748	753	5	.006	.02		

* MET SAMPLES 702.5-703, 715-715.5, 725-725.5, 733-733.5

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%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		755-783 lt gy-white fine grain tuff strong sil w/crackle bx poss v. wk silication @70	760 770 780 790 800 EOH		Add frac @ 10 Add frac @ 30∠40 (60) 783-800 1 frac/ft @ 60, 30∠30 EOH 783-794 shear zone with clay + sandy (coarse) fragmentals	754-783 str. crackle bx w/high angle rubble components, x-cutting fine sulf vn and gy qtz vn, qtz vn tend to be vugy with clay + marcasite-py white clay str-sil
		783-793 soft lt gray-white v. str clay alt rock poss as above				783-794 v. str. clay alt rock, dissem py (5%) sulf veinlets @ 50 texturer obscured
		793-794 SAS but granular fragmental tort Fault ?				494-496 silica saturated bx matrix, vugs with sulf + clay
		794-796 sil breccia, rarely angular, generally sub-rounded to rounded 1/8-2"				796-800 wk crackle bx w/qtz-sulf-clay cements + fillings of vugs, hairline qtz stockwork str. sil
		796-800 Fault bx ? fine-med grain volcaniclastic Tuff lt gy-lt brown - crackle bx				

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
753	758	5	.010	.04		
758	763	5	.030	.05		
763	768	5	.023	.06		
768	773	5	.020	.06		
773	778	5	.006	.04		
778	783	5	.027	.10		
783	788	5	.012	.13		
788	793	5	.007	.15		
793	795	2	.011	.06		
795	800 EOH	5	.010	.07		

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # 94-320 DATE: 9/6/94 LOGGED BY: _____ PAGE 1 OF 5

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)
303	313	84	93	.65	305.5	1575	1	50	R	chlorite powders	305.5	457	180	2.53
313	323	91	95	.66	317.6	1125	1	80, 30	R	chl; 1/10 qtz + clay	317.6	424.5	180	2.35
323	333	94	96	.87	325.6	975	1	50	R	nil chl - rich rock	325.6	398	160	2.48
333	343	89	96	.79	337	1575	1	80	R	nil chl-rich rk	337	488	190	2.56
343	353	97	98	.81	348.5	600	1	80	R	SAb	345.5	304.5	125	2.43
353	363	82	94	.64	361	625	1.5	70	R	SAb	361	573	240	2.38
363	373	94	99	.81	369	1500	1	70, 40	R	SAb	369	521	220	2.37
373	383	82	94	.69	376	2100	1.5	80, 70	S	SAb	376	413	180	2.30
383	393	90	99	.77	385	600	.5	80	S	SAb	385	402	180	2.23
393	403	77	97	.54	401	1350	1.5	40	R	1/8" py/clay	401	473	210	2.25
403	413	85	97	.52	409	2400	2	10, 40	S/R	chl/ py+clay 1/10"	409	400	160	2.5
413	423	88	98	.51	419	975	1	30	R	clay + qtz 1/10"	419	580	240	2.42

lbs/2.236 in²

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # 94-320 DATE: 9/6/94 LOGGED BY: _____ PAGE 2 OF 5

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)
423	433	88	96	.59	428	900	2	40,20	S	chl	428	456	200	2.28
433	440						1-3	60	R	clays barite bx				
440	449	53	74	.22	443	2400	2	50	S-R	clay film +chl	443	499.5	190	2.63
449	459	85	98	.63	454	2100	1.5	50	R	qtz-clay barite 1/4"	454	473.5	180	2.63
459	469	89	95	.49	463	675	1	50	R	1/8" clay	463	496.5	200	2.48
469	473	50	75	.10	470	2550	2.5	20 ⊥ 40	S	chl-chl films	470	502	190	2.64
473	483	63	80	.27	480	2325	1.3	40, 30	R	chl-clay qtz 1/20-1/4"	480	497	200	2.49
483	483.5													
483.5	493	62	90	.32	485.5	600	2	70, 30, 40	R	chl film	485.5	491	200	2.46
493	503	98	99	.73	498	550	.5	50, 70	R	nil chl Rock	498	500	220	2.27
503	513	99	100	.81	509	825	.8	70-80	R	SAS	509	225	100	2.25

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # 94-320 DATE: 9/7 LOGGED BY: _____ PAGE 3 OF 5

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)
513	527	90	97	.55	515	900	1.3	40, 50	R	nil chl Rock	515	588.5	230	2.30
523	533	96	98	.57	527	1200	1.2	40, 50	R	1/16" qtz-calcite vn	527	465.5	200	2.33
533	543	88	92	.52	537	675	.9	40	R	nil clay-chl Rock	537	372.5	170	2.19
543	553	98	99	.74	549.5	1425	.9	70, 60	R	SAB	549.5	528	220	2.4
553	563	98	99	.65	558	1575	1	70	R	SAB	558	448	210	2.13
563	573	94	97	.72	568.5	1875	.8	70, 30	R	SAB	568.5	379	170	2.23
573	583	95	98	.73	576	1050	.9	40	R	qtz-marc illite vn 1/16-1/4	576	464	200	2.32
583	593	80	91	.67	586.5	1200	3	70, 40	R	chl films	586.5	503.5	220	2.29
593	603	98	98	.85	598	1575	.5	80, 55	R	nil chl Rock	598	558	220	2.54

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # 94-320 DATE: 9/7 LOGGED BY: RK PAGE 4 OF 5

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)
603	613	94	95	.56	606.5	2025	1.2	80	R	hil sil RK	606.5	454	180	2.52
613	623	96	96	.63	617.6	975	1.2	80, 60	R	SAS	617.6	512	210	2.44
623	633	91	92	.54	627.5	2325	.8	80, 60	R	qtz + clay 1/16"	627.5	384.5	160	2.40
633	643	89	92	.71	638.5	2850	1	70	R	clay films	638.5	485	200	2.43
643	653	81	94	.56	648	4200	1.2	70, 40 ⊥ 50	R	qtz-dark clay-filled vugs	648	547	210	2.60
653	663	86	88	.76	656	5150	.7	80, 40	VR	qtz-barite + clays	656	520	200	2.60
663	673	95	95	.57	667	4275	.9	80	R	SAS	667	339	140	2.42
673	683	95	97	.64	686.5	1650	.7	80, 40	R	SAS	686.5	542	210	2.58
683	692	66	83	.34	687	5175	1.4	50	R	SAS	687	501.5	200	2.50
692	696	60	80	.30	696	5100	1.8	50	R	SAS	696	395	160	2.47
696	703	74	81	.23	699.5	6450	1.8	50	R	SAS	699.5	563.5	210	2.68

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # 94-320 DATE: 9/8 LOGGED BY: RR PAGE 5 OF 5

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)
703	711.5	85	88	.49	708	4800	.9	60, 20 50	R	silica w/clay powders chl films	708	417	150	2.78
711.5	712	40	40	0										
712	713	.30	90	0										
713	723	89	94	.57	720.5	3075	1	70	R	clay films	720.5	564	220	2.56
723	733	82	94	.56	729.5	3900	1.3	70, 60	R	1/10" green clays	729.5	411	160	2.57
733	743	97	97	.59	738.5	4275	.8	70, 30	R	1/10" clay	738.5	586	240	2.44
743	753	94	95	.65	746	2550	1	60, 50	R	SAS	746	404.5	170	2.38
753	763	87	98	.41	760.5	2325	1.7	60, 50	S	SAS	760.5	597.5	240	2.49
763	773	79	95	.43	769.5	1800	1.6	60, 40 10	R	SAS	769.5	510.5	210	2.43
773	783	69	89	.31	776.5	3150	2.1	30 ⊥ 40 60	VR	SAS	776.5	547	220	2.49
783	- 793	.73	94	.40	792	550	.8	60	R	soft clay	792	444	180	2.46
793	800 EOH	66	97	.44	797	1950	1	30 ⊥ 30 65	R	AH RH	797	521.5	210	2.48

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 1
LOGD BY: HSM	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE #
DATE: 03/07/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	94-320

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DRILLING: DEPTH FT; REC/CUT; R Q

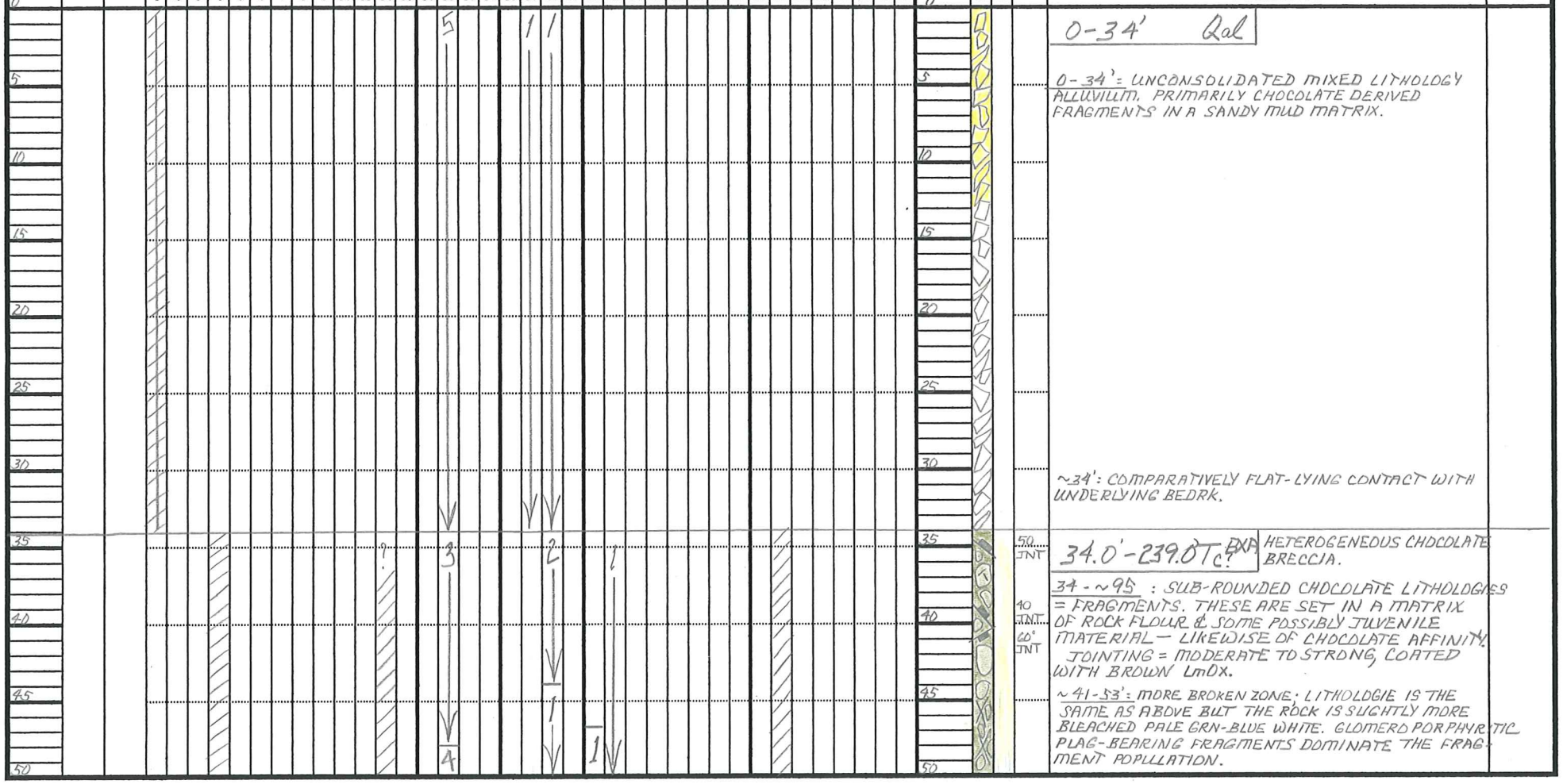
LITHOLOGY: ALLUVUM (1); MUDCGL (2); (3); LITHTUF (4); PUMTUF (5); SURGTUF (6); SASHFL (7); LAVA (8); AUTOBX (9); INTRUSV (10); BASALT (11); ANDESIT (12); RHYOLIT (13)

STRUCT: TEC BXA (14); BROKEN (15); GOUGE (16); VOID (17)

ALTERATION/MINLIZATION: Fe MIN: MNOX (18); HEMTIT (19); LIMONIT (20); PYRITE (21); PROP (22); ARG (23); ARG2 (24); ARPLSIL (25); (26); QTZVNS (27); CALCITES (28); METALS (29)

STRAT: BADGEROCK (30); CHOCOLT (31); UBUD (32); BRADY (33); MKRPOR (34); LBUD (35); WILDROS (36); DOZER (37)

DEPTH FT; LITHGRAPH; ALTGRAPH; STRCT; SAMPLINT



COMMENTS

0-34' Qal

0-34': UNCONSOLIDATED MIXED LITHOLOGY ALLUVIUM. PRIMARILY CHOCOLATE DERIVED FRAGMENTS IN A SANDY MUD MATRIX.

~34': COMPARATIVELY FLAT-LYING CONTACT WITH UNDERLYING BEDRK.

34.0'-239.0' Tc? EXA

HETEROGENEOUS CHOCOLATE BRECCIA.

34 - ~95 : SUB-ROUNDED CHOCOLATE LITHOLOGIES = FRAGMENTS. THESE ARE SET IN A MATRIX OF ROCK FLOUR & SOME POSSIBLY JUVENILE MATERIAL — LIKEWISE OF CHOCOLATE AFFINITY.

JOINTING = MODERATE TO STRONG, COATED WITH BROWN LmOx.

~41-53': MORE BROKEN ZONE; LITHOLOGIE IS THE SAME AS ABOVE BUT THE ROCK IS SLIGHTLY MORE BLEACHED PALE GRN-BLUE WHITE. GLOMERD PORPHYRITIC PLAG-BEARING FRAGMENTS DOMINATE THE FRAGMENT POPULATION.

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 2
LOGD BY: HSM	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE #
DATE: 03/07/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	94-320C

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DEPTH FT	DRILLING REC/CUT	DRILLING RQD	LITHOLOGY (ALLUVIUM, MUD CGL, LITHTUF, PUMTUF, SURGTUF, SHALLOW, ALAVA, AUTOBX, INTRUSIV, BANDALT, ANDESITE, RHYOLITE)	STRUCT (TEC, BROKEN, GOUGE, VOID)	ALTERATION/MINLIZATION (Fe MIN: MNOX, HEMTITE, LIMONITE, PYRITE; PROP, ARG, ARG2, RPL, SILL, QTZVNS, CALCITE, METCILAS)	STRAT (BADLAND, CHOCOLT, BUD, BRADY, MKRPOR, LBUD, WILDROS, DOZER)	ALT GRAPH	ALT STRCT	COMMENTS
50									
			?	3	1 1 1			60° INT	53-63': WEAKLY SHEARED & TECTONIZED, MODERATELY ARGILLIZED & STRONGLY BLEACHED. STRONGER ALTERATION + DISRUPTION THAN THAT FOUND FROM 41-53'.
55									
60								50° SH/INT	63-95': LESS BROKEN & UNTECTONIZED. MODERATE JOINTING WITH BROWN LIMONITIC FeOx ON JNTS & PARTINGS. LITHOLOGY CONTINUES AS DESCRIBED ON PREVIOUS PAGE, MIXED PLAG-BEARING CHOCOLATE LITHOLOGIES = >90% FRAGMENT POPULATION. ~5% NON-CHOCOLATE LITHICS.
				2	2			60° INT	
65									
70									~71': OSCAR LITHIC
								50 INT	
75									
80								50 INT	
85								50 INT	85': EARTHY BRN LmOx VEIN.
					1			45° LmVN	
90									NO CALCITE.
								45 INT	
95									~95': FRAGMENT POPULATION APPEARS MORE UNIFORM THAN ABOVE WITH MOTTLED, FLOW BANDED VERY FINE-GRAINED & POSSIBLY JUVENILE PLAG-BEARING CHOCOLATE DOMINATING THE FRAGMENT POPULATION.
								40° INT	
100									

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 3
LOGD BY: HSM	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE #
DATE: 03/07/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	94-320C

SCALE: 1" = 10 ft.

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DRILLING: DEPTH, RECOVERY, RQD

LITHOLOGY: ALLUVIUM, MUD, CGL, LITHIC TUFF, PUMICE TUFF, SURGE TUFF, ASHAVA, LAUTOBX, AIRFALL, BANDED TUFF, ARGILLITE, RHYOLITE

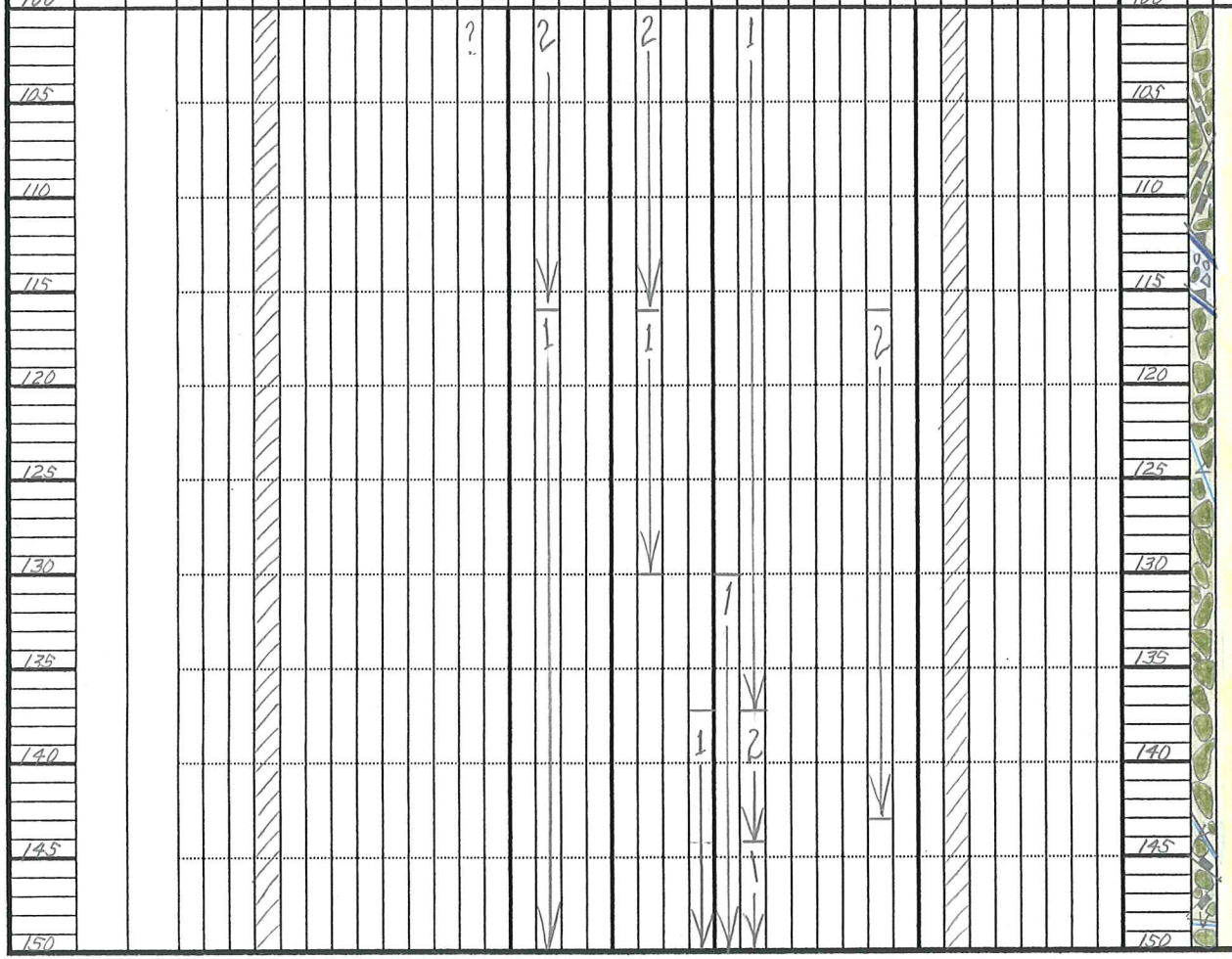
STRUCT: TEC, BRECCIA, BOUDINAGE, VOID

ALTERATION/MINLIZATION: Fe MIN (MINOR, HEMATITE, MINTIN, PYRITE), PROP, ARG, ARGP, SILQTZ, VNS, CALCITE, MEALCITE, CALCITAS

STRAT: BADGER, CHOCOLAT, BOUDIN, BRADY, MKRPOR, LBUD, WILDROS, DOZER

DEPTH, FAPH, LITHGRAPH, ALTGRAPH, STRCT, SAMPLE

COMMENTS



~95-112.5': APHANITIC FLOW-BANDED PLAG-BEARING SUB-ROUNDED CHOCOLATE FRAGMENTS ARE PACKED IN A PALE RED ROCK FLOUR MATRIX. THE FRAGMENTS ARE COMMONLY FROZEN IN THE ACT OF DISAGREGATING. MODERATELY BLEACHED.

112.5': FAULT/SHEAR AT 40° TO C/A. MATRIX ROCK FLOUR TURNS DARK PURPLE AT & BELOW THE SHEAR, AND REMAINS DARK PURPLE TO ~116'. THERE IS NO LITHOLOGIC CHANGE ACROSS THIS SHEAR ZONE. THE FRAGMENT POPULATION IS SMALLER WITHIN IT & ANGULAR, POSSIBLY DUE TO SECONDARY TECTONIC BRECCIATION. BY 116' THE ROCK IS AGAIN AS DESCRIBED ABOVE. JNTING IS SPARSE. DISS'D & VN CALCITE TO 143'.

137-143': MODERATE ARGILLIZATION & PROPYLLITIZATION. ROCK IS SOMEWHAT FRIABLE MODERATELY BLEACHED AND BLUISH-GRN WITH CHLORITE ON FRAX. SMALL PYRITE BLEBS SCATTERED THROUGH THE ~~GROUNDMASS~~ ROCK NOW PARTIALLY OXIDIZED.

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 4
LOGD BY: HSM	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE #
DATE: 03/03/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	94-320C

SCALE: 1" = 10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DRILLING: DEPTH (150, 155, 160, 165, 170, 175, 180, 185, 190, 195, 200); RECOVERY; RQD

LITHOLOGY: ALUVUM (1), MUDCGL (2), (3), LITHTUF (4), PUMTUFF (5), SURGTUFF (6), ASHFLO (7), ALAVA (8), AUTOBX (9), INTRUSIV (10), BASALT (11), ANDESITE (12), RHYOLITE (13)

STRUCT: TEC BXA (14), BROKEN (15), GOUGE (16), VOID (17)

ALTERATION/MINLIZATION: Fe MIN: MNOX (18), HEMTIT (19), LIMONIT (20), PYRITE (21); PROP (22), ARG (23), ARGG (24), REPL SIL (25), (26), QTZ VNS (27), CALCITE (28), METCLAS (29)

STRAT: BCDOGER (30), CHOCOLT (31), (32), BRAD (33), MKRPOR (34), LBUD (35), WILDROS (36), DOZER (37)

DEPTH FRAPH: 150, 155, 160, 165, 170, 175, 180, 185, 190, 195, 200

LITH GRAPH

ALT GRAPH

STRCT NT: 40° FRX, 65° SLICK; 10° PYI CALVN; 60° CALVN

SAMPLE INT

COMMENTS

143'-159': WK TO TRACE BLUE-GRN COLOR & SOME DISSEMINATED CHLORITE IN THE MATRIX ~ 153'. FRAGMENTS ARE PREFENTIALLY BLEACHED & ARGILLIZED THROUGH THIS ZONE EXCEAT FROM 153-156' WHERE MODI STR. ARGILLIZATION EXTENDS THRDUGHOUT THE ROCK WITH ATTENDENT STRONG BLEACHING.

LITHOLOGY CONTINUES AS DESCRIBED ABOVE: HETEROGENEOUS SUB-ROUNDED TO ANGULAR CHOCOLATE FRAGMENTS USUALLY OF THE PLAG-BEARING 'TYPE' LITHOLOGY W/ OR W/O FLOW BANDING.

WISPY DULL BRASSY FG SULFIDE VNLTS = SPARSE TO WEAK.

169': BLUE-GRN COLOR & ALT'N PICK UP. NO TRUE JOINTING TO ~207'. DULL BRASSY PYRITE DISSEMINATED & AS WISPY VEINLETS.

~180': PREFERENTIAL CLAY ALTERATION OF FRAGMENTS DIES OUT.

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 5
LOGD BY: HSM	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE #
DATE: 03/08/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	94-320C

SCALE: 1" = 10 ft.

LITH EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DEPTH FT	REC FT	RQD	AMIUM	MUD CGL		LITH TUF	PUM TUF	SURGE TUF	ALAV	ALAO BX	AUTO BX	INTRUSV	BASALT	ANDESIT	RHYOLIT	TEC BX	BROKEN	GOUGE	VOID	Fe MIN MNOX	HEMTIT	LIMONITE	PYRITE	PROP	ARGG	ARGG 2	RPL SIL		QTZ VNS	CALCITE	MEALCAS	BCHDGER	CHOCOLT	BUD	BRADY	MKRPOR	LBUD	WILDROS	DOZER	DEPTH FT	LITH GRAPH	ALT GRAPH	STRCT ANT	SAMPLE INT
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37				
200																																								200			
														?			2					1	1	2	1					2														
205																																								205			
210																						1																		210		50° INT.	
215																																								215			
																																									50° INT		
220																																								220			
225																																								225			
																														1														
230																																								230			
235																																								235		60° MARC/ CALVN	
																																										40° MARC/ CALVN 70°	239'-370' Tc BXA
240														?																										240			
245																														2										245			
250																																								250			

COMMENTS

CONTINUED HETEROGENEOUS CHOCOLATE BRECCIA AS DESCRIBED ON PRECEDING PAGES.

FRAGMENTS ARE HIGHLY VARIABLE IN TEXTURE AND RANGE FROM COBBLES TO PEBBLES IN SIZE. THEY INCLUDE FAINTLY RUDDY GRY PLAG & MAFIC BEARING 'TYPE' CHOCOLATE LAVA FRAGMENTS THAT WERE FULLY INDURATED AT THE TIME OF EMPLACEMENT. OTHER GENERALLY LARGE FRAGMENTS ARE COMPRISED OF FLOW BANDED APHANITIC AMPHIBOLE ANDESITE. THESE & THE SPARSER TUFFACEOUS OR SCORIACEOUS FRAGMENTS TEND TO BE BLEACHED LT. BLUE-GREEN & ARGILLIZED. THE TUFFACEOUS ONES MAY BE JUVENILE.

TRUE JOINTING SPARSE. WISPY DULL FG SULFIDE VEINLETS COMMON = WK TO MOD. BRN LmOX STAINS BLEED OFF OF BLEBS & VNLTS OF SULFIDE.

239': 5-6" WIDE SILICA-PYRITE VEIN AT CONTACT BETWEEN 2 DISTINCT TYPES OF CHOCOLATE BXA.

BELOW THIS WIDE BXA VEIN THE FORMATIONAL BRECCIA IS MATRIX-SUPPORTED, TO A GREATER DEGREE THAN ABOVE. ARGILLIZED, SUB-ANGULAR FLOW-BANDED A3 FRAGMENTS DOMINATE & THERE ARE NUMEROUS ULTRA-APHANITIC, SUB-ROUNDED FRAGMENTS WITH PERLITIC CRACKS. ~~THE MATRIX IS UNIFORM & APPARENTLY JUVENILE.~~ →

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 6
LOGD BY: HSM	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE #
DATE: 03/08/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	94-320C

SCALE: 1" = 10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

| DRILLING | | | LITHOLOGY | | | | | | | | | | | | | STRUCT | | | | ALTERATION/MINIZATION | | | | | | | | | | | | STRAT | | | | | | | | | | | | |

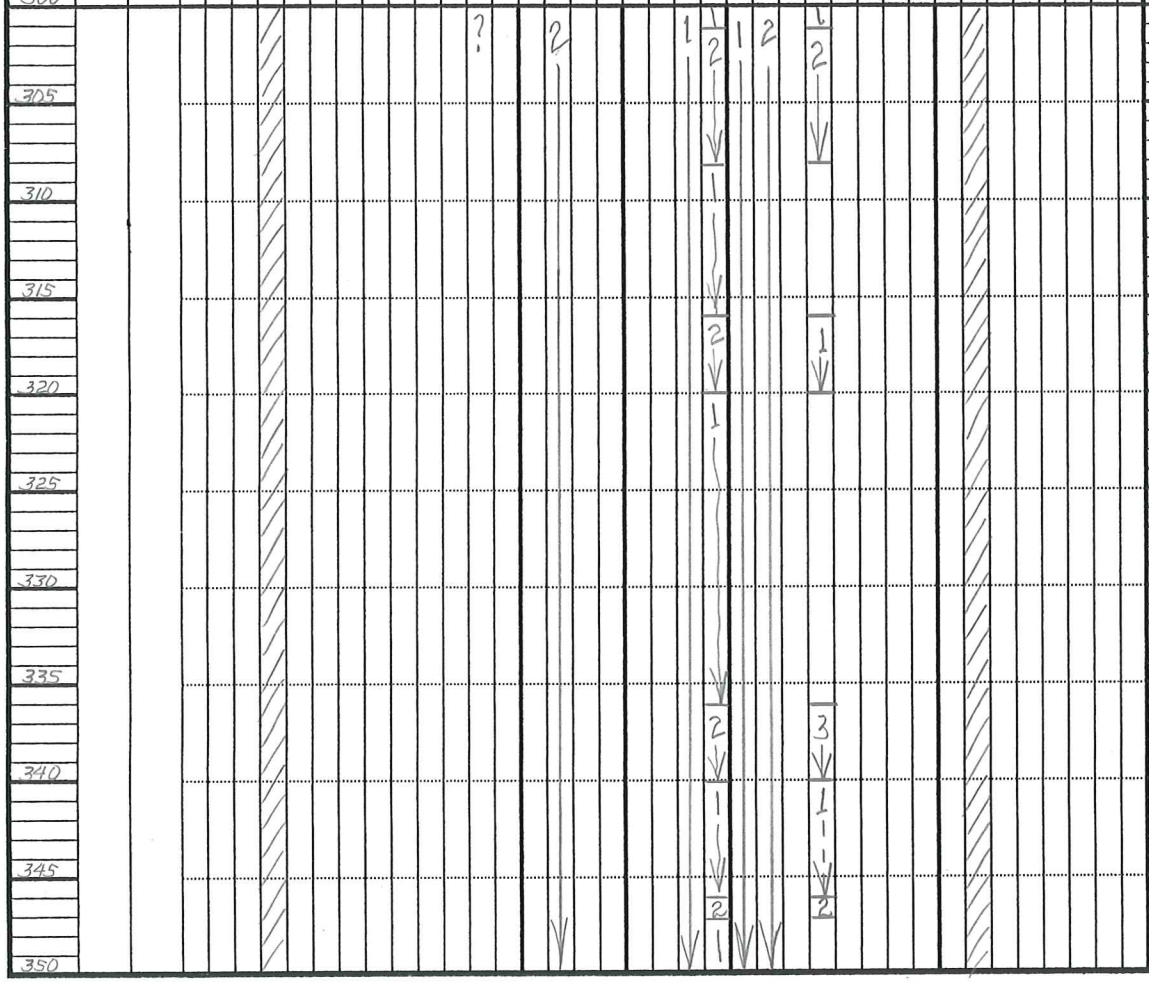
PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 7
LOGD BY: HSM	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE #
DATE: 03/09/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	94-320C

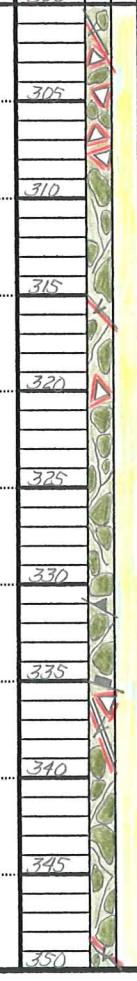
SCALE: 1" = 10 ft

LITH EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DRILLING			LITHOLOGY													STRUCT				ALTERATION/MINIZATION											STRAT								DEPTH	LITH GRAPH	ALT GRAPH	STRUCT	SAMPLE
DEPTH	RECOVERY	RQD	ALUVUM	MUDCGL		LITHTUF	PUMTUFF	SURGTUFF	ASH	LAVA	AUTOBX	INTRUSV	BASALT	ANDESIT	RHYOLIT	TECBXA	BROKEN	GOUGE	OID	Fe MIN: MNOX	HEMTIT	LIMONIT	PYRITE	PROP	ARG	ARG2	RPL	SIL	QTZVNS	CALCITES	METCLAS	BADGER	COLT	BUD	BRADY	MKRPOR	BUD	WILDROS	DOZER	DEPTH FT				SAMPLE INT
300			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	300				





COMMENTS

301-308': QUARTZ RIMS CEMENT BRECCIA. OVERPRINTS ~~LITHOLOGIC~~ VOLCANIC BRECCIA, BLADED MARCASITE DEPOSITED WITH OR AFTER SILICA IN LEACHED VUGS & VN OPEN SPACE = WEAK TO MODERATE.

300-350': VOLCANIC BRECCIA WITH THE SAME LITHOLOGIC CHARACTERISTICS AS DESCRIBED ON PREVIOUS PAGES. ROCK IS LT. BLUE-GREEN & WKLY TO MODERATELY PROPYLITIZED THROUGHOUT. PERVASIVE WK ARGILLIZATN RANGING TO STRONG IN CERTAIN FRAGMENTS.

316' & 320': MINOR VEIN & ~3" OF THE SAME TYPE OF HYDROTHERMAL BRECCIA OVERPRINT AS DESCRIBED ABOVE: WHT CHALCEDONIC SILICA + BLADED MARCASITE. FRAGMENTS PUNKIER BELOW 320'.

WISPY DULL BRASSY SULFIDE VNLTS = WK TO MOD. THRU THIS INTERVAL AS ON PRECEDING PAGES.

FRAGMENT PROBABLY

336-340': WHT CHALCEDONIC SILICA FLOOD OVERPRINTS ~~LITHOLOGIC~~ VOLCANIC BXA.

FROM ~340': MATRIX IS SLIGHTLY PINK & HARDER THAN FRAGMENTS; POSSIBLY WEAKLY SILICIFIED. FRAGMENTS ARE PUNKY & STRONGLY ARGILLIZED AS ABOVE. OVERALL PERVASIVE ALTERATION IS THE SAME.

NO CALCITE

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 8
LOGD BY: HSM	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE #
DATE: 03/09/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	94-320C

SCALE: 1" = 10 ft

LITH EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DRILLING: DEPTH (350, 355, 360, 365, 370, 375, 380, 385, 390, 395, 400); RECOVERY; RQD

LITHOLOGY: ALLUVIUM (1), MUDCGL (2), (3), LITHTUF (4), PUMTUFF (5), SURGTUFF (6), ASHFLO (7), ALAVA (8), AUTOBXA (9), INTRUSIV (10), (11), BANDESIT (12), ARHYOLIT (13)

STRUCT: TEC (14), BROKEN (15), GOUGE (16), VOID (17)

ALTERATION/MINLIZATION: Fe MIN: MNOXA (18), HEMATIT (19), LIMONIT (20), PYRITE (21); PROP (22), ARG (23), ARG2 (24), RPL SIL (25), (26), QTZ VNS (27), CALCITE (28), MELAS (29)

STRAT: BADGER (30), CHOLT (31), (32), BRADY (33), MKRPOR (34), (35), WILDROS (36), DOZER (37)

DEPTH GRAPH: LITH GRAPH, ALT GRAPH, ALT TRACT, SAMPLE INT

COMMENTS

LITHIC TUFF BRECCIA AS DESCRIBED ON PRECEDING PAGES, EXCEPT A GRADATIONAL INCREASE IN THE SIZE & NUMBER OF BLEACHED, ARGILLIZED BLUE-GREEN PERLITIC FRAGMENTS IS OBSERVED.

85° SiPy VN 60° INT ~50° WHT CLAY VNLT 30-55° SiPy VN

CONTACT 370': APPEARS IRREGULAR & ESSENTIALLY CONFORMABLE - ASSUMING THAT THIS IS A SURFACE ERUPTIVE SEQUENCE & THAT THE UNDERLYING LAVA IS NOT A SHALLOW INTRUSIVE.

364-370': FRAGMENT POPULATION DOMINATED BY FORMLY GLASSY, PERLITIC, LT. BLUE-GRN, CLAY-ALTERED JUVENILE CHILLED MATERIAL.

TRUE JOINTING = WEAK TO ABSENT.

370' - Tc FOLIATED, APHANITIC,

370-375': GLASSY PERLITIC JUVENILE FRAGMENT, NOW BLEACHED & ARGILLIZED (STR.)

374-375': SLIGHTLY SHEARED(?) CLAYSHOT ZONE COULD BE EITHER A CLAYSHOT FRAGMT ~~OR A PLT.~~

~382': UNBROKEN, FOLIATED, AMPHIBOLE BEARING ANDESITE 'TIL BASE OF RETAINED CORE AT 393'. FOLIATION IS DEFINED BY ALIGNMENT OF AMPHIBOLE PHENOCRYSTS.

60° JNT

THIS IS PROBABLY THE 'PARENT' LAVA FOR THE ULTRA-APHANITIC PERLITIC JUVENILES FOUND IN THE OVERLYING TUFF/BXA. THE DEGREE & TYPE OF ALTERATION IS IDENTICAL. BOTH THIS FOLIATED LAVA & THE PERLITIC +- FLOW BANDED FRAGMENTS ARE STRONGLY ARGILLIZED & BLEACHED BLUE-GREEN. RELICT PHENOCRYST SITE APPEAR LARGER & MORE ABUNDANT IN THE LAVA BUT ARE PRESENT IN MANY OF THESE GLASSY JUVENILES ABOVE.

50° FLOW

CONTAINS SILVER DOLLAR SIZED Py BLEBS. CALCITE IS PERVASIVELY DISSEMINATED.

30° JNT

393' SWITCH TO NC? HQ ENDS AT THIS POINT

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: 94-320
LABORATORY JOB No. : SP030865
SAMPLE TYPE :

RECEIVED : 12 SEP 1994
REPORTED :
No. SAMPLES : 87

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 : 94-320
JOB NUMBER : SP030865
REPORTED :

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
94-320 390-395	<0.001			<0.02
94-320 395-400	0.004			0.06
94-320 400-405	<0.001			0.04
94-320 405-410	0.003			0.11
94-320 410-415	0.003			0.08
94-320 415-420	0.002			0.07
94-320 420-425	0.002			0.07
94-320 425-430	0.001			0.05
94-320 430-435	0.004			0.07
94-320 435-440	0.004			0.07
94-320 440-445	0.004			0.05
94-320 445-450	0.003			0.05
94-320 450-455	0.010			0.05
94-320 455-460	0.003			0.04
94-320 460-465	0.002			0.03
94-320 465-470	0.006			0.05
94-320 470-475	0.001			0.04
94-320 475-480	0.001			0.04
94-320 480-485	0.002			0.06
94-320 485-490	<0.001			0.05
94-320 490-495	<0.001			<0.02
94-320 495-500	<0.001			<0.02
94-320 500-505	<0.001			<0.02
94-320 505-510	<0.001			0.02
94-320 510-515	0.001			0.04

AMERICAN ASSAY LABORATORIES
ANALYSIS REPORT

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : 94-320
JOB NUMBER : SP030865
REPORTED :

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
94-320 515-520	0.001			0.03
94-320 520-525	0.002			0.03
94-320 525-530	0.002			0.03
94-320 530-535	0.010			0.03
94-320 535-540	<0.001			0.05
94-320 540-545	0.007			0.03
94-320 545-550	0.005			0.04
94-320 550-555	0.002			0.03
94-320 555-560	0.006			0.05
94-320 560-565	0.003			0.04
94-320 565-570	0.003			0.04
94-320 570-575	0.001			0.03
94-320 575-580	0.002			0.04
94-320 580-585	0.002			0.04
94-320 585-590	0.002			0.03
94-320 590-595	0.003			0.04
94-320 595-600	0.009			0.04
94-320 600-605	0.003			0.06
94-320 605-610	0.012			0.08
94-320 610-615	0.004			0.05
94-320 615-620	0.003			0.05
94-320 620-623	0.003			0.03
94-320 623-628	0.002			0.06
94-320 628-633	0.002			0.04
94-320 633-638	0.001			0.14

AMERICAN ASSAY LABORATORIES
ANALYSIS REPORT

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : 94-320
JOB NUMBER : SP030865
REPORTED :

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
94-320 638-641	0.002			0.05
94-320 641-645.5	0.002			0.14
94-320 645.5-648	0.009			6.42
94-320 648-653	0.002			0.83
94-320 653-658	0.002			0.09
94-320 658-663	0.001			0.05
94-320 663-668	0.003			0.13
94-320 668-671	0.006			0.59
94-320 671-676	0.003			0.07
94-320 676-681	0.011			0.12
94-320 681-683	0.032			1.87
94-320 683-688	0.003			0.19
94-320 688-692	0.006			0.44
94-320 692-693	0.013			0.38
94-320 693-697.5	0.004			0.13
94-320 697.5-700	0.027			0.94
94-320 700-705	0.107			0.22
94-320 705-710	0.093		0.105	1.83
94-320 710-713	0.018			1.11
94-320 713-718	0.076		0.079	0.18
94-320 718-723	0.008	0.045		0.19
94-320 723-728	0.008	0.014		0.08
94-320 728-733	0.022			0.05
94-320 733-738	0.011			0.05
94-320 738-743	0.006			0.03

AMERICAN ASSAY LABORATORIES
ANALYSIS REPORT

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : 94-320
JOB NUMBER : SP030865
REPORTED :

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
94-320 743-748	0.005			0.05
94-320 748-753	0.006			0.02
94-320 753-758	0.010			0.04
94-320 758-763	0.030			0.05
94-320 763-768	0.023			0.06
94-320 768-773	0.020			0.06
94-320 773-778	0.006			0.04
94-320 778-783	0.027			0.10
94-320 783-788	0.012			0.13
94-320 788-793	0.007			0.15
94-320 793-795	0.011			0.06
94-320 795-800	0.010			0.07

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: 94-320
LABORATORY JOB No. : SP030846
SAMPLE TYPE :

RECEIVED : 12 SEP 1994
REPORTED : 23 SEP 1994
No. SAMPLES : 38

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au	FA30	15%	ppb	5
Au(R)	FA30	15%	ppb	5

SIGNATORY : Sue Faircloth M.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : 94-320
JOB NUMBER : SP030846
REPORTED : 23 SEP 1994

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb
94-320 10-20	24	
94-320 20-30	20	
94-320 30-40	144	
94-320 40-50	14	10
94-320 50-60	162	
94-320 60-70	14	
94-320 70-80	<5	
94-320 80-90	61	
94-320 90-100	11	
94-320 100-110	<5	
94-320 110-120	<5	
94-320 120-130	<5	
94-320 130-140	<5	
94-320 140-150	104	101
94-320 150-160	597	
94-320 160-170	70	
94-320 170-180	86	
94-320 180-190	10	
94-320 190-200	10	
94-320 200-210	80	
94-320 210-220	8	
94-320 220-230	180	
94-320 230-240	164	
94-320 240-250	10	
94-320 250-260	<5	

AMERICAN ASSAY LABORATORIES
ANALYSIS REPORT

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : 94-320
JOB NUMBER : SP030846
REPORTED : 23 SEP 1994

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb
94-320 260-270	<5	
94-320 270-280	6	
94-320 280-290	68	
94-320 290-300	23	
94-320 300-310	205	
94-320 310-320	178	
94-320 320-330	162	
94-320 330-340	236	
94-320 340-350	101	
94-320 350-360	241	
94-320 360-370	41	
94-320 370-380	56	61
94-320 380-390	6	

SAMPLE SUBMITTAL FORM

American Assay Laboratories Inc.

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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: 9/9/94 Number of Packages: 29 [ ] Prepaid [ ] Collect

9/15

ANALYSIS REQUIRED

SAMPLE		TYPE	ELEMENTS REQUIRED
94-320: 10-20	160-170	CORE	Au IAT FA (ppb)
20-30	170-180		
30-40	180-190		* repeat with grav. finish
40-50	190-200		if Au ≥ 1500 ppb
50-60	200-210		(in OPT)
60-70	210-220		
70-80	220-230		
80-90	230-240		
90-100	240-250		
100-110	250-260		
110-120	260-270		
120-130	270-280		
130-140	280-290		
140-150	290-300		
150-160			

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:

CLIENT FILE COPY

SAMPLE SUBMITTAL FORM

American Assay Laboratories Inc.

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(702) 738-2594

Company: Hecla Mining Co

Address:

Telephone Number: ( ) Fax Number: ( )

Project Name: Rosebud Purchase Order Number:

Transport Company: Waybill Number:

Date Shipped: 9/9 Number of Packages: 9 [ ] Prepaid [ ] Collect

(9/6 sample)

ANALYSIS REQUIRED

SAMPLE		TYPE	ELEMENTS REQUIRED
94-320	300-310	core	Au IAT FA ppb
	310-320	chips	
	320-330		* repeat Au if
	330-340		Au ≥ 1500 ppb in OPT
	340-350		with grav. finish
	350-360		
	360-370		
	370-380		
	380-390		

COARSE REJECTS (Normally Discarded)

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

PULPS (Normally Stored Free For One Month)

[ ] Discard after one month
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RESULTS AND INVOICES TO BE SENT TO:

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(2)

(3)

Comments:

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(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: 9/9 Number of Packages: 17 [ ] Prepaid [ ] Collect

(9/6 sampled)

ANALYSIS REQUIRED

SAMPLE		TYPE	ELEMENTS REQUIRED
94-320: 390-395	465-470	coms	Au+Ag 2AT FA
395-400	470-475		w/ Hecla-Rosebud
400-405			Custom Prep.
405-410			
410-415			* repeat if Au ≥ .05 OPT
415-420			with grav. finish
420-425			
425-430			
430-435			
435-440			
440 ~~-35~~-445			
445-450			
450-455			
455-460			
460-465			

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:

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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: 9/9 Number of Packages: 26 [ ] Prepaid [ ] Collect

sampled 9/7

ANALYSIS REQUIRED

SAMPLE		TYPE	ELEMENTS REQUIRED
94-320: 475-480	550-555	CORE	Au + Ag 2AT FA
480-485	555-560		w/ Hecla-Rosebud
485-490	560-565		Custom Rep.
490-495	565-570		
495-500	570-575		* repeat Au
500-505	575-580		with Grav. finish
505-510	580-585		Au ≥ .05 OPT
510-515	585-590		
515-520	590-595		
520-525	595-600		
525-530	600-605		
530-535			
535-540			
540-545			
545-550			

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 Muehoff

(2)

(3)

Comments:

CLIENT FILE COPY

SAMPLE SUBMITTAL FORM

American Assay Laboratories Inc.

Sparks Office
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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: 9/9 Number of Packages: 23 [ ] Prepaid [ ] Collect

(sampled 5/8)

ANALYSIS REQUIRED

94-320: SAMPLE		TYPE	ELEMENTS REQUIRED
605-610	671-676		Au, Ag 2A FA
610-615	676-681	CORE	w/ Hecla-Rosebud
615-620	681-683		
620-623	683-688		* Repeat Au if
623-628	688-692		Au ≥ .05 OPT
628-633	692-693		
633-638	693-697.5		
638-641	697.5-700		
641-645.5			
645.5-648			
648-653			
653-658			
658-663			
663-668			
668-671			

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:

CLIENT FILE COPY

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(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: 9/9 Number of Packages: 21 [ ] Prepaid [ ] Collect

(Sampled 9/9)

ANALYSIS REQUIRED

SAMPLE		TYPE	ELEMENTS REQUIRED
94-320 700-705	773-778	CORE	Au & Ag 2AT FA
705-710	778-783		w/Hecla-Rosebud
710-713	783-788		Custom Prep
713-718	788-793		
718-723	793-795		* Repeat Au ~~Ag~~ w/grav fin
723-728	795-800		if Au ≥ .05 OPT
728-733			
733-738			
738-743			
743-748			
748-753			
753-758			
758-763			
763-768			
768-773			

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:

CLIENT FILE COPY

HECLA MINING CO.
ROSEBUD PROJECT
94-320
1"
Down

HECLA Mining Co.
ROSEBUD PROJECT
94-320
1"
Down

HECLA Mining Co.
ROSEBUD PROJECT
94-320
1"
Down
363

HECLA Mining Co.
ROSEBUD PROJECT
94-320
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Down
353

HECLA Mining Co.
ROSEBUD PROJECT
94-320
1"
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343

HECLA Mining Co
ROSEBUD PROJECT
94-320
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HECLA Mining Co.
ROSEBUD PROJECT
94-320
1"
Down
3415

HECLA Mining Co.
ROSEBUD PROJECT
94-320
1"
Down
323

HECLA Mining Co.
ROSEBUD PROJECT
94-320
1"
Down
3/3

HECLA Mining Co.
ROSEBUD PROJECT
94-320
1"
Down
EOH

HECLA Mining Co.
ROSEBUD PROJECT
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1"
Down
295

HECLA MINING Co.
ROSEBUD PROJECT
94-320
1"
Down
283

HECLA Mining Co.
ROSEBUD PROJECT
94-320
1"
Down
273

HECLA Mining Co.
ROSEBUD PROJECT
94-320
1"
Down
26B

HECLA Mining Co.
ROSEBUD PROJECT
94-320
1"
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253

243
HECLA MINING Co.
ROSEBUD PROJECT
94-320
1"
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HECLA Mining Co.
ROSEBUD PROJECT
94-320
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HECLA MINING Co.
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HECLA Mining Co.
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4SA

HECLA Mining Co.
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533

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523

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513

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94-320
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523

HECLA MINING Co.
ROSEBUD PROJECT
94-320
1"
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HECLA Mining Co.
ROSEBUD PROJECT
94-320
1"
Down
46'

HECLA Mining Co.
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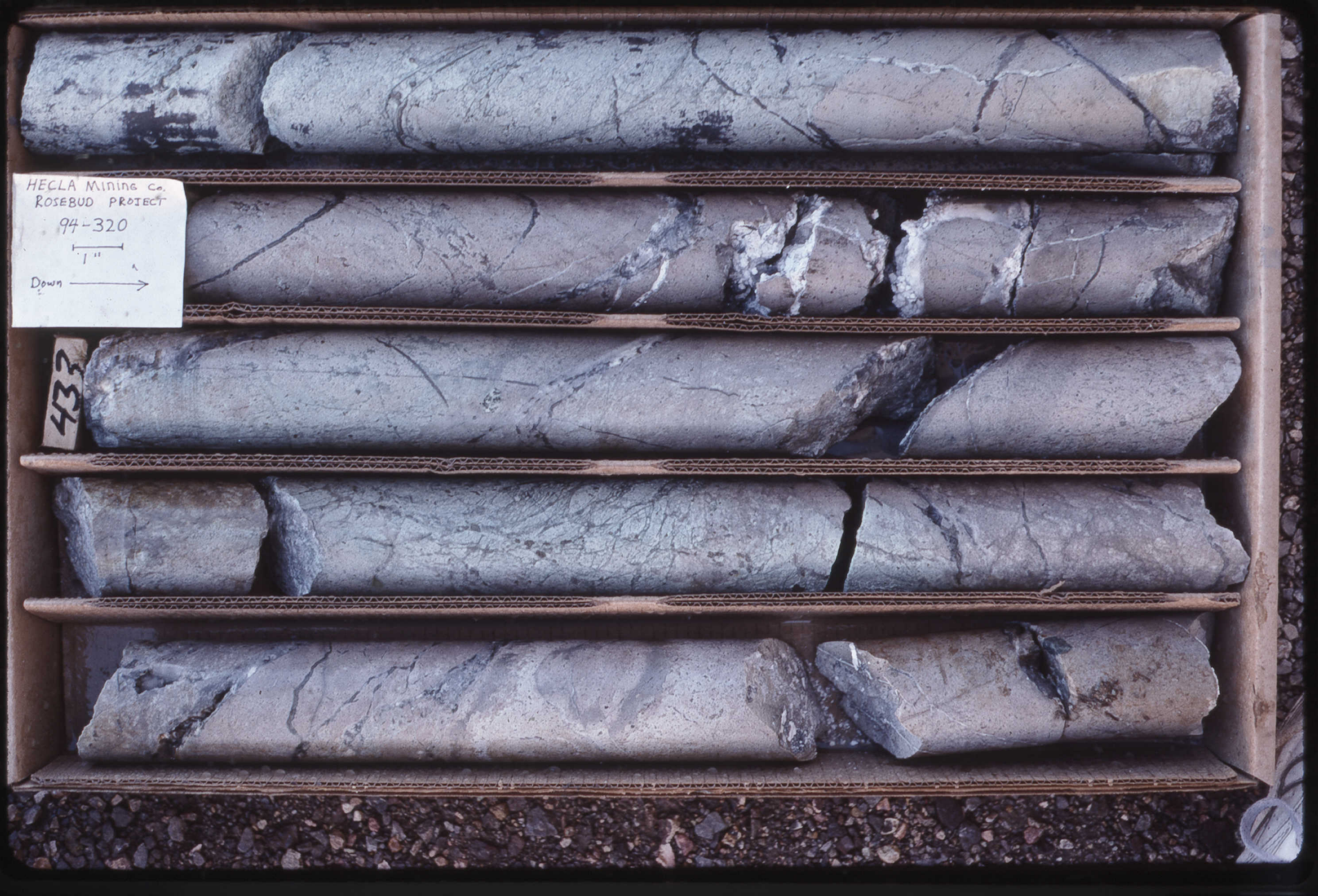
Down
449

440
HECLA Mining Co.
ROSEBUD PROJECT
94-320
1"
Down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94-320
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433

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HECLA MINING CO.
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HECLA MINING CO.
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HECLA MINING
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HECLA MINING Co.
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703

HECLA Mining Co.
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94-320
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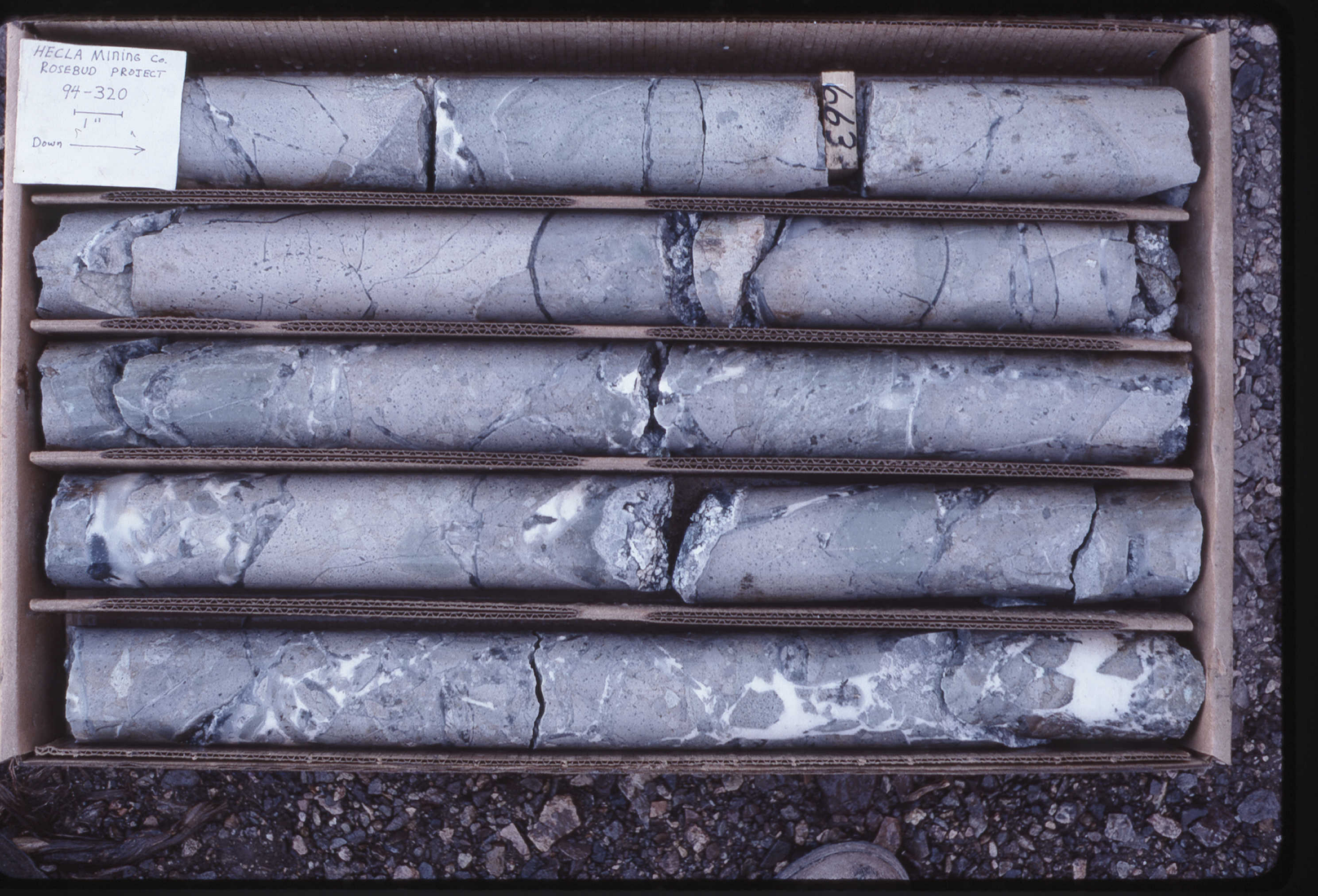
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ROSEBUD PROJECT
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163

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623

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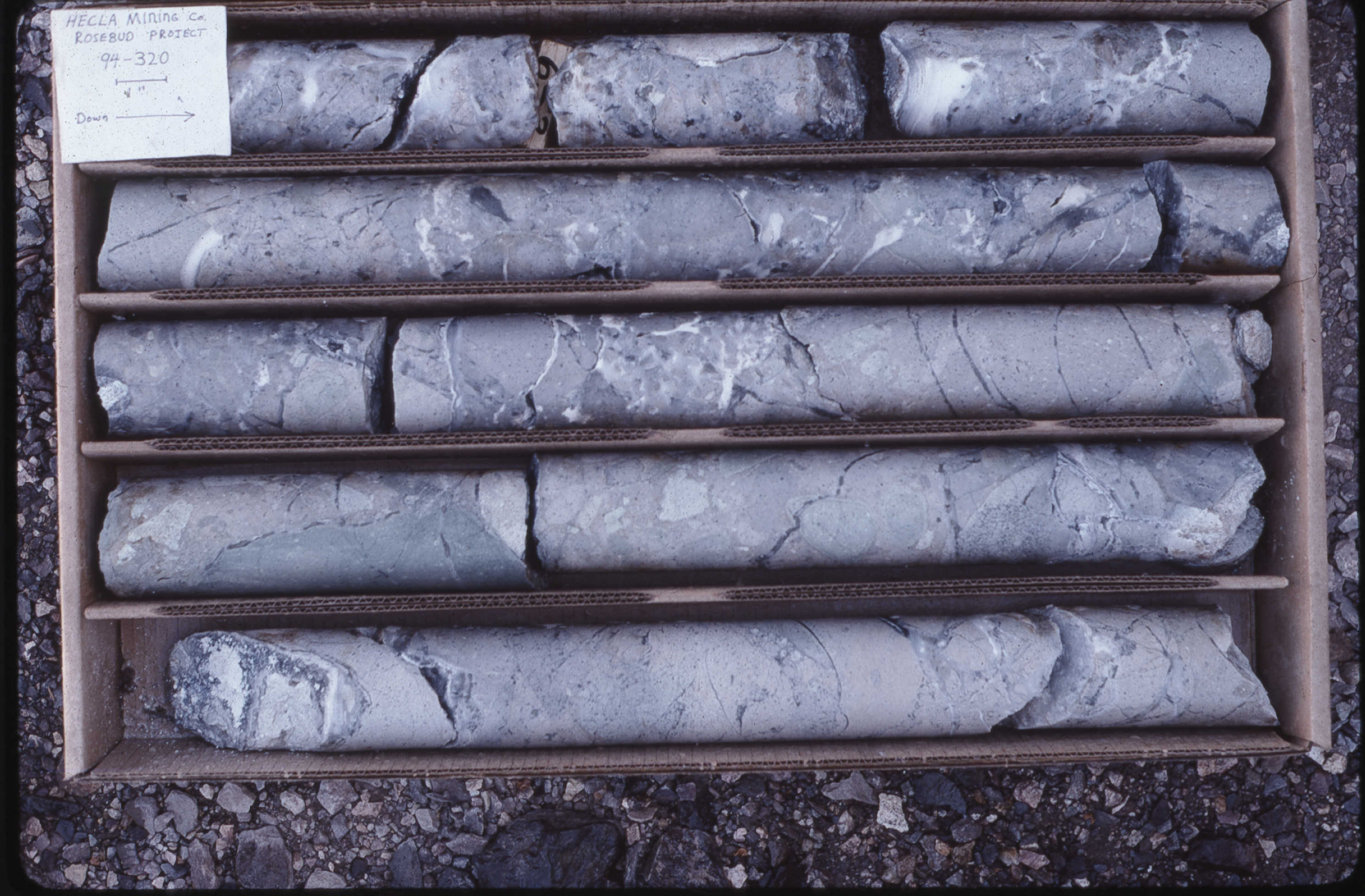
HECLA MINING Co.
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793
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HECLA Mining Co.
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783
10

HECLA Mining Co.
ROSEBUD PROJECT
94-320
1"
Down
W

HECLA Mining Co.
ROSEBUD PROJECT
94-320
1"
Down
175'

HECLA Mining Co.
ROSEBUD PROJECT
94-320
1"
Down