60000614

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. R-493
AUTHOR	D. Schoorl; J. P. Rogowski; B. Morris; K. Allen; L.E. Macleodon; V. Reid; M. Niemi
DATE OF DOC(S)	2000
MULTI_DIST Y / N? Additional Dist_Nos:	
QUAD_NAME	Sulphur 7.5'
P_M_C_NAME (mine, claim & company names)	Rosebud Mine; Rosebud Mining Co., LLC; Rosebud Project; Hecla Mining Co.; Degerstrom; Byington Hole
COMMODITY If not obvious	gold; silver
NOTES	drill logs; geology; assay; total depth 1140' invoice; geochemistry 119p.

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 3/21/08
Initials Date
DB:
Initials Date
SCANNED:
Initials Date

Revised: 1/22/08

RS-493 yr 2000

Degerstrom

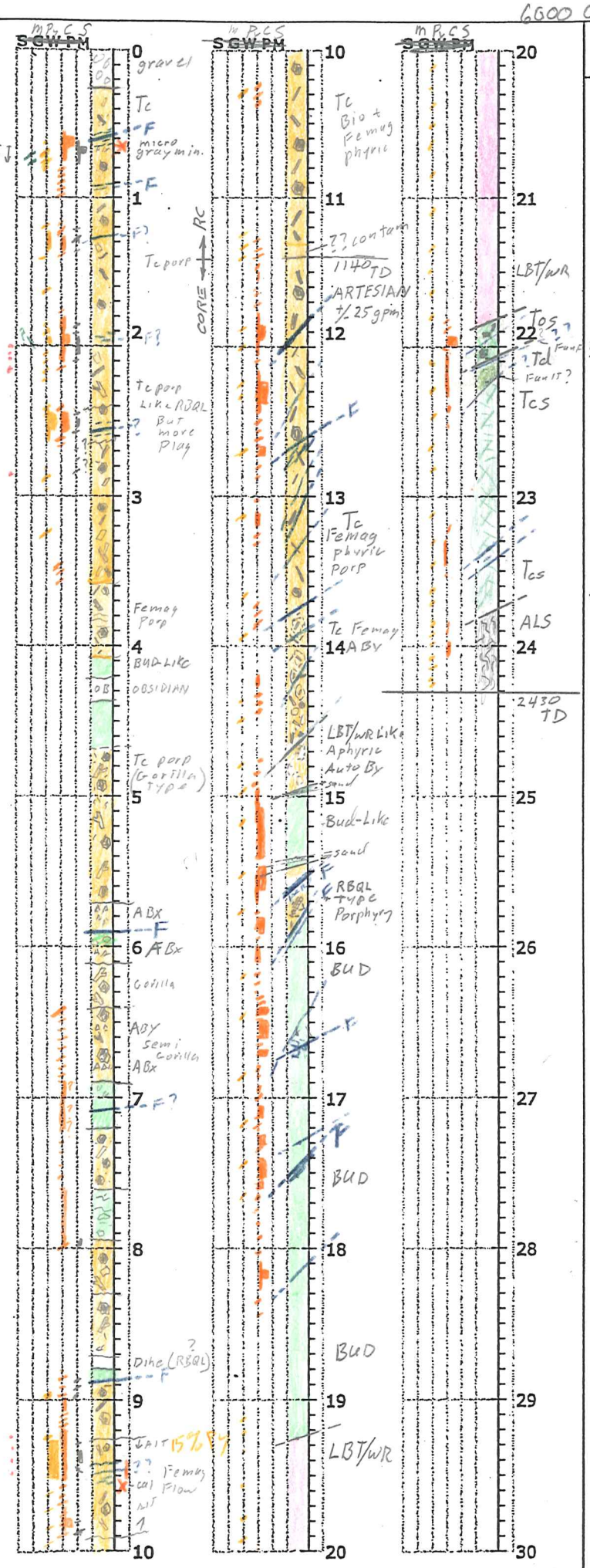
6000064
4010

6600 0614

ROSEBUD MINING COMPANY, LLC.

HOLE #	RS-493
START HOLE	2 Mar 2000
FINISH HOLE	RC 14 MAY 2000 / CORE 13 May 2000
HOLE TYPE	RC - 6"
LOGGED BY	Rogowski
BEARING	N 72 W
ANGLE	-45
T.D	1140 RC TD
PAGE 1 OF	13 RC 14 TD CORE
SURVEYED TO	Wel-Nav 1140 RC CORE TO 2430
CORE SURVEYED	
COLLAR COORDINATES	
NORTH	2,205,142
EAST	478,614
ELEV	5204
DRILLING CO.	Ekland
DRILLER	Don Schoor

Byington Hole drilled from E. to W. into the footwall of the Deerstrom struct.



ALTERATION INTENSITY

1 WEAK — 2 MODERATE — 3 STRONG

VERITHIN COLOR

737	SILICIFICATION
751	GREEN CLAY
747½	WHITE CLAY
755	PYRITE
757	MARCASITE

GRAPHIC LOG

Stoped Hole - Fear more ARTESIAN Flow

Plan to core to 2500'

VERITHIN COLOR

	BRECCIA
741	FAULT 741
	CONTACT
737	QUARTZ VEIN
741½	CALCITE VEIN
747½	CLAY VEIN
755	PYRITE VEIN

	(Tc) CHOC FM Aphyric Flows & Porphrys
	Bud-Like clastis
	LBT/WR Rhyo Flow
	Tos - clastic
	Td - Dozer Rhyo
	Tcs
	ALS phyllites

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

INTENSITY
1 = WEAK
2 = MODERATE
3 = STRONG
or % by Vol

HOLE NUMBER RS-493
PAGE 2 OF 13
DATE 2 mar 2000 to 14 mar 2000
LOGGED BY Rogowski
TOTAL DEPTH RC to 1140 / core to
Finish core 13 may 2000

LOCATION ROSEBUD, NV
NORTHING 2,205,142
EASTING 478,614
ELEVATION 5204
AZIMUTH N 72 W
INCLINATION -45°

AREA Degerstrom
DRILLING CO. Eklund
RIG TYPE RC
HOLE SIZE 6" RC
DOWN HOLE SURVEY BY Wel-Nav to 1140

0-100

2/13

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE
0		overburden	0 - 25 gravel	H	
10					
20					
30			25-100 Tc (choc) Fxln "rhyo" flow. Has rare sanidine, +plag, +prob num. very small bios + micro drk laths that could be Fmag		Rhyo Flow
40					
50					
60	F clay gouge		60 - 75 Vn zone	H	Lithy + Mag zone
70	Alt zone			VH	
			60-75 Some tc but alt around a silicified bx zone w/ cubic + hahedral Py w/ some Py H. See Traces of gray min around Py	H	Rhyo Flow
80					
90	F (clay)				
100				H	

FEET	ALTERATION: SILICIFICATION 5%	15%	+25%	MATRIX %	QUARTS %	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC % CHLORITE	CALCITE	POTASSIC % K-SPAR	ALUNITE	OXIDATION 5%	15%	+25%	VIENING %	TYPE
0											1							
10											1							
20											1							
											Tr							
30	0					0												
40																		
50											Tr							
						0					0							
60	0					3					2							
	1+2					1+w					0							
70	3					1+v					0							
	2+1					1					0							
80	0					1					Tr							
	0					1					0							
90	0					1					0							
	1					1					0							
100	0					0					0							

FEET	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	AS-SUL %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
0				0														
10																		
20																		
30																		
40																		
50																		
60				0		Py H												
				Tr										Tr of gray min around P				
70				1		tr? micro												
				2		tr? Lath Mar						some Plag Replaced by Emerald green? gray min						
80				1		cont'd												
				0														
90																		
100				0														

Hecla MINING COMPANY
ROSEBUD PROJECT DRILL LOG

INTENSITY
1 = WEAK
2 = MODERATE
3 = STRONG
or % by Vol

HOLE NUMBER RS-493
PAGE 3 OF 13
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD, NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

AREA
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

1-200 3/13

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE
100–200		Rhyolite flow – similar to VT13 QL but smaller & fewer phenos	100-200 is same rock as 25 to 100. Is a Tc porphyry. Has very rare K-spar & plag laths. Numerous micro bio & Femag. Also very rare Large Femag phenos. At first appearance & bio it appears Aphyric. Red-Brown to maroon in color. Some K-spar is not very alt. See also very rare Glamo P. plag. Appears that after 170 there are more fell. phenos. QT phenos	H	↑ Flow ↓

ALTERATION

FEET	SILICIFICATION 5%	15%	+25%	MAGNET %	QUARTZ %	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC % CHLORITE	CALCITE	POTASSIC % K-SPAR	ALUNITE	OXIDATION 5%	15%	+25%	VIENING %	TYPE
100	0					tr					0							
110	0																	
	0					tr												
120	tr–1					1												
	1					2												
130	tr					2												
	0					tr												
140						0												
150																		
160						0	prob contam											
						tr–1												
170						0												
						0												
180						0												
	0					tr												
190						2	1st green clay											
						2												
200	2					2+3					0							

MINERALIZATION

FEET	SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	K-SUL %	STIBNITE %	BARITE %
100				0					
110				0					
				0					
120				Tr	Py C				
				2	Py H?	micro lath			
130				2		?			
				Tr					
140				0					
150				0					
160				Tr	Pos contam				
				0					
170									
180									
				0					
190				Tr–1					
				1					
200				2		? micro lath			

METALLURGY

FEET	OXIDE	SULF	CARBON	MOISTURE
130				

ANALYTICAL DATA

FEET	FROM	TO	W	Au	Ag
130					

trace of stibnite
Poss. grab specs

Hecla MINING COMPANY
ROSEBUD PROJECT DRILL LOG

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HOLE NUMBER RS-493
PAGE 4 OF 13
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD, NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

AREA Z-300
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

4/13

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	15%	+25%	MATRIX %	QUARTS %	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC % CHLORITE	CALCITE	POTASSIC % K-SPAR	ALUNITE	OXIDATION 5%	15%	+25%	VIENING %	TYPE	Py MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	K-SLF %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
200		Rhyolite Porphyry Felsic Flow	200-300 Tc (chocolate)	H	wtt + P. oxidation	1+	2				2	+1				0								tr-																	
210			similar to 25 to 200			1					2													1	Py C																
			poss slightly			tr					1													1+	Py C																
			more Gl mo P. plag			0					0													1 to tr	Py C																
220																								tr	← contam																
			some plag or Fem		MOD WW	0					tr													1?	— poss Contam																
230			is alt. to Emerald			0					0													0																	
			green something			0					0													0																	
240			poss chlor but			0					0													0																	
			doubt it			0					tr	— phenos												0																	
250		Rich zone			Rare Phenos	1+					2+													4																	
						2					3																													
											2+																													
			Large frag @ 245		Fragment Breccia	1					3													5									← Probable stuff								
260			may be from up hole			tr					1+	2												2																	
						0					0													0																	
270						tr ?																		tr																	
						tr ?																		tr																	
																								tr																	
280						tr ?																		tr																	
					MOD WW	1?										0								1	— contam? or Veinlet																
290						0										1								tr																	
						0										tr								0																	
300				H		0					0					tr								0																	

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

INTENSITY
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or % by Vol

HOLE NUMBER RS-493
PAGE 5 OF 13
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD, NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

AREA 3-400
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	15%	+25%	MAT'X	QUARTS	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC % CHLORITE	CALCITE	POTASSIC % K-SPAR	ALUNITE	OXIDATION 5%	15%	+25%	VIENING %	TYPE	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	AC-SUL %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOLYBDE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
300		Rhyolite Flow	TC 300 to 355 Same as	H	F Xln porp. Reddish Brown	0					0					1											0														
310			25 to 300													1																									
			K-spar etc.													Tr																									
320																Tr											0														
																Tr											Tr ← contam														
330																0											0														
			@325 is a large,													1																									
340			alt + pyritized													1																									
			frag. suspect contam								0					0																									
350			Num Large frags								Tr					0																									
	?		?								Tr		grain clay on fract.			0																									
360			355 to 400 Tc								0					1																									
			marked decrease																																					
370		Rhyolite Flow	in Feld. & much		VF Xln Porp Moderate to																																			
			more bio. matrix																																					
380			is v. fine Xln.																																					
			more like Fenox																																					
390			porp.																																					
400				H		0					0					1											0														

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

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HOLE NUMBER RS-493
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DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD, NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

AREA 4-500
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

6/13

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE
400			400-405 Flow texture like an Ignimbrite	H	Flow Lt Pur
410			405-420 - clastic BUD-Like, usual soft green matrix w/ BIO Rhyo clasts.	S	Clastic pale green grey
				S	
				S	
420					
		grn	420-435 glassy olive green & blk	S	
	Glassy Obsidian	grn	Obsidian, some clasts	S	Obsidian Blk grn
430		Blk to grn	& Plag phenos	S	
				S	
			435-465		
440			Clastic? Some looks clastic & some like a flow Bx	H	Clastic or Flow Br
				H	
450			(call clastic)	H	
			mostly Rhyo clast	H	
460				H	Reddish Purple
				H	
			465-500 (Gorilla) Tc porphyry (TYPE)	H	Clastic Reddish Purple
470					
			upper 10' may be		
480			vesicular filled w/ emerald green? chlor?		
490			Has plag (some Glom P) + Bio w/ VF-X in matrix		VF-X in matrix - plag phyric Reddish Purple
			consid emerald		
500				H	

FEET	ALTERATION: SILICIFICATION 5%	15%	+25%	MATRIX %	QUARTS %	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC % CHLORITE	CALCITE	POTASSIC % K-SPAR	ALUNITE	OXIDATION 5%	15%	+25%	VIENING %	TYPE	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	K-SUL %	SULFATE %	BARITE %	METALLURGY: OXIDE	SULF	OXIDSULF	MIXCURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
400	0					0				0	1-2											0														
410										tr	1-2																									
											1																									
420											tr																									
											1																									
430											1																									
											1																									
440											tr																									
											1																									
450											1																									
											1																									
460											2																									
											2																									
470											2																									
											1																									
480											2																									
											2																									
490											1																									
											2																									
500	0					0				tr	2											0														

An unusual clear xl very very small (Li, topaz)

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

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HOLE NUMBER RS-493
PAGE 7 OF 13
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD, NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

AREA 5-600
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

7/13

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION MATRIX %	SILICIFICATION CLASTS %	ARGILLIC 5%	ARGILLIC 15%	ARGILLIC +25%	ARGILLIC TYPE	PROPYLITIC % CHLORITE	PROPYLITIC % CALCITE	POTASSIC % K-SPAR	POTASSIC % ALUNITE	OXIDATION 5%	OXIDATION 15%	OXIDATION +25%	VIENING %	VIENING TYPE	MINERALIZATION: SULFIDES 5%	SULFIDES 15%	SULFIDES +25%	PY %	CPY %	MAR %	K-SLF %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
500		Rhyolite Plag-Phyric	465 to 570 Gorilla type porp	H	Pale to Dry Grn	0					0					1											0													
510			F to VF x/n matrix,													1	Tan Stgr																								
			Reddish Brown color,													2																									
520			Num plag lath													1																									
			(some Glomo P.)													1																									
530			Has considerable													1																									
			Emerald green mat.													2																									
540			rep. Felt & on													1																									
			fract. (could be chlor													1																									
550			or celad) Has													1																									
			Bio plano & rare													1																									
560			K spar. Effer &													1																									
			has num calc stgrs.													1																									
570																																									
		A Bx	TC - 570-590																																						
		A Bx	Reddish gray Auto																																						
580			Bx matrix + some for																																						
		Rhyo Flow	flow - Num micro																																						
			Femag lath + Bio																																						
			K-spar plano plag																																						
590			also																																						
			matrix is like Femag Porp																																						
			590-600 TC																																						
		Clastic ?	some clastic & some flow													2																									
600			Gorilla-Like	H	Clastic gray green	0					0					2											0														

Send 5-20, 545, 545-600 for Green ID

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

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HOLE NUMBER RS-493
PAGE 8 OF 13
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD, NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

AREA 6-700
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

8/13

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE
600		FBx?	590-610	H	clastic or FBx
		FBx?	Tc. Gorilla type? clastic? or flow Bx		
610			consid dk green		
		Rhyo Flow	610 to 640 Gorilla-like, has num Plag, Bio + Clomop phen v.f. xln. Reddish Brn matrix - many Plag are clear. Dark green prefers Bio		V/F xln matrix & mod porphyritic
620					
630					
640					
		FBx	640-690 Tc. flow, Has Bio phenos & very rare plag. Matrix is mixln w/a lot of the green mutum (chlor or celadonite) Has frags of FBx Gorilla-type		mxln matrix Tc flow
650					
660					
670					
680					
690					
			690-720 Clastic or ~~Flow Bx~~ multi lithic	H	clastic small clast
700					

FEET	ALTERATION: SILICIFICATION 5%	15%	+25%	MATRIX	CLASTS	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC % CHLORITE	CALCITE	POTASSIC % K-SPAR	ALUNITE	OXIDATION 5%	15%	+25%	VIENING %	TYPE
600	0					Tr				2	1							
610										2								
620																		
630																		
640						T												
650						1				2								
660										2								
670																		
680																		
690						1				2								
						1½				2								
700	0					1+2				2	1							

EMERALD GREEN - Poss CHLORITE AS REP & FRACT FILLING

FEET	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	X-SLF %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
600				0														
700				0														

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

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HOLE NUMBER RS-493
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LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD, NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

AREA
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

7-800

9/13

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE
700			690 – 720		
			Clastic, BUD-like	S	Mod Ix – tc & Pale orange
710		F?	Clasts are tc for most		
			parts	S	
720			720 – 760		
		ABX	Rhyo flow	VH	
730			Bio phyric, v:f x/ln		Reddish Brown
			has very Rare		
740			plag		
			Reddish brown		
750			not well alt		
			Plag is effer		
760		ABX		VH	
			760 – 800		
			Flow BX? or	H	
770			tc BUD-Like unit		
			Has consid Em-grn		
780		Clastic or Flow Bx	Granular & mono-		Reddish Brown + P. Green
			lithic		
790					
			795 to 830	H	
800					

FEET	ALTERATION: SILICIFICATION 5%	15%	+25%	MAJOR %	QUARTS %	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC % CHLORITE	CALCITE	POTASSIC % K-SPAR	ALUNITE	OXIDATION 5%	15%	+25%	VIENING %	TYPE
700	0					2					1							
710																		
720						2?												
730						Tr												
740																		
750																		
760						Tr												
770						1-2					1							
780											2							
790																		
800	0					1-2												
	Tr					1					2							

FEET	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	AC-SUL %	SILBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOCURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
700				0							Un Ox							
800				0														

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

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HOLE NUMBER RS 493
PAGE 10 OF 13
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD, NV
NORTHING
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ELEVATION
AZIMUTH
INCLINATION

AREA
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

8-900

10/13

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE
800			795-830 Very fine x'ln matrix. Another tc porphyry has Bio, ksp + plag? would guess it is not well alt except for the em-green which is on joints, feld Rep + groths. around phenos. At first glance would call it Gorilla but not	H	Porphyritic Fx ln; med x ln
810					
820					
830			830 to 885 could be the same as above but matrix is med x ln w/a granular appearance. much less Fe may porphyry - much more em-green and I don't think this is chlorite		
840					
850					
860					
870			870-875 Dike? prob RBQL: f x ln. diff to tell. Has some tc inclusions. Has Q phenos some Euhedral		
880			875-890 - micro clastic? Possa Bud like unit	H	Clastic (pod 53 gr 8) & gouge
890	F		gouge as wt clay	S	
			890- Looks like Aphanitic tc flow but has LBT like Bio and many micro Fenegs	H	Fx ln Red 13 ron gr 8
900				H	

FEET	ALTERATION: SILICIFICATION 5%	15%	+25%	MASSIVE	QUARTZ %	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC % CHLORITE	CALCITE	POTASSIC % K-SPAR	ALBITE	OXIDATION 5%	15%	+25%	VIENING %	TYPE
800	0					Tr					2							
810											2							
820											1							
830											1							
840											2							
850											1							
860											1							
870											2							
880											1							
890	0					Tr					1							
	Tr					1					2							
	Tr					Tr					2							
900	Tr					Tr					2							

Emerald green throughout

Many Calc veinlets

FEET	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	K-SLF %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
800				0														
890				Tr														

Py A
Ar hedral

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

INTENSITY
1 = WEAK
2 = MODERATE
3 = STRONG
or % by Vol

HOLE NUMBER RS-493
PAGE 11 OF 13
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD, NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

AREA
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

9-1000 11/13

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	15%	+25%	MATRIX %	QUARTS %	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC % CHLORITE	CALCITE	POTASSIC % K-SPAR	ALUNITE	OXIDATION 5%	15%	+25%	VIENING %	TYPE	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	K-SUL %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
900			890-1000 Tc porp		Fxln porp	0					2					1											Tr		cubic											
910			On close inspection,								1																0														
			all of this rock is probably								1																0														
920			the same. would call								1																0														
			Femag + Bio. phyric								2+3																1										mixed Rocks				
930		Buff	rhyolite flow w/								2																5		Py Hb												
			rare K-spar + plag.			1					2																10		Py oc						Note: Probably struct					
940			From 925 to 990			2 along Py filled open struct					2																15								here but no gauge					
		Brecc	is an alteration			1					2					1											7								Had a marked increase					
950			zone around 940			1					2					2											7								in water.					
			Has large frags from			0					1					1											0														
960		cal	a broken zone that			1					1					3											tr														
		xls	plugged the inter-		Poss Vein or open struct	tr					1					+3											1									Dog tooth calcite				
		dog tooth																																			spar				
970			change. Heavy Py from			0					2					3											tr														
			930 to 950 w/very			0					tr					2											6														
980			large frags			0					tr					1											0														
		Buff			Fxln porp mixed	tr					2					1											tr														
		Buff									2+3					1											tr														
990						0					0					1											0														
1000						0					0					1											0														

Hecla MINING COMPANY
ROSEBUD PROJECT DRILL LOG

INTENSITY
1 = WEAK
2 = MODERATE
3 = STRONG
or % by Vol

HOLE NUMBER RS-493
PAGE 12 OF 13
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD, NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

AREA
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

10-1100

12/13

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE
1000		Rhyolite	1000 to 1100 same as 890 to 1000 — Biotite, Ferrug. phyric rhyolite (Tc flow) weakly bleached from 1020 to 1035	H	Em green & maroon, Fxln matrix Rhyolite porphyry, gray, maroon, light maroon
1100				H	

ALTERATION

FEET	SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION MATRIX %	SILICIFICATION QUARTZ %	ARGILLIC 5%	ARGILLIC 15%	ARGILLIC +25%	ARGILLIC TYPE	PROPYLITIC % CHLORITE	PROPYLITIC % CALCITE	POTASSIC % K-SPAR	POTASSIC % ALUNITE	OXIDATION 5%	OXIDATION 15%	OXIDATION +25%	VIENING %	VIENING TYPE
1000	0					0					1							
1010											2							
											1							
1020						0												
						Tr												
1030						Tr												
						Tr												
1040						0												
1050																		
1060											1							
											Tr							
1070											1							
1080																		
1090																		
1100	0					0					1							

MINERALIZATION

FEET	SULFIDES 5%	SULFIDES 15%	SULFIDES +25%	PY %	CPY %	MAR %	K-SUL %	STIBNITE %	BARITE %
1000				0					
1010									
1020				0					
				Tr					
1030				0					
1040									
1050									
1060									
1070									
1080									
1090									
1100				0					

METALLURGY

FEET	OXIDE	SULF	CARBON	MOLYBDE
1090				← NOTE

ANALYTICAL DATA

FEET	FROM	TO	W	Au	Ag
1090					~140 gpm H2O

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

INTENSITY
1 = WEAK
2 = MODERATE
3 = STRONG
or % by Vol

HOLE NUMBER RS-493
PAGE 13 OF 13
DATE
LOGGED BY
TOTAL DEPTH 1140

LOCATION ROSEBUD, NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

AREA
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

1100 to 1200 13/13

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	15%	+25%	MATRIX %	QUARTS %	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC % CHLORITE	CALCITE	POTASSIC % K-SPAR	ALUNITE	OXIDATION 5%	15%	+25%	VIENING %	TYPE	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	K-SUL %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
1100			1100 to 1130 same	mH	Porphyritic	0					1				2	1											0													
1110			as 1000 to 1100								tr																													
			Fe mag. phyric Rhyo																																					
1120		Rhyo	flow (tc flow)												Lm Green												0													
											tr																tr		tr											
1130											1																0													
			1130-1140 Appears to								1																tr	Py H w/												
	?		be a mix of several								1																													
1140			rock types Prob contam	mH	Dk green to choc Brown	0					1					1											tr	overgrowth												
			from up hole.																																					
			1140 TD - RC																																					
			core to																																					
1150																																								
1160			See Femag Tc, Bud																																					
			Lit. c, ChocBud																																					
			that has strong emgrn																																					
1170			color																																					
1180																																								
1190																																								
1200																																								

quartz, chalcedony, silicification S
faults, fractures - F
FeOx - Ox
sulfide - Su
calcite, carbonate - Ca
argillization, white clays - A
propylitization - Pr
potassic alteration - K
chlorite, chloritic clays Cl
hematite

Hecla
MINING COMPANY

ROSEBUD PROJECT
DIAMOND DRILL LOG

HOLE NUMBER	RS 493	LOCATION		REMARKS	
PAGE	13A OF	NORTHING			Survey-
DATE		EASTING			
LOGGED BY		ELEVATION			
SCALE		AZIMUTH			
TOTAL DEPTH		INCLINATION			

INTENSITY 1 2 3

LITH	OX/RE	LITHOLOGY	FT	GRAPHIC LOG (S Ox Su Ca A Pr K Cl H)	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2
		PAGE 13A START AT 1140										
		Page 14 1140 to TD IS CORE TAIL										

RC to 1140 CORE TO

HOLE NUMBER RS-493 PAGE 14 OF

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG (S Ox Su Ca AP K Cl H)	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
		1140 - 1155 Tc Femag phyric flow (Rhyo) Has several near vertical calc & Hem veinlets less than 1/4". Num Femags w/ near parallel alignment to flow banding. Some Bio plasms also	1140 1143.4			- CALC ON FRACT ONLY - Hem ON FRACT, JOINTS & FLOW BANDS.							
		@ 1155 - 1156. Broken zone along a fault. Full of Hem & wt clay	1150 1151 1160 1161		@ 1157 Fault (Large)								
		1156 to 1189 same Tc											
		@ 1189.2 & 1191.5 are 3/4" calcite veins w/ dog tooth spar. found a few xls of cubic Py	1170 1171 1180 1190		@ 1189 to 1191 A Large Fault w/ clay Gouge + Bx	- Strong clay alt (3) - A few xls of Py	1187 1189.5		2.5 4.0				
		Note 1140 to 1210 is (Tc) Femag Rhyo flow shows weak calcite around femags & has several calc stars. The Fault @ 11.91 has calcite veinlets. also, from 1160 on to 1210 is weakly mottled. Lighter color is more calcareous	1200 1210				1193.5						

HOLE NUMBER RS 493 PAGE 15 OF

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG (S Ox Su Ca AP. KCl H)	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
		@ 1216 are two 1/2" veinlets of calc w/ dog tooth spar	1210										
			9										
			1220										
			10				1221.5						
		Note: 1210 to 1280 is all (Tc)(chocolate Fm) Femag phyric Rhyolite flows. Med gray where not bleached & clay alt. No Hem in clay zones. Has calcite veins w/ dog tooth spar from 1216 to 1234. See only a minor trace of Pyr. Mottled dark & light w/ light blotches having more calcite. Femags look chloritized & some appear to have chlorite growths around them. Femags also show effer.			1229-1230 Large Fault	1221 to 1236 is (3) clay alt & has consid calcite & open vugs with dog tooth spar	1227	5.5'					
			1230				1230	3.0'					
			11										
			14				1234	4.0'					
			1240										
			13										
			1250										
		@ 1260.4 is a black inclusion that is poss ALS	14 1260										
		@ 1266!! a root in clay gouge	15 1269.1		1264 to 1276 Fault zone	1264 to 1267 has strong clay/calc. alt.	1264	3.0'					
		Very broken from 1264 to 1276 with several gouge shears & calcite stgrs & veinlets.	1270				1267						
			16										
			1280 1280.2										

HOLE NUMBER RS-493 PAGE 16 OF

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG (S Ox Su Ca AP. K Cl H)	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
		1280 to 1350 - Same (Tc) Fe-mag phyric Rhyo Flow. (Chocolate Femag Flow). Femags 0.5 to 3mm & sec occa Bio xl. Matrix is v.f to f xln, m-gray rhyolite. Flow banded & often has mottling around flow bands that, where lt color, are more effer. Femags are usually near ∥ to flow bands. Entire core, where not bleached & clay alt shows weak prop alt. some Femags appear to have chlorite overgrowths are are often effer.	1280 17 1290 18 1300 19 1310 20 1320 21 22 1330		minor fault @ 1289	Fault @ 1289 has Hem							
					Fault @ 1308	1308 Fault has Hem surrounding clasts & in matrix							
		@ 1337 - inclusion of ? andesite?	1340 23 1345.7 24 1350		Fault @ 1344 w/ minor calc & Hem on surface.	← Hem, calc & minor clay. @ ± 1347 is 1/2 to 3/4" calcite veinlet w/ sparse calcite xls							

HOLE NUMBER RS-493 PAGE 17 OF

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG (S Ox Su Ca AP Pr KC IH)	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
		1350-1372, same Tc Femag phyric rhyo flow as above. prob very weak propo alt from partial calcite Rep of Femags	1350 1360 1370			1350 to 1420 Red Hem & calcite stgrs throughout							
		1372-1455 - monolithic Auto Bx or rhyo flow bx. Same vol as above but has numerous inclusions of same material. Both clasts & groundmass have Femag phenos and except for xl size are identical. most clasts are finer xln than groundmass	ABx 1380 1390 1400 1410 1420		1372 Broken & sheared zone. gouge @ 1372 1390 @ 1395 - 3/8" Bx w/ calc cement. 1417 to 1420 Broken w/ minor fault	14-17 to 1420 chlorite con. fract							

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LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG (S Ox Su Ca AP. K Cl H)	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
		1420 - 1465 Tc Femag phyric monolithic auto or flow Bx same as above but more Hematite stain @ 1427 a weakly bleached broken zone with a small fault	1420 ABx 1430 ABx		1427 small Fault	@ 1415 some Leisgange bands. - 1427 Bleached & chloritized on either side of Fault for 1'							
		Note: From 890 to 1465 is the Femag phyric rhyolite flow of the Tc (Chocolate Fm) is strongly flow banded, has 1 to 5% Femag phenos & Bio phenos also but <1%	1440 mono Lithic 1450										
		Contact @ 1465 - to 1498.5 Femag porp above & aphyric Rhyo flow below. contact is sharp & has a 1mm wt calcite stringer. It looks like a joint.	ABx 1460 ABx 1470		contact @ 1465 almost like a joint	- calcite veinlet on contact.							
		Below 1465 is an aphyric Rhyo flow see rare K spar phenos <1.5mm & poss <1mm Bio. Appears chloritized but this may be pale green clay. This unit is weakly auto. Bx from 1467 to 1481 then becomes very pronounced	mono Lithic Aphyric Flow 1480 RHYO.										
		Note: This aphyric unit from 1465 to 1498.5 could pass for LBT/WR!	1490										

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LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG (S Ox Su Ca AP. K Cl H)	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
		1490 to 1498.5 - Aphyric Rhyo Auto Bx as above.	1490										
		A 4" layer of sandstone @ 1498.5 seperates Auto Bx above from a BUD-Like unit below	1500										
		1498.5 to 1542 BUD-Like "Epi" clastics looks bleached and clay alt. Suspect the pale green color is clay alt. but some think chlorite. Is soft & multi-lithic with clasts of basalt?, rhyolite & several porphyrys. (Note: some of the clasts could be bleached ALS) Note: from 1498.5 to 1514 this unit is Reddish brown & below 1514 it increases in pale green (poss water layne pyroclastic)	1510										
			1520										
			1530										
		sand	1540										
		1542 to 15 1546 - Porphyry (RBQL type)											
		1546-1566 Same Porp type but is a mono lithic flow bx or Auto Bx with hem. stain in matrix in several areas	1550										
		Note: 1542 to 1582 is an RBQL Type porphyry with more Fe mags than usual. also less sanidine. Auto Bx from 1547 To . (For Better discription see Next page)	1560										

HOLE NUMBER RS-493 PAGE 20 OF 32 2430TD

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG (S Ox Su Ca AP KCl H)	STRUCTURE	ALTERATION AND MINERALIZATION
		Porphyry 1542 to 1582, Fxln gray matrix. Phenos are Plag, both as single & glomerophyric; K-spar equant square xls. Do not see any twined sanidine but if any they are very minor. Femags, but can't tell what kind, poss hornblend. <1mm; Biotite phenos common. 95% of phenos are <2mm Plag is effer in part which may be from prop alt. Overall calcite is very minor. Femags don't look chloritized. Auto Bx from 1547 to 1582 fault.	1560 1570 1580 1590 1600 1610 1620 1630	Abx Rbal Apc Rbal Epi clastic Epi Epi-c Epi-c Epi-c Epi-c Epi-c 60 30 30 60 20 35	@ 1582 - Large fault zone @ 1668 MAJOR GOUGE ZONE	Plag gray w/ Hem Pale green & Hem RW.

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	Ag2

HOLE NUMBER RS-493 PAGE 21 OF 32

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG (S Ox Su Ca AP Pr KC IH)	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
			1630										
			1640		@ 1636-6" gouge zone	Hem pal & green mottled							
			1650		@ 1646.4 a 3" gouge zone w/slicks @ 1651.5-2" gouge 2' Broken	Pale grn							
		@ 1656.8 is a fault contact Epiclastic or pyroclastic 1658.8 to 1675.5 - Pale green, waxy matrix with 20% clasts and consid devit textures, very soft. Clasts are soft also. Bio's in waxy green are alt. to pale green colored ?clay?	1660		@ 1656.5-2" gouge zone								
			1670		@ 1666.2 2" gouge @ 1669 4" gouge								
		1675.5 to 1698 pale green & wt pyroclastic (lithic tuff?) clast size varies from fine to 2"	1680										
		1698-1710 3/8 to 1/2" clasts w/ waxy soft green matrix, shows compaction textures, clast or lithic size varies in the matrix.	1690		@ 1687.5-3" gouge, 1' Broken	Pale green							
			1700										

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LITH.	OX/RED.	LITHOLOGY	FT 1700	GRAPHIC LOG S Ox Su Ca AP PK Cl H	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
		BUD-LIKE UNIT. 1528 TO → ? 1710-1830, Epi-clastic? or Pyro-clastic. Prob lithic tuff that shows very strong compaction textures. Especially around larger lithics	1710	60		Paleogreen ↓ @1707 is a a minor fault w/calcite X/s 1-2mm on surface.							
		Is multi lithic, but 90% lithics appear to be Fx/n Rhyo. Matrix is fine clastic but tends toward the waxy. His hints of alt bio in the matrix	1720	60	@1716 - 1" gouge minor Fault.								
		NOTE: with RC Drill chips this 1528 TO would all be called BUD-LIKE. All has weak to mod alterv. & is cut by numerous wi calc. filled fract.	1730	65 60 75	@1728 - 6" gouge Large Fault.	@1728 strong clay (white) clay							
		NOTE: Very rare single cubic Py x/s can be found.	1740										
		NOTE: THe waxy green material appears to be a fine Ash showing devi text & is also weakly clay alt or chloritized.	1750	40	@1749 - 2' gouge & wt clay - major Struct	1449 - wt clay in gouge zone & along Joints.							
		Entire Clastic unit is altered (prob propylitic) from very weak to weak.	1760	55	@1759.5 1' gouge very large Fault.	Paleogreen →							
			1770										

HOLE NUMBER RS-493 PAGE 23 OF 32

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG (S Ox Su Ca AP. K Cl H)	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
			1770										
			1780			Hem Red. grn							
			1790			Hem							
			1800										
			1810			Hem Red.							
		1829.- 1902 → Same as above but not much evidence of compaction & has boulders up to 1' (one foot). Multilithic much of it could be welded. Matrix is not clearly fragmental. Many clasts are rimed or bleached around their edges. (Looks like it was deposited Hot). Is not well bedded & has a mottled greenish-gray color. Has a slight layering in a few places. Rare micro Py	1820		@ 1816 minor Fault w/ 1/2" gouge	Pale green							
			1830										
			1840										

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LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG (S Ox Su Ca AP. K Cl H)	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
		1829 - 1902 (cont) Minor prop alteration w/ traces of red Hem. Very weak after Clasts are all angular. Rare micro B	1840			- chlorite on joints.							
			1850										
			1860										
			1870			@ 1872 is a 3to6mm wide calcite stgr							
			1880										
			1890										
			1900										
		1902 - 1924 Very Bul-like, sharp boundries on clasts, wavy green matrix w/ broken bio, and strongly layered (cont)	1910										

HOLE NUMBER RS-493 PAGE 25 OF 32

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG (S Ox Su Ca AP. KCl H)	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
		1902 - 1926 (cont) all clasts are very angular and it is multi lithic Rare micro Py	1910 BUD		1902 to 1924 No faults but most fracturing is along layering.	1902-1924 weak propylitic alteration. most calcite is confined to hair line stgrs. chlorite on joints							
			1920 BUD	70									
		LBT/WR 1926 to 1956 - LBT/WR Auto Bxed and Flow banded (strong m. to Lt gray. Auto Bx is Pink matrix Breccia type (PMB) very rare micro fine Py	LBT/WR 1930 ABX LBT ABX 1940	50 80 6 6	1926 to 1956 is Auto Bx with small clasts & Rhyo matrix	1926 to 1956 very mod altern w/chlorite on joints w/hematite							
			LBT ABX 1950 ABX LBT	70									
		LBT/WR 1956 to 1970.5 similar to above but only abt 10% Auto Bx Is pale green to gray & weakly clay alt. Flow banding gives it a mottled appearance Rare micro Py	1960 LBT 1970	45	1956-1970.5 Joints cut across flow banding	1956 to 1970.5 still propylit but more Hem - has reddish green color							
			1980										

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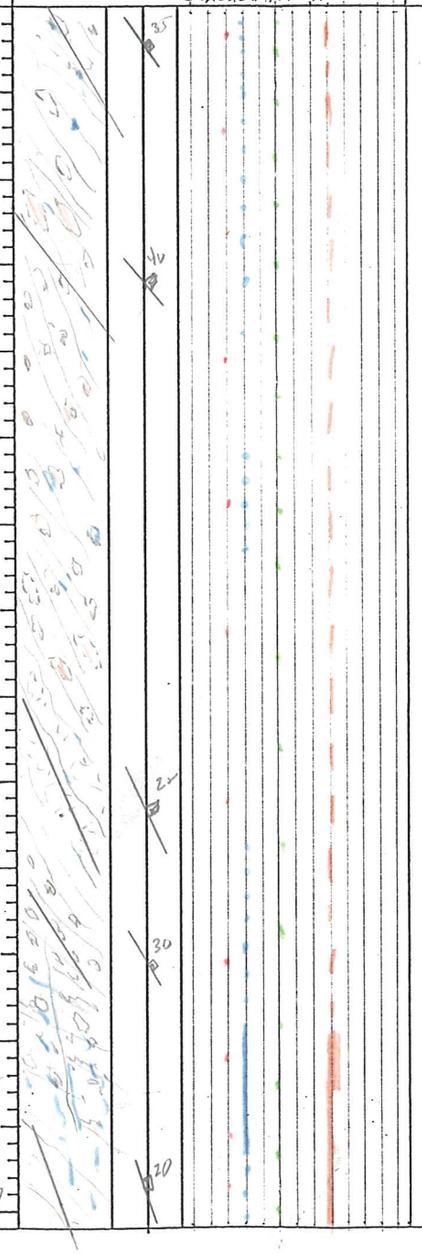
LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG (S Ox Su Ca AP+KC IH)	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
		1970.5 to 2183 - LBT/WR very typical. Lt gray to Hem Reddish brown. Often w/ white to lt green flow bands. Auto Brecciation is common & Breccia clasts have more Hematite and many of the clasts seperate along flow bands. Matriv is V. fine xln Lt gray rhyolite (clasic LBT/WR w/ Rare sanidine phenos (≈1mm) and <0.5mm bios. also has numerous micr blacks that are both magnetite and Hem.)	1980	LBT/WR; 1990; Latite; 2000; LBT ABX; 2010; LBT; 2020; 2030; LBT/WR; 2040; LBT ABX; 2050	1970.5 to 2183 - Flow bands often contorted. Bx clasts often seperate along flow bands.	1970-1983.5 = Very weak propy alt. Calcite stgrs are common (as shown). Effer is limited to vnlets & Hair line fract. Also Has Hem & prob. chlorite on joints							

Has very rare Py <0.01mm to 0.1mm

Shows consid devit in many areas.

HOLE NUMBER RS-493 PAGE 27 OF 32

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
			2050	S OxSuCaAPyKClH									



HOLE NUMBER RS-493 PAGE 28 OF 32

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG (S Ox Su Ca AP FK Cl H)	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
		2183 to 2197.5 (welded or fused) BUD-Like unit, . Shows compaction & prob welding. (would call a welded lithic tuff, lithics are ± 75%) Compacted or layered in part. Note: this unit does not appear to have ALS clasts as in most Tos (cont)	2120 LBT/WR ABX 2130 2140 2150 LBT/WR 2160 LBT/WR 2170 LBT/WR 2180 TOS 2190	45 50 30 20 3 67		Strong Hem from 2183 to 2189 There is pale green color typical of many Bud-like units							

HOLE NUMBER RS-493 PAGE 29 OF 32

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG (S OxSuCaAPyKClH)	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
		but. This fits into the Tos position.	2190										
		2197.5 – 2207 Tos F grained clastic unit, pale green except for the interval 2197.5 to 2200 which is Hemed & much like a siltstone. Alternates Coarse & fine. w/some gradal bedding	2200										
		2207 to 2223.5 (Td?) @ 2207 contact is not clear but could be a minor fault or erosion surface ?Dozer(Td)? looks typical, has goost like auto Bx in part. Fine to Very fine x/h rhyo. this fits well into the strat sequence. Contact @ 22235 is not clear but could be a fault	2210 2220		@2207 the contact is not clearly a fault. minor if it is	2207 to 2223 is weak to mod clay alt & has minor chlor or poss pale green clay weakly effer.							
		2223.5 – 2379.3 TCS Tcs unit lies under the Dozer in this part of the rose bud area, and usually consists of andesite flows interlayered w/ Andesite and Basalt dorival seds of Drk Red Brn silt & mud stones, sandstones, & conglomerates. 2223.5 to 2228 is andesite, F.x/h w/ traces of plag & femag phenos. Has num clasts that make it Auto bx in part 2228 to 2262.	2230 2240 2250 2260		contact @ 2223.5 could be either a fault or sed contact.	2223.5 – 2228 – Ta & Ta ABx w/ Hem & chlorite alt, also pale green clay & chlor.							

HOLE NUMBER RS-493 PAGE 30 OF 32

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG (S Ox Su Ca AP tKCl Hem)	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
		2262-2265 Ta? green to 2265 Fxln andesite w/some Auto Br	2260										
		2265-2270.3 - Grayish brown silt & mud stone. Has carbon specks from plants	2270										
		2270.3-2281 - sandsize particle of andesite derived sed. Pale green with numerous wispy sed layers that have plant material well laminated	2280										
		2281-2292 - silt & mud size sed. - drk gray brn - carbonaceous	2290										
		2292-2294 - Conglomerate look like tos & has ALS clasts but nothing I would call dozer. Well indurated & most clasts are rounded	2300										
		2294-2315 very similar to 2270.3-2281 some sand size well laminated sed derived from andesite	2310										
		2315-2332 - Grayish Brown silt & mud size carbonaceous sed very similar to 2281 to 2292.	2320		contact @ 2332 may be an erosion surface								
			2330										

HOLE NUMBER RS-493 PAGE 31 OF 32

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG (S Ox Su Ca AP KCl H)	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
		@ 2332 may be erosion surface - not fault 2332 to 2379.3 - Tcs cong clasts angular to well rounded Phyllite clasts are more round than Tcs andesite (really ratty looking) semi layered clasts are ALS phyllite & qtzite w/ andesite matrix is sand size Andesite derived sed. is weakly layered. Has some very rare Py xls (cubic) near 2370 to ALS some very rare Py w/ calcite veinlets	2330 2340 2350 2360 2370 2380 2390 2400	Tcs cong Tcs cong Tcs cong Tcs cong Tcs cong ALS ALS	2335 to 2340 are several minor faults	2332 to 2379.3 cong has num calc stgr.							
		ALS 2379.3 to 2430 TD @ 2379.3 contact is not a fault but does look like an erosion surface on the ALS ALS is the usual Blk. phyllite w/ num irr clots of Wt Qtz layering is +/- 1mm & strongly contorted Does not appear very alt. Often shiny carbon on bedding plain surfaces Has Lt colored Dozer like that											

HOLE NUMBER RS-493 PAGE 32 OF 32

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
		at least in part looks sill or dike like intrusive. other areas look like boulders or clasts Mod to weak calcite Traces of cubic Py ± 0.1mm in Porphyritic vol. and traces of Py // to schistosity in blk phyllite much much less than 1% Py in phyllite is extremely small < 0.1mm & euhedral-flat.	2400 2410 2420 2430	ALS ALS ALS very broken + weathered contorted foliation wl sep blend 50 S OxSuCaAPrKClH								
				2430 TD								

American Assay Laboratories

INVOICE

Remit To: P.O. Box 11530
Reno, Nevada 89510
Phone No.: 775-356-0606
Fax No.: 775-356-1413

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431-5902

(775) 356-0606

INVOICE NO: SP 0057534-IN
INVOICE DATE: 06/30/00

INVOICE TO:
THE ROSEBUD MINING CO., LLC
HECLA MINING COMPANY, OPERATOR
P.O. BOX 2610
WINNEMUCCA NV 89446

THE ROSEBUD MINING CO., LLC
HECLA MINING COMPANY, OPERATOR
P.O. BOX 2610
WINNEMUCCA NV 89446

CUSTOMER P.O.	PROJECT	TERMS
RS-493	KURT ALLEN	NET 30 - DUE IN U.S. DOLLARS

QUANTITY	DESCRIPTION	PRICE	AMOUNT
7.000	SAMPLES RECEIVED	.000	.000
1.000	NO PREPARATION REQUIRED	.000	.000
6.000	DRY/JAW CRUSH ENTIRE SAMPLE	2.300	13.800
6.000	COARSE MILLING CHARGE	6.000	36.000
6.000	ROTARY SPLIT	2.400	14.400
6.000	RING/PUCK MILL	2.000	12.000
7.000	Au (1 A.T. FIRE ASSAY)	8.000	56.000
7.000	HYDROCHLORIC/NITRIC DIGESTION	2.000	14.000
7.000	Ag ANALYSES	1.000	7.000
7.000	MULTI-ELEMENT ICP PACKAGE	13.750	96.250

86- 2502-477
KAA

NET INVOICE:	249.45
LESS DISCOUNT:	74.84
FREIGHT:	.00
INVOICE TOTAL:	174.61

DUPLICATE INVOICE

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057534

American Assay Laboratories

PO BOX 11530
RENO NV,USA
Ph.(775) 356-0606, Fax.(775) 356-1413

HECLA MINING COMPANY

COPIES TO : BRIAN MORRIS

: KURT ALLEN

:

:

CLIENT REFERENCE No: RS-493 RECEIVED : 26 MAY 2000

No. SAMPLES : 7 REPORTED : 30 JUN 2000

MAIN SAMPLE TYPE : DRILL CORE

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au	FA30	15%	ppb	5
Au(R)	FA30	15%	ppb	5
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag	D210	10%	ppm	0.5
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Leonard E. Mackedon B.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057534

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-493

REPORTED : 30 JUN 2000

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 1187.0-1189.5	8		<0.001		0.7	0.02
RS-493 1189.5-1193.5	7		<0.001		0.5	<0.02
RS-493 1221.5-1227.0	9		<0.001		<0.5	<0.02
RS-493 1227-1230	<5		<0.001		<0.5	<0.02
RS-493 1230-1234	<5		<0.001		0.5	<0.02
RS-493 1264-1267	<5		<0.001		<0.5	<0.02
34789	5900		0.172		65.7	1.92

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057534

American Assay Laboratories

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RENO NV,USA
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HECLA MINING COMPANY

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: KURT ALLEN

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No. SAMPLES : 7 REPORTED : 30 JUN 2000

MAIN SAMPLE TYPE : DRILL CORE

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ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au	FA30	15%	ppb	5
Au(R)	FA30	15%	ppb	5
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag	D210	10%	ppm	0.5
Ag(OZ)	D210	10%	OPT	0.02

86- 2502-7

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057534

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-493

REPORTED : 30 JUN 2000

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 1187.0-1189.5	8		<0.001		0.7	0.02
RS-493 1189.5-1193.5	7		<0.001		0.5	<0.02
RS-493 1221.5-1227.0	9		<0.001		<0.5	<0.02
RS-493 1227-1230	<5		<0.001		<0.5	<0.02
RS-493 1230-1234	<5		<0.001		0.5	<0.02
RS-493 1264-1267	<5		<0.001		<0.5	<0.02
34789	5900		0.172		65.7	1.92

86- 2502-477

AMERICAN ASSAY LABORATORIES
AAL 03-0 ICP PACKAGE DETECTION LIMITS

ELEMENT	Ag	Al	As	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Sr	Te	Th	Ti	Tl	U	V	W	Zn
SAMPLES	ppb	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppb	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
	30	0.01	0.5	3	1	0.1	0.01	.01	1	1	0.2	0.01	0.5	10	0.01	1	0.01	2	0.1	0.01	1	0.001	0.3	0.2	0.4	1	0.2	2	0.01	0.2	5	1	2	1

5.0 GRAMS OF PULP IS DIGESTED WITH HYDROCHLORIC AND NITRIC ACID AT 95 DEGREE CENTIGRADE FOR ONE HOUR.
DIGEST IS PARTIAL FOR Al, B, Ba, Ca, Co, Cr, Fe, K, La, Mg, Mn, Na, Ni, P, Sr, Th, Ti, U, V AND W.
ORGANIC SOLUTION EXTRACTION AND ULTRASONIC ICP FOR Ag, As, Bi, Cd, Cu, Ga, Mo, Pb, Sb, Se, Te AND Tl.
Hg BY COLD VAPOR AAS.

CLIENT:	*HECLA MINING CO.*
CLIENT REF:	KURT ALLEN
AAL REF:	SP57534
METHOD:	AAL 03-0

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431
PHONE: (775) 356-0606
FAX: (775) 356-1413

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Se	Sr	Te	Th	Ti	Tl	U	V	W	Zn
SAMPLES	ppb	%	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppb	%	ppm	%	ppm	ppm	%	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
RS-493 1187.0-1189.5	350	0.66	18.8	6.8	6	26.8	< .02	8.13	0.2	2.3	0.8	3.52	2.15	3.3	90	0.12	15.5	0.08	1568	0.71	0.017	2	0.039	19.14	0.96	3.46	1.3	0.8	276	0.02	4.6	0.001	0.09	1.4	4	0.2	73.1
RS-493 1189.5-1193.5	262	0.87	8.8	2.1	5	30.2	< .02	1.91	0.07	2.8	1.3	8.61	1.74	4.4	42	0.14	26.2	0.09	486	1.44	0.017	2.3	0.051	22.53	0.48	3.46	1.2	0.5	133.5	< .02	9.5	0.002	0.03	1.2	4	< .2	88.9
RS-493 1221.5-1227.0	131	0.75	4.8	< .2	5	30.5	< .02	10.95	0.1	1.2	0.6	3.31	1.08	3.2	26	0.15	20.2	0.1	1925	0.17	0.017	1.3	0.038	17.5	0.1	1.42	1.2	0.2	276.6	0.02	6.5	< .001	< .02	2.1	4	< .2	59
RS-493 1227-1230	148	0.61	3	< .2	5	521.8	< .02	17.52	0.14	1	< .5	3.25	0.99	2.5	21	0.12	16.6	0.08	2838	0.13	0.014	1	0.026	10.99	0.04	0.52	1.3	0.2	520.5	0.03	4.4	< .001	< .02	1.6	2	< .2	42.6
RS-493 1230-1234	140	0.71	5.8	1	5	398.6	< .02	8.56	0.26	1.4	0.7	3.06	1.01	2.8	37	0.15	22	0.07	1655	0.22	0.019	1	0.043	16.62	0.15	3.08	1.4	0.3	281.3	0.02	7.7	< .001	< .02	1.4	3	< .2	68.3
RS-493 1264-1267	180	0.59	7.5	1.6	5	248.7	< .02	1.94	0.1	1.7	0.6	8.33	0.98	2.6	28	0.17	26.1	0.06	552	0.12	0.029	0.9	0.053	21.48	0.4	1.61	1.3	0.1	135.1	< .02	9	0.003	< .02	0.9	3	< .2	78.6
34789	57019	2.49	128.3	5510.4	7	41.7	0.17	0.95	1.52	4	6.8	23.97	2.71	8	362	0.9	16.5	0.15	340	6.01	0.068	3.8	0.056	28.77	1.4	18.32	1	24.4	70.6	0.02	4.1	0.003	0.41	1.4	9	0.2	91.1
STANDARD DS2	266	1.67	62.3	190.9	3	147.5	10.68	0.51	9.69	11.5	156.3	128.85	3.01	5.8	224	0.15	14.7	0.59	815	13.47	0.029	35	0.086	30.45	0.02	9.17	2.6	2.2	27.8	1.91	3.5	0.09	1.7	17.9	72	7	157.6

AMERICAN ASSAY LABORATORIES
AAL 03-0 ICP PACKAGE DETECTION LIMITS

ELEMENT	Ag	Al	As	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Sr	Te	Th	Ti	Tl	U	V	W	Zn
SAMPLES	ppb	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppb	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
	30	0.01	0.5	3	1	0.1	0.01	.01	1	1	0.2	0.01	0.5	10	0.01	1	0.01	2	0.1	0.01	1	0.001	0.3	0.2	0.4	1	0.2	2	0.01	0.2	5	1	2	1

5.0 GRAMS OF PULP IS DIGESTED WITH HYDROCHLORIC AND NITRIC ACID AT 95 DEGREE CENTIGRADE FOR ONE HOUR.
DIGEST IS PARTIAL FOR Al, B, Ba, Ca, Co, Cr, Fe, K, La, Mg, Mn, Na, Ni, P, Sr, Th, Ti, U, V AND W.
ORGANIC SOLUTION EXTRACTION AND ULTRASONIC ICP FOR Ag, As, Bi, Cd, Cu, Ga, Mo, Pb, Sb, Se, Te AND Tl.
Hg BY COLD VAPOR AAS.

CLIENT:	*HECLA MINING CO.*
CLIENT REF:	KURT ALLEN
AAL REF:	SP57534
METHOD:	AAL 03-0

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431
PHONE: (775) 356-0606
FAX: (775) 356-1413

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Se	Sr	Te	Th	Ti	Tl	U	V	W	Zn
SAMPLES	ppb	%	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppb	%	ppm	%	ppm	ppm	%	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
RS-493 1187.0-1189.5	350	0.66	18.8	6.8	6	26.8	< .02	8.13	0.2	2.3	0.8	3.52	2.15	3.3	90	0.12	15.5	0.08	1568	0.71	0.017	2	0.039	19.14	0.96	3.46	1.3	0.8	276	0.02	4.6	0.001	0.09	1.4	4	0.2	73.1
RS-493 1189.5-1193.5	262	0.87	8.8	2.1	5	30.2	< .02	1.91	0.07	2.8	1.3	8.61	1.74	4.4	42	0.14	26.2	0.09	486	1.44	0.017	2.3	0.051	22.53	0.48	3.46	1.2	0.5	133.5	< .02	9.5	0.002	0.03	1.2	4	< .2	88.9
RS-493 1221.5-1227.0	131	0.75	4.8	< .2	5	30.5	< .02	10.95	0.1	1.2	0.6	3.31	1.08	3.2	26	0.15	20.2	0.1	1925	0.17	0.017	1.3	0.038	17.5	0.1	1.42	1.2	0.2	276.6	0.02	6.5	< .001	< .02	2.1	4	< .2	59
RS-493 1227-1230	148	0.61	3	< .2	5	521.8	< .02	17.52	0.14	1	< .5	3.25	0.99	2.5	21	0.12	16.6	0.08	2838	0.13	0.014	1	0.026	10.99	0.04	0.52	1.3	0.2	520.5	0.03	4.4	< .001	< .02	1.6	2	< .2	42.6
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RS-493 1264-1267	180	0.59	7.5	1.6	5	248.7	< .02	1.94	0.1	1.7	0.6	8.33	0.98	2.6	28	0.17	26.1	0.06	552	0.12	0.029	0.9	0.053	21.48	0.4	1.61	1.3	0.1	135.1	< .02	9	0.003	< .02	0.9	3	< .2	78.6
34789	57019	2.49	128.3	5510.4	7	41.7	0.17	0.95	1.52	4	6.8	23.97	2.71	8	362	0.9	16.5	0.15	340	6.01	0.068	3.8	0.056	28.77	1.4	18.32	1	24.4	70.6	0.02	4.1	0.003	0.41	1.4	9	0.2	91.1
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American Assay Laboratories

INVOICE

Remit To: P.O. Box11530
Reno, Nevada 89510
Phone NO.: 702-356-0606
Fax No.: 702-356-1413

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431-5902

(775) 356-0606

INVOICE NO: SP 0057610-IN
INVOICE DATE: 06/30/00

INVOICE TO:
THE ROSEBUD MINING CO., LLC
HECLA MINING COMPANY, OPERATOR
P.O. BOX 2610
WINNEMUCCA NV 89446

THE ROSEBUD MINING CO., LLC
HECLA MINING COMPANY, OPERATOR
P.O. BOX 2610
WINNEMUCCA NV 89446

CUSTOMER P.O.	PROJECT	TERMS
RS-493	KURT ALLEN	NET 30 - DUE IN U.S. DOLLARS

QUANTITY	DESCRIPTION	PRICE	AMOUNT
25	SAMPLES RECEIVED	.00	.00
1	NO PREPARATION REQUIRED	.00	.00
24	DRY/JAW CRUSH ENTIRE SAMPLE	2.30	55.20
24	COARSE MILLING CHARGE	6.00	144.00
24	"JONES" RIFFLE SPLIT	2.40	57.60
24	RING/PUCK MILL	2.00	48.00
25	Au (1 A.T. FIRE ASSAY)	8.00	200.00
25	HYDROCHLORIC/NITRIC DIGESTION	2.00	50.00
25	Ag ANALYSES	1.00	25.00
25	MULTI-ELEMENT ICP PACKAGE	13.75	343.75

86-2512-477
KDA

NET INVOICE:	923.55
LESS DISCOUNT:	277.07
FREIGHT:	.00
INVOICE TOTAL:	646.48

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057610

American Assay Laboratories

PO BOX 11530
RENO NV,USA
Ph.(775) 356-0606, Fax.(775) 356-1413

HECLA MINING COMPANY

COPIES TO : BRIAN MORRIS
: KURT ALLEN
:
:

CLIENT REFERENCE No: RS-493 RECEIVED : 5 JUN 2000

No. SAMPLES : 25 REPORTED : 30 JUN 2000

MAIN SAMPLE TYPE : DRILL CORE

NEVADA LEGISLATIVE DISCLAIMER :-
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Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag	D210	10%	ppm	0.5
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Leonard E. Mackedon B.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057610

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-493

REPORTED : 30 JUN 2000

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 1340-1360	<5		<0.001		<0.5	<0.02
RS-493 1390-1410	<5		<0.001		<0.5	<0.02
RS-493 1440-1460	<5		<0.001		<0.5	<0.02
RS-493 1490-1510	<5		<0.001		<0.5	<0.02
RS-493 1540-1560	<5		<0.001		<0.5	<0.02
RS-493 1590-1610	<5		<0.001		0.6	<0.02
RS-493 1640-1660	<5		<0.001		<0.5	<0.02
RS-493 1690-1710	<5		<0.001		0.5	<0.02
RS-493 1740-1760	<5		<0.001		0.8	0.02
RS-493 1790-1810	<5		<0.001		<0.5	<0.02
RS-493 1840-1860	<5		<0.001		<0.5	<0.02
RS-493 1890-1910	<5		<0.001		<0.5	<0.02
RS-493 1940-1960	<5		<0.001		<0.5	<0.02
RS-493 1990-2010	<5		<0.001		<0.5	<0.02
RS-493 2040-2060	<5		<0.001		<0.5	<0.02
RS-493 2090-2110	<5		<0.001		<0.5	<0.02
RS-493 2140-2160	<5		<0.001		<0.5	<0.02
RS-493 2190-2210	<5		<0.001		<0.5	<0.02
RS-493 2210-2222	<5		<0.001		0.6	<0.02
RS-493 2240-2260	<5		<0.001		<0.5	<0.02
RS-493 2290-2310	<5		<0.001		<0.5	<0.02
RS-493 2340-2360	<5		<0.001		0.9	0.03
RS-493 2390-2410	<5		<0.001		2.1	0.06
RS-493 2420-2430	<5		<0.001		0.5	<0.02
89711	68		0.002		41.1	1.20

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057610

American Assay Laboratories

PO BOX 11530
RENO NV,USA
Ph.(775) 356-0606, Fax.(775) 356-1413

HECLA MINING COMPANY

COPIES TO : BRIAN MORRIS
: KURT ALLEN
:
:

CLIENT REFERENCE No: RS-493 RECEIVED : 5 JUN 2000

No. SAMPLES : 25 REPORTED : 30 JUN 2000

MAIN SAMPLE TYPE : DRILL CORE

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au	FA30	15%	ppb	5
Au(R)	FA30	15%	ppb	5
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag	D210	10%	ppm	0.5
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Leonard E. Mackedon B.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057610

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-493

REPORTED : 30 JUN 2000

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 1340-1360	<5		<0.001		<0.5	<0.02
RS-493 1390-1410	<5		<0.001		<0.5	<0.02
RS-493 1440-1460	<5		<0.001		<0.5	<0.02
RS-493 1490-1510	<5		<0.001		<0.5	<0.02
RS-493 1540-1560	<5		<0.001		<0.5	<0.02
RS-493 1590-1610	<5		<0.001		0.6	<0.02
RS-493 1640-1660	<5		<0.001		<0.5	<0.02
RS-493 1690-1710	<5		<0.001		0.5	<0.02
RS-493 1740-1760	<5		<0.001		0.8	0.02
RS-493 1790-1810	<5		<0.001		<0.5	<0.02
RS-493 1840-1860	<5		<0.001		<0.5	<0.02
RS-493 1890-1910	<5		<0.001		<0.5	<0.02
RS-493 1940-1960	<5		<0.001		<0.5	<0.02
RS-493 1990-2010	<5		<0.001		<0.5	<0.02
RS-493 2040-2060	<5		<0.001		<0.5	<0.02
RS-493 2090-2110	<5		<0.001		<0.5	<0.02
RS-493 2140-2160	<5		<0.001		<0.5	<0.02
RS-493 2190-2210	<5		<0.001		<0.5	<0.02
RS-493 2210-2222	<5		<0.001		0.6	<0.02
RS-493 2240-2260	<5		<0.001		<0.5	<0.02
RS-493 2290-2310	<5		<0.001		<0.5	<0.02
RS-493 2340-2360	<5		<0.001		0.9	0.03
RS-493 2390-2410	<5		<0.001		2.1	0.06
RS-493 2420-2430	<5		<0.001		0.5	<0.02
89711	68		0.002		41.1	1.20

AMERICAN ASSAY LABORATORIES
AAL 03-0 ICP PACKAGE DETECTION LIMITS

ELEMENT	Ag	Al	As	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Sr	Te	Th	Ti	Tl	U	V	W	Zn
SAMPLES	ppb	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppb	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
	30	0.01	0.5	3	1	0.1	0.01	.01	1	1	0.2	0.01	0.5	10	0.01	1	0.01	2	0.1	0.01	1	0.001	0.3	0.2	0.4	1	0.2	2	0.01	0.2	5	1	2	1

5.0 GRAMS OF PULP IS DIGESTED WITH HYDROCHLORIC AND NITRIC ACID AT 95 DEGREE CENTIGRADE FOR ONE HOUR.
DIGEST IS PARTIAL FOR Al, B, Ba, Ca, Co, Cr, Fe, K, La, Mg, Mn, Na, Ni, P, Sr, Th, Ti, U, V AND W.
ORGANIC SOLUTION EXTRACTION AND ULTRASONIC ICP FOR Ag, As, Bi, Cd, Cu, Ga, Mo, Pb, Sb, Se, Te AND Tl.
Hg BY COLD VAPOR AAS.

CLIENT:	*HECLA MINING CO.*
CLIENT REF:	KURT ALLEN
AAL REF:	SP57610
METHOD:	AAL 03-0

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431
PHONE: (775) 356-0606
FAX: (775) 356-1413

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Se	Sr	Te	Th	Ti	Tl	U	V	W	Zn
SAMPLES	ppb	%	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppb	%	ppm	%	ppm	ppm	%	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
RS-493 1340-1360	70	1	1.8	1.5	3	165.1	< .02	1.9	0.58	1.6	5.5	7.15	2.94	4.5	58	0.3	20.1	0.13	1037	1.05	0.091	16.6	0.042	12.1	0.01	0.72	2.1	0.3	156.2	0.02	9.2	0.033	< .02	1.5	12	0.4	64.3
RS-493 1390-1410	158	1.24	4.3	1.6	5	169.4	0.03	0.76	0.15	1.9	4.2	4.57	2.88	6.9	34	0.43	20.5	0.11	454	0.76	0.097	12.6	0.046	19.13	< .01	1.27	1.6	0.2	127.1	< .02	7.9	0.036	0.09	0.9	10	0.9	56.1
RS-493 1440-1460	146	1.19	2.6	0.4	5	85.1	0.03	1.2	0.2	1.1	2.1	3.33	2.01	6.9	24	0.56	22.9	0.1	633	0.34	0.06	4.8	0.041	20.54	0.01	0.78	1.6	0.1	143	0.02	6.6	0.017	0.21	2	9	0.4	55.8
RS-493 1490-1510	148	0.94	1.9	0.3	4	52.3	0.16	1.08	0.17	0.9	3.6	4.08	2.02	4.6	19	0.48	21.3	0.07	424	0.87	0.05	10.1	0.03	16.2	0.01	0.59	1.2	0.2	119.3	< .02	7.5	0.011	0.15	1.5	6	0.7	40.1
RS-493 1540-1560	139	1.01	3.1	0.8	2	62.9	0.2	1.85	0.28	0.4	1.3	1.99	1.36	3	20	0.45	11.5	0.04	796	0.69	0.025	3	0.015	22.67	0.53	3.63	0.9	0.3	138.7	< .02	6.2	< .001	0.12	0.8	2	< .2	33.4
RS-493 1590-1610	438	0.85	1.4	1.8	2	65.5	0.12	1.72	1	1	2	3.23	2.02	2.4	170	0.34	21.8	0.05	1132	1.25	0.033	4.6	0.042	21.97	1.04	2.9	0.9	2.1	170.9	< .02	5.5	0.001	0.22	1.1	4	< .2	87.8
RS-493 1640-1660	140	0.77	2.2	1	2	105.6	0.31	0.93	0.26	0.8	2.7	3.5	1.13	2.2	133	0.33	26.1	0.05	411	0.69	0.026	5.6	0.024	19.38	0.19	1.35	0.4	0.2	141.1	< .02	6.9	< .001	0.11	0.9	2	< .2	46.2
RS-493 1690-1710	321	1.05	2.7	1.3	1	43.4	0.24	2	0.41	4	3.7	3.58	2.47	3.7	91	0.31	20.4	0.28	971	0.54	0.034	3	0.04	18.78	1.38	4.07	1.2	0.6	173	< .02	3.2	< .001	0.41	0.5	5	< .2	75.2
RS-493 1740-1760	446	0.76	4.9	1.2	< 1	28.2	0.21	1.02	0.34	2	1.9	4.54	1.84	2.1	146	0.39	21.8	0.05	447	0.8	0.03	4.8	0.045	22.3	1.55	2.04	0.5	2.4	180.2	0.03	3.9	< .001	0.24	0.5	2	< .2	56.7
RS-493 1790-1810	106	1.05	8.8	< .2	2	136.4	0.23	1.46	0.18	1.3	3	3.54	2.29	3.4	13	0.48	25.9	0.14	523	0.72	0.069	7.9	0.049	15.29	0.01	0.44	0.8	0.1	266.9	0.02	5.4	0.009	0.12	1.4	9	0.2	29
RS-493 1840-1860	103	1.54	2.2	2.3	5	97.1	0.08	1.21	0.17	6	3.3	5.26	2.54	7.8	9	0.5	24.3	0.38	770	0.21	0.113	4.3	0.062	16.36	< .01	0.3	3	0.2	177.6	< .02	2.8	0.245	0.14	2.3	32	0.9	69.6
RS-493 1890-1910	105	1.98	4.2	1.1	6	105.6	0.14	1.16	0.12	4.2	4.5	5.34	3.21	9.4	12	0.76	24	0.23	627	0.6	0.135	9.1	0.05	15.79	< .01	0.38	2.3	0.3	237.8	< .02	3.8	0.189	0.27	1.7	30	1.3	55.4
RS-493 1940-1960	109	1.67	1	1.1	4	159.2	0.11	0.74	0.12	1.2	3.2	4.73	2.37	10.2	11	0.86	38.5	0.09	461	0.62	0.139	10.7	0.039	17.43	0.01	0.24	0.8	< .1	86.7	< .02	4.5	0.03	0.23	4.2	3	0.6	59.8
RS-493 1990-2010	54	0.82	7.1	< .2	4	83.5	0.06	0.85	0.09	0.8	2.5	3.57	2.42	5.8	8	0.45	25.3	0.04	575	0.44	0.096	9.2	0.021	14.36	0.02	0.43	0.8	< .1	64.8	< .02	6.3	0.036	0.07	2.2	2	0.4	41.8
RS-493 2040-2060	92	0.81	6.3	0.4	3	70.9	< .02	1.07	0.05	0.7	1.8	2.82	2.17	5.5	< 5	0.41	29	0.04	575	0.75	0.071	6.2	0.031	20.36	0.02	0.38	0.9	0.2	104.5	0.02	10.6	0.018	0.06	1.3	< 2	0.9	33.1
RS-493 2090-2110	88	0.85	4.4	0.5	3	173.9	0.09	0.79	0.04	1.1	2.5	3	2.47	5.9	< 5	0.42	29.5	0.04	537	0.47	0.07	7.4	0.023	22.52	0.02	0.6	0.9	0.1	103.5	< .02	10.8	0.032	0.07	0.7	< 2	1.5	44.4
RS-493 2140-2160	82	1.09	3.8	< .2	4	90.1	< .02	0.96	0.08	0.5	1.7	2.37	2.1	6.7	< 5	0.56	28.6	0.04	354	0.77	0.094	7.2	0.028	17.56	0.02	0.42	0.8	0.2	105.8	< .02	11.2	0.019	0.1	0.9	< 2	0.6	35.5
RS-493 2190-2210	161	2.14	4.2	1.1	3	133.7	0.27	0.87	0.14	5.9	10.7	25.61	2.88	6.9	16	0.95	24.3	0.2	345	0.8	0.092	22.7	0.039	17.36	0.18	1.07	2.2	0.5	316.6	0.04	4.8	0.013	0.24	1.1	24	< .2	51.1
RS-493 2210-2222	312	2.17	6.7	0.9	3	192.8	0.31	1.15	0.16	5.3	6.7	11.06	1.71	7.8	8	0.78	17.9	0.25	303	0.42	0.09	25.6	0.053	27.86	0.19	0.75	0.6	1	229.1	0.02	3	< .001	0.16	0.5	19	< .2	57.9
RS-493 2240-2260	200	1.98	17.4	0.2	1	204.3	0.2	2.21	0.19	22.4	45.2	49.03	3.22	6.3	20	0.31	19.3	0.72	469	0.95	0.064	94.1	0.106	9.51	0.17	1.7	4	0.6	364.2	0.05	3.6	0.007	0.08	0.6	58	< .2	78
RS-493 2290-2310	93	2.3	9.6	< .2	2	439.8	0.15	2.12	0.17	16	36.4	25.57	3.56	7.5	24	0.27	7.8	1	528	0.84	0.057	38.8	0.078	11.57	0.11	1.21	4.4	0.3	336	0.04	3.5	0.004	0.07	0.3	63	< .2	78.2
RS-493 2340-2360	683	2.68	44.3	2.7	< 1	51.3	0.12	1.34	0.48	16	28.4	41.51	7.32	8.2	30	0.18	2.7	1.1	862	1.04	0.031	30.7	0.047	8.24	2.96	3.1	6.3	3.1	181	0.05	1.1	< .001	0.08	< .1	94	< .2	112.1
RS-493 2390-2410	1383	1.01	41.7	< .2	2	116.1	0.21	3.99	4.3	11.5	16	61.67	2.81	1.8	52	0.17	2.1	1.55	683	12.63	0.013	63.3	0.08	15.38	1.25	6.46	2.1	7.3	308.9	0.05	1.6	< .001	0.19	0.3	22	< .2	414.8
RS-493 2420-2430	296	0.45	30.6	< .2	5	156.2	0.14	7.59	3.31	6.5	3.9	35.34	1.92	0.9	75	0.2	1.6	0.48	383	35.16	0.01	59.7	0.097	10.54	1.93	7.24	1.6	4.7	638.4	0.09	2.3	< .001	0.46	1.5	17	0.2	333.8
89711	33354	0.91	66.1	2437.6	< 1	84.7	0.56	0.83	0.2	2.6	22.6	11.11	1.74	2.6	180	0.4	16.3	0.09	235	8.01	0.027	10.8	0.056	17.99	1.89	7.54	0.4	17.2	77.6	0.03	3.1	0.002	0.27	0.5	3	0.4	76.5
STANDARD DS2	255	1.74	58.4	199.1	4	149.4	10.92	0.55	9.64	11.5	170.4	126.86	3.07	6.1	225	0.16	15.2	0.6	830	13.87	0.032	36.5	0.089	30.84	0.02	9.1	2.7	2.3	30.4	1.85	3.5	0.096	1.91	18.5	75	6.6	161.2

AMERICAN ASSAY LABORATORIES
AAL 03-0 ICP PACKAGE DETECTION LIMITS

ELEMENT	Ag	Al	As	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Sr	Te	Th	Ti	Tl	U	V	W	Zn
SAMPLES	ppb	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppb	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
	30	0.01	0.5	3	1	0.1	0.01	.01	1	1	0.2	0.01	0.5	10	0.01	1	0.01	2	0.1	0.01	1	0.001	0.3	0.2	0.4	1	0.2	2	0.01	0.2	5	1	2	1

5.0 GRAMS OF PULP IS DIGESTED WITH HYDROCHLORIC AND NITRIC ACID AT 95 DEGREE CENTIGRADE FOR ONE HOUR.
DIGEST IS PARTIAL FOR Al, B, Ba, Ca, Co, Cr, Fe, K, La, Mg, Mn, Na, Ni, P, Sr, Th, Ti, U, V AND W.
ORGANIC SOLUTION EXTRACTION AND ULTRASONIC ICP FOR Ag, As, Bi, Cd, Cu, Ga, Mo, Pb, Sb, Se, Te AND Tl.
Hg BY COLD VAPOR AAS.

CLIENT:	*HECLA MINING CO.*
CLIENT REF:	KURT ALLEN
AAL REF:	SP57610
METHOD:	AAL 03-0

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431
PHONE: (775) 356-0606
FAX: (775) 356-1413

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Se	Sr	Te	Th	Ti	Tl	U	V	W	Zn
SAMPLES	ppb	%	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppb	%	ppm	%	ppm	ppm	%	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
RS-493 1340-1360	70	1	1.8	1.5	3	165.1	< .02	1.9	0.58	1.6	5.5	7.15	2.94	4.5	58	0.3	20.1	0.13	1037	1.05	0.091	16.6	0.042	12.1	0.01	0.72	2.1	0.3	156.2	0.02	9.2	0.033	< .02	1.5	12	0.4	64.3
RS-493 1390-1410	158	1.24	4.3	1.6	5	169.4	0.03	0.76	0.15	1.9	4.2	4.57	2.88	6.9	34	0.43	20.5	0.11	454	0.76	0.097	12.6	0.046	19.13	< .01	1.27	1.6	0.2	127.1	< .02	7.9	0.036	0.09	0.9	10	0.9	56.1
RS-493 1440-1460	146	1.19	2.6	0.4	5	85.1	0.03	1.2	0.2	1.1	2.1	3.33	2.01	6.9	24	0.56	22.9	0.1	633	0.34	0.06	4.8	0.041	20.54	0.01	0.78	1.6	0.1	143	0.02	6.6	0.017	0.21	2	9	0.4	55.8
RS-493 1490-1510	148	0.94	1.9	0.3	4	52.3	0.16	1.08	0.17	0.9	3.6	4.08	2.02	4.6	19	0.48	21.3	0.07	424	0.87	0.05	10.1	0.03	16.2	0.01	0.59	1.2	0.2	119.3	< .02	7.5	0.011	0.15	1.5	6	0.7	40.1
RS-493 1540-1560	139	1.01	3.1	0.8	2	62.9	0.2	1.85	0.28	0.4	1.3	1.99	1.36	3	20	0.45	11.5	0.04	796	0.69	0.025	3	0.015	22.67	0.53	3.63	0.9	0.3	138.7	< .02	6.2	< .001	0.12	0.8	2	< .2	33.4
RS-493 1590-1610	438	0.85	1.4	1.8	2	65.5	0.12	1.72	1	1	2	3.23	2.02	2.4	170	0.34	21.8	0.05	1132	1.25	0.033	4.6	0.042	21.97	1.04	2.9	0.9	2.1	170.9	< .02	5.5	0.001	0.22	1.1	4	< .2	87.8
RS-493 1640-1660	140	0.77	2.2	1	2	105.6	0.31	0.93	0.26	0.8	2.7	3.5	1.13	2.2	133	0.33	26.1	0.05	411	0.69	0.026	5.6	0.024	19.38	0.19	1.35	0.4	0.2	141.1	< .02	6.9	< .001	0.11	0.9	2	< .2	46.2
RS-493 1690-1710	321	1.05	2.7	1.3	1	43.4	0.24	2	0.41	4	3.7	3.58	2.47	3.7	91	0.31	20.4	0.28	971	0.54	0.034	3	0.04	18.78	1.38	4.07	1.2	0.6	173	< .02	3.2	< .001	0.41	0.5	5	< .2	75.2
RS-493 1740-1760	446	0.76	4.9	1.2	< 1	28.2	0.21	1.02	0.34	2	1.9	4.54	1.84	2.1	146	0.39	21.8	0.05	447	0.8	0.03	4.8	0.045	22.3	1.55	2.04	0.5	2.4	180.2	0.03	3.9	< .001	0.24	0.5	2	< .2	56.7
RS-493 1790-1810	106	1.05	8.8	< .2	2	136.4	0.23	1.46	0.18	1.3	3	3.54	2.29	3.4	13	0.48	25.9	0.14	523	0.72	0.069	7.9	0.049	15.29	0.01	0.44	0.8	0.1	266.9	0.02	5.4	0.009	0.12	1.4	9	0.2	29
RS-493 1840-1860	103	1.54	2.2	2.3	5	97.1	0.08	1.21	0.17	6	3.3	5.26	2.54	7.8	9	0.5	24.3	0.38	770	0.21	0.113	4.3	0.062	16.36	< .01	0.3	3	0.2	177.6	< .02	2.8	0.245	0.14	2.3	32	0.9	69.6
RS-493 1890-1910	105	1.98	4.2	1.1	6	105.6	0.14	1.16	0.12	4.2	4.5	5.34	3.21	9.4	12	0.76	24	0.23	627	0.6	0.135	9.1	0.05	15.79	< .01	0.38	2.3	0.3	237.8	< .02	3.8	0.189	0.27	1.7	30	1.3	55.4
RS-493 1940-1960	109	1.67	1	1.1	4	159.2	0.11	0.74	0.12	1.2	3.2	4.73	2.37	10.2	11	0.86	38.5	0.09	461	0.62	0.139	10.7	0.039	17.43	0.01	0.24	0.8	< .1	86.7	< .02	4.5	0.03	0.23	4.2	3	0.6	59.8
RS-493 1990-2010	54	0.82	7.1	< .2	4	83.5	0.06	0.85	0.09	0.8	2.5	3.57	2.42	5.8	8	0.45	25.3	0.04	575	0.44	0.096	9.2	0.021	14.36	0.02	0.43	0.8	< .1	64.8	< .02	6.3	0.036	0.07	2.2	2	0.4	41.8
RS-493 2040-2060	92	0.81	6.3	0.4	3	70.9	< .02	1.07	0.05	0.7	1.8	2.82	2.17	5.5	< 5	0.41	29	0.04	575	0.75	0.071	6.2	0.031	20.36	0.02	0.38	0.9	0.2	104.5	0.02	10.6	0.018	0.06	1.3	< 2	0.9	33.1
RS-493 2090-2110	88	0.85	4.4	0.5	3	173.9	0.09	0.79	0.04	1.1	2.5	3	2.47	5.9	< 5	0.42	29.5	0.04	537	0.47	0.07	7.4	0.023	22.52	0.02	0.6	0.9	0.1	103.5	< .02	10.8	0.032	0.07	0.7	< 2	1.5	44.4
RS-493 2140-2160	82	1.09	3.8	< .2	4	90.1	< .02	0.96	0.08	0.5	1.7	2.37	2.1	6.7	< 5	0.56	28.6	0.04	354	0.77	0.094	7.2	0.028	17.56	0.02	0.42	0.8	0.2	105.8	< .02	11.2	0.019	0.1	0.9	< 2	0.6	35.5
RS-493 2190-2210	161	2.14	4.2	1.1	3	133.7	0.27	0.87	0.14	5.9	10.7	25.61	2.88	6.9	16	0.95	24.3	0.2	345	0.8	0.092	22.7	0.039	17.36	0.18	1.07	2.2	0.5	316.6	0.04	4.8	0.013	0.24	1.1	24	< .2	51.1
RS-493 2210-2222	312	2.17	6.7	0.9	3	192.8	0.31	1.15	0.16	5.3	6.7	11.06	1.71	7.8	8	0.78	17.9	0.25	303	0.42	0.09	25.6	0.053	27.86	0.19	0.75	0.6	1	229.1	0.02	3	< .001	0.16	0.5	19	< .2	57.9
RS-493 2240-2260	200	1.98	17.4	0.2	1	204.3	0.2	2.21	0.19	22.4	45.2	49.03	3.22	6.3	20	0.31	19.3	0.72	469	0.95	0.064	94.1	0.106	9.51	0.17	1.7	4	0.6	364.2	0.05	3.6	0.007	0.08	0.6	58	< .2	78
RS-493 2290-2310	93	2.3	9.6	< .2	2	439.8	0.15	2.12	0.17	16	36.4	25.57	3.56	7.5	24	0.27	7.8	1	528	0.84	0.057	38.8	0.078	11.57	0.11	1.21	4.4	0.3	336	0.04	3.5	0.004	0.07	0.3	63	< .2	78.2
RS-493 2340-2360	683	2.68	44.3	2.7	< 1	51.3	0.12	1.34	0.48	16	28.4	41.51	7.32	8.2	30	0.18	2.7	1.1	862	1.04	0.031	30.7	0.047	8.24	2.96	3.1	6.3	3.1	181	0.05	1.1	< .001	0.08	< .1	94	< .2	112.1
RS-493 2390-2410	1383	1.01	41.7	< .2	2	116.1	0.21	3.99	4.3	11.5	16	61.67	2.81	1.8	52	0.17	2.1	1.55	683	12.63	0.013	63.3	0.08	15.38	1.25	6.46	2.1	7.3	308.9	0.05	1.6	< .001	0.19	0.3	22	< .2	414.8
RS-493 2420-2430	296	0.45	30.6	< .2	5	156.2	0.14	7.59	3.31	6.5	3.9	35.34	1.92	0.9	75	0.2	1.6	0.48	383	35.16	0.01	59.7	0.097	10.54	1.93	7.24	1.6	4.7	638.4	0.09	2.3	< .001	0.46	1.5	17	0.2	333.8
89711	33354	0.91	66.1	2437.6	< 1	84.7	0.56	0.83	0.2	2.6	22.6	11.11	1.74	2.6	180	0.4	16.3	0.09	235	8.01	0.027	10.8	0.056	17.99	1.89	7.54	0.4	17.2	77.6	0.03	3.1	0.002	0.27	0.5	3	0.4	76.5
STANDARD DS2	255	1.74	58.4	199.1	4	149.4	10.92	0.55	9.64	11.5	170.4	126.86	3.07	6.1	225	0.16	15.2	0.6	830	13.87	0.032	36.5	0.089	30.84	0.02	9.1	2.7	2.3	30.4	1.85	3.5	0.096	1.91	18.5	75	6.6	161.2

American Assay Laboratories

INVOICE

Remit To: P.O. Box11530
Reno, Nevada 89510
Phone NO.: 702-356-0606
Fax No.: 702-356-1413

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431-5902

(775) 356-0606

INVOICE NO: SP 0057534-IN
INVOICE DATE: 06/30/00

INVOICE TO:
THE ROSEBUD MINING CO., LLC
HECLA MINING COMPANY, OPERATOR
P.O. BOX 2610
WINNEMUCCA NV 89446

THE ROSEBUD MINING CO., LLC
HECLA MINING COMPANY, OPERATOR
P.O. BOX 2610
WINNEMUCCA NV 89446

CUSTOMER P.O.	PROJECT	TERMS
RS-493	KURT ALLEN	NET 30 - DUE IN U.S. DOLLARS

QUANTITY	DESCRIPTION	PRICE	AMOUNT
7	SAMPLES RECEIVED	.00	.00
1	NO PREPARATION REQUIRED	.00	.00
6	DRY/JAW CRUSH ENTIRE SAMPLE	2.30	13.80
6	COARSE MILLING CHARGE	6.00	36.00
6	ROTARY SPLIT	2.40	14.40
6	RING/PUCK MILL	2.00	12.00
7	Au (1 A.T. FIRE ASSAY)	8.00	56.00
7	HYDROCHLORIC/NITRIC DIGESTION	2.00	14.00
7	Ag ANALYSES	1.00	7.00
7	MULTI-ELEMENT ICP PACKAGE	13.75	96.25

86-2512-477

NET INVOICE:	249.45
LESS DISCOUNT:	74.84
FREIGHT:	.00
INVOICE TOTAL:	174.61

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057534

American Assay Laboratories

PO BOX 11530
RENO NV,USA
Ph.(775) 356-0606, Fax.(775) 356-1413

HECLA MINING COMPANY

COPIES TO : BRIAN MORRIS

: KURT ALLEN

:

:

CLIENT REFERENCE No: RS-493 RECEIVED : 26 MAY 2000

No. SAMPLES : 7 REPORTED : 30 JUN 2000

MAIN SAMPLE TYPE : DRILL CORE

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au	FA30	15%	ppb	5
Au(R)	FA30	15%	ppb	5
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag	D210	10%	ppm	0.5
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Leonard E. Mackedon B.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057534

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-493

REPORTED : 30 JUN 2000

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 1187.0-1189.5	8		<0.001		0.7	0.02
RS-493 1189.5-1193.5	7		<0.001		0.5	<0.02
RS-493 1221.5-1227.0	9		<0.001		<0.5	<0.02
RS-493 1227-1230	<5		<0.001		<0.5	<0.02
RS-493 1230-1234	<5		<0.001		0.5	<0.02
RS-493 1264-1267	<5		<0.001		<0.5	<0.02
34789	5900		0.172		65.7	1.92

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057534

American Assay Laboratories

PO BOX 11530
RENO NV,USA
Ph.(775) 356-0606, Fax.(775) 356-1413

HECLA MINING COMPANY

COPIES TO : BRIAN MORRIS
: KURT ALLEN
:
:

CLIENT REFERENCE No: RS-493
No. SAMPLES : 7
MAIN SAMPLE TYPE : DRILL CORE

RECEIVED : 26 MAY 2000
REPORTED : 30 JUN 2000

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au	FA30	15%	ppb	5
Au(R)	FA30	15%	ppb	5
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag	D210	10%	ppm	0.5
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Leonard E. Mackedon B.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057534

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-493

REPORTED : 30 JUN 2000

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 1187.0-1189.5	8		<0.001		0.7	0.02
RS-493 1189.5-1193.5	7		<0.001		0.5	<0.02
RS-493 1221.5-1227.0	9		<0.001		<0.5	<0.02
RS-493 1227-1230	<5		<0.001		<0.5	<0.02
RS-493 1230-1234	<5		<0.001		0.5	<0.02
RS-493 1264-1267	<5		<0.001		<0.5	<0.02
34789	5900		0.172		65.7	1.92

AMERICAN ASSAY LABORATORIES
AAL 03-0 ICP PACKAGE DETECTION LIMITS

ELEMENT	Ag	Al	As	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Sr	Te	Th	Ti	Tl	U	V	W	Zn
SAMPLES	ppb	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppb	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
	30	0.01	0.5	3	1	0.1	0.01	.01	1	1	0.2	0.01	0.5	10	0.01	1	0.01	2	0.1	0.01	1	0.001	0.3	0.2	0.4	1	0.2	2	0.01	0.2	5	1	2	1

5.0 GRAMS OF PULP IS DIGESTED WITH HYDROCHLORIC AND NITRIC ACID AT 95 DEGREE CENTIGRADE FOR ONE HOUR.
DIGEST IS PARTIAL FOR Al, B, Ba, Ca, Co, Cr, Fe, K, La, Mg, Mn, Na, Ni, P, Sr, Th, Ti, U, V AND W.
ORGANIC SOLUTION EXTRACTION AND ULTRASONIC ICP FOR Ag, As, Bi, Cd, Cu, Ga, Mo, Pb, Sb, Se, Te AND Tl.
Hg BY COLD VAPOR AAS.

CLIENT:	*HECLA MINING CO.*
CLIENT REF:	KURT ALLEN
AAL REF:	SP57534
METHOD:	AAL 03-0

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431
PHONE: (775) 356-0606
FAX: (775) 356-1413

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Se	Sr	Te	Th	Ti	Tl	U	V	W	Zn
SAMPLES	ppb	%	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppb	%	ppm	%	ppm	ppm	%	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
RS-493 1187.0-1189.5	350	0.66	18.8	6.8	6	26.8	< .02	8.13	0.2	2.3	0.8	3.52	2.15	3.3	90	0.12	15.5	0.08	1568	0.71	0.017	2	0.039	19.14	0.96	3.46	1.3	0.8	276	0.02	4.6	0.001	0.09	1.4	4	0.2	73.1
RS-493 1189.5-1193.5	262	0.87	8.8	2.1	5	30.2	< .02	1.91	0.07	2.8	1.3	8.61	1.74	4.4	42	0.14	26.2	0.09	486	1.44	0.017	2.3	0.051	22.53	0.48	3.46	1.2	0.5	133.5	< .02	9.5	0.002	0.03	1.2	4	< .2	88.9
RS-493 1221.5-1227.0	131	0.75	4.8	< .2	5	30.5	< .02	10.95	0.1	1.2	0.6	3.31	1.08	3.2	26	0.15	20.2	0.1	1925	0.17	0.017	1.3	0.038	17.5	0.1	1.42	1.2	0.2	276.6	0.02	6.5	< .001	< .02	2.1	4	< .2	59
RS-493 1227-1230	148	0.61	3	< .2	5	521.8	< .02	17.52	0.14	1	< .5	3.25	0.99	2.5	21	0.12	16.6	0.08	2838	0.13	0.014	1	0.026	10.99	0.04	0.52	1.3	0.2	520.5	0.03	4.4	< .001	< .02	1.6	2	< .2	42.6
RS-493 1230-1234	140	0.71	5.8	1	5	398.6	< .02	8.56	0.26	1.4	0.7	3.06	1.01	2.8	37	0.15	22	0.07	1655	0.22	0.019	1	0.043	16.62	0.15	3.08	1.4	0.3	281.3	0.02	7.7	< .001	< .02	1.4	3	< .2	68.3
RS-493 1264-1267	180	0.59	7.5	1.6	5	248.7	< .02	1.94	0.1	1.7	0.6	8.33	0.98	2.6	28	0.17	26.1	0.06	552	0.12	0.029	0.9	0.053	21.48	0.4	1.61	1.3	0.1	135.1	< .02	9	0.003	< .02	0.9	3	< .2	78.6
34789	57019	2.49	128.3	5510.4	7	41.7	0.17	0.95	1.52	4	6.8	23.97	2.71	8	362	0.9	16.5	0.15	340	6.01	0.068	3.8	0.056	28.77	1.4	18.32	1	24.4	70.6	0.02	4.1	0.003	0.41	1.4	9	0.2	91.1
STANDARD DS2	266	1.67	62.3	190.9	3	147.5	10.68	0.51	9.69	11.5	156.3	128.85	3.01	5.8	224	0.15	14.7	0.59	815	13.47	0.029	35	0.086	30.45	0.02	9.17	2.6	2.2	27.8	1.91	3.5	0.09	1.7	17.9	72	7	157.6

AMERICAN ASSAY LABORATORIES
AAL 03-0 ICP PACKAGE DETECTION LIMITS

ELEMENT	Ag	Al	As	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Sr	Te	Th	Ti	Tl	U	V	W	Zn
SAMPLES	ppb	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppb	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
	30	0.01	0.5	3	1	0.1	0.01	.01	1	1	0.2	0.01	0.5	10	0.01	1	0.01	2	0.1	0.01	1	0.001	0.3	0.2	0.4	1	0.2	2	0.01	0.2	5	1	2	1

5.0 GRAMS OF PULP IS DIGESTED WITH HYDROCHLORIC AND NITRIC ACID AT 95 DEGREE CENTIGRADE FOR ONE HOUR.
DIGEST IS PARTIAL FOR Al, B, Ba, Ca, Co, Cr, Fe, K, La, Mg, Mn, Na, Ni, P, Sr, Th, Ti, U, V AND W.
ORGANIC SOLUTION EXTRACTION AND ULTRASONIC ICP FOR Ag, As, Bi, Cd, Cu, Ga, Mo, Pb, Sb, Se, Te AND Tl.
Hg BY COLD VAPOR AAS.

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431
PHONE: (775) 356-0606
FAX: (775) 356-1413

CLIENT:	*HECLA MINING CO.*
CLIENT REF:	KURT ALLEN
AAL REF:	SP57534
METHOD:	AAL 03-0

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Se	Sr	Te	Th	Ti	Tl	U	V	W	Zn
SAMPLES	ppb	%	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppb	%	ppm	%	ppm	ppm	%	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
RS-493 1187.0-1189.5	350	0.66	18.8	6.8	6	26.8	< .02	8.13	0.2	2.3	0.8	3.52	2.15	3.3	90	0.12	15.5	0.08	1568	0.71	0.017	2	0.039	19.14	0.96	3.46	1.3	0.8	276	0.02	4.6	0.001	0.09	1.4	4	0.2	73.1
RS-493 1189.5-1193.5	262	0.87	8.8	2.1	5	30.2	< .02	1.91	0.07	2.8	1.3	8.61	1.74	4.4	42	0.14	26.2	0.09	486	1.44	0.017	2.3	0.051	22.53	0.48	3.46	1.2	0.5	133.5	< .02	9.5	0.002	0.03	1.2	4	< .2	88.9
RS-493 1221.5-1227.0	131	0.75	4.8	< .2	5	30.5	< .02	10.95	0.1	1.2	0.6	3.31	1.08	3.2	26	0.15	20.2	0.1	1925	0.17	0.017	1.3	0.038	17.5	0.1	1.42	1.2	0.2	276.6	0.02	6.5	< .001	< .02	2.1	4	< .2	59
RS-493 1227-1230	148	0.61	3	< .2	5	521.8	< .02	17.52	0.14	1	< .5	3.25	0.99	2.5	21	0.12	16.6	0.08	2838	0.13	0.014	1	0.026	10.99	0.04	0.52	1.3	0.2	520.5	0.03	4.4	< .001	< .02	1.6	2	< .2	42.6
RS-493 1230-1234	140	0.71	5.8	1	5	398.6	< .02	8.56	0.26	1.4	0.7	3.06	1.01	2.8	37	0.15	22	0.07	1655	0.22	0.019	1	0.043	16.62	0.15	3.08	1.4	0.3	281.3	0.02	7.7	< .001	< .02	1.4	3	< .2	68.3
RS-493 1264-1267	180	0.59	7.5	1.6	5	248.7	< .02	1.94	0.1	1.7	0.6	8.33	0.98	2.6	28	0.17	26.1	0.06	552	0.12	0.029	0.9	0.053	21.48	0.4	1.61	1.3	0.1	135.1	< .02	9	0.003	< .02	0.9	3	< .2	78.6
34789	57019	2.49	128.3	5510.4	7	41.7	0.17	0.95	1.52	4	6.8	23.97	2.71	8	362	0.9	16.5	0.15	340	6.01	0.068	3.8	0.056	28.77	1.4	18.32	1	24.4	70.6	0.02	4.1	0.003	0.41	1.4	9	0.2	91.1
STANDARD DS2	266	1.67	62.3	190.9	3	147.5	10.68	0.51	9.69	11.5	156.3	128.85	3.01	5.8	224	0.15	14.7	0.59	815	13.47	0.029	35	0.086	30.45	0.02	9.17	2.6	2.2	27.8	1.91	3.5	0.09	1.7	17.9	72	7	157.6

American Assay Laboratories

INVOICE

Remit To: P.O. Box11530
Reno, Nevada 89510
Phone NO.: 702-356-0606
Fax No.: 702-356-1413

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431-5902

(775) 356-0606

INVOICE NO: SP 0057534-IN
INVOICE DATE: 06/30/00

INVOICE TO:
THE ROSEBUD MINING CO., LLC
HECLA MINING COMPANY, OPERATOR
P.O. BOX 2610
WINNEMUCCA NV 89446

THE ROSEBUD MINING CO., LLC
HECLA MINING COMPANY, OPERATOR
P.O. BOX 2610
WINNEMUCCA NV 89446

CUSTOMER P.O.	PROJECT	TERMS
RS-493	KURT ALLEN	NET 30 - DUE IN U.S. DOLLARS

QUANTITY	DESCRIPTION	PRICE	AMOUNT
7	SAMPLES RECEIVED	.00	.00
1	NO PREPARATION REQUIRED	.00	.00
6	DRY/JAW CRUSH ENTIRE SAMPLE	2.30	13.80
6	COARSE MILLING CHARGE	6.00	36.00
6	ROTARY SPLIT	2.40	14.40
6	RING/PUCK MILL	2.00	12.00
7	Au (1 A.T. FIRE ASSAY)	8.00	56.00
7	HYDROCHLORIC/NITRIC DIGESTION	2.00	14.00
7	Ag ANALYSES	1.00	7.00
7	MULTI-ELEMENT ICP PACKAGE	13.75	96.25

NET INVOICE:	249.45
LESS DISCOUNT:	74.84
FREIGHT:	.00
INVOICE TOTAL:	174.61

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057534

American Assay Laboratories

PO BOX 11530
RENO NV,USA
Ph.(775) 356-0606, Fax.(775) 356-1413

HECLA MINING COMPANY

COPIES TO : BRIAN MORRIS

: KURT ALLEN

:

:

CLIENT REFERENCE No: RS-493

No. SAMPLES : 7

MAIN SAMPLE TYPE : DRILL CORE

RECEIVED : 26 MAY 2000

REPORTED : 30 JUN 2000

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au	FA30	15%	ppb	5
Au(R)	FA30	15%	ppb	5
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag	D210	10%	ppm	0.5
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Leonard E. Mackedon B.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP057534

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-493

REPORTED : 30 JUN 2000

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 1187.0-1189.5	8		<0.001		0.7	0.02
RS-493 1189.5-1193.5	7		<0.001		0.5	<0.02
RS-493 1221.5-1227.0	9		<0.001		<0.5	<0.02
RS-493 1227-1230	<5		<0.001		<0.5	<0.02
RS-493 1230-1234	<5		<0.001		0.5	<0.02
RS-493 1264-1267	<5		<0.001		<0.5	<0.02
34789	5900		0.172		65.7	1.92

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431
PHONE: (775) 356-0605
FAX: (775) 356-1413

CLIENT: *HECLA MINING CO.*
CLIENT REF: KURT ALLEN
AAL REF: SP57534
METHOD: AAL 03-0

ELEMENT SAMPLES	Ag ppb	Al %	As ppm	Au ppb	B ppm	Ba ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppb	K %	La ppm	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P %	Pb ppm	S %	Sb ppm	Sc ppm	Se ppm	Sr ppm	Te ppm	Th ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
RS-493 1187.0-1189.5	350	0.66	18.8	6.8	6	26.8	< .02	8.13	0.2	2.3	0.8	3.52	2.15	3.3	90	0.12	16.5	0.08	1568	0.71	0.017	2	0.039	19.14	0.96	3.46	1.3	0.8	276	0.02	4.6	0.001	0.09	1.4	4	0.2	73.1
RS-493 1189.5-1193.5	262	0.87	8.8	2.1	5	30.2	< .02	1.91	0.07	2.8	1.3	8.61	1.74	4.4	42	0.14	26.2	0.09	486	1.44	0.017	2.3	0.051	22.53	0.48	3.46	1.2	0.6	133.6	< .02	9.6	0.002	0.03	1.2	4	< .2	88.9
RS-493 1221.5-1227.0	131	0.76	4.8	< .2	5	30.5	< .02	10.95	0.1	1.2	0.6	3.31	1.08	3.2	26	0.15	20.2	0.1	1925	0.17	0.017	1.3	0.038	17.5	0.1	1.42	1.2	0.2	276.8	0.02	6.6	< .001	< .02	2.1	4	< .2	59
RS-493 1227-1230	148	0.61	3	< .2	5	621.8	< .02	17.52	0.14	1	< .5	3.26	0.99	2.5	21	0.12	16.6	0.06	2838	0.13	0.014	1	0.026	10.99	0.04	0.52	1.3	0.2	520.5	0.03	4.4	< .001	< .02	1.6	2	< .2	42.6
RS-493 1230-1234	140	0.71	5.8	1	6	398.6	< .02	8.56	0.26	1.4	0.7	3.06	1.01	2.8	37	0.15	22	0.07	1655	0.22	0.019	1	0.043	16.62	0.15	3.08	1.4	0.3	281.3	0.02	7.7	< .001	< .02	1.4	3	< .2	68.3
RS-493 1264-1267	160	0.69	7.5	1.6	5	248.7	< .02	1.94	0.1	1.7	0.6	8.33	0.98	2.6	28	0.17	28.1	0.06	552	0.12	0.029	0.9	0.053	21.48	0.4	1.61	1.3	0.1	136.1	< .02	9	0.003	< .02	0.9	3	< .2	78.6
34769	57019	2.49	128.3	5510.4	7	41.7	0.17	0.95	1.52	4	6.8	23.97	2.71	8	362	0.9	16.6	0.15	340	6.01	0.068	3.8	0.056	28.77	1.4	18.32	1	24.4	70.6	0.02	4.1	0.003	0.41	1.4	9	0.2	91.1
STANDARD DS2	266	1.67	62.3	190.9	3	147.5	10.68	0.51	9.69	11.5	166.3	128.85	3.01	5.8	224	0.16	14.7	0.69	815	13.47	0.029	35	0.086	30.45	0.02	9.17	2.6	2.2	27.8	1.91	3.6	0.09	1.7	17.9	72	7	157.6

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057610

PO BOX 11530
RENO NV,USA
Ph.(775) 356-0606, Fax.(775) 356-1413

HECLA MINING COMPANY

COPIES TO : BRIAN MORRIS

: KURT ALLEN

:

:

CLIENT REFERENCE No: RS-493 RECEIVED : 5 JUN 2000

No. SAMPLES : 25 REPORTED : 15 JUN 2000

MAIN SAMPLE TYPE : DRILL CORE

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au	FA30	15%	ppb	5
Au(R)	FA30	15%	ppb	5
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag	D210	10%	ppm	0.5
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Leonard E. Mackedon B.S.

06/15/2000 10:21 7753561413 AMERICAN ASSAY LABS PAGE 01
7753561413

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057610

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-493

REPORTED : 15 JUN 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-493 1340-1360	<5		<0.001		<0.5	<0.02
RS-493 1390-1410	<5		<0.001		<0.5	<0.02
RS-493 1440-1460	<5		<0.001		<0.5	<0.02
RS-493 1490-1510	<5		<0.001		<0.5	<0.02
RS-493 1540-1560	<5		<0.001		<0.5	<0.02
RS-493 1590-1610	<5		<0.001		0.6	<0.02
RS-493 1640-1660	<5		<0.001		<0.5	<0.02
RS-493 1690-1710	<5		<0.001		0.5	<0.02
RS-493 1740-1760	<5		<0.001		0.8	0.02
RS-493 1790-1810	<5		<0.001		<0.5	<0.02
RS-493 1840-1860	<5		<0.001		<0.5	<0.02
RS-493 1890-1910	<5		<0.001		<0.5	<0.02
RS-493 1940-1960	<5		<0.001		<0.5	<0.02
RS-493 1990-2010	<5		<0.001		<0.5	<0.02
RS-493 2040-2060	<5		<0.001		<0.5	<0.02
RS-493 2090-2110	<5		<0.001		<0.5	<0.02
RS-493 2140-2160	<5		<0.001		<0.5	<0.02
RS-493 2190-2210	<5		<0.001		<0.5	<0.02
RS-493 2210-2222	<5		<0.001		0.6	<0.02
RS-493 2240-2260	<5		<0.001		<0.5	<0.02
RS-493 2290-2310	<5		<0.001		<0.5	<0.02
RS-493 2340-2360	<5		<0.001		0.9	0.03
RS-493 2390-2410	<5		<0.001		2.1	0.06
RS-493 2420-2430	<5		<0.001		0.5	<0.02
89711	68		0.002		41.1	1.20

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057610

PO BOX 11530
RENO NV,USA
Ph.(775) 356-0606, Fax.(775) 356-1413

HECLA MINING COMPANY

COPIES TO : BRIAN MORRIS
: KURT ALLEN
:
:

CLIENT REFERENCE No: RS-493 RECEIVED : 5 JUN 2000

No. SAMPLES : 25 REPORTED : 12 JUN 2000

MAIN SAMPLE TYPE : DRILL CORE

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au	FA30	15%	ppb	5
Au(R)	FA30	15%	ppb	5
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag	D210	10%	ppm	0.5
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Leonard E. Mackedon B.S.

06/12/2000 13:43 7753561413 AMERICAN ASSAY LABS PAGE 01
7753561413

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057610

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-493

REPORTED : 12 JUN 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-493 1340-1360	<5		<0.001			
RS-493 1390-1410	<5		<0.001			
RS-493 1440-1460	<5		<0.001			
RS-493 1490-1510	<5		<0.001			
RS-493 1540-1560	<5		<0.001			
RS-493 1590-1610	<5		<0.001			
RS-493 1640-1660	<5		<0.001			
RS-493 1690-1710	<5		<0.001			
RS-493 1740-1760	<5		<0.001			
RS-493 1790-1810	<5		<0.001			
RS-493 1840-1860	<5		<0.001			
RS-493 1890-1910	<5		<0.001			
RS-493 1940-1960	<5		<0.001			
RS-493 1990-2010	<5		<0.001			
RS-493 2040-2060	<5		<0.001			
RS-493 2090-2110	<5		<0.001			
RS-493 2140-2160	<5		<0.001			
RS-493 2190-2210	<5		<0.001			
RS-493 2210-2222	<5		<0.001			
RS-493 2240-2260	<5		<0.001			
RS-493 2290-2310	<5		<0.001			
RS-493 2340-2360	<5		<0.001			
RS-493 2390-2410	<5		<0.001			
RS-493 2420-2430	<5		<0.001			
89711	68		0.002			

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057534

PO BOX 11530
RENO NV,USA
Ph.(775) 356-0606, Fax.(775) 356-1413

HECLA MINING COMPANY

COPIES TO : BRIAN MORRIS

: KURT ALLEN

:

:

CLIENT REFERENCE No: RS-493 RECEIVED : 26 MAY 2000

No. SAMPLES : 7 REPORTED : 12 JUN 2000

MAIN SAMPLE TYPE : DRILL CORE

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au	FA30	15%	ppb	5
Au(R)	FA30	15%	ppb	5
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag	D210	10%	ppm	0.5
Ag(OZ)	D210	10%	OPT	0.02
AAL03-0	AAL03-0	10%		

SIGNATORY : Leonard E. Mackedon B.S.

06/12/2000 10:15 7753561413 AMERICAN ASSAY LABS PAGE 01
7753561413

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057534

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-493

REPORTED : 12 JUN 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-493 1187.0-1189.5	8		<0.001		0.7	0.02
RS-493 1189.5-1193.5	7		<0.001		0.5	<0.02
RS-493 1221.5-1227.0	9		<0.001		<0.5	<0.02
RS-493 1227-1230	<5		<0.001		<0.5	<0.02
RS-493 1230-1234	<5		<0.001		0.5	<0.02
RS-493 1264-1267	<5		<0.001		<0.5	<0.02
34789	5900		0.172		65.7	1.92

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057534

PO BOX 11830
RENO NV,USA
Ph.(775) 356-0606, Fax.(775) 356-1413

HECLA MINING COMPANY

COPIES TO : BRIAN MORRIS

: KURT ALLEN

:

:

CLIENT REFERENCE No: RS-493 RECEIVED : 26 MAY 2000

No. SAMPLES : 7 REPORTED : 7 JUN 2000

MAIN SAMPLE TYPE : DRILL CORE

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au	FA30	15%	ppb	5
Au(R)	FA30	15%	ppb	5
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag	D210	10%	ppm	0.5
Ag(OZ)	D210	10%	OPT	0.02
AAL03-0	AAL03-0	10%		

SIGNATORY : Leonard E. Mackedon B.S.

06/07/2000 10:26 7753561413 AMERICAN ASSAY LABS PAGE 01
7753561413

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP057534

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-493

REPORTED : 7 JUN 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-493 1187.0-1189.5	20		<0.001		0.7	0.02
RS-493 1189.5-1193.5	7		<0.001		0.5	<0.02
RS-493 1221.5-1227.0	9		<0.001		<0.5	<0.02
RS-493 1227-1230	<5		<0.001		<0.5	<0.02
RS-493 1230-1234	<5		<0.001		0.5	<0.02
RS-493 1264-1267	<5		<0.001		<0.5	<0.02
34789	5900		0.172		65.7	1.92

SP

SUBMITTAL FORM

American Assay Laboratories

Geochemical • Environmental • Metallurgical

Sparks Office
1500 Glendale Ave.
Nevada 89431
Box 11530
Reno, NV 89510
Telephone
(702) 356-0606
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Elko Office
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Nevada 89801
Box 2908
Elko, NV 89801
Telephone
(702) 738-9100
Fax
(702) 738-2594

Zacatecas Office
Telephone/Fax
011-52-49-234530

Other Offices
Lima, Peru
Santiago, Chile
Mendoza, Argentina

Company: Rosebud Mining, LLC

Address: PO Box 2610

City Winnemucca State NV Zip 89446

Telephone Number: (775) 623-6912 Fax Number: (775) 623-6967

Project Name: N. W. Corridor Purchase Order Number:

Date Submitted: 14 Mar 00 Number of Samples: 228

RESULTS REPORTED IN: ppm [ ] ppb [✓] opt [✓]

SAMPLE IDENTIFICATION	TYPE	ELEMENTS REQUIRED
Drill Hole RS-493	RC	Au + Ag - Use Rosebud Exploration
0 to 1140		Protocol Sample Prep & Assay
NOTE: Please make up		20 ft. composits of
the pulps for	ICP + Se	Trace Elements.
1 (one) Pulp - Rosebud		
Production Standard.		
@ end of Run		

COARSE REJECTS (Normally Discarded After 60 Days)

[ ] Return COD after analysis complete

PULPS (Normally Stored Free For One Month)

[ ] Discard after one month

[X] Return COD after one month

RESULTS AND INVOICES TO BE SENT TO:

Invoice to:

Kurt Allen
PO Box 2610
Winnemucca, NV 89446

Results to:

Kurt Allen

- Same -

Comments:

CLIENT FILE COPY

American Assay Laboratories

INVOICE

Remit To: P.O. Box11530
Reno, Nevada 89510
Phone NO.: 702-356-0606
Fax No.: 702-356-1413

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431-5902

(775) 356-0606

INVOICE NO: SP 0056627-IN
INVOICE DATE: 04/19/00

INVOICE TO:
THE ROSEBUD MINING CO., LLC
HECLA MINING COMPANY, OPERATOR
P.O. BOX 2610
WINNEMUCCA NV 89446

THE ROSEBUD MINING CO., LLC
HECLA MINING COMPANY, OPERATOR
P.O. BOX 2610
WINNEMUCCA NV 89446

CUSTOMER P.O.	PROJECT	TERMS
RS-493	N.W. CORRIDOR	NET 30 - DUE IN U.S. DOLLARS

QUANTITY	DESCRIPTION	PRICE	AMOUNT
229	SAMPLES RECEIVED	.00	.00
1	NO PREPARATION REQUIRED	.00	.00
228	DRY/JAW CRUSH ENTIRE SAMPLE	2.30	524.40
228	"JONES" RIFFLE SPLIT	2.40	547.20
228	RING/PUCK MILL	2.00	456.00
229	Au (1 A.T. FIRE ASSAY)	8.00	1,832.00
229	HYDROCHLORIC/NITRIC DIGESTION	2.00	458.00
229	Ag ANALYSES	1.00	229.00
228	COMPOSITE CHARGE	1.25	285.00
57	MULTI-ELEMENT ICP PACKAGE	13.75	783.75

86-2510-477
KA

NET INVOICE:	5,115.35
LESS DISCOUNT:	1,790.37
FREIGHT:	.00
INVOICE TOTAL:	3,324.98

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056627

American Assay Laboratories

PO BOX 11530
RENO NV,USA
Ph.(775) 356-0606, Fax.(775) 356-1413

HECLA MINING COMPANY

COPIES TO : BRIAN MORRIS

: KURT ALLEN

:

:

CLIENT REFERENCE No: RS-493 RECEIVED : 16 MAR 2000

No. SAMPLES : 229 REPORTED : 17 APR 2000

MAIN SAMPLE TYPE : DRILL CUTTINGS

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au	FA30	15%	ppb	5
Au(R)	FA30	15%	ppb	5
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag	D210	10%	ppm	0.5
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Leonard E. Mackedon B.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056627

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-493

REPORTED : 17 APR 2000

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 0000-0005	6		<0.001		0.6	<0.02
RS-493 0005-0010	6		<0.001		0.6	<0.02
RS-493 0010-0015	7		<0.001		0.8	0.02
RS-493 0015-0020	<5		<0.001		<0.5	<0.02
RS-493 0020-0025	<5		<0.001		<0.5	<0.02
RS-493 0025-0030	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0030-0035	<5		<0.001		<0.5	<0.02
RS-493 0035-0040	<5		<0.001		<0.5	<0.02
RS-493 0040-0045	<5		<0.001		<0.5	<0.02
RS-493 0045-0050	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0050-0055	<5		<0.001		<0.5	<0.02
RS-493 0055-0060	<5		<0.001		<0.5	<0.02
RS-493 0060-0065	16		<0.001		0.5	<0.02
RS-493 0065-0070	5		<0.001		<0.5	<0.02
RS-493 0070-0075	<5		<0.001		<0.5	<0.02
RS-493 0075-0080	<5		<0.001		<0.5	<0.02
RS-493 0080-0085	<5		<0.001		<0.5	<0.02
RS-493 0085-0090	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0090-0095	<5		<0.001		<0.5	<0.02
RS-493 0095-0100	<5		<0.001		<0.5	<0.02
RS-493 0100-0105	<5		<0.001		<0.5	<0.02
RS-493 0105-0110	<5		<0.001		<0.5	<0.02
RS-493 0110-0115	<5		<0.001		<0.5	<0.02
RS-493 0115-0120	<5		<0.001		<0.5	<0.02
RS-493 0120-0125	6		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056627

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CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-493

REPORTED : 17 APR 2000

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 0125-0130	6		<0.001		<0.5	<0.02
RS-493 0130-0135	<5		<0.001		<0.5	<0.02
RS-493 0135-0140	<5		<0.001		<0.5	<0.02
RS-493 0140-0145	<5		<0.001		<0.5	<0.02
RS-493 0145-0150	<5		<0.001		<0.5	<0.02
RS-493 0150-0155	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0155-0160	<5		<0.001		<0.5	<0.02
RS-493 0160-0165	<5		<0.001		<0.5	<0.02
RS-493 0165-0170	<5		<0.001		<0.5	<0.02
RS-493 0170-0175	<5		<0.001		<0.5	<0.02
RS-493 0175-0180	<5		<0.001		<0.5	<0.02
RS-493 0180-0185	<5		<0.001		<0.5	<0.02
RS-493 0185-0190	6		<0.001		<0.5	<0.02
RS-493 0190-0195	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0195-0200	5		<0.001		<0.5	<0.02
RS-493 0200-0205	10	14	<0.001	<0.001	<0.5	<0.02
RS-493 0205-0210	51		0.001		<0.5	<0.02
RS-493 0210-0215	30		<0.001		<0.5	<0.02
RS-493 0215-0220	<5		<0.001		<0.5	<0.02
RS-493 0220-0225	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0225-0230	<5		<0.001		<0.5	<0.02
RS-493 0230-0235	<5		<0.001		<0.5	<0.02
RS-493 0235-0240	<5		<0.001		<0.5	<0.02
RS-493 0240-0245	<5		<0.001		<0.5	<0.02
RS-493 0245-0250	26		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056627

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-493

REPORTED : 17 APR 2000

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 0250-0255	28	25	<0.001	<0.001	<0.5	<0.02
RS-493 0255-0260	25		<0.001		<0.5	<0.02
RS-493 0260-0265	<5		<0.001		<0.5	<0.02
RS-493 0265-0270	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0270-0275	<5		<0.001		<0.5	<0.02
RS-493 0275-0280	<5		<0.001		<0.5	<0.02
RS-493 0280-0285	33		<0.001		<0.5	<0.02
RS-493 0285-0290	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0290-0295	<5		<0.001		<0.5	<0.02
RS-493 0295-0300	<5		<0.001		<0.5	<0.02
RS-493 0300-0305	<5		<0.001		<0.5	<0.02
RS-493 0305-0310	<5		<0.001		<0.5	<0.02
RS-493 0310-0315	<5		<0.001		<0.5	<0.02
RS-493 0315-0320	<5		<0.001		<0.5	<0.02
RS-493 0320-0325	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0325-0330	<5		<0.001		<0.5	<0.02
RS-493 0330-0335	<5		<0.001		<0.5	<0.02
RS-493 0335-0340	<5		<0.001		<0.5	<0.02
RS-493 0340-0345	<5		<0.001		<0.5	<0.02
RS-493 0345-0350	<5		<0.001		<0.5	<0.02
RS-493 0350-0355	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0355-0360	<5		<0.001		<0.5	<0.02
RS-493 0360-0365	<5		<0.001		<0.5	<0.02
RS-493 0365-0370	<5		<0.001		<0.5	<0.02
RS-493 0370-0375	15		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056627

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-493

REPORTED : 17 APR 2000

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 0375-0380	<5		<0.001		<0.5	<0.02
RS-493 0380-0385	<5		<0.001		<0.5	<0.02
RS-493 0385-0390	<5		<0.001		<0.5	<0.02
RS-493 0390-0395	8		<0.001		<0.5	<0.02
RS-493 0395-0400	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0400-0405	<5		<0.001		<0.5	<0.02
RS-493 0405-0410	<5		<0.001		0.8	0.02
RS-493 0410-0415	<5		<0.001		0.5	<0.02
RS-493 0415-0420	<5		<0.001		<0.5	<0.02
RS-493 0420-0425	<5		<0.001		<0.5	<0.02
RS-493 0425-0430	<5		<0.001		<0.5	<0.02
RS-493 0430-0435	<5		<0.001		<0.5	<0.02
RS-493 0435-0440	<5		<0.001		<0.5	<0.02
RS-493 0440-0445	<5		<0.001		<0.5	<0.02
RS-493 0445-0450	<5		<0.001		<0.5	<0.02
RS-493 0450-0455	<5		<0.001		<0.5	<0.02
RS-493 0455-0460	<5		<0.001		<0.5	<0.02
RS-493 0460-0465	<5		<0.001		<0.5	<0.02
RS-493 0465-0470	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0470-0475	13		<0.001		<0.5	<0.02
RS-493 0475-0480	<5		<0.001		<0.5	<0.02
RS-493 0480-0485	<5		<0.001		<0.5	<0.02
RS-493 0485-0490	<5		<0.001		<0.5	<0.02
RS-493 0490-0495	<5		<0.001		<0.5	<0.02
RS-493 0495-0500	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056627

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-493

REPORTED : 17 APR 2000

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 0500-0505	<5		<0.001		<0.5	<0.02
RS-493 0505-0510	<5		<0.001		<0.5	<0.02
RS-493 0510-0515	<5		<0.001		<0.5	<0.02
RS-493 0515-0520	<5		<0.001		<0.5	<0.02
RS-493 0520-0525	8	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0525-0530	<5		<0.001		<0.5	<0.02
RS-493 0530-0535	<5		<0.001		<0.5	<0.02
RS-493 0535-0540	<5		<0.001		<0.5	<0.02
RS-493 0540-0545	<5		<0.001		<0.5	<0.02
RS-493 0545-0550	<5		<0.001		<0.5	<0.02
RS-493 0550-0555	<5		<0.001		<0.5	<0.02
RS-493 0555-0560	<5		<0.001		<0.5	<0.02
RS-493 0560-0565	<5		<0.001		<0.5	<0.02
RS-493 0565-0570	<5		<0.001		<0.5	<0.02
RS-493 0570-0575	<5		<0.001		<0.5	<0.02
RS-493 0575-0580	<5		<0.001		<0.5	<0.02
RS-493 0580-0585	<5		<0.001		<0.5	<0.02
RS-493 0585-0590	<5		<0.001		<0.5	<0.02
RS-493 0590-0595	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0595-0600	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0600-0605	<5		<0.001		<0.5	<0.02
RS-493 0605-0610	<5		<0.001		<0.5	<0.02
RS-493 0610-0615	<5		<0.001		<0.5	<0.02
RS-493 0615-0620	<5		<0.001		<0.5	<0.02
RS-493 0620-0625	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056627

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-493

REPORTED : 17 APR 2000

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 0625-0630	<5		<0.001		<0.5	<0.02
RS-493 0630-0635	<5		<0.001		<0.5	<0.02
RS-493 0635-0640	<5		<0.001		<0.5	<0.02
RS-493 0640-0645	<5		<0.001		<0.5	<0.02
RS-493 0645-0650	<5		<0.001		<0.5	<0.02
RS-493 0650-0655	<5		<0.001		<0.5	<0.02
RS-493 0655-0660	<5		<0.001		<0.5	<0.02
RS-493 0660-0665	<5		<0.001		<0.5	<0.02
RS-493 0665-0670	<5		<0.001		<0.5	<0.02
RS-493 0670-0675	<5		<0.001		<0.5	<0.02
RS-493 0675-0680	<5		<0.001		<0.5	<0.02
RS-493 0680-0685	<5		<0.001		<0.5	<0.02
RS-493 0685-0690	<5		<0.001		<0.5	<0.02
RS-493 0690-0695	<5		<0.001		<0.5	<0.02
RS-493 0695-0700	<5		<0.001		<0.5	<0.02
RS-493 0700-0705	<5		<0.001		<0.5	<0.02
RS-493 0705-0710	<5		<0.001		<0.5	<0.02
RS-493 0710-0715	<5		<0.001		<0.5	<0.02
RS-493 0715-0720	<5		<0.001		<0.5	<0.02
RS-493 0720-0725	6		<0.001		<0.5	<0.02
RS-493 0725-0730	<5		<0.001		<0.5	<0.02
RS-493 0730-0735	<5		<0.001		<0.5	<0.02
RS-493 0735-0740	<5		<0.001		<0.5	<0.02
RS-493 0740-0745	<5		<0.001		<0.5	<0.02
RS-493 0745-0750	<5		<0.001		<0.5	<0.02

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 0750-0755	<5		<0.001		<0.5	<0.02
RS-493 0755-0760	<5		<0.001		<0.5	<0.02
RS-493 0760-0765	<5		<0.001		<0.5	<0.02
RS-493 0765-0770	<5		<0.001		<0.5	<0.02
RS-493 0770-0775	<5		<0.001		<0.5	<0.02
RS-493 0775-0780	<5		<0.001		<0.5	<0.02
RS-493 0780-0785	<5		<0.001		<0.5	<0.02
RS-493 0785-0790	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0790-0795	<5		<0.001		<0.5	<0.02
RS-493 0795-0800	<5		<0.001		<0.5	<0.02
RS-493 0800-0805	<5		<0.001		<0.5	<0.02
RS-493 0805-0810	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0810-0815	<5		<0.001		<0.5	<0.02
RS-493 0815-0820	<5		<0.001		<0.5	<0.02
RS-493 0820-0825	<5		<0.001		<0.5	<0.02
RS-493 0825-0830	<5		<0.001		<0.5	<0.02
RS-493 0830-0835	<5		<0.001		<0.5	<0.02
RS-493 0835-0840	<5		<0.001		<0.5	<0.02
RS-493 0840-0845	<5		<0.001		<0.5	<0.02
RS-493 0845-0850	<5		<0.001		<0.5	<0.02
RS-493 0850-0855	8		<0.001		<0.5	<0.02
RS-493 0855-0860	5		<0.001		<0.5	<0.02
RS-493 0860-0865	6		<0.001		<0.5	<0.02
RS-493 0865-0870	<5		<0.001		<0.5	<0.02
RS-493 0870-0875	<5		<0.001		<0.5	<0.02

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 0875-0880	<5		<0.001		<0.5	<0.02
RS-493 0880-0885	<5		<0.001		<0.5	<0.02
RS-493 0885-0890	7		<0.001		<0.5	<0.02
RS-493 0890-0895	<5		<0.001		<0.5	<0.02
RS-493 0895-0900	<5		<0.001		<0.5	<0.02
RS-493 0900-0905	<5		<0.001		<0.5	<0.02
RS-493 0905-0910	<5		<0.001		<0.5	<0.02
RS-493 0910-0915	<5		<0.001		<0.5	<0.02
RS-493 0915-0920	<5		<0.001		<0.5	<0.02
RS-493 0920-0925	<5		<0.001		<0.5	<0.02
RS-493 0925-0930	20		<0.001		<0.5	<0.02
RS-493 0930-0935	50	58	0.001	0.002	<0.5	<0.02
RS-493 0935-0940	42		0.001		<0.5	<0.02
RS-493 0940-0945	34		<0.001		<0.5	<0.02
RS-493 0945-0950	18		<0.001		<0.5	<0.02
RS-493 0950-0955	<5		<0.001		<0.5	<0.02
RS-493 0955-0960	<5		<0.001		<0.5	<0.02
RS-493 0960-0965	<5		<0.001		<0.5	<0.02
RS-493 0965-0970	<5		<0.001		<0.5	<0.02
RS-493 0970-0975	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0975-0980	<5		<0.001		<0.5	<0.02
RS-493 0980-0985	<5		<0.001		<0.5	<0.02
RS-493 0985-0990	8		<0.001		<0.5	<0.02
RS-493 0990-0995	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0995-1000	<5		<0.001		<0.5	<0.02

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REPORTED : 17 APR 2000

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 1000-1005	<5		<0.001		<0.5	<0.02
RS-493 1005-1010	<5		<0.001		<0.5	<0.02
RS-493 1010-1015	<5		<0.001		<0.5	<0.02
RS-493 1015-1020	8		<0.001		<0.5	<0.02
RS-493 1020-1025	<5		<0.001		<0.5	<0.02
RS-493 1025-1030	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 1030-1035	9		<0.001		<0.5	<0.02
RS-493 1035-1040	<5		<0.001		<0.5	<0.02
RS-493 1040-1045	<5		<0.001		<0.5	<0.02
RS-493 1045-1050	6		<0.001		<0.5	<0.02
RS-493 1050-1055	<5		<0.001		<0.5	<0.02
RS-493 1055-1060	<5		<0.001		<0.5	<0.02
RS-493 1060-1065	<5		<0.001		<0.5	<0.02
RS-493 1065-1070	<5		<0.001		<0.5	<0.02
RS-493 1070-1075	<5		<0.001		<0.5	<0.02
RS-493 1075-1080	<5		<0.001		<0.5	<0.02
RS-493 1080-1085	<5		<0.001		<0.5	<0.02
RS-493 1085-1090	<5		<0.001		<0.5	<0.02
RS-493 1090-1095	<5		<0.001		<0.5	<0.02
RS-493 1095-1100	<5		<0.001		<0.5	<0.02
RS-493 1100-1105	<5		<0.001		<0.5	<0.02
RS-493 1105-1110	<5		<0.001		<0.5	<0.02
RS-493 1110-1115	<5		<0.001		<0.5	<0.02
RS-493 1115-1120	<5		<0.001		<0.5	<0.02
RS-493 1120-1125	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056627

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-493

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 1125-1130	<5		<0.001		<0.5	<0.02
RS-493 1130-1135	<5		<0.001		<0.5	<0.02
RS-493 1135-1140	<5		<0.001		<0.5	<0.02
76009	5690		0.166		64.4	1.88

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056627

American Assay Laboratories

PO BOX 11530
RENO NV,USA
Ph.(775) 356-0606, Fax.(775) 356-1413

HECLA MINING COMPANY

COPIES TO : BRIAN MORRIS

: KURT ALLEN

:

:

CLIENT REFERENCE No: RS-493

No. SAMPLES : 229

MAIN SAMPLE TYPE : DRILL CUTTINGS

RECEIVED : 16 MAR 2000

REPORTED : 17 APR 2000

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au	FA30	15%	ppb	5
Au(R)	FA30	15%	ppb	5
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag	D210	10%	ppm	0.5
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Leonard E. Mackedon B.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056627

American Assay Laboratories

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REFERENCE : RS-493

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 0000-0005	6		<0.001		0.6	<0.02
RS-493 0005-0010	6		<0.001		0.6	<0.02
RS-493 0010-0015	7		<0.001		0.8	0.02
RS-493 0015-0020	<5		<0.001		<0.5	<0.02
RS-493 0020-0025	<5		<0.001		<0.5	<0.02
RS-493 0025-0030	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0030-0035	<5		<0.001		<0.5	<0.02
RS-493 0035-0040	<5		<0.001		<0.5	<0.02
RS-493 0040-0045	<5		<0.001		<0.5	<0.02
RS-493 0045-0050	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0050-0055	<5		<0.001		<0.5	<0.02
RS-493 0055-0060	<5		<0.001		<0.5	<0.02
RS-493 0060-0065	16		<0.001		0.5	<0.02
RS-493 0065-0070	5		<0.001		<0.5	<0.02
RS-493 0070-0075	<5		<0.001		<0.5	<0.02
RS-493 0075-0080	<5		<0.001		<0.5	<0.02
RS-493 0080-0085	<5		<0.001		<0.5	<0.02
RS-493 0085-0090	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0090-0095	<5		<0.001		<0.5	<0.02
RS-493 0095-0100	<5		<0.001		<0.5	<0.02
RS-493 0100-0105	<5		<0.001		<0.5	<0.02
RS-493 0105-0110	<5		<0.001		<0.5	<0.02
RS-493 0110-0115	<5		<0.001		<0.5	<0.02
RS-493 0115-0120	<5		<0.001		<0.5	<0.02
RS-493 0120-0125	6		<0.001		<0.5	<0.02

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 0125-0130	6		<0.001		<0.5	<0.02
RS-493 0130-0135	<5		<0.001		<0.5	<0.02
RS-493 0135-0140	<5		<0.001		<0.5	<0.02
RS-493 0140-0145	<5		<0.001		<0.5	<0.02
RS-493 0145-0150	<5		<0.001		<0.5	<0.02
RS-493 0150-0155	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0155-0160	<5		<0.001		<0.5	<0.02
RS-493 0160-0165	<5		<0.001		<0.5	<0.02
RS-493 0165-0170	<5		<0.001		<0.5	<0.02
RS-493 0170-0175	<5		<0.001		<0.5	<0.02
RS-493 0175-0180	<5		<0.001		<0.5	<0.02
RS-493 0180-0185	<5		<0.001		<0.5	<0.02
RS-493 0185-0190	6		<0.001		<0.5	<0.02
RS-493 0190-0195	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0195-0200	5		<0.001		<0.5	<0.02
RS-493 0200-0205	10	14	<0.001	<0.001	<0.5	<0.02
RS-493 0205-0210	51		0.001		<0.5	<0.02
RS-493 0210-0215	30		<0.001		<0.5	<0.02
RS-493 0215-0220	<5		<0.001		<0.5	<0.02
RS-493 0220-0225	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0225-0230	<5		<0.001		<0.5	<0.02
RS-493 0230-0235	<5		<0.001		<0.5	<0.02
RS-493 0235-0240	<5		<0.001		<0.5	<0.02
RS-493 0240-0245	<5		<0.001		<0.5	<0.02
RS-493 0245-0250	26		<0.001		<0.5	<0.02

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American Assay Laboratories

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 0250-0255	28	25	<0.001	<0.001	<0.5	<0.02
RS-493 0255-0260	25		<0.001		<0.5	<0.02
RS-493 0260-0265	<5		<0.001		<0.5	<0.02
RS-493 0265-0270	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0270-0275	<5		<0.001		<0.5	<0.02
RS-493 0275-0280	<5		<0.001		<0.5	<0.02
RS-493 0280-0285	33		<0.001		<0.5	<0.02
RS-493 0285-0290	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0290-0295	<5		<0.001		<0.5	<0.02
RS-493 0295-0300	<5		<0.001		<0.5	<0.02
RS-493 0300-0305	<5		<0.001		<0.5	<0.02
RS-493 0305-0310	<5		<0.001		<0.5	<0.02
RS-493 0310-0315	<5		<0.001		<0.5	<0.02
RS-493 0315-0320	<5		<0.001		<0.5	<0.02
RS-493 0320-0325	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0325-0330	<5		<0.001		<0.5	<0.02
RS-493 0330-0335	<5		<0.001		<0.5	<0.02
RS-493 0335-0340	<5		<0.001		<0.5	<0.02
RS-493 0340-0345	<5		<0.001		<0.5	<0.02
RS-493 0345-0350	<5		<0.001		<0.5	<0.02
RS-493 0350-0355	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0355-0360	<5		<0.001		<0.5	<0.02
RS-493 0360-0365	<5		<0.001		<0.5	<0.02
RS-493 0365-0370	<5		<0.001		<0.5	<0.02
RS-493 0370-0375	15		<0.001		<0.5	<0.02

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CLIENT : HECLA MINING COMPANY
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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 0375-0380	<5		<0.001		<0.5	<0.02
RS-493 0380-0385	<5		<0.001		<0.5	<0.02
RS-493 0385-0390	<5		<0.001		<0.5	<0.02
RS-493 0390-0395	8		<0.001		<0.5	<0.02
RS-493 0395-0400	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0400-0405	<5		<0.001		<0.5	<0.02
RS-493 0405-0410	<5		<0.001		0.8	0.02
RS-493 0410-0415	<5		<0.001		0.5	<0.02
RS-493 0415-0420	<5		<0.001		<0.5	<0.02
RS-493 0420-0425	<5		<0.001		<0.5	<0.02
RS-493 0425-0430	<5		<0.001		<0.5	<0.02
RS-493 0430-0435	<5		<0.001		<0.5	<0.02
RS-493 0435-0440	<5		<0.001		<0.5	<0.02
RS-493 0440-0445	<5		<0.001		<0.5	<0.02
RS-493 0445-0450	<5		<0.001		<0.5	<0.02
RS-493 0450-0455	<5		<0.001		<0.5	<0.02
RS-493 0455-0460	<5		<0.001		<0.5	<0.02
RS-493 0460-0465	<5		<0.001		<0.5	<0.02
RS-493 0465-0470	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0470-0475	13		<0.001		<0.5	<0.02
RS-493 0475-0480	<5		<0.001		<0.5	<0.02
RS-493 0480-0485	<5		<0.001		<0.5	<0.02
RS-493 0485-0490	<5		<0.001		<0.5	<0.02
RS-493 0490-0495	<5		<0.001		<0.5	<0.02
RS-493 0495-0500	<5		<0.001		<0.5	<0.02

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American Assay Laboratories

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 0500-0505	<5		<0.001		<0.5	<0.02
RS-493 0505-0510	<5		<0.001		<0.5	<0.02
RS-493 0510-0515	<5		<0.001		<0.5	<0.02
RS-493 0515-0520	<5		<0.001		<0.5	<0.02
RS-493 0520-0525	8	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0525-0530	<5		<0.001		<0.5	<0.02
RS-493 0530-0535	<5		<0.001		<0.5	<0.02
RS-493 0535-0540	<5		<0.001		<0.5	<0.02
RS-493 0540-0545	<5		<0.001		<0.5	<0.02
RS-493 0545-0550	<5		<0.001		<0.5	<0.02
RS-493 0550-0555	<5		<0.001		<0.5	<0.02
RS-493 0555-0560	<5		<0.001		<0.5	<0.02
RS-493 0560-0565	<5		<0.001		<0.5	<0.02
RS-493 0565-0570	<5		<0.001		<0.5	<0.02
RS-493 0570-0575	<5		<0.001		<0.5	<0.02
RS-493 0575-0580	<5		<0.001		<0.5	<0.02
RS-493 0580-0585	<5		<0.001		<0.5	<0.02
RS-493 0585-0590	<5		<0.001		<0.5	<0.02
RS-493 0590-0595	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0595-0600	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0600-0605	<5		<0.001		<0.5	<0.02
RS-493 0605-0610	<5		<0.001		<0.5	<0.02
RS-493 0610-0615	<5		<0.001		<0.5	<0.02
RS-493 0615-0620	<5		<0.001		<0.5	<0.02
RS-493 0620-0625	<5		<0.001		<0.5	<0.02

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 0625-0630	<5		<0.001		<0.5	<0.02
RS-493 0630-0635	<5		<0.001		<0.5	<0.02
RS-493 0635-0640	<5		<0.001		<0.5	<0.02
RS-493 0640-0645	<5		<0.001		<0.5	<0.02
RS-493 0645-0650	<5		<0.001		<0.5	<0.02
RS-493 0650-0655	<5		<0.001		<0.5	<0.02
RS-493 0655-0660	<5		<0.001		<0.5	<0.02
RS-493 0660-0665	<5		<0.001		<0.5	<0.02
RS-493 0665-0670	<5		<0.001		<0.5	<0.02
RS-493 0670-0675	<5		<0.001		<0.5	<0.02
RS-493 0675-0680	<5		<0.001		<0.5	<0.02
RS-493 0680-0685	<5		<0.001		<0.5	<0.02
RS-493 0685-0690	<5		<0.001		<0.5	<0.02
RS-493 0690-0695	<5		<0.001		<0.5	<0.02
RS-493 0695-0700	<5		<0.001		<0.5	<0.02
RS-493 0700-0705	<5		<0.001		<0.5	<0.02
RS-493 0705-0710	<5		<0.001		<0.5	<0.02
RS-493 0710-0715	<5		<0.001		<0.5	<0.02
RS-493 0715-0720	<5		<0.001		<0.5	<0.02
RS-493 0720-0725	6		<0.001		<0.5	<0.02
RS-493 0725-0730	<5		<0.001		<0.5	<0.02
RS-493 0730-0735	<5		<0.001		<0.5	<0.02
RS-493 0735-0740	<5		<0.001		<0.5	<0.02
RS-493 0740-0745	<5		<0.001		<0.5	<0.02
RS-493 0745-0750	<5		<0.001		<0.5	<0.02

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 0750-0755	<5		<0.001		<0.5	<0.02
RS-493 0755-0760	<5		<0.001		<0.5	<0.02
RS-493 0760-0765	<5		<0.001		<0.5	<0.02
RS-493 0765-0770	<5		<0.001		<0.5	<0.02
RS-493 0770-0775	<5		<0.001		<0.5	<0.02
RS-493 0775-0780	<5		<0.001		<0.5	<0.02
RS-493 0780-0785	<5		<0.001		<0.5	<0.02
RS-493 0785-0790	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0790-0795	<5		<0.001		<0.5	<0.02
RS-493 0795-0800	<5		<0.001		<0.5	<0.02
RS-493 0800-0805	<5		<0.001		<0.5	<0.02
RS-493 0805-0810	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0810-0815	<5		<0.001		<0.5	<0.02
RS-493 0815-0820	<5		<0.001		<0.5	<0.02
RS-493 0820-0825	<5		<0.001		<0.5	<0.02
RS-493 0825-0830	<5		<0.001		<0.5	<0.02
RS-493 0830-0835	<5		<0.001		<0.5	<0.02
RS-493 0835-0840	<5		<0.001		<0.5	<0.02
RS-493 0840-0845	<5		<0.001		<0.5	<0.02
RS-493 0845-0850	<5		<0.001		<0.5	<0.02
RS-493 0850-0855	8		<0.001		<0.5	<0.02
RS-493 0855-0860	5		<0.001		<0.5	<0.02
RS-493 0860-0865	6		<0.001		<0.5	<0.02
RS-493 0865-0870	<5		<0.001		<0.5	<0.02
RS-493 0870-0875	<5		<0.001		<0.5	<0.02

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 0875-0880	<5		<0.001		<0.5	<0.02
RS-493 0880-0885	<5		<0.001		<0.5	<0.02
RS-493 0885-0890	7		<0.001		<0.5	<0.02
RS-493 0890-0895	<5		<0.001		<0.5	<0.02
RS-493 0895-0900	<5		<0.001		<0.5	<0.02
RS-493 0900-0905	<5		<0.001		<0.5	<0.02
RS-493 0905-0910	<5		<0.001		<0.5	<0.02
RS-493 0910-0915	<5		<0.001		<0.5	<0.02
RS-493 0915-0920	<5		<0.001		<0.5	<0.02
RS-493 0920-0925	<5		<0.001		<0.5	<0.02
RS-493 0925-0930	20		<0.001		<0.5	<0.02
RS-493 0930-0935	50	58	0.001	0.002	<0.5	<0.02
RS-493 0935-0940	42		0.001		<0.5	<0.02
RS-493 0940-0945	34		<0.001		<0.5	<0.02
RS-493 0945-0950	18		<0.001		<0.5	<0.02
RS-493 0950-0955	<5		<0.001		<0.5	<0.02
RS-493 0955-0960	<5		<0.001		<0.5	<0.02
RS-493 0960-0965	<5		<0.001		<0.5	<0.02
RS-493 0965-0970	<5		<0.001		<0.5	<0.02
RS-493 0970-0975	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0975-0980	<5		<0.001		<0.5	<0.02
RS-493 0980-0985	<5		<0.001		<0.5	<0.02
RS-493 0985-0990	8		<0.001		<0.5	<0.02
RS-493 0990-0995	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 0995-1000	<5		<0.001		<0.5	<0.02

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SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 1000-1005	<5		<0.001		<0.5	<0.02
RS-493 1005-1010	<5		<0.001		<0.5	<0.02
RS-493 1010-1015	<5		<0.001		<0.5	<0.02
RS-493 1015-1020	8		<0.001		<0.5	<0.02
RS-493 1020-1025	<5		<0.001		<0.5	<0.02
RS-493 1025-1030	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-493 1030-1035	9		<0.001		<0.5	<0.02
RS-493 1035-1040	<5		<0.001		<0.5	<0.02
RS-493 1040-1045	<5		<0.001		<0.5	<0.02
RS-493 1045-1050	6		<0.001		<0.5	<0.02
RS-493 1050-1055	<5		<0.001		<0.5	<0.02
RS-493 1055-1060	<5		<0.001		<0.5	<0.02
RS-493 1060-1065	<5		<0.001		<0.5	<0.02
RS-493 1065-1070	<5		<0.001		<0.5	<0.02
RS-493 1070-1075	<5		<0.001		<0.5	<0.02
RS-493 1075-1080	<5		<0.001		<0.5	<0.02
RS-493 1080-1085	<5		<0.001		<0.5	<0.02
RS-493 1085-1090	<5		<0.001		<0.5	<0.02
RS-493 1090-1095	<5		<0.001		<0.5	<0.02
RS-493 1095-1100	<5		<0.001		<0.5	<0.02
RS-493 1100-1105	<5		<0.001		<0.5	<0.02
RS-493 1105-1110	<5		<0.001		<0.5	<0.02
RS-493 1110-1115	<5		<0.001		<0.5	<0.02
RS-493 1115-1120	<5		<0.001		<0.5	<0.02
RS-493 1120-1125	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056627

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-493

REPORTED : 17 APR 2000

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag D210 ppm	Ag(OZ) D210 OPT
RS-493 1125-1130	<5		<0.001		<0.5	<0.02
RS-493 1130-1135	<5		<0.001		<0.5	<0.02
RS-493 1135-1140	<5		<0.001		<0.5	<0.02
76009	5690		0.166		64.4	1.88

AMERICAN ASSAY LABORATORIES
AAL 03-0 ICP PACKAGE DETECTION LIMITS

ELEMENT	Ag	Al	As	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Sr	Te	Th	Ti	Tl	U	V	W	Zn
SAMPLES	ppb	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppb	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
	30	0.01	0.5	3	1	0.1	0.01	.01	1	1	0.2	0.01	0.5	10	0.01	1	0.01	2	0.1	0.01	1	0.001	0.3	0.2	0.4	1	0.2	2	0.01	0.2	5	1	2	1

5.0 GRAMS OF PULP IS DIGESTED WITH HYDROCHLORIC AND NITRIC ACID AT 95 DEGREE CENTIGRADE FOR ONE HOUR.
DIGEST IS PARTIAL FOR Al, B, Ba, Ca, Co, Cr, Fe, K, La, Mg, Mn, Na, Ni, P, Sr, Th, Ti, U, V AND W.
ORGANIC SOLUTION EXTRACTION AND ULTRASONIC ICP FOR Ag, As, Bi, Cd, Cu, Ga, Mo, Pb, Sb, Se, Te AND Tl.
Hg BY COLD VAPOR AAS.

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431
PHONE: (775) 356-0606
FAX: (775) 356-1413

CLIENT: HECLA MINING CO.
CLIENT REF: KURT ALLEN
AAL REF: SP56627
METHOD: AAL03-0

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Se	Sr	Te	Th	Ti	Tl	U	V	W	Zn
SAMPLES	ppb	%	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppb	%	ppm	%	ppm	ppm	%	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
RS-493 0000-0020	594	0.98	10.5	13.7	9	155.20	0.14	0.39	0.2	3.10	9.2	22.46	2.65	4.3	103	0.4	26.6	0.2	693	3.2	0.092	6.5	0.036	29.67	0.11	6.45	1.1	50.1	0.02	11.6	0.022	0.18	1.4	18	1	63.1
RS-493 0020-0040	156	0.51	4.4	3.9	3	69.10	0.03	0.46	0.2	0.80	6.3	8.38	2.23	2.5	33	0.25	29.2	0.05	940	2.67	0.057	1.9	0.023	24.66	0.04	3.07	0.5	29.9	< .02	13.6	0.024	0.05	1.8	9	1.7	49.5
RS-493 0040-0060	96	0.59	4.9	2.4	< 1	74.70	< .02	0.54	0.27	0.80	5.4	6.18	2.07	2.6	24	0.3	26.6	0.03	1156	2.1	0.025	2.2	0.023	37.43	0.11	7.05	0.4	24	< .02	13.2	0.01	0.06	1.2	7	1.3	78
RS-493 0060-0080	219	0.59	6.2	9.2	< 1	76.10	< .02	0.25	0.22	0.70	4.4	8.31	1.85	2.4	229	0.41	31.9	0.02	246	2.36	0.013	2.2	0.025	24.79	0.72	8.75	1.1	15.6	< .02	11.9	0.005	0.19	1.6	5	1.4	84.8
RS-493 0080-0100	109	0.63	3.8	3.5	2	64.00	0.03	0.21	0.29	0.80	4.6	9.86	2.65	2.9	58	0.36	35.8	0.02	465	2.74	0.033	2	0.033	28.74	0.25	5.67	0.6	16.6	< .02	15.3	0.012	0.07	1	6	1.6	113.7
RS-493 0100-0120	98	0.63	4.2	1.9	1	66.90	0.02	0.33	0.13	0.70	5.2	6.15	2.49	2.8	35	0.31	36.1	0.02	627	2.31	0.031	1.5	0.029	22.87	0.14	7.17	0.6	19.1	< .02	14.1	0.012	0.05	0.8	5	1.3	87.8
RS-493 0120-0140	106	0.52	8.7	9.3	2	68.10	< .02	0.26	0.27	1.00	3.9	7.02	2.1	2.3	326	0.35	38.1	0.02	213	2.31	0.026	1.7	0.038	32.07	0.95	10.99	0.7	19.7	< .02	13.4	0.006	0.18	1.2	6	2.2	86.6
RS-493 0140-0160	105	0.55	2.7	2.1	2.0	46.90	< .02	0.23	0.29	0.70	4.4	7.99	2.16	2.7	81	0.34	35.2	0.02	450	2.16	0.03	1.6	0.029	22.36	0.21	11.52	0.6	16.4	< .02	12.6	0.013	0.1	1.1	9	2.3	76.7
RS-493 0160-0180	107	0.51	3.6	2.1	2	51.40	< .02	0.22	0.23	0.80	5.1	11.73	2.61	2.6	85	0.3	33	0.02	1628	2.78	0.037	2.3	0.026	16.12	0.18	11.49	0.5	13.8	< .02	12.3	0.018	0.1	1.1	9	2.1	105.6
RS-493 0180-0200	121	0.55	4.8	5.5	1	88.00	0.02	0.19	0.24	1.00	6.4	10.25	2.4	2.7	262	0.32	32.1	0.02	463	2.32	0.029	1.9	0.027	18.53	0.68	9.28	0.6	13.4	< .02	12.1	0.012	0.18	1.1	9	1.9	84.7
RS-493 0200-0220	117	0.46	9.3	19.5	< 1	35.90	0.02	0.2	0.25	1.40	4.8	11.91	2.89	2.8	680	0.22	31.6	0.02	935	2.12	0.029	2.7	0.027	15.9	1.37	8.17	1	12.6	< .02	12.6	0.011	0.32	1.4	7	1.2	117
RS-493 0220-0240	107	0.37	4.7	2	1	28.20	< .02	0.24	0.25	1.10	5.2	9.08	2.71	2.2	161	0.15	34.7	0.03	1615	1.9	0.032	2.2	0.03	13.62	0.46	3.87	0.6	15.2	< .02	13.8	0.017	0.11	1.7	8	1.4	115.3
RS-493 0240-0260	131	0.37	8.8	14.7	1	30.70	< .02	0.18	0.27	2.00	1	7.21	2.93	2.6	361	0.15	35	0.02	676	1.77	0.019	1.8	0.037	18.57	2.44	8.38	0.9	11.5	< .02	14.6	0.007	0.19	1.6	4	1.1	106.7
RS-493 0260-0280	114	0.38	3.3	5.1	1	26.30	< .02	0.3	0.37	1.20	3.9	7.72	2.68	2.3	104	0.15	34.3	0.03	2005	1.79	0.028	1.6	0.034	13.97	0.43	3.95	0.6	18.6	< .02	13.2	0.02	0.06	1.6	7	1.6	141.3
RS-493 0280-0300	74	0.58	6.0	9.1	5	53.50	< .02	0.66	0.3	1.50	6.5	11.24	2.97	3.2	67	0.22	33.3	0.04	1092	1.72	0.044	2.5	0.033	13.88	0.61	4.67	0.8	29.4	< .02	13.5	0.023	0.07	1.7	8	1.5	93.2
RS-493 0300-0320	72	0.41	4.1	2.8	1	38.50	< .02	0.42	0.2	1.00	6.4	8.95	2.78	2.1	47	0.17	30.9	0.03	995	1.59	0.036	2.3	0.031	12.99	0.49	4.27	0.4	21.1	< .02	12.9	0.022	0.05	1.5	8	1.5	70.2
RS-493 0320-0340	70	0.39	2.8	1.8	< 1	37.00	< .02	0.61	0.27	0.90	4.6	9.21	2.42	2	31	0.21	31.4	0.02	924	1.73	0.036	2.2	0.025	12.9	0.3	2.67	0.5	28.5	< .02	12	0.019	0.05	1.2	7	1.4	53.5
RS-493 0340-0360	104	0.43	3.2	1.5	2	239.70	0.02	0.27	0.19	1.00	5.7	11.87	2.61	2.2	27	0.23	32	0.02	638	1.96	0.04	3	0.025	14.26	0.12	2.55	0.4	21.9	< .02	12.6	0.026	0.06	1.6	10	1.4	101.8
RS-493 0360-0380	82	0.53	1.2	1.4	3	57.60	< .02	0.63	0.21	0.90	7.8	14.34	2.56	2.9	11	0.32	32.5	0.03	1002	2.26	0.058	3.5	0.022	12.84	0.04	2.35	0.4	29.1	< .02	12.4	0.024	0.06	1.6	10	1.3	62.4
RS-493 0380-0400	86	0.36	2.2	1.7	2	57.10	0.03	0.76	0.27	0.90	10.8	16.57	2.76	1.9	16	0.23	27.8	0.02	1045	2.25	0.041	4.7	0.023	12.71	0.15	3.03	0.5	26.9	0.02	11.1	0.023	0.05	1.6	10	1.7	49.7
RS-493 0400-0420	425	0.75	0.9	1.6	< 1	348.00	0.22	1.74	0.77	0.50	6.2	9.36	1.33	3.2	40	0.34	30.8	0.09	1153	0.95	0.277	1.9	0.026	23.2	0.05	0.92	0.5	123.1	0.03	9.1	0.009	0.22	2.7	4	0.9	47.3
RS-493 0420-0440	133	1.17	2	1.3	< 1	327.40	0.21	0.88	0.32	0.90	4.6	7.37	1.45	4.6	19	0.33	28.1	0.15	329	1.23	0.412	1.3	0.029	17.75	0.03	0.45	0.4	150.6	< .02	7.9	0.008	0.19	2.2	4	0.4	51.4
RS-493 0440-0460	136	1.38	3.3	1.3	1	80.10	0.5	1.24	0.68	4.20	7.1	9.37	2.57	5.6	12	0.48	30.6	0.25	639	1.56	0.057	3.3	0.06	18.04	0.02	0.67	0.5	104	< .02	7.5	0.023	0.2	1.9	14	0.5	70.6
RS-493 0460-0480	113	1.25	2.5	4.3	< 1	56.60	0.17	2.35	0.31	8.90	10	10.9	3.09	5.6	5	0.42	29	0.34	1150	1.21	0.068	4.2	0.116	12.21	0.01	0.51	0.4	102.7	0.02	6.3	0.036	0.16	2.1	29	< .2	93.5
RS-493 0480-0500	133	0.85	4.2	0.6	< 1	96.40	0.09	1.41	0.3	8.40	9.8	25.3	3.93	4.2	13	0.41	28.2	0.19	783	4.02	0.071	7.7	0.119	10.66	0.02	1.33	0.8	73	0.02	7.5	0.054	0.15	3.1	40	0.5	78.7
RS-493 0500-0520	117	0.99	5.0	15.6	< 1	163.70	0.08	1.8	0.25	8.10	8.8	20.43	3.67	4.8	11	0.42	27.4	0.23	814	2.91	0.069	4.7	0.119	11.83	0.01	1.52	0.6	98.8	0.02	7.6	0.051	0.14	2.9	38	0.4	73.9
RS-493 0520-0540	121	1.60	2.6	4	< 1	333.00	0.09	2.32	0.26	9.20	10.3	9.65	2.99	6.2	6	0.44	30	0.48	748	0.65	0.054	3.5	0.122	14.82	0.02	0.8	0.3	167	0.03	7.3	0.024	0.15	2.2	27	< .2	85.1
RS-493 0540-0560	102	0.77	4.9	1.5	< 1	109.10	0.09	1.49	0.15	7.80	11.8	22.81	4.27	3.7	< 5	0.35	24.9	0.16	713	2.15	0.066	6.7	0.118	14.19	0.03	3.75	0.4	78.1	0.03	6.3	0.062	0.14	2.5	41	0.7	89.2
RS-493 0560-0580	90	0.75	3.6	1.3	1	94.30	0.07	1.26	0.18	5.00	10.5	20.38	3.74	3.5	< 5	0.32	27.9	0.13	654	2.04	0.049	5.5	0.086	13.88	0.03	4.27	0.3	77.5	< .02	8.5	0.04	0.13	1.9	30	0.7	68.4
RS-493 0580-0600	84	0.71	1.8	1.6	1.0	101.80	0.1	1.51	0.34	3.10	8	13.13	2.81	3.3	6	0.31	31.8	0.11	771	1.58	0.042	3.4	0.062	16.82	0.03	3.77	0.1	87.4	0.02	10.5	0.02	0.1	1.4	17	0.8	54.7
RS-493 0600-0620	129	1.19	3	0.9	< 1	96.4	0.06	1.87	0.16	8.6	6.4	13.2	3.53	4.8	6	0.36	28.5	0.37	702	1.3	0.046	3.8	0.123	14.89	0.01	1.86	0.5	147.3	0.02	6.6	0.042	0.12	2.2	32	0.2	101.9
RS-493 0620-0640	105	0.83	4.3	2	2	171.4	0.06	1.57	0.17	7.5	10.5	20.89	4.01	4.5	< 5	0.41	29.3	0.21	645	2.34	0.071	5.6	0.119	12.56	0.01	1.83	1.2	89.1	0.02	7.8	0.063	0.16	2.8	36	0.3	96.1
RS-493 0640-0660	137	1.39	2.5	2.4	5	275.5	0.09	1.94	0.22	7.9	8.6	11	2.84	6.5	24	0.52	32.5	0.36	719	1.02	0.057	3.1	0.111	16.36	0.08	1.08	2	152.1	0.02	6.6	0.03	0.24	1.8	27	< .2	98.1
STANDARD DS2	232	1.74	58.8	201.2	2	154.6	10.96	0.54	10.4	11.3	163.9	127.72	3.09	6	229	0.17	16.5	0.61	829	14.02	0.029	35.3	0.091	32.82	0.04	9.67	2.4	27.5	1.88	3.7	0.092	1.85	20	76	6.5	161.6
RS-493 0660-0680	134	1.16	3.5	2	4	135.3	0.09	1.78	0.2	6.8	9.6	14.65	2.98	5.7	16	0.41	29.6	0.35	688	1.55	0.057	3.1	0.107	16.01	0.02	0.92	< .1	131	< .02	5.7	0.032	0.2	2	25	0.2	87.1

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CLIENT: HECLA MINING CO.
CLIENT REF: KURT ALLEN
AAL REF: SP56627
METHOD: AAL03-0

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Se	Sr	Te	Th	Ti	Tl	U	V	W	Zn
SAMPLES	ppb	%	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppb	%	ppm	%	ppm	ppm	%	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
RS-493 0680-0700	111	1.45	2.3	1.6	4	142.9	0.11	2.42	0.26	6.2	5.7	7.68	2.37	6.9	23	0.49	32.9	0.36	894	0.58	0.06	2.1	0.092	16.22	0.01	0.67	< .1	152.5	< .02	6	0.023	0.23	1.9	20	< .2	83.2
RS-493 0700-0720	145	1.3	4.4	2.9	1	241.7	0.31	1.9	0.33	3.2	5.4	10	1.9	5.5	65	0.49	25.6	0.2	686	1.31	0.043	1.5	0.057	40.72	0.09	1.02	< .1	146.3	< .02	6.3	0.018	0.28	1.8	11	0.5	102.9
RS-493 0720-0740	137	0.76	5.9	2.1	4	228.4	0.18	1.12	0.21	2.3	6.1	17.92	2.68	4.1	15	0.34	24.2	0.11	505	3.04	0.067	2.7	0.05	33.99	0.03	1.9	0.2	79.3	< .02	9	0.045	0.18	1.6	12	1.3	91.3
RS-493 0740-0760	92	0.67	3.5	1.5	4	161.5	0.11	0.83	0.16	2.5	8.5	22.18	3.07	3.1	41	0.29	21.1	0.09	411	3.83	0.055	4.2	0.046	15.79	0.05	1.87	< .1	65.7	< .02	8.5	0.037	0.15	1.6	13	1	66.2
RS-493 0760-0780	125	1.68	2.8	1.4	< 1	122.1	0.09	3.56	0.3	6.8	8.7	7.71	3.06	7	11	0.5	31.9	0.44	1012	0.46	0.029	1.8	0.129	16.88	0.04	1.05	0.3	163.6	< .02	4.7	0.03	0.22	2.1	27	< .2	99.1
RS-493 0780-0800	120	1.15	2.9	1.7	< 1	144.3	0.08	3.17	0.27	7.4	6.7	11.24	2.84	5.6	22	0.4	31.1	0.3	895	0.71	0.033	2.6	0.119	15.48	0.06	1.07	0.1	156.2	< .02	4.8	0.031	0.19	2.8	22	0.2	92.3
RS-493 0800-0820	100	0.74	5	0.7	2	103.3	0.07	1.48	0.14	8.2	10.7	17.77	3.88	4.4	21	0.35	26.6	0.2	739	1.9	0.05	4.6	0.116	11.54	0.02	1.09	0.2	67.7	0.04	5.3	0.066	0.15	2.2	32	0.3	93.1
RS-493 0820-0840	126	1.39	3.6	1.8	3	191.5	0.11	1.84	0.24	8.1	8.6	9.78	2.94	6.4	38	0.52	27.9	0.45	748	0.9	0.05	2.7	0.113	15.24	0.05	0.99	0.2	117.5	0.02	5	0.034	0.24	2	24	0.2	88
RS-493 0840-0860	123	1.17	2.8	1.8	< 1	186.6	0.09	1.91	0.28	7.4	11	11.26	2.82	5.8	24	0.43	29.3	0.37	838	0.64	0.051	3.1	0.118	13.66	0.03	0.82	0.2	118.2	0.02	4.6	0.027	0.21	2	23	< .2	95.4
RS-493 0860-0880	121	0.9	2.4	1.6	1	140.3	0.12	1.84	0.22	4.7	4.6	9.5	1.92	4.2	21	0.33	29.6	0.22	681	0.54	0.05	2.6	0.073	17.23	0.02	0.65	0.2	122.5	< .02	5.3	0.014	0.14	1.6	15	0.2	66.3
RS-493 0880-0900	139	0.74	4.9	1.5	1	144.5	0.12	1.77	0.19	2.5	5.4	8.52	2.14	3.2	106	0.3	22.6	0.11	669	1.04	0.027	1.5	0.057	21.64	0.21	2.26	0.1	84.8	< .02	7.5	0.026	0.16	1.6	13	0.6	77.3
RS-493 0900-0920	150	1.07	3.7	2.1	2	236.7	0.1	1.33	0.32	2.5	3.3	5.9	2.17	4.7	80	0.42	26.5	0.12	504	1.15	0.022	1.2	0.052	23.47	0.11	2.47	0.3	79.3	< .02	9.7	0.025	0.18	2.4	12	0.6	65
RS-493 0920-0940	271	1.12	38.2	17.6	2	71.1	0.1	1.64	0.31	3.5	5.3	7.1	3.51	4.7	215	0.41	22.3	0.13	612	1.73	0.021	1.3	0.063	25.41	3.14	9.37	1.9	81.5	< .02	7.7	0.012	0.44	1.4	9	0.3	66.6
RS-493 0940-0960	164	0.78	24	11.5	< 1	106.7	0.09	5.76	0.27	2.7	8.2	8.46	2.81	3.5	172	0.27	17.3	0.11	2269	1.89	0.021	1.3	0.052	51.44	1.98	7.44	1.2	111.2	0.02	6.7	0.013	0.26	2	9	0.7	57.9
RS-493 0960-0980	82	0.61	6.9	2.3	< 1	182.6	0.05	6.08	0.26	3	4.1	6.08	1.97	3.2	78	0.26	23.2	0.13	2474	1	0.03	0.7	0.058	18.42	0.27	2.84	0.4	132.2	0.02	7.7	0.022	0.14	2.4	10	0.6	42.7
RS-493 0980-1000	104	0.75	13.5	2.5	1	117.6	0.06	3.09	0.19	2.6	4.5	7.03	1.82	3.6	115	0.28	19.9	0.1	1209	0.92	0.029	1	0.052	30.58	0.67	3.58	0.2	99.6	0.03	7.7	0.016	0.13	1.3	6	0.6	58.9
RS-493 1000-1020	112	0.95	6.4	1	< 1	211.1	0.08	2.17	0.34	3.2	4.3	6.04	2.02	4.7	61	0.34	24.3	0.15	902	1.08	0.043	1.1	0.058	20.21	0.16	1.59	0.3	104.9	0.02	8	0.025	0.12	1.6	11	0.4	59.8
RS-493 1020-1040	105	0.89	7.2	9.6	< 1	133.7	0.04	2.23	0.22	2.9	3.3	5.64	2.07	4.6	27	0.35	25.9	0.14	944	0.99	0.06	1	0.059	19.56	0.11	1.36	0.3	92.4	0.02	8.7	0.026	0.1	1.6	12	0.5	57.7
RS-493 1040-1060	109	0.92	6.4	3.4	2	82	0.02	1.11	0.19	2.2	3.2	6.51	2.05	4.8	18	0.31	23	0.12	541	1.33	0.081	1.4	0.047	17.33	0.06	1.13	0.3	82.4	< .02	9.4	0.023	0.07	1.7	11	0.8	63
RS-493 1060-1080	103	0.84	6.2	2.2	3	95.4	0.03	1.24	0.23	2.7	5.3	8.57	2.17	4.2	20	0.3	21.6	0.13	609	1.66	0.074	1.9	0.052	19.82	0.07	0.95	0.3	79.8	< .02	9	0.026	0.09	2.8	13	0.7	77.9
RS-493 1080-1100	124	0.77	5	1.8	1	111.6	0.04	1.43	0.19	2.8	3.9	7.48	2.02	3.8	72	0.25	24.9	0.11	558	1.58	0.057	1.6	0.055	16.15	0.21	2.18	0.4	81.5	< .02	9.1	0.026	0.09	3.2	12	0.7	80.6
RS-493 1100-1120	287	0.66	5	2.2	< 1	115.6	0.05	1.64	0.19	2.5	5.4	7.32	2.19	3.2	87	0.22	25.3	0.12	638	1.87	0.038	1.6	0.053	18.75	0.25	2.12	0.3	92.9	< .02	8.8	0.027	0.09	3	12	0.7	75.9
RS-493 1120-1140	487	0.91	7.3	3.3	2	133.6	0.26	1.93	0.17	3.9	6.4	6.92	2.23	4.1	46	0.3	24.5	0.16	691	3.17	0.033	2	0.07	28.65	0.44	2.34	0.3	99.9	< .02	7.1	0.02	0.13	2.6	14	0.5	73.6
76009 empty	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STANDARD DS2	234	1.72	57.5	205.1	2	152	10.95	0.54	10.63	12	162.5	127.38	3.09	6	237	0.16	16.6	0.6	823	14.65	0.033	35.7	0.091	30.46	0.01	9.79	2.2	30.2	1.79	3.7	0.093	1.89	19.9	74	6.6	161.5

AMERICAN ASSAY LABORATORIES
AAL 03-0 ICP PACKAGE DETECTION LIMITS

ELEMENT	Ag	Al	As	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Sr	Te	Th	Ti	Tl	U	V	W	Zn
SAMPLES	ppb	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppb	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
	30	0.01	0.5	3	1	0.1	0.01	.01	1	1	0.2	0.01	0.5	10	0.01	1	0.01	2	0.1	0.01	1	0.001	0.3	0.2	0.4	1	0.2	2	0.01	0.2	5	1	2	1

5.0 GRAMS OF PULP IS DIGESTED WITH HYDROCHLORIC AND NITRIC ACID AT 95 DEGREE CENTIGRADE FOR ONE HOUR.
DIGEST IS PARTIAL FOR Al, B, Ba, Ca, Co, Cr, Fe, K, La, Mg, Mn, Na, Ni, P, Sr, Th, Ti, U, V AND W.
ORGANIC SOLUTION EXTRACTION AND ULTRASONIC ICP FOR Ag, As, Bi, Cd, Cu, Ga, Mo, Pb, Sb, Se, Te AND Tl.
Hg BY COLD VAPOR AAS.

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431
PHONE: (775) 356-0606
FAX: (775) 356-1413

CLIENT: HECLA MINING CO.
CLIENT REF: KURT ALLEN
AAL REF: SP56627
METHOD: AAL03-0

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Se	Sr	Te	Th	Ti	Tl	U	V	W	Zn
SAMPLES	ppb	%	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppb	%	ppm	%	ppm	ppm	%	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
RS-493 0000-0020	594	0.98	10.5	13.7	9	155.20	0.14	0.39	0.2	3.10	9.2	22.46	2.65	4.3	103	0.4	26.6	0.2	693	3.2	0.092	6.5	0.036	29.67	0.11	6.45	1.1	50.1	0.02	11.6	0.022	0.18	1.4	18	1	63.1
RS-493 0020-0040	156	0.51	4.4	3.9	3	69.10	0.03	0.46	0.2	0.80	6.3	8.38	2.23	2.5	33	0.25	29.2	0.05	940	2.67	0.057	1.9	0.023	24.66	0.04	3.07	0.5	29.9	< .02	13.6	0.024	0.05	1.8	9	1.7	49.5
RS-493 0040-0060	96	0.59	4.9	2.4	< 1	74.70	< .02	0.54	0.27	0.80	5.4	6.18	2.07	2.6	24	0.3	26.6	0.03	1156	2.1	0.025	2.2	0.023	37.43	0.11	7.05	0.4	24	< .02	13.2	0.01	0.06	1.2	7	1.3	78
RS-493 0060-0080	219	0.59	6.2	9.2	< 1	76.10	< .02	0.25	0.22	0.70	4.4	8.31	1.85	2.4	229	0.41	31.9	0.02	246	2.36	0.013	2.2	0.025	24.79	0.72	8.75	1.1	15.6	< .02	11.9	0.005	0.19	1.6	5	1.4	84.8
RS-493 0080-0100	109	0.63	3.8	3.5	2	64.00	0.03	0.21	0.29	0.80	4.6	9.86	2.65	2.9	58	0.36	35.8	0.02	465	2.74	0.033	2	0.033	28.74	0.25	5.67	0.6	16.6	< .02	15.3	0.012	0.07	1	6	1.6	113.7
RS-493 0100-0120	98	0.63	4.2	1.9	1	66.90	0.02	0.33	0.13	0.70	5.2	6.15	2.49	2.8	35	0.31	36.1	0.02	627	2.31	0.031	1.5	0.029	22.87	0.14	7.17	0.6	19.1	< .02	14.1	0.012	0.05	0.8	5	1.3	87.8
RS-493 0120-0140	106	0.52	8.7	9.3	2	68.10	< .02	0.26	0.27	1.00	3.9	7.02	2.1	2.3	326	0.35	38.1	0.02	213	2.31	0.026	1.7	0.038	32.07	0.95	10.99	0.7	19.7	< .02	13.4	0.006	0.18	1.2	6	2.2	86.6
RS-493 0140-0160	105	0.55	2.7	2.1	2.0	46.90	< .02	0.23	0.29	0.70	4.4	7.99	2.16	2.7	81	0.34	35.2	0.02	450	2.16	0.03	1.6	0.029	22.36	0.21	11.52	0.6	16.4	< .02	12.6	0.013	0.1	1.1	9	2.3	76.7
RS-493 0160-0180	107	0.51	3.6	2.1	2	51.40	< .02	0.22	0.23	0.80	5.1	11.73	2.61	2.6	85	0.3	33	0.02	1628	2.78	0.037	2.3	0.026	16.12	0.18	11.49	0.5	13.8	< .02	12.3	0.018	0.1	1.1	9	2.1	105.6
RS-493 0180-0200	121	0.55	4.8	5.5	1	88.00	0.02	0.19	0.24	1.00	6.4	10.25	2.4	2.7	262	0.32	32.1	0.02	463	2.32	0.029	1.9	0.027	18.53	0.68	9.28	0.6	13.4	< .02	12.1	0.012	0.18	1.1	9	1.9	84.7
RS-493 0200-0220	117	0.46	9.3	19.5	< 1	35.90	0.02	0.2	0.25	1.40	4.8	11.91	2.89	2.8	680	0.22	31.6	0.02	935	2.12	0.029	2.7	0.027	15.9	1.37	8.17	1	12.6	< .02	12.6	0.011	0.32	1.4	7	1.2	117
RS-493 0220-0240	107	0.37	4.7	2	1	28.20	< .02	0.24	0.25	1.10	5.2	9.08	2.71	2.2	161	0.15	34.7	0.03	1615	1.9	0.032	2.2	0.03	13.62	0.46	3.87	0.6	15.2	< .02	13.8	0.017	0.11	1.7	8	1.4	115.3
RS-493 0240-0260	131	0.37	8.8	14.7	1	30.70	< .02	0.18	0.27	2.00	1	7.21	2.93	2.6	361	0.15	35	0.02	676	1.77	0.019	1.8	0.037	18.57	2.44	8.38	0.9	11.5	< .02	14.6	0.007	0.19	1.6	4	1.1	106.7
RS-493 0260-0280	114	0.38	3.3	5.1	1	26.30	< .02	0.3	0.37	1.20	3.9	7.72	2.68	2.3	104	0.15	34.3	0.03	2005	1.79	0.028	1.6	0.034	13.97	0.43	3.95	0.6	18.6	< .02	13.2	0.02	0.06	1.6	7	1.6	141.3
RS-493 0280-0300	74	0.58	6.0	9.1	5	53.50	< .02	0.66	0.3	1.50	6.5	11.24	2.97	3.2	67	0.22	33.3	0.04	1092	1.72	0.044	2.5	0.033	13.88	0.61	4.67	0.8	29.4	< .02	13.5	0.023	0.07	1.7	8	1.5	93.2
RS-493 0300-0320	72	0.41	4.1	2.8	1	38.50	< .02	0.42	0.2	1.00	6.4	8.95	2.78	2.1	47	0.17	30.9	0.03	995	1.59	0.036	2.3	0.031	12.99	0.49	4.27	0.4	21.1	< .02	12.9	0.022	0.05	1.5	8	1.5	70.2
RS-493 0320-0340	70	0.39	2.8	1.8	< 1	37.00	< .02	0.61	0.27	0.90	4.6	9.21	2.42	2	31	0.21	31.4	0.02	924	1.73	0.036	2.2	0.025	12.9	0.3	2.67	0.5	28.5	< .02	12	0.019	0.05	1.2	7	1.4	53.5
RS-493 0340-0360	104	0.43	3.2	1.5	2	239.70	0.02	0.27	0.19	1.00	5.7	11.87	2.61	2.2	27	0.23	32	0.02	638	1.96	0.04	3	0.025	14.26	0.12	2.55	0.4	21.9	< .02	12.6	0.026	0.06	1.6	10	1.4	101.8
RS-493 0360-0380	82	0.53	1.2	1.4	3	57.60	< .02	0.63	0.21	0.90	7.8	14.34	2.56	2.9	11	0.32	32.5	0.03	1002	2.26	0.058	3.5	0.022	12.84	0.04	2.35	0.4	29.1	< .02	12.4	0.024	0.06	1.6	10	1.3	62.4
RS-493 0380-0400	86	0.36	2.2	1.7	2	57.10	0.03	0.76	0.27	0.90	10.8	16.57	2.76	1.9	16	0.23	27.8	0.02	1045	2.25	0.041	4.7	0.023	12.71	0.15	3.03	0.5	26.9	0.02	11.1	0.023	0.05	1.6	10	1.7	49.7
RS-493 0400-0420	425	0.75	0.9	1.6	< 1	348.00	0.22	1.74	0.77	0.50	6.2	9.36	1.33	3.2	40	0.34	30.8	0.09	1153	0.95	0.277	1.9	0.026	23.2	0.05	0.92	0.5	123.1	0.03	9.1	0.009	0.22	2.7	4	0.9	47.3
RS-493 0420-0440	133	1.17	2	1.3	< 1	327.40	0.21	0.88	0.32	0.90	4.6	7.37	1.45	4.6	19	0.33	28.1	0.15	329	1.23	0.412	1.3	0.029	17.75	0.03	0.45	0.4	150.6	< .02	7.9	0.008	0.19	2.2	4	0.4	51.4
RS-493 0440-0460	136	1.38	3.3	1.3	1	80.10	0.5	1.24	0.68	4.20	7.1	9.37	2.57	5.6	12	0.48	30.6	0.25	639	1.56	0.057	3.3	0.06	18.04	0.02	0.67	0.5	104	< .02	7.5	0.023	0.2	1.9	14	0.5	70.6
RS-493 0460-0480	113	1.25	2.5	4.3	< 1	56.60	0.17	2.35	0.31	8.90	10	10.9	3.09	5.6	5	0.42	29	0.34	1150	1.21	0.068	4.2	0.116	12.21	0.01	0.51	0.4	102.7	0.02	6.3	0.036	0.16	2.1	29	< .2	93.5
RS-493 0480-0500	133	0.85	4.2	0.6	< 1	96.40	0.09	1.41	0.3	8.40	9.8	25.3	3.93	4.2	13	0.41	28.2	0.19	783	4.02	0.071	7.7	0.119	10.66	0.02	1.33	0.8	73	0.02	7.5	0.054	0.15	3.1	40	0.5	78.7
RS-493 0500-0520	117	0.99	5.0	15.6	< 1	163.70	0.08	1.8	0.25	8.10	8.8	20.43	3.67	4.8	11	0.42	27.4	0.23	814	2.91	0.069	4.7	0.119	11.83	0.01	1.52	0.6	98.8	0.02	7.6	0.051	0.14	2.9	38	0.4	73.9
RS-493 0520-0540	121	1.60	2.6	4	< 1	333.00	0.09	2.32	0.26	9.20	10.3	9.65	2.99	6.2	6	0.44	30	0.48	748	0.65	0.054	3.5	0.122	14.82	0.02	0.8	0.3	167	0.03	7.3	0.024	0.15	2.2	27	< .2	85.1
RS-493 0540-0560	102	0.77	4.9	1.5	< 1	109.10	0.09	1.49	0.15	7.80	11.8	22.81	4.27	3.7	< 5	0.35	24.9	0.16	713	2.15	0.066	6.7	0.118	14.19	0.03	3.75	0.4	78.1	0.03	6.3	0.062	0.14	2.5	41	0.7	89.2
RS-493 0560-0580	90	0.75	3.6	1.3	1	94.30	0.07	1.26	0.18	5.00	10.5	20.38	3.74	3.5	< 5	0.32	27.9	0.13	654	2.04	0.049	5.5	0.086	13.88	0.03	4.27	0.3	77.5	< .02	8.5	0.04	0.13	1.9	30	0.7	68.4
RS-493 0580-0600	84	0.71	1.8	1.6	1.0	101.80	0.1	1.51	0.34	3.10	8	13.13	2.81	3.3	6	0.31	31.8	0.11	771	1.58	0.042	3.4	0.062	16.82	0.03	3.77	0.1	87.4	0.02	10.5	0.02	0.1	1.4	17	0.8	54.7
RS-493 0600-0620	129	1.19	3	0.9	< 1	96.4	0.06	1.87	0.16	8.6	6.4	13.2	3.53	4.8	6	0.36	28.5	0.37	702	1.3	0.046	3.8	0.123	14.89	0.01	1.86	0.5	147.3	0.02	6.6	0.042	0.12	2.2	32	0.2	101.9
RS-493 0620-0640	105	0.83	4.3	2	2	171.4	0.06	1.57	0.17	7.5	10.5	20.89	4.01	4.5	< 5	0.41	29.3	0.21	645	2.34	0.071	5.6	0.119	12.56	0.01	1.83	1.2	89.1	0.02	7.8	0.063	0.16	2.8	36	0.3	96.1
RS-493 0640-0660	137	1.39	2.5	2.4	5	275.5	0.09	1.94	0.22	7.9	8.6	11	2.84	6.5	24	0.52	32.5	0.36	719	1.02	0.057	3.1	0.111	16.36	0.08	1.08	2	152.1	0.02	6.6	0.03	0.24	1.8	27	< .2	98.1
STANDARD DS2	232	1.74	58.8	201.2	2	154.6	10.96	0.54	10.4	11.3	163.9	127.72	3.09	6	229	0.17	16.5	0.61	829	14.02	0.029	35.3	0.091	32.82	0.04	9.67	2.4	27.5	1.88	3.7	0.092	1.85	20	76	6.5	161.6
RS-493 0660-0680	134	1.16	3.5	2	4	135.3	0.09	1.78	0.2	6.8	9.6	14.65	2.98	5.7	16	0.41	29.6	0.35	688	1.55	0.057	3.1	0.107	16.01	0.02	0.92	< .1	131	< .02	5.7	0.032	0.2	2	25	0.2	87.1

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431
PHONE: (775) 356-0606
FAX: (775) 356-1413

CLIENT:	HECLA MINING CO.
CLIENT REF:	KURT ALLEN
AAL REF:	SP56627
METHOD:	AAL03-0

ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Se	Sr	Te	Th	Ti	Tl	U	V	W	Zn
SAMPLES	ppb	%	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppb	%	ppm	%	ppm	ppm	%	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
RS-493 0680-0700	111	1.45	2.3	1.6	4	142.9	0.11	2.42	0.26	6.2	5.7	7.68	2.37	6.9	23	0.49	32.9	0.36	894	0.58	0.06	2.1	0.092	16.22	0.01	0.67	< .1	152.5	< .02	6	0.023	0.23	1.9	20	< .2	83.2
RS-493 0700-0720	145	1.3	4.4	2.9	1	241.7	0.31	1.9	0.33	3.2	5.4	10	1.9	5.5	65	0.49	25.6	0.2	686	1.31	0.043	1.5	0.057	40.72	0.09	1.02	< .1	146.3	< .02	6.3	0.018	0.28	1.8	11	0.5	102.9
RS-493 0720-0740	137	0.76	5.9	2.1	4	228.4	0.18	1.12	0.21	2.3	6.1	17.92	2.68	4.1	15	0.34	24.2	0.11	505	3.04	0.067	2.7	0.05	33.99	0.03	1.9	0.2	79.3	< .02	9	0.045	0.18	1.6	12	1.3	91.3
RS-493 0740-0760	92	0.67	3.5	1.5	4	161.5	0.11	0.83	0.16	2.5	8.5	22.18	3.07	3.1	41	0.29	21.1	0.09	411	3.83	0.055	4.2	0.046	15.79	0.05	1.87	< .1	65.7	< .02	8.5	0.037	0.15	1.6	13	1	66.2
RS-493 0760-0780	125	1.68	2.8	1.4	< 1	122.1	0.09	3.56	0.3	6.8	8.7	7.71	3.06	7	11	0.5	31.9	0.44	1012	0.46	0.029	1.8	0.129	16.88	0.04	1.05	0.3	163.6	< .02	4.7	0.03	0.22	2.1	27	< .2	99.1
RS-493 0780-0800	120	1.15	2.9	1.7	< 1	144.3	0.08	3.17	0.27	7.4	6.7	11.24	2.84	5.6	22	0.4	31.1	0.3	895	0.71	0.033	2.6	0.119	15.48	0.06	1.07	0.1	156.2	< .02	4.8	0.031	0.19	2.8	22	0.2	92.3
RS-493 0800-0820	100	0.74	5	0.7	2	103.3	0.07	1.48	0.14	8.2	10.7	17.77	3.88	4.4	21	0.35	26.6	0.2	739	1.9	0.05	4.6	0.116	11.54	0.02	1.09	0.2	67.7	0.04	5.3	0.066	0.15	2.2	32	0.3	93.1
RS-493 0820-0840	126	1.39	3.6	1.8	3	191.5	0.11	1.84	0.24	8.1	8.6	9.78	2.94	6.4	38	0.52	27.9	0.45	748	0.9	0.05	2.7	0.113	15.24	0.05	0.99	0.2	117.5	0.02	5	0.034	0.24	2	24	0.2	88
RS-493 0840-0860	123	1.17	2.8	1.8	< 1	186.6	0.09	1.91	0.28	7.4	11	11.26	2.82	5.8	24	0.43	29.3	0.37	838	0.64	0.051	3.1	0.118	13.66	0.03	0.82	0.2	118.2	0.02	4.6	0.027	0.21	2	23	< .2	95.4
RS-493 0860-0880	121	0.9	2.4	1.6	1	140.3	0.12	1.84	0.22	4.7	4.6	9.5	1.92	4.2	21	0.33	29.6	0.22	681	0.54	0.05	2.6	0.073	17.23	0.02	0.65	0.2	122.5	< .02	5.3	0.014	0.14	1.6	15	0.2	66.3
RS-493 0880-0900	139	0.74	4.9	1.5	1	144.5	0.12	1.77	0.19	2.5	5.4	8.52	2.14	3.2	106	0.3	22.6	0.11	669	1.04	0.027	1.5	0.057	21.64	0.21	2.26	0.1	84.8	< .02	7.5	0.026	0.16	1.6	13	0.6	77.3
RS-493 0900-0920	150	1.07	3.7	2.1	2	236.7	0.1	1.33	0.32	2.5	3.3	5.9	2.17	4.7	80	0.42	26.5	0.12	504	1.15	0.022	1.2	0.052	23.47	0.11	2.47	0.3	79.3	< .02	9.7	0.025	0.18	2.4	12	0.6	65
RS-493 0920-0940	271	1.12	38.2	17.6	2	71.1	0.1	1.64	0.31	3.5	5.3	7.1	3.51	4.7	215	0.41	22.3	0.13	612	1.73	0.021	1.3	0.063	25.41	3.14	9.37	1.9	81.5	< .02	7.7	0.012	0.44	1.4	9	0.3	66.6
RS-493 0940-0960	164	0.78	24	11.5	< 1	106.7	0.09	5.76	0.27	2.7	8.2	8.46	2.81	3.5	172	0.27	17.3	0.11	2269	1.89	0.021	1.3	0.052	51.44	1.98	7.44	1.2	111.2	0.02	6.7	0.013	0.26	2	9	0.7	57.9
RS-493 0960-0980	82	0.61	6.9	2.3	< 1	182.6	0.05	6.08	0.26	3	4.1	6.08	1.97	3.2	78	0.26	23.2	0.13	2474	1	0.03	0.7	0.058	18.42	0.27	2.84	0.4	132.2	0.02	7.7	0.022	0.14	2.4	10	0.6	42.7
RS-493 0980-1000	104	0.75	13.5	2.5	1	117.6	0.06	3.09	0.19	2.6	4.5	7.03	1.82	3.6	115	0.28	19.9	0.1	1209	0.92	0.029	1	0.052	30.58	0.67	3.58	0.2	99.6	0.03	7.7	0.016	0.13	1.3	6	0.6	58.9
RS-493 1000-1020	112	0.95	6.4	1	< 1	211.1	0.08	2.17	0.34	3.2	4.3	6.04	2.02	4.7	61	0.34	24.3	0.15	902	1.08	0.043	1.1	0.058	20.21	0.16	1.59	0.3	104.9	0.02	8	0.025	0.12	1.6	11	0.4	59.8
RS-493 1020-1040	105	0.89	7.2	9.6	< 1	133.7	0.04	2.23	0.22	2.9	3.3	5.64	2.07	4.6	27	0.35	25.9	0.14	944	0.99	0.06	1	0.059	19.56	0.11	1.36	0.3	92.4	0.02	8.7	0.026	0.1	1.6	12	0.5	57.7
RS-493 1040-1060	109	0.92	6.4	3.4	2	82	0.02	1.11	0.19	2.2	3.2	6.51	2.05	4.8	18	0.31	23	0.12	541	1.33	0.081	1.4	0.047	17.33	0.06	1.13	0.3	82.4	< .02	9.4	0.023	0.07	1.7	11	0.8	63
RS-493 1060-1080	103	0.84	6.2	2.2	3	95.4	0.03	1.24	0.23	2.7	5.3	8.57	2.17	4.2	20	0.3	21.6	0.13	609	1.66	0.074	1.9	0.052	19.82	0.07	0.95	0.3	79.8	< .02	9	0.026	0.09	2.8	13	0.7	77.9
RS-493 1080-1100	124	0.77	5	1.8	1	111.6	0.04	1.43	0.19	2.8	3.9	7.48	2.02	3.8	72	0.25	24.9	0.11	558	1.58	0.057	1.6	0.055	16.15	0.21	2.18	0.4	81.5	< .02	9.1	0.026	0.09	3.2	12	0.7	80.6
RS-493 1100-1120	287	0.66	5	2.2	< 1	115.6	0.05	1.64	0.19	2.5	5.4	7.32	2.19	3.2	87	0.22	25.3	0.12	638	1.87	0.038	1.6	0.053	18.75	0.25	2.12	0.3	92.9	< .02	8.8	0.027	0.09	3	12	0.7	75.9
RS-493 1120-1140	487	0.91	7.3	3.3	2	133.6	0.26	1.93	0.17	3.9	6.4	6.92	2.23	4.1	46	0.3	24.5	0.16	691	3.17	0.033	2	0.07	28.65	0.44	2.34	0.3	99.9	< .02	7.1	0.02	0.13	2.6	14	0.5	73.6
76009 empty	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STANDARD DS2	234	1.72	57.5	205.1	2	152	10.95	0.54	10.63	12	162.5	127.38	3.09	6	237	0.16	16.6	0.6	823	14.65	0.033	35.7	0.091	30.46	0.01	9.79	2.2	30.2	1.79	3.7	0.093	1.89	19.9	74	6.6	161.5

SP

SUBMITTAL FORM

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Geochemical • Environmental • Metallurgical

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Mendoza, Argentina

Company: Rosebud Mining LLC

Address: PO Box 2610

City Winnemucca State NV Zip 89446

Telephone Number: (775) 623-6912 Fax Number: (775) 623-6967

Project Name: Degistrom Purchase Order Number: _____

Date Submitted: 2 June 2000 Number of Samples: 24

RESULTS REPORTED IN: ppm [ ] ppb [✓] opt [✓]

SAMPLE IDENTIFICATION	TYPE	ELEMENTS REQUIRED	
Drill Hole RS-493		1640-1660	2290 to 2310
1340 - 1360		1690 - 1710	2340 - 2360
1390 - 1410		1740 - 1760	2390 - 2410
1440 - 1460		1790 - 1810	2420 - 2430
1490 - 1510		1840 - 1860	
1540 - 1560		1890 - 1910	
1590 - 1610		1940 - 1960	
		1990 - 2010	
Au + Ag use Rosebud Exp. Protocol		2040 - 2060	
Also		2090 - 2110	
Run pulps for ICP + Se trace		2140 - 2160	
		2190 - 2210	
1 (pulp) Rosebud Production Standard		2210 - 2222	
		2240 - 2260	

COARSE REJECTS (Normally Discarded After 60 Days)

[ ] Return COD after analysis complete

PULPS (Normally Stored Free For One Month)

[ ] Discard after one month

[ ] Return COD after one month

RESULTS AND INVOICES TO BE SENT TO:

Invoice to:

Kurt Allen
PO Box 2610
Winnemucca NV 89446

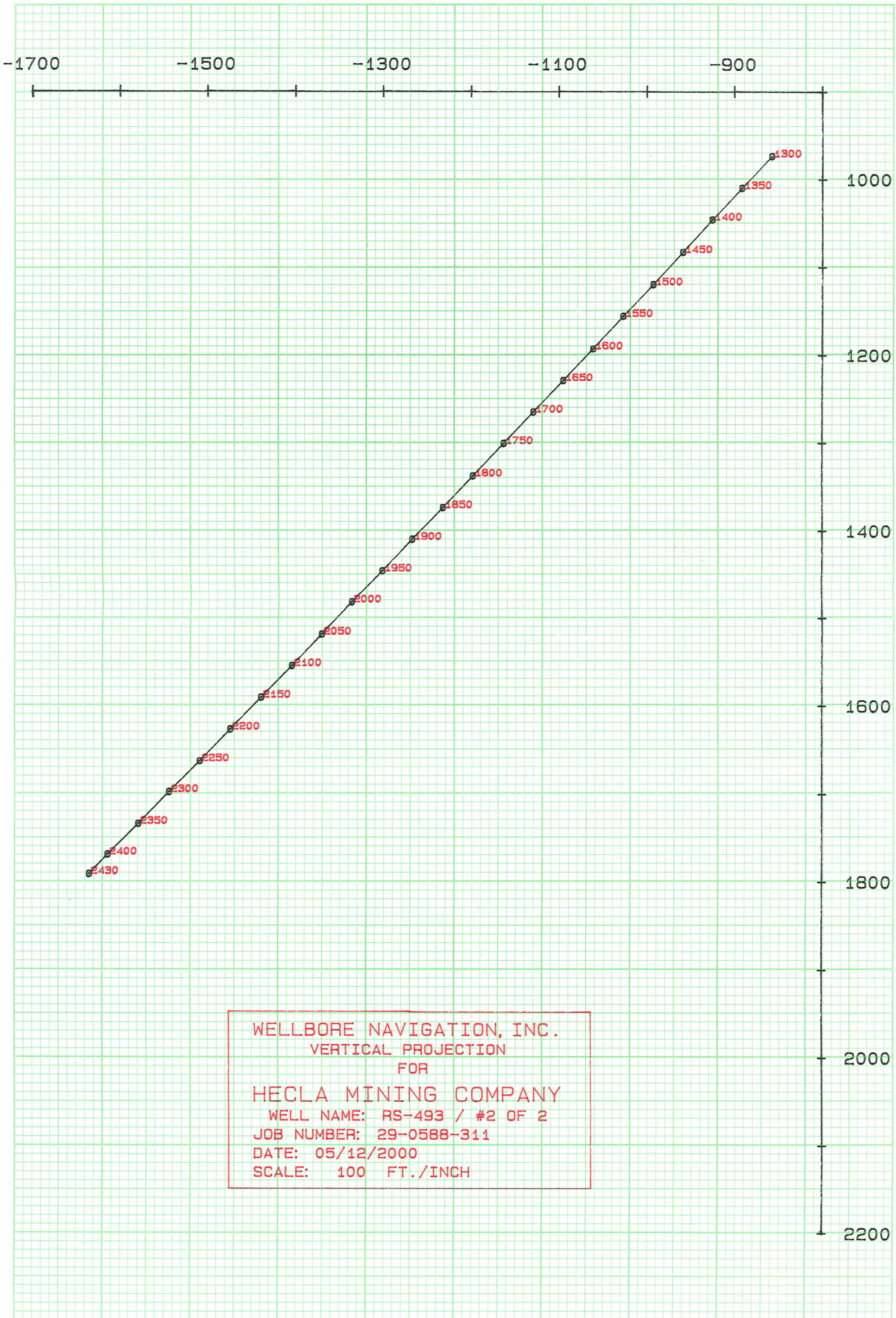
Results to:

Same

Comments:

CLIENT FILE COPY

STARLIGHT PRINTING (801) 467-2841



WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* HECLA MINING COMPANY *
****

JOB NUMBER: 29-0588-311

WELL NAME: RS-493

LOCATION: ROSEBUD MINE

SURVEY DATE: 05/12/2000

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: TRUE NORTH

TIE-ON COORDINATES AT: 0 M.D.
TAKEN FROM: COLLAR

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 108.00

****
****** DEPTH MEASURED IN FEET *******
****

COMMENTS: ** BOART LONGYEAR **
*** MARTIN NIEMI ***

****
****
*** THIS DIRECTIONAL SURVEY REPORT IS ****
** CORRECT TO THE BEST OF MY KNOWLEDGE ***
* AND IS SUPPORTED BY ACTUAL FIELD DATA! *
**
**
**
**
COMPANY REPRESENTATIVE
**
****
****

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

JOB NUMBER: 29-0588-311

WELL NAME: RS-493

INRUN SURVEY
BY MINIMUM CURVATURE

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	L/R PROP.	INCL HORZ	BEARING AZIMUTH	COORDINATES LATITUDE	COORDINATES DEPARTURE	D-LEG /100	D-LEG /CL	STATION DISP.	DISPLACEMENT DIRECTION
0.0	0.00	0.00	0.000	-43.89	287.97	0.00 N	0.00 E	0.00		0.00	AT 000.00
50.0	34.72	-35.98	0.085	-44.06	287.76	11.04 N	34.25 W	0.45	0.23	35.98	AT 287.87
100.0	69.74	-71.67	0.200	-44.86	287.87	21.96 N	68.22 W	1.61	0.80	71.67	AT 287.84
150.0	105.12	-106.99	0.247	-45.24	287.98	32.83 N	101.83 W	0.78	0.39	106.99	AT 287.87
200.0	140.82	-142.00	-0.151	-45.86	289.33	44.03 N	135.01 W	2.26	1.13	142.00	AT 288.06
250.0	177.02	-176.49	-0.508	-46.92	287.84	55.02 N	167.69 W	2.95	1.48	176.49	AT 288.16
300.0	213.75	-210.41	-0.213	-47.61	287.16	65.22 N	200.05 W	1.66	0.83	210.41	AT 288.06
350.0	250.72	-244.07	0.471	-47.76	286.51	74.97 N	232.27 W	0.93	0.46	244.07	AT 287.89
400.0	287.87	-277.52	1.283	-48.21	286.71	84.54 N	264.34 W	0.94	0.47	277.53	AT 287.74
450.0	325.23	-310.74	1.710	-48.51	287.82	94.40 N	296.06 W	1.59	0.80	310.75	AT 287.68
500.0	362.83	-343.70	1.748	-49.02	288.05	104.55 N	327.42 W	1.06	0.53	343.70	AT 287.71
550.0	400.68	-376.38	1.569	-49.35	288.58	114.82 N	358.44 W	0.96	0.48	376.38	AT 287.76
600.0	438.69	-408.84	0.746	-49.64	290.33	125.63 N	389.06 W	2.35	1.17	408.84	AT 287.90
650.0	477.06	-440.88	-0.386	-50.60	289.71	136.61 N	419.18 W	2.08	1.04	440.88	AT 288.05
700.0	515.77	-472.51	-1.578	-50.84	290.61	147.52 N	448.90 W	1.24	0.62	472.52	AT 288.19
750.0	554.75	-503.78	-3.088	-51.63	290.92	158.61 N	478.17 W	1.63	0.81	503.79	AT 288.35
800.0	594.17	-534.48	-5.019	-52.43	292.29	169.94 N	506.77 W	2.32	1.16	534.51	AT 288.54
850.0	633.90	-564.77	-7.135	-52.79	291.70	181.31 N	534.92 W	1.02	0.51	564.82	AT 288.72
900.0	673.70	-594.97	-9.027	-52.73	291.47	192.44 N	563.06 W	0.30	0.15	595.04	AT 288.87
950.0	712.99	-625.83	-10.929	-50.86	291.58	203.79 N	591.83 W	3.74	1.87	625.93	AT 289.00
1000.0	751.56	-657.58	-13.144	-50.09	292.40	215.70 N	621.33 W	1.86	0.93	657.71	AT 289.15
1050.0	789.65	-689.84	-15.950	-49.17	293.53	228.34 N	651.15 W	2.35	1.18	690.02	AT 289.32
1100.0	827.20	-722.64	-19.702	-48.17	295.50	242.05 N	681.18 W	3.28	1.64	722.91	AT 289.56
1150.0	864.21	-755.95	-24.298	-47.32	296.21	256.71 N	711.44 W	1.95	0.97	756.34	AT 289.84
1200.0	900.89	-789.59	-29.003	-47.07	295.71	271.58 N	741.99 W	0.84	0.42	790.13	AT 290.10
1250.0	937.36	-823.50	-33.422	-46.62	295.14	286.26 N	772.87 W	1.19	0.60	824.18	AT 290.32
1300.0	973.71	-857.60	-37.565	-46.62	294.72	300.74 N	804.01 W	0.58	0.29	858.42	AT 290.51
1350.0	1010.14	-891.59	-41.655	-46.94	295.00	315.13 N	835.08 W	0.75	0.37	892.56	AT 290.67
1400.0	1046.73	-925.42	-45.701	-47.14	294.64	329.44 N	866.01 W	0.63	0.32	926.55	AT 290.83
1450.0	1083.42	-959.20	-49.406	-47.25	293.88	343.40 N	896.98 W	1.06	0.53	960.47	AT 290.95
1500.0	1120.04	-993.06	-52.953	-46.92	294.08	357.23 N	928.09 W	0.71	0.36	994.47	AT 291.05
1550.0	1156.57	-1027.02	-56.403	-46.97	293.52	371.01 N	959.32 W	0.77	0.39	1028.56	AT 291.14
1600.0	1193.11	-1061.02	-59.434	-46.92	292.67	384.40 N	990.72 W	1.16	0.58	1062.68	AT 291.21
1650.0	1229.51	-1095.18	-62.120	-46.54	292.32	397.51 N	1022.38 W	0.90	0.45	1096.94	AT 291.25
1700.0	1265.75	-1129.53	-64.718	-46.36	292.33	410.59 N	1054.25 W	0.36	0.18	1131.38	AT 291.28
1750.0	1301.97	-1163.91	-67.327	-46.47	292.35	423.70 N	1086.13 W	0.22	0.11	1165.85	AT 291.31
1800.0	1338.17	-1198.29	-70.053	-46.29	292.72	436.92 N	1117.99 W	0.62	0.31	1200.34	AT 291.35

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

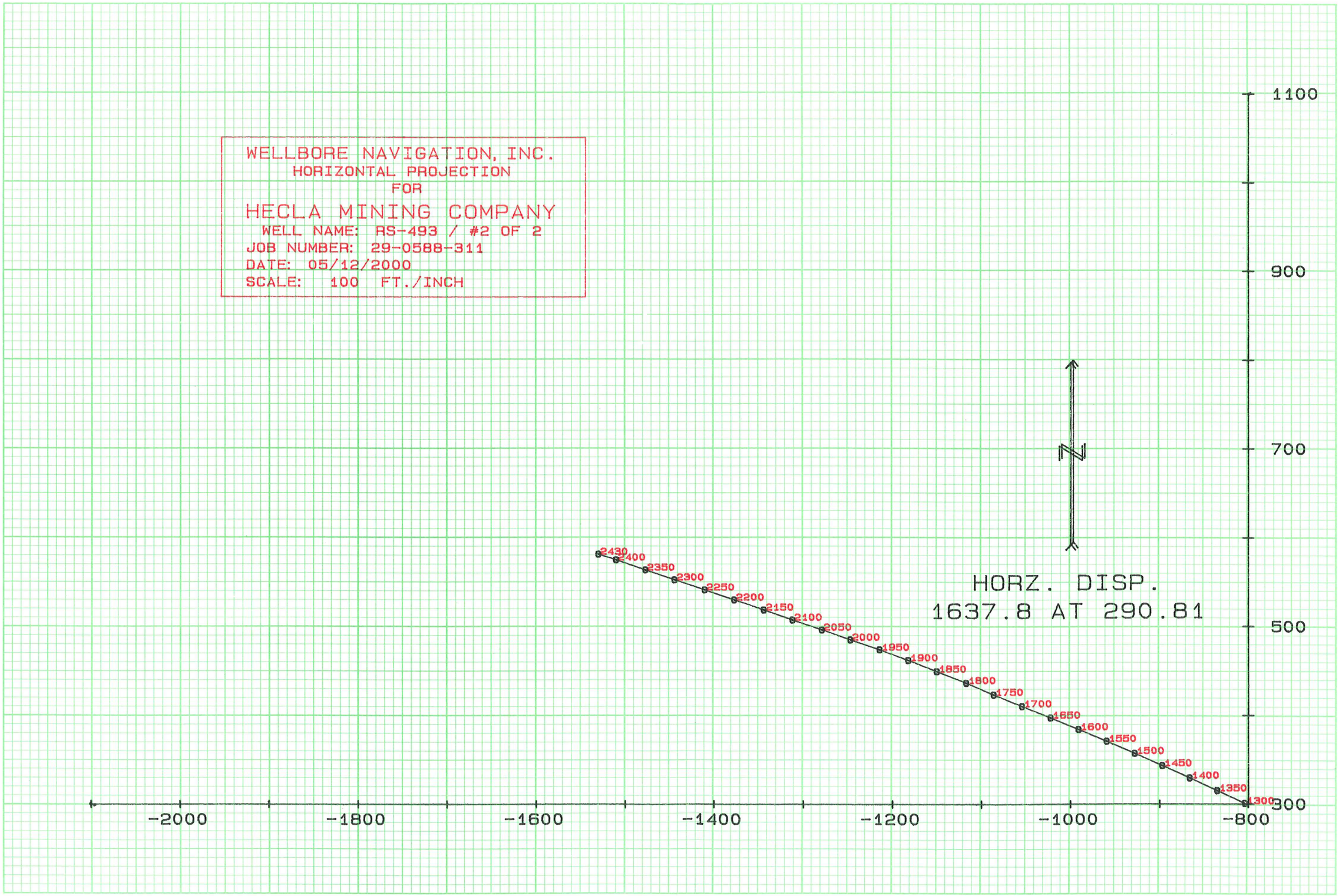
JOB NUMBER: 29-0588-311 WELL NAME: RS-493

INRUN SURVEY
BY MINIMUM CURVATURE

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	L/R PROP.	INCL HORZ	BEARING AZIMUTH	COORDINATES LATITUDE	COORDINATES DEPARTURE	D-LEG /100	D-LEG /CL	STATION DISP.	DISPLACEMENT DIRECTION
1850.0	1374.25	-1232.82	-72.449	-46.10	291.22	449.86 N	1150.09 W	2.11	1.06	1234.94	AT 291.36
1900.0	1410.40	-1267.30	-74.443	-46.51	291.40	462.42 N	1182.27 W	0.86	0.43	1269.48	AT 291.36
1950.0	1446.69	-1301.66	-75.842	-46.56	289.26	474.37 N	1214.52 W	2.95	1.47	1303.87	AT 291.33
2000.0	1482.98	-1336.05	-76.352	-46.51	288.44	485.48 N	1247.07 W	1.13	0.57	1338.23	AT 291.27
2050.0	1519.26	-1370.47	-76.805	-46.50	289.07	496.54 N	1279.66 W	0.87	0.43	1372.62	AT 291.21
2100.0	1555.44	-1404.96	-77.323	-46.23	288.65	507.70 N	1312.31 W	0.79	0.40	1407.09	AT 291.15
2150.0	1591.57	-1439.53	-77.953	-46.29	289.44	518.98 N	1344.98 W	1.10	0.55	1441.64	AT 291.10
2200.0	1627.61	-1474.17	-78.645	-45.96	288.85	530.34 N	1377.72 W	1.05	0.53	1476.27	AT 291.05
2250.0	1663.42	-1509.07	-79.220	-45.51	289.04	541.67 N	1410.73 W	0.94	0.47	1511.15	AT 291.01
2300.0	1698.97	-1544.22	-79.724	-45.13	288.60	553.01 N	1444.01 W	0.98	0.49	1546.28	AT 290.96
2350.0	1734.38	-1579.52	-80.010	-45.05	288.33	564.19 N	1477.49 W	0.41	0.21	1581.55	AT 290.90
2400.0	1769.87	-1614.74	-80.293	-45.38	288.59	575.35 N	1510.90 W	0.75	0.38	1616.74	AT 290.85
2430.0	1791.20	-1635.84	-80.310	-45.26	287.51	581.88 N	1530.95 W	2.56	0.77	1637.81	AT 290.81

```
*************************************************************
*                          ********                         *
*      THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF          *
*                          ********                         *
*  2430.0 FEET EQUALS  1637.81   FEET AT  290.81            *
*                          ********                         *
*************************************************************
```

H2



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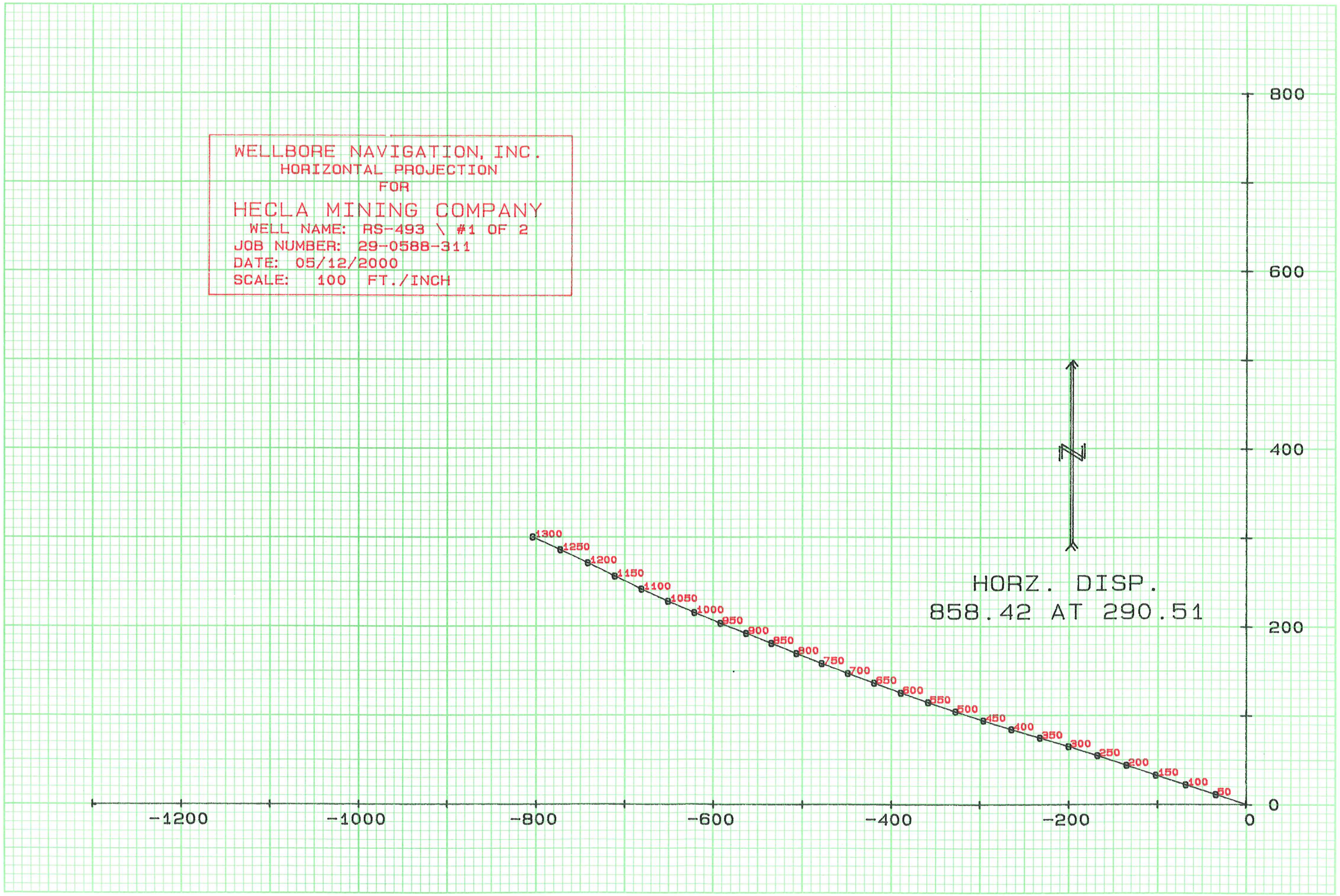
H1



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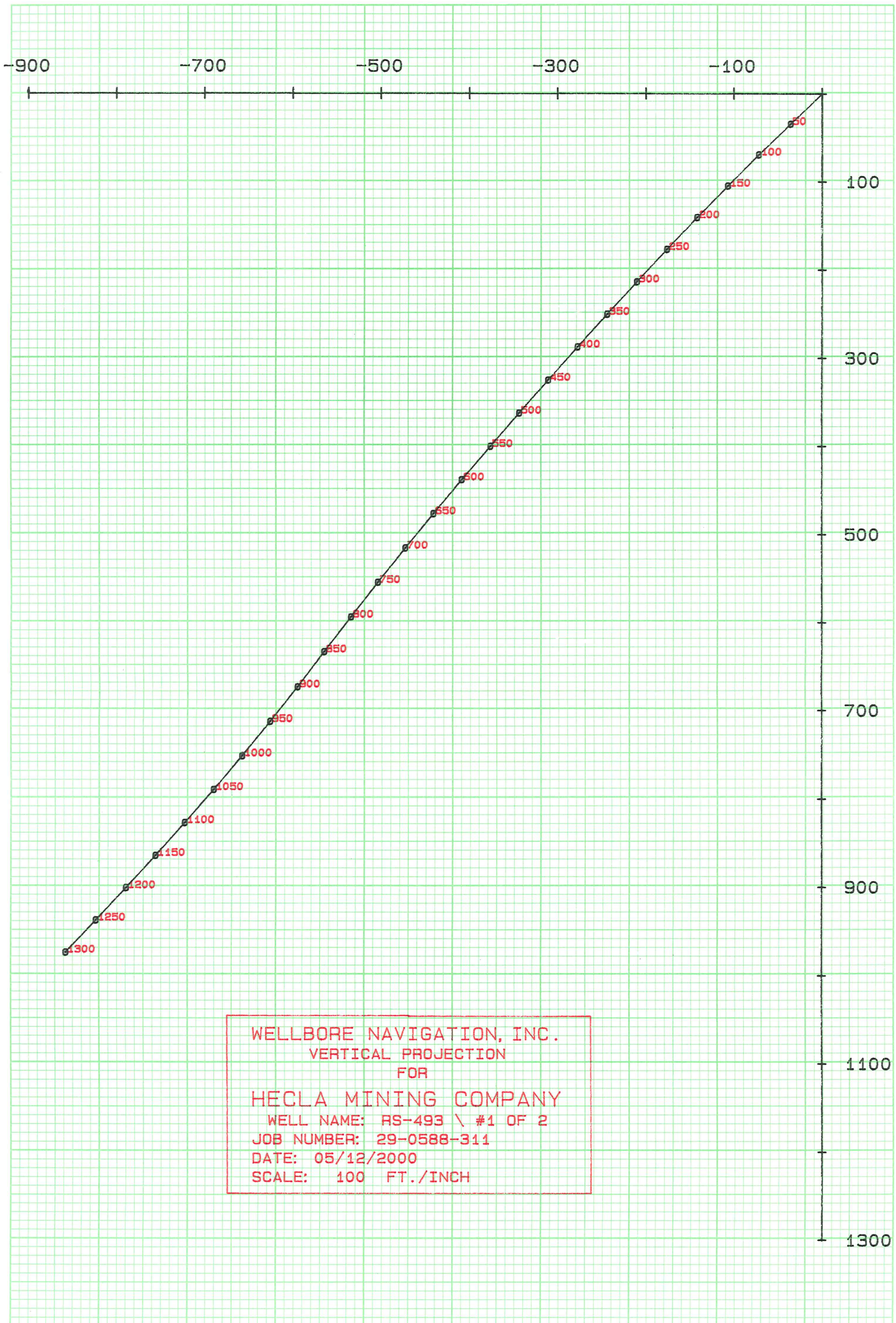
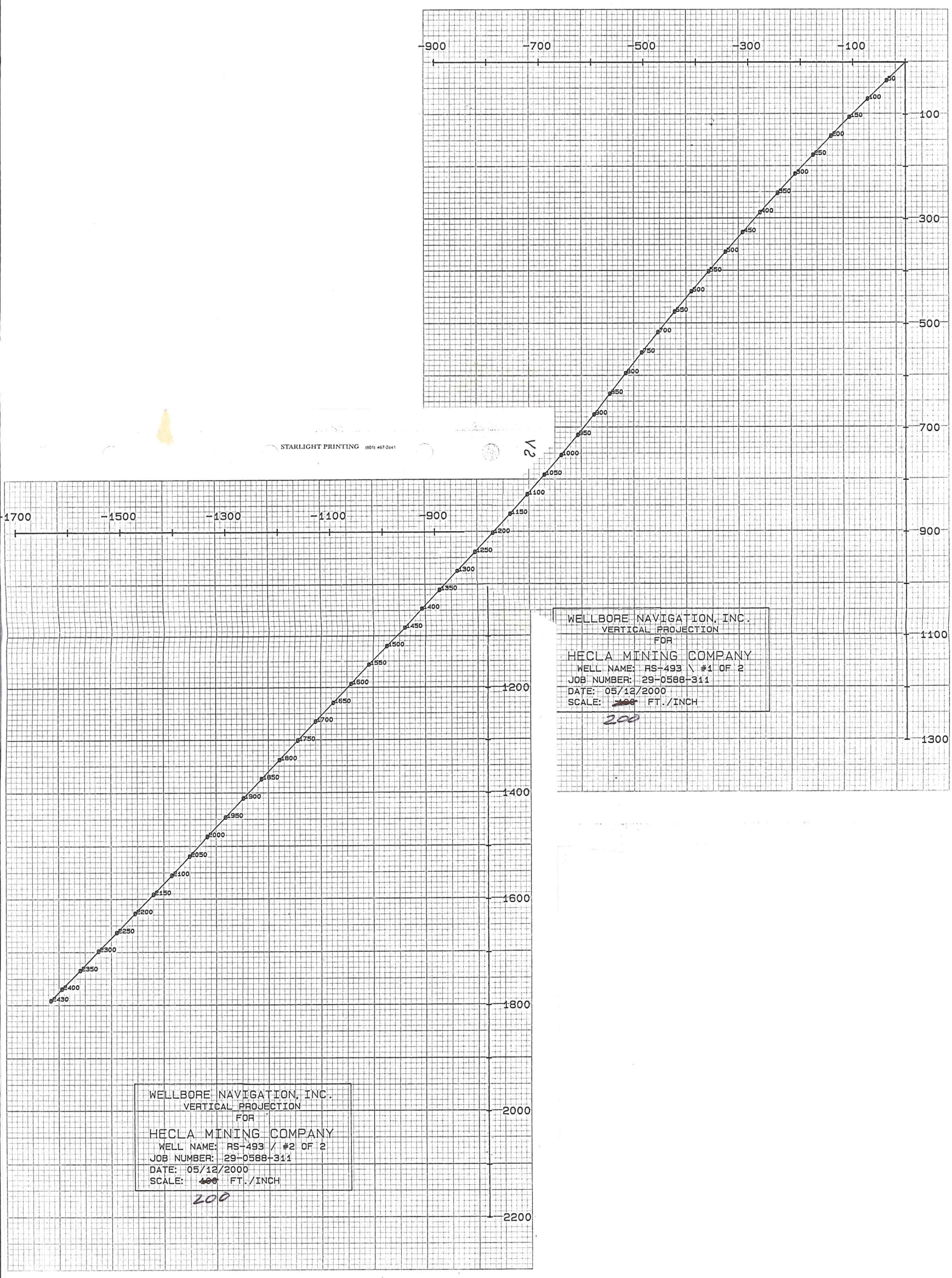
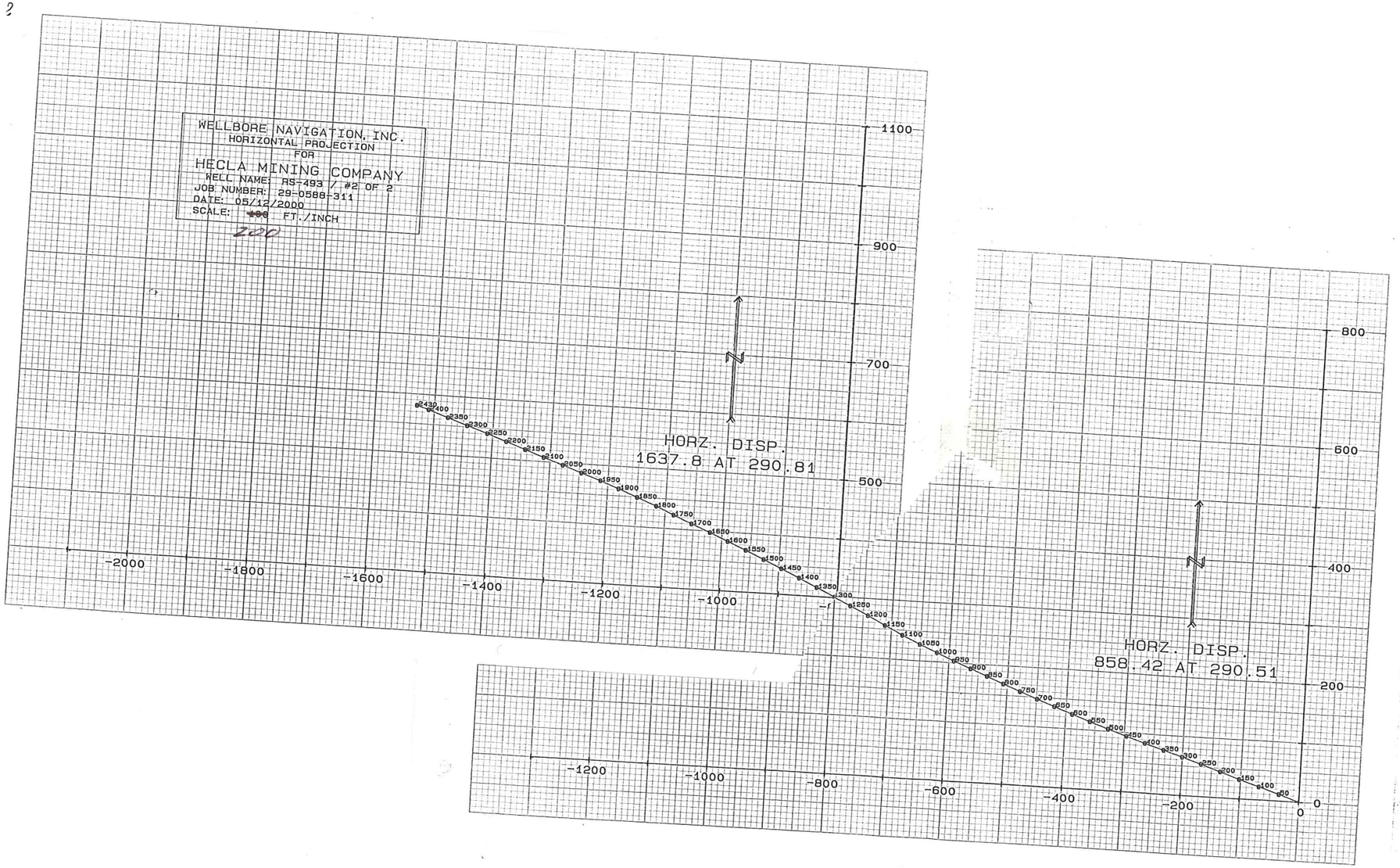
STARLIGHT PRINTING (801) 467-2841





STARLIGHT PRINTING (801) 467-2641


WELLBORE NAVIGATION, INC.
HORIZONTAL PROJECTION
FOR
HECLA MINING COMPANY
WELL NAME: RS-493 / #2 OF 2
JOB NUMBER: 29-0588-311
DATE: 05/12/2000
SCALE: ~~100~~ 200 FT./INCH
HORZ. DISP.
1637.8 AT 290.81
HORZ. DISP.
858.42 AT 290.51

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-493 DATE: 19 May 2000 LOGGED BY: Rogowski PAGE 1 OF ____

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)
1140	1143.4	100	100	3.0/3.4 88										
1143.4 7.8 5.16	7.6 1151	8.8 115.8	9.8 115.8	7.6 100										
1151	10 1161	8.9 89	9.9 99	83										
1161	10 1171	100	100	97										
1171	9 1180	7.1 78	7.1 78	5.5 61										
1180	9.5 1189.5	8.2 91	10.2 107	9.3 97										
1189.5	4.0 1193.5	3.5 88	3.8 95	0.5 13										
1193.5	6.5 1200	6.5 100	6.5 100	5.5 87										
1200	10 1210	9.1 91	9.9 99	7.5 75										
1210	10 1220	6.8 68	10.3 103	6.8 68										
1220	10 1230	9.0 90	10.2 102	6.5 65										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-493 DATE: 19 may 2000 LOGGED BY: Rogowski PAGE 2 OF ____

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)
1230	10 1240	8.9 89	9.9 99	5.5 55										
1240	10 1250	10.0 100	10.2 102	5.6 56										
1250	10 1260	9.9 99	9.9 99	8.1 81										
1260	9.7 1269.7	6.2 72	9.7 100	4.2 43										
1269.7	10.5 1280.2	5.2 49	12.0 114	4.1 39										
1280.2	9.8 1290	8.4 86	9.2 102	4.4 90										
1290	10 1300	6.4 64	10.5 105	6.1 61										
1300	10 1310	6.4 64	9.4 94	2.0 20										
1310	10 1320	7.0 70	10 100	4.1 41										
1320	10 1330	9.9 99	9.9 99	7.1 71										
1330	10 1340	10 100	10 100	6.4 64										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # R5-493 DATE: 19 May 2000 LOGGED BY: Rogowski PAGE 3 OF ____

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)
1340	5.7 1345.7	4.6 80	5.6 98	2.4 42										
1345.7	10.3 1356.0	9.3 90	10.2 99	6.5 63										
1356	10 1366	10 100	10 100	9.0 90										
1366	9.5 1375.5	8.6 91	9.8 97	6.0 63										
1375.5	6 1381.5	6.0 100	3.0 50	1.4 23										
1381.5	9.5 1391	10.1 106	9.4 99	6.8 72										
1391	10 1401	10.1 101	10.1 101	9.7 97										
1401	10 1411	9.1 91	9.1 91	8.1 81										
1411	10 1421	8.6 86	10.6 106	7.1 71										
1421	9.5 1430.5	9.3 98	9.3 98	4.7 49										
1430.5	9.5 1440	10 105	10 105	7.5 71										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-493 DATE: 24 May 2000 LOGGED BY: Rogowski PAGE 4 OF ____

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)
1440	1450 10	9.5 95	9.5 95	7.7 77										
1450	1460 10	10 100	10 100	5.7 57										
1460	1470 10	10 100	10 100	9.3 93										
1470	1480 10	10.1 101	10.1 101	6.6 66										
1480	1490 10	10 100	10 100	8.5 85										
1490	1500 10	9.8 98	9.8 98	8.1 81										
1500	1510 10	9.7 97	10.0 100	6.7 67										
1510	1520 10	9.9 98	9.8 98	7.6 76										
1520	1530 10	10.0 100	10.2 102	7.8 78										
1530	1540 10	10.1 101	10.1 101	8.5 85										
1540	1550 10	9.0 90	10.0 100	6.0 60										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # R5-493 DATE: 24 May 2000 LOGGED BY: Rogowski PAGE 5 OF

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)
1550	10 1560	8.0 80	10.3 103	5.6 56										
1560	10 1570	9.9 99	10.1 101	8.0 80										
1570	10 1580	9.6 96	9.9 99	7.9 79										
1580	10 1590	7.7 77	10.9 109	3.9 39										
1590	10 1600	8.7 87	9.3 93	5.6 56										
1600	10 1610	5.4 54	11.1 111	2.1 21										
1610	9.2 1619.2	7.9 86	9.1 99	5.5 60										
1619.2	10.5 1629.7	9.6 91	9.6 91	7.8 74										
1629.7	7.4 1637.1	5.4 72	6.9 93	6.1 82										
1637.1	9.3 1646.4	8.5 91	8.5 91	8.1 87										
1646.4	10.4 1656.8	8.1 78	10.9 105	5.7 55										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-493 DATE: 25 May 2000 LOGGED BY: Rogowski PAGE 6 OF ____

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)
1656.8	10 1666.8	10 100	10 100	6.7 6.7										
1666.8	10.4 1677.2	9.2 88	10.2 98	5.6 54										
1677.2	10.3 1687.5	9.2 90	9.9 97	6.5 63										
1687.5	10 1697.5	9.1 91	10 100	6.6 66										
1697.5	10.5 1708	8.2 78	10.6 101	6.6 63										
1708	10 1718	9.4 94	9.7 97	5.5 55										
1718	10 1728	8.0 80	10.5 105	6.5 65										
1728	10.5 1738.5	8.2 78	8.8 84	7.7 77										
1748.5	10 1758.5	8.9 89	9.9 99	4.6 46										
1758.5	10.5 1769	7.3 70	11.3 108	6.3 60										
1769	10 1779	10.2 102	10.2 102	10.2 102										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-493 DATE: 25 May 2000 LOGGED BY: Rogowski PAGE 7 OF ____

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)
1779	10.1 1789.1	9.4 83	9.4 83	8.7 86										
1789.1	10.4 1799.5	10.2 98	10.2 98	9.2 88										
1799.5	10.4 1809.9	10.2 98	10.2 98	8.8 85										
1809.9	10.1 1820	10.2 101	10.2 101	7.7 76										
1820	10 1830	10.0 100	10.0 100	8.8 88										
1830	10 1840	9.6 96	9.6 96	9.0 90										
1840	10 1850	10.2 102	10.2 102	8.8 88										
1850	10 1860	9.2 92	9.2 92	7.7 77										
1860	10 1870	10.1 101	10.1 10.1	70										
1870	10 1880	9.6 96	9.6 96	75										
1880	10 1890	100	100	75										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-493 DATE: 31 May 2000 LOGGED BY: Rogowski PAGE 8 OF

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)
1890	1900 10	100	100	85										
1900	1910 10	101	101	79										
1910	1920 10	106	100	83										
1920	1930 10	99	99	87										
1930	1940 10	100	100	91										
1940	1950 10	99	99	79										
1950	1960 10	99	99	92										
1970	1973.5 3.5	3.2 91	3.2 91	2.4 68										
1973.5	1980 6.5	6.6 102	6.6 102	6.3 97										
1980	1990 10	10 100	10 100	97										
1990	2000 10	100	100	85										

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: Rosebud Mining, LLC

Address: PO Box 2610, Winnemucca NV 89446

Telephone Number: (775) 623-6912 Fax Number: (775) 623-6967

Project Name: Rosebud Ex Purchase Order Number:

Transport Company: Waybill Number:

Date Shipped: 25 May 2000 Number of Packages: 6 [ ] Prepaid [ ] Collect

ANALYSIS REQUIRED ppb & oz/ton

SAMPLE	TYPE	ELEMENTS REQUIRED
RS-493	CORE	Au-Ag USE ROSEBUD EXP
1187-1189.5		PROTOCOL for sample prep &
1189.5-1193.5		assays
~~1195~~ - 1221.5-1227		
1227-1230 also 1264-1267		
1230-1234		
Please run for ICP +	Se	trace elements
1 (one) pulp of Rosebud Production standard @ end		
of Run		

COARSE REJECTS (Normally Discarded)

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

PULPS (Normally Stored Free For One Month)

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

RESULTS AND INVOICES TO BE SENT TO:

Please mark invoice person and address [I]

(1) Kurt Allen
Same

(2)

(3)

Comments:

CLIENT FILE COPY