6000 0612

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. RS-491
AUTHOR	P Schoorl; P.G. Rogowski; B Morris; K. Allen; L.E Mackedon; D Schoorl; V. Reid
DATE OF DOC(S)	2006
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; Hecla Mining Co.; Rosebud Project; North Equinox
COMMODITY If not obvious	gold; silver
NOTES	drill logs; geology; assay; total depth 1485'; invoice; geochemistry 76p.

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 3/20/08
Initials Date
DB:
Initials Date
SCANNED:
Initials Date

Revised: 1/22/08

RS-491

60000612
4010

6000 0611

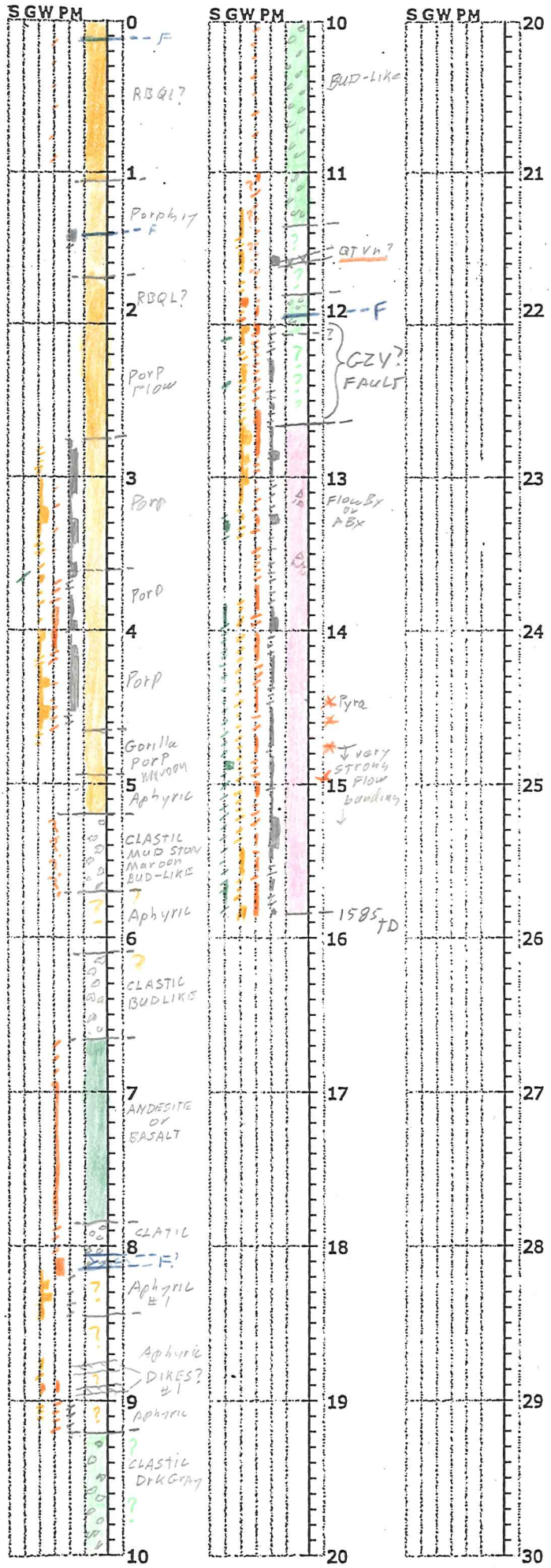
ROSEBUD MINING COMPANY, LLC.

HOLE #	RS-491
FINISH HOLE	22 Feb 2000
START HOLE	18 Feb 2000
LOGGED BY	Rogowski
HOLE TYPE	RC-6"
ANGLE	-90
BEARING	—
T.D	1485
SURVEYED TO	Wel-Nav + Vern Reed #80
PAGE 1 OF	17

COLLAR COORDINATES

NORTH	2,213,550
EAST	478,957
ELEV	+/- 5900'
DRILLER	Pete Schwarl
DRILLING CO.	EH Lund

Drilled on North side of No. Emerald to test both to be Gator-22 strut. & Northern extension of RS-489



ALTERATION INTENSITY

1 WEAK	2 MODERATE	3 STRONG

VERITHIN COLOR

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

GRAPHIC LOG

VERITHIN COLOR

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

	CHOC FM
	BUD-LIKE
	LBT/WR
	DOZIER?
	ANDESITE

Hecla MINING COMPANY
ROSEBUD PROJECT DRILL LOG

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

HOLE NUMBER RS-491
PAGE 2 OF 17
DATE 18 Feb 2000 TO Feb 2000
LOGGED BY Rogowski
TOTAL DEPTH

LOCATION ROSEBUD, NV
NORTHING 2,213,550
EASTING 478,957
ELEVATION +/- 5900
AZIMUTH —
INCLINATION -90

AREA N. Side - N. Equinox
DRILLING CO. Eklund - Pete School
RIG TYPE RC - 75-E
HOLE SIZE 6" Rock bit @ 1525
DOWN HOLE SURVEY BY Wel-Nav TO -

0-100

2/17

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	15%	+25%	MATRIX	QUARTZ	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
0			0-100 porphyry	H	VF x/m matrix porphyritic Hem red	0					Tr	Feld phenos have some clayey				0										0							← almost all phenos have some Hem							
10			Hem red v.F.x/m																																						
			ground mass that																																						
20			has non magnetic																																						
			blk specks (poss. mag																																						
30			gone to specularite)																																						
			phenocrysts are																																						
40			<1mm bio-commong																																						
			Plag! w/some Glomp-													0																									
50			rare sanidine?													tr																									
			common, + Quartz													1																									
60			uncommon, (Poss.													0																									
			RQLP but not sure)																																						
70			"Phenos are																																						
			generally not																																						
80			effer.																																						
			?? poss. some Femag																																						
90			phenos but these could																																						
			be Fe stained plag.																																						
100				H		0					tr					0										0															

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

INTENSITY
1 = WEAK
2 = MODERATE
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or % by Vol

HOLE NUMBER RS-491
PAGE 3 OF 17
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

3/17

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	15%	+25%	MASSIVE %	QUARTZ %	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-SLF %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOLYBDE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
100			100 to 105 Same as 0-100			0					Tr-small increase in c'ly around phenos					0										0														
110			105-120 Lt. gray porphyry diff. from 0-105 in that matrix is m.to c.xln. Is mixed w/ 0-105 porphyry																																						
120																																									
130																																									
140		Vn struc. ? ?	oxidized & silicified Both porphyrys			3					Tr																							X							
150			phenos are similar on poss larger on arg.			0																																			
160																																									
170			Same porphyry as 0-105 (except for Glmop Plag. being rare, this looks like Gorilla)																																						
180																																									
190																																									
200						0					Tr					0											0														

← Vn struct.?

← trace scorodite

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

INTENSITY
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HOLE NUMBER: RS-491
PAGE 4 OF 17
DATE
LOGGED BY
TOTAL DEPTH

LOCATION: ROSEBUD, NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

AREA: 2-300
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

4/17

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION MAJOR %	SILICIFICATION QUARTS %	ARGILLIC 5%	ARGILLIC 15%	ARGILLIC +25%	ARGILLIC TYPE	PROPYLITIC % CHLORITE	PROPYLITIC % CALCITE	POTASSIC % K-SPAR	POTASSIC % ALBITE	OXIDATION 5%	OXIDATION 15%	OXIDATION +25%	VIENING %	VIENING TYPE	MINERALIZATION: SULFIDES 5%	SULFIDES 15%	SULFIDES +25%	PY %	CPY %	MAR %	K-SUL %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOLYBDENITE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
200		RBQL But Matrix could be Gorilla	200 to 275 —	H		0					tr			soft white Feld		0											0														
210			same Hem red																																						
			porp as 0-105																																						
220			but poss more																																						
			Almo P plag																																						
230			Does not look																																						
			like Gorilla porp																																						
240			but not like																																						
			RBQL either																																						
250			Is a member																																						
			of the chocolate																																						
260			group of flows.																																						
			Matrix is very																																						
270			fine xln & red-brn.																																						
			Abrupt Change	H	V. Fxln matrix Porphyry maroon color	0																					0														
			275-300																																						
280			could be the same	VH		2																					tr														
			as 200-275 but			2																					tr														
290			is strong silicified		silicified porphyry gray tan	3	/																				tr														
						3	—	gray silicification																			-1														
300	← gray mly			VH		3	/					tr				0											1														

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

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HOLE NUMBER RS-491
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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

5/17

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE
300			300– Silicified Lt Brn Porphyry, Feld Phenos gone to wt. clay mixed w/gray, clear silicified same rock – Fx in matrix for 75% coarse matrix 25– Bxed in part very alt & good Py content.	H	Fx/In ground mass porphyry Ox rusty & grey
310					
320					
330					
340					
350					
360					
370			365–400 Coarse matrix Porphyry Phenos similar to above Phenos gone to wt clay		m to cxln ground mass Ox Rust & grey
380					
390					
400				H	

FEET	ALTERATION: SILICIFICATION 5%	15%	+25%	MASSIVE %	QUARTS %	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC % CHLORITE	CALCITE	POTASSIC % K-SPAR	ALBITE	OXIDATION 5%	15%	+25%	VIENING %	TYPE
300	2+	3				tr					0							
310	2+	3																
	2																	
320	2																	
	2																	
330	3																	
	3																	
340	3																	
	3																	
350	2																	
	2																	
360	2																	
	3					tr												
370	1					1												
	1					1												
380	2					1												
	2					2												
390	2					2												
	2					2												
400	2+	3				2					0							

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
300				3	– cupric & Anhedral													
310				5	some													
				3	silicencup													
320				3														
330				4														
				4														
340				2														
				2														
350				3														
				1														
360				1														
				0														
				0														
370				3		tr												
				2														
380				3														
				1														
390				tr														
				t														
400				1														

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

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HOLE NUMBER RS-491
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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

6/17

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	ALBITE	OXIDATION 5%	15%	+25%	VIENING %	TYPE	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	AC-SULF %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOLYBDE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
400			Porphyritic w/Py	H		1					2					0											5													
			CLAY GOUGE	H		2					2																2													
410			365 to 465	VH		3					1																1													
			coarse matrix			3					1																1													
420			porphyry			3					tr																2													
		Prob Rhyo Porp	gray min			3					tr																3													
430			lumps matrix			3																					5													
			has bio, Equant			3																					4													
440			K-feld & plag			3																					4													
			most at it is			3																					3													
450			strongly silicified	VH	Coarse matrix Porphyry gray & Lt brown	3					tr																5													
			& pyritized	H		tr					1																5													
460			most silica is in	H		1					1																4													
			matrix	H		1					1																0													
470		Gorilla-like Porphyry? (TBAL)?	weak Feld phen	MH	Prob Gorilla Porp. maroon	0					0?																													
			& mod. Bio porp.																																					
480			un alt. Is a																																					
			near Aphyric rhyo.																																					
490			chocolate flow																																					
			has Glmo P. plag																																					
500			Aphyric Rhyolite	MF		0					0					0											0													

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

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HOLE NUMBER RS-491
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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

5-600

7/17

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	15%	+25%	MASSIVE %	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-SLF %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOLYBDE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
500		Rhyo Flow	495 to 520	M H & soft	Fxlm - Aphyric Flow & mudstone like maroon	0					0					Tr											0														
510			near Aphyric													Tr																									
			Rhyo flow in the													1																									
520			Chocolate Fm.								0					2																									
		?									?					1																									
											Pos	a																												
530			clastic 520 to 570																																						
			>choc Fm??																																						
		?	clastic mudstone-																																						
540			maroon, Fxlm																																						
			mixed w/ v. soft																																						
550		?	mudstone-like																																						
			material that is																																						
560			layered could																																						
		?	be an interflow																																						
570			? sed.																																						
			>Choc Fm?																																						
		Rhyo Flow	Very similar to								0					1																									
580			495 to 520 - both													Tr																									
			have rare bio. plants													Tr																									
590			would almost pass													Tr																									
			for LBT/WR													Tr																									
600				M H & soft		0					0					Tr											0														

Hecla MINING COMPANY

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HOLE NUMBER RS 491
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DATE
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TOTAL DEPTH

LOCATION ROSEBUD, NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

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

6-700

8/17

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE
600		?"Rhyo	570-610 - Aphyric Rhyo maroon - not alt. Has rare. Biop. + some flow BX	H M.	Maroon to Reddish Brown
610			610-665 Clastic? Has num clasts of 570-610 but also a mudstone like soft "seal" w/ num small clasts. Note: has the same maroon color (reddish-brown) also num calcite stgrs. 640 to 665 basal typical waxy green, very soft bio bearing Bud-like matrix	S to VS	
620		Clastic/mudstone			
630					
640					
650					
660			A brupt change		
670		?"Basalt"?	665 to 785 Greenish gray, w/ 30% chlor specks. Soft. Aphyric. Poss Andesite or basalt like material	S	
680					
690					
700				S	

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					0	?				Tr							
610	0					0	?				1							
620	0					Tr	?											
630																		
640																		
650																		
660											1							
											Tr							
	0					Tr					Tr							
670	0					Tr				2	0							
											Tr							
680											Tr							
											Tr							
690											1							
											Tr							
700	0					Tr				2	1							

FEET	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	AS-SLF %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
600				0														
610																		
620																		
630																		
640																		
650																		
660																		
670																		
680																		
690																		
700				0														

Hecla MINING COMPANY

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HOLE NUMBER RS-491
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DATE
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TOTAL DEPTH

LOCATION ROSEBUD, NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

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

7-800 9/17

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE
700		Andesite — or basalt	685-785 Greenish gray, soft near aphyric vol. poss. a basalt or andesite. see very rare plag? phenos, plag. replaced by chlorite	soft	Basalt-like gray green
710					
720					
730					
740					
750					
760					
770					
780					
790		Clastic	785 to 805 Clastic, Numerous frags from the Above "basalt" (contam)		
800				soft	

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
700	0					2	7			1	1							
710						2	soft			1	1							
720						2												
730																		
740																		
750																		
760											1							
770											2							
780											2							
790	0					2				1	1							
800	0					1				Tr	1							
						1				Tr	1							
	0					1				Tr	1							

FEET	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	K-SUL %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
700				0														
710																		
720																		
730																		
740																		
750																		
760																		
770																		
780																		
790																		
800				0														

Hecla MINING COMPANY

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HOLE NUMBER RS-491
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TOTAL DEPTH

LOCATION ROSEBUD, NV
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ELEVATION
AZIMUTH
INCLINATION

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

8-900

10/17

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE
800			Same as 785 to 805 clastic	H	Clastic Flow
810		clay gouge	805 to 815 BUD-Like		
		clastic	815 - 845		
820		RHYOLITE Flow	flow banded		Flow banded Rhyo Tan Aphyric
			Rhyo - tan +		
830			Pyritic same		
			Auto Bx		
840			Aphyric (Looks like some LPT)		
850		Dk Choc Rhyo Flow	845-900 Dark chocolate, Fxly Rhyolite? flow		Dk Red Brown
860					
870					
880			Same as 815-845 — Dike?		tan
890			815-845 Dike?		tan
900				H	

FEET	ALTERATION: SILICIFICATION 5%	15%	+25%	MAGNET %	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 %	AS-SLF %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
800	0					0					1											0														
810						3					1											0														
	0					3					2											tr														
820	1					1					Tr											2														
	tr										Tr											2														
830	tr										0											t														
	1										0											2														
840	tr										0											5														
	tr					1					0											3														
850	0					0					2											0														
											1																									
860																																				
870	0					0																0														
880	1					1																3														
	0					0																1														
890	0					0																0														
	1					2																3														
900	0					0					1											0														

Hecla MINING COMPANY

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HOLE NUMBER RS-491
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TOTAL DEPTH

LOCATION ROSEBUD, NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

AREA 9-1000
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

11/17

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	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	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	AC-SUL %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOLYBDE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
900		Rhyo Flow		H	Rhyo=Flow dry tan	0					?1					Tr											0														
910						1					1					1											Tr														
920						1					1					Tr											Tr														
			Flow? Choc?	H		Tr					1					Tr											?														
			925 - 1000			0					1					Tr											0														
930		Clastic	Clastic, dry, reddish gray - (would call Bud but for color) part of Choc Fm becomes more BUD-Like toward 1000	MS	Clastic Dry gray						1					1											0														
940																																									
950																																									
960																																									
970																																									
980																																									
990																																									
1000				MS		0					1					1											0														

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

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

HOLE NUMBER RS-491
PAGE 12 OF 17
DATE
LOGGED BY
TOTAL DEPTH

LOCATION ROSEBUD, NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

AREA 10-1100
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

12/17

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-SUL %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
1000		Clastic Dark Green	1000 to 1100	H		0					Tr					0											0														
1010			BUD-Like Clastic,													Tr																									
			has broken bio,													Tr																									
1020			1000 to 1050 is													Tr																									
			dark & 1050 to													0																									
1030			1100 is pale green													Tr																									
																0																									
1040																Tr																									
																1																									
1050				H							Tr					1																									
				MS							1					Tr																									
1060		Pale Green																																							
																Tr																									
1070																1																									
																Tr																									
1080																																									
																Tr																									
1090																1																									
				MS		0					1					1											0														
1100																																									

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

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TOTAL DEPTH

LOCATION ROSEBUD, NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

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

11-1200 13/17

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	15%	+25%	MASSIVE %	CLASTS %	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC % CHLORITE	CHLORITE	POTASSIC % K-SPAR	ALUNITE	OXIDATION 5%	15%	+25%	VIENING %	TYPE	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	K-SLF %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	OXIDEON	MOLYBDENITE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
100			1100 – 1135																																						
			BUD-LIKE	MH		0					?1	1+2	?		?	Tr											0														
110			small clasts of	soft												Tr											0														
		Clastic	Rhyo. etc													0											0														
120			broken bio. in													1											0														
			pale green clay													2											2	Py C													
130																Tr											2		X1 clusters												
			↑ Definate BUD-Like													0											3														
			↓ 1135 – 1180																																						
140			prob. BUD-LIKE			0										1											3														
			mixed various													0											2														
150			rocks, predom													1											1														
		Clastic	a fxln. Rhyo.			0										0											1		1												
160		poss vn	Could be Large			2+3 – gray silica										0											3														
			Clast Bud-like			0									Pale green color may be chlor.												2	Py C													
170			broken Bio																								2		1 – Large X's												
																											1		Tr												
180																											1	Py	C + Py H												
			↓ Definate BUD-Like																								3														
			1180 to 1200																																						
190		Clastic	small clasts								1+2																Tr		Tr												
		?? wt clay	broken bio								2 – wt clay					0											Tr														
200						0					1+2				?	Tr											1														

Hecla MINING COMPANY
ROSEBUD PROJECT DRILL LOG

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or % by Vol

HOLE NUMBER RS-491
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DATE
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TOTAL DEPTH

LOCATION ROSEBUD, NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

AREA 12+300
DRILLING CO.
RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	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	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	K-SLF %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOLYBDE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
1200		clastic	BUD-Like?	H+	soft clast	1					2				+L	0											5	Py	L											
			? — ? — ? — ?																																						
1210	?		1205 to 1265	H		tr					1																2		tr												
			Could be BUD w/			1					1																1														
1220	?		predom. LBT/WR			1					1																1														
		Poss. clastic or maybe rhyolite flow	clasts or LBT/WR		Poss. Clastic	2					1																1														
1230	?		w/ BUD contam.			2					1																3														
			from above			2+3					tr																4														
1240	?		generally a mix			2					1	wt clay															2		tr												
			of rock types			1					1																1														
1250	?		w/ 85% LBT/WR			1					1																1														
						2					1	wt clay															1														
1260	?	wavy green	↑ BUD-Like???	H+	soft	1					2																3														
			↓ LBT/WR	V-1		2+3					tr				TR												tr														
1270		mBx			Rhyo Flow																						2														
			Flow banded			2					1																4														
1280		Rhyo Flow	Lt brown to wt			2					2																5														
			well alt.			3					tr																2														
1290		Brn matrix	NOTE: spider micro Bx from 1270-1300			2					2																5														
			w/ drk Brn matrix +			2					1																1	Py	H												
			clay alt. clasts																																						
1300				VH		2					1					0											5														

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

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HOLE NUMBER RS-491
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LOCATION ROSEBUD, NV
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

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

13-1400 15/17

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION MASSIVE %	SILICIFICATION QUARTS %	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 %	AS-SLF %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
1300			1300 to 1400	H		tr					1					tr											5	large piece												
1310		spider BY +LBT	Prob all LBT/WR			tr					1					0											3	P.H												
			but often			tr					1					tr											3													
1320			see frags of			1					1					tr											1													
			BUD-like green			? 2 & 3?					tr					1											1													
1330			waxy clay w/broke			tr					2					tr											2		tr											
			bio + but appears			1					1					1											tr													
1340			to be contam			0					0					1											0													
			from 1335 to 1345			0					0					1											0													
1350			is a Drk gray			tr					1				tr	0											0													
			unalt Rhyo			1					1					0											0													
1360			Has indistinct			1					1					tr											0													
		← MIX BIY, BUD LBT	flow bands			1 & tr					1					0																							
1370			for most of it			1 & 2					1					tr																							
						tr					2					0																							
1380						tr					2				tr	0											0													
			1385 - 1400 : 15.	H		1					2					tr											1		1											
1390			LBT/WR + but is	VH		2					1					0											1		1											
			un contam & strongly	VH		3					tr					0											1	Py	H											
			silicified	VH		3					tr					0											tr													
1400																																									

Weakly Flow Banded Rhyo

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

INTENSITY
1 = WEAK
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3 = STRONG
or % by Vol

HOLE NUMBER: RS-491
PAGE 16 OF 17
DATE:
LOGGED BY:
TOTAL DEPTH:

LOCATION: ROSEBUD, NV
NORTHING:
EASTING:
ELEVATION:
AZIMUTH:
INCLINATION:

AREA: 14-1500
DRILLING CO.:
RIG TYPE:
HOLE SIZE:
DOWN HOLE SURVEY BY:

16/17

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE
1400		Flow banded Rhyolite	1spec of sphalerite LBT/WR - mod to strong flow bands. white to L+gray w/ minor pale green color that may be chloro. Silicifi is Gen. white Flow bands increase toward 1500	H	1" to 1" flow banded Rhyolite wx to L+gray
1410					
1420					
1430					
1440					
1450	*		mar & traces of gray min. (Pyrargyrite)		
1460	*		Pyra + CP very small specks		
1470			NOTE: There may be a lot of uphole contamination		
1480	*		Pyra specks		
1490					
1500	*		Pyra specks	H	

FEET	SILICIFICATION 5%	15%	+25%	MATRIX %	QUARTZ %	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC % CHLORITE	CALCITE	POTASSIC % K-SPAR	ALUNITE	OXIDATION 5%	15%	+25%	VIENING %	TYPE
1400	Tr					2					0							
1410	1					2					Tr							
1420	1					2					Tr							
	1+2					2					Tr							
1430	2					1					0							
	2+3					1					Tr							
1440	2					1					0							
	1					2					1							
1450	1					2												
	1+2					2												
	1+2					1					0							
1460	2					1					Tr							
	2					1					0							
1470	2					1												
	1					2												
1480	1					2												
	2					1												
1490	2					1					0							
	2					1					Tr							
1500	2					1					0							

Green color may be clay or poss. chlorite

Has pale grayish color that may be chlor.

FEET	SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	K-SUL %	SULFATE %	BARITE %	METALLURGY OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA FROM	TO	W	Au	Ag
1400				1+Py		H 1												
1410				1		1												
1420				1		2												
				1		Tr												
1430				Tr		Tr												
				Tr	Py H	Tr												
1440				1		1												
				Tr		Tr												
1450				1		1												
				1		2												
				Tr		1												
1460				1		2												
				1		Tr												
1470				Tr		1												
				1		Tr												
1480				1		Tr												
				3		Tr												
1490				Tr		Tr												
				Tr		Tr												
1500				Tr		Tr												

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

INTENSITY
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or % by Vol

HOLE NUMBER: RS-491
PAGE 17 OF 17
DATE:
LOGGED BY:
TOTAL DEPTH: 1585

LOCATION: ROSEBUD, NV
NORTHING:
EASTING:
ELEVATION:
AZIMUTH:
INCLINATION:

AREA: N. Equinox
DRILLING CO.:
RIG TYPE:
HOLE SIZE:
DOWN HOLE SURVEY BY:

15-1585TD 17/17

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION MATRIX %	SILICIFICATION QUARTS %	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 %	X-SUL %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOLYBDE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
1500		Aphyric Rhyolite Flow	1500 to 1585	H	F. X in Flow Band Rhyolite	1					2					1											tr		1												
1510			All of it is strongly			2					2					1											tr		tr												
			flow banded LBT/WR			2					1					tr											tr		1												
1520			(Kurt's "planar			2					1					2											tr		tr												
			laminated Dozer")			2+	3				1					1											tr		tr												
1530			Silicification is			3					tr					1											1		tr												
			white			3					tr					1											tr		tr												
1540						3					tr					1											0		tr												
						2					2					1								as vnlets			2		tr												
1550						2					1					1											3		1												
						1					2					1											3		tr												
1560			← Py in X cut vnlets			1					2					tr											tr		1												
						2					1					tr											1		1												
1570						1					2					0											1		1												
						tr					2					1											tr		tr												
1580						1					2					tr											0		tr												
				H		1					2					0											2		1												
1590			1585 TD																																						
			Probably should not																																						
00			have stopped this hole																																						

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP056339

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-491 RECEIVED : 25 FEB 2000

No. SAMPLES : 318 REPORTED : 13 MAR 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.

03/13/2000 15:01 7753561413 AMERICAN ASSAY LABS PAGE 01
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AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP056339

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-491

REPORTED : 13 MAR 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-491 0000-0005	<5		<0.001		<0.5	<0.02
RS-491 0005-0010	<5		<0.001		<0.5	<0.02
RS-491 0010-0015	<5		<0.001		<0.5	<0.02
RS-491 0015-0020	<5		<0.001		<0.5	<0.02
RS-491 0020-0025	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0025-0030	<5		<0.001		<0.5	<0.02
RS-491 0030-0035	<5		<0.001		<0.5	<0.02
RS-491 0035-0040	<5		<0.001		<0.5	<0.02
RS-491 0040-0045	<5		<0.001		<0.5	<0.02
RS-491 0045-0050	<5		<0.001		<0.5	<0.02
RS-491 0050-0055	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0055-0060	<5		<0.001		<0.5	<0.02
RS-491 0060-0065	<5		<0.001		<0.5	<0.02
RS-491 0065-0070	<5		<0.001		<0.5	<0.02
RS-491 0070-0075	<5		<0.001		<0.5	<0.02
RS-491 0075-0080	<5		<0.001		<0.5	<0.02
RS-491 0080-0085	<5		<0.001		<0.5	<0.02
RS-491 0085-0090	<5		<0.001		<0.5	<0.02
RS-491 0090-0095	<5		<0.001		<0.5	<0.02
RS-491 0095-0100	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0100-0105	<5		<0.001		<0.5	<0.02
RS-491 0105-0110	<5		<0.001		<0.5	<0.02
RS-491 0110-0115	<5		<0.001		<0.5	<0.02
RS-491 0115-0120	<5		<0.001		<0.5	<0.02
RS-491 0120-0125	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP056339

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-491

REPORTED : 13 MAR 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-491 0125-0130	<5		<0.001		<0.5	<0.02
RS-491 0130-0135	<5		<0.001		<0.5	<0.02
RS-491 0135-0140	<5		<0.001		<0.5	<0.02
RS-491 0140-0145	17		<0.001		<0.5	<0.02
RS-491 0145-0150	<5		<0.001		<0.5	<0.02
RS-491 0150-0155	<5		<0.001		<0.5	<0.02
RS-491 0155-0160	<5		<0.001		<0.5	<0.02
RS-491 0160-0165	<5		<0.001		<0.5	<0.02
RS-491 0165-0170	<5		<0.001		<0.5	<0.02
RS-491 0170-0175	<5		<0.001		<0.5	<0.02
RS-491 0175-0180	<5		<0.001		<0.5	<0.02
RS-491 0180-0185	<5		<0.001		<0.5	<0.02
RS-491 0185-0190	<5		<0.001		<0.5	<0.02
RS-491 0190-0195	<5		<0.001		<0.5	<0.02
RS-491 0195-0200	<5		<0.001		<0.5	<0.02
RS-491 0200-0205	<5		<0.001		<0.5	<0.02
RS-491 0205-0210	<5		<0.001		<0.5	<0.02
RS-491 0210-0215	<5		<0.001		<0.5	<0.02
RS-491 0215-0220	8		<0.001		<0.5	<0.02
RS-491 0220-0225	7		<0.001		<0.5	<0.02
RS-491 0225-0230	<5		<0.001		<0.5	<0.02
RS-491 0230-0235	5		<0.001		<0.5	<0.02
RS-491 0235-0240	<5		<0.001		<0.5	<0.02
RS-491 0240-0245	5		<0.001		<0.5	<0.02
RS-491 0245-0250	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP056339

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-491

REPORTED : 13 MAR 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-491 0250-0255	<5		<0.001		<0.5	<0.02
RS-491 0255-0260	<5		<0.001		<0.5	<0.02
RS-491 0260-0265	<5		<0.001		<0.5	<0.02
RS-491 0265-0270	<5		<0.001		<0.5	<0.02
RS-491 0270-0275	<5		<0.001		<0.5	<0.02
RS-491 0275-0280	11		<0.001		<0.5	<0.02
RS-491 0280-0285	89		0.003		<0.5	<0.02
RS-491 0285-0290	43	44	0.001	0.001	<0.5	<0.02
RS-491 0290-0295	60		0.002		0.5	<0.02
RS-491 0295-0300	75		0.002		0.5	<0.02
RS-491 0300-0305	115		0.003		<0.5	<0.02
RS-491 0305-0310	112		0.003		<0.5	<0.02
RS-491 0310-0315	13		<0.001		<0.5	<0.02
RS-491 0315-0320	5		<0.001		<0.5	<0.02
RS-491 0320-0325	7		<0.001		<0.5	<0.02
RS-491 0325-0330	303	304	0.009	0.009	1.3	0.04
RS-491 0330-0335	198		0.006		0.6	<0.02
RS-491 0335-0340	63		0.002		<0.5	<0.02
RS-491 0340-0345	39		0.001		<0.5	<0.02
RS-491 0345-0350	44		0.001		<0.5	<0.02
RS-491 0350-0355	15		<0.001		<0.5	<0.02
RS-491 0355-0360	37		0.001		<0.5	<0.02
RS-491 0360-0365	57		0.002		<0.5	<0.02
RS-491 0365-0370	57		0.002		<0.5	<0.02
RS-491 0370-0375	20		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP056339

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-491

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-491 0375-0380	54		0.002		<0.5	<0.02
RS-491 0380-0385	57		0.002		<0.5	<0.02
RS-491 0385-0390	91		0.003		<0.5	<0.02
RS-491 0390-0395	218	230	0.006	0.007	<0.5	<0.02
RS-491 0395-0400	49	50	0.001	0.001	<0.5	<0.02
RS-491 0400-0405	50		0.001		<0.5	<0.02
RS-491 0405-0410	100		0.003		<0.5	<0.02
RS-491 0410-0415	134		0.004		<0.5	<0.02
RS-491 0415-0420	128		0.004		<0.5	<0.02
RS-491 0420-0425	182		0.005		<0.5	<0.02
RS-491 0425-0430	197	230	0.006	0.007	<0.5	<0.02
RS-491 0430-0435	92		0.003		<0.5	<0.02
RS-491 0435-0440	73		0.002		<0.5	<0.02
RS-491 0440-0445	56		0.002		<0.5	<0.02
RS-491 0445-0450	77		0.002		<0.5	<0.02
RS-491 0450-0455	52		0.002		<0.5	<0.02
RS-491 0455-0460	20		<0.001		<0.5	<0.02
RS-491 0460-0465	8		<0.001		<0.5	<0.02
RS-491 0465-0470	13		<0.001		<0.5	<0.02
RS-491 0470-0475	15		<0.001		<0.5	<0.02
RS-491 0475-0480	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0480-0485	<5		<0.001		<0.5	<0.02
RS-491 0485-0490	12		<0.001		<0.5	<0.02
RS-491 0490-0495	<5		<0.001		<0.5	<0.02
RS-491 0495-0500	<5		<0.001		<0.5	<0.02

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REFERENCE : RS-491

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-491 0500-0505	<5		<0.001		<0.5	<0.02
RS-491 0505-0510	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0510-0515	<5		<0.001		<0.5	<0.02
RS-491 0515-0520	11		<0.001		<0.5	<0.02
RS-491 0520-0525	<5		<0.001		<0.5	<0.02
RS-491 0525-0530	<5		<0.001		<0.5	<0.02
RS-491 0530-0535	<5		<0.001		<0.5	<0.02
RS-491 0535-0540	<5		<0.001		<0.5	<0.02
RS-491 0540-0545	<5		<0.001		<0.5	<0.02
RS-491 0545-0550	<5		<0.001		<0.5	<0.02
RS-491 0550-0555	<5		<0.001		<0.5	<0.02
RS-491 0555-0560	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0560-0565	<5		<0.001		<0.5	<0.02
RS-491 0565-0570	<5		<0.001		<0.5	<0.02
RS-491 0570-0575	<5		<0.001		<0.5	<0.02
RS-491 0575-0580	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0580-0585	<5		<0.001		<0.5	<0.02
RS-491 0585-0590	<5		<0.001		<0.5	<0.02
RS-491 0590-0595	<5		<0.001		<0.5	<0.02
RS-491 0595-0600	<5		<0.001		<0.5	<0.02
RS-491 0600-0605	<5		<0.001		<0.5	<0.02
RS-491 0605-0610	<5		<0.001		<0.5	<0.02
RS-491 0610-0615	<5		<0.001		<0.5	<0.02
RS-491 0615-0620	<5		<0.001		<0.5	<0.02
RS-491 0620-0625	8	9	<0.001	<0.001	<0.5	<0.02

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-491 0625-0630	<5		<0.001		<0.5	<0.02
RS-491 0630-0635	<5		<0.001		<0.5	<0.02
RS-491 0635-0640	<5		<0.001		<0.5	<0.02
RS-491 0640-0645	<5		<0.001		<0.5	<0.02
RS-491 0645-0650	<5		<0.001		<0.5	<0.02
RS-491 0650-0655	<5		<0.001		<0.5	<0.02
RS-491 0655-0660	<5		<0.001		<0.5	<0.02
RS-491 0660-0665	<5		<0.001		<0.5	<0.02
RS-491 0665-0670	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0670-0675	<5		<0.001		<0.5	<0.02
RS-491 0675-0680	<5		<0.001		<0.5	<0.02
RS-491 0680-0685	<5		<0.001		<0.5	<0.02
RS-491 0685-0690	<5		<0.001		<0.5	<0.02
RS-491 0690-0695	<5		<0.001		<0.5	<0.02
RS-491 0695-0700	<5		<0.001		<0.5	<0.02
RS-491 0700-0705	<5		<0.001		<0.5	<0.02
RS-491 0705-0710	<5		<0.001		<0.5	<0.02
RS-491 0710-0715	<5		<0.001		<0.5	<0.02
RS-491 0715-0720	<5		<0.001		<0.5	<0.02
RS-491 0720-0725	<5		<0.001		<0.5	<0.02
RS-491 0725-0730	<5		<0.001		<0.5	<0.02
RS-491 0730-0735	<5		<0.001		<0.5	<0.02
RS-491 0735-0740	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0740-0745	<5		<0.001		<0.5	<0.02
RS-491 0745-0750	<5		<0.001		<0.5	<0.02

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ
RS-491 0750-0755	<5		<0.001		<0.5	<0.02
RS-491 0755-0760	<5		<0.001		<0.5	<0.02
RS-491 0760-0765	<5		<0.001		<0.5	<0.02
RS-491 0765-0770	<5		<0.001		<0.5	<0.02
RS-491 0770-0775	<5		<0.001		<0.5	<0.02
RS-491 0775-0780	<5		<0.001		<0.5	<0.02
RS-491 0780-0785	<5		<0.001		<0.5	<0.02
RS-491 0785-0790	<5		<0.001		<0.5	<0.02
RS-491 0790-0795	<5		<0.001		<0.5	<0.02
RS-491 0795-0800	<5		<0.001		<0.5	<0.02
RS-491 0800-0805	<5		<0.001		<0.5	<0.02
RS-491 0805-0810	<5		<0.001		<0.5	<0.02
RS-491 0810-0815	15		<0.001		<0.5	<0.02
RS-491 0815-0820	31		<0.001		0.7	0.02
RS-491 0820-0825	109	116	0.003	0.003	2.3	0.07
RS-491 0825-0830	55		0.002		2.3	0.07
RS-491 0830-0835	46		0.001		1.6	0.05
RS-491 0835-0840	34		<0.001		1.6	0.05
RS-491 0840-0845	27		<0.001		2.7	0.08
RS-491 0845-0850	5		<0.001		<0.5	<0.02
RS-491 0850-0855	<5		<0.001		<0.5	<0.02
RS-491 0855-0860	<5		<0.001		<0.5	<0.02
RS-491 0860-0865	<5		<0.001		<0.5	<0.02
RS-491 0865-0870	<5		<0.001		<0.5	<0.02
RS-491 0870-0875	13		<0.001		0.9	0.03

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-491 0875-0880	55	66	0.002	0.002	1.4	0.04
RS-491 0880-0885	23		<0.001		0.9	0.03
RS-491 0885-0890	<5		<0.001		<0.5	<0.02
RS-491 0890-0895	43		0.001		1.3	0.04
RS-491 0895-0900	<5		<0.001		<0.5	<0.02
RS-491 0900-0905	<5		<0.001		<0.5	<0.02
RS-491 0905-0910	13		<0.001		<0.5	<0.02
RS-491 0910-0915	<5		<0.001		<0.5	<0.02
RS-491 0915-0920	<5		<0.001		<0.5	<0.02
RS-491 0920-0925	<5		<0.001		<0.5	<0.02
RS-491 0925-0930	<5		<0.001		<0.5	<0.02
RS-491 0930-0935	<5		<0.001		<0.5	<0.02
RS-491 0935-0940	<5		<0.001		<0.5	<0.02
RS-491 0940-0945	<5		<0.001		<0.5	<0.02
RS-491 0945-0950	<5		<0.001		<0.5	<0.02
RS-491 0950-0955	<5		<0.001		<0.5	<0.02
RS-491 0955-0960	<5		<0.001		<0.5	<0.02
RS-491 0960-0965	<5		<0.001		<0.5	<0.02
RS-491 0965-0970	<5		<0.001		<0.5	<0.02
RS-491 0970-0975	<5		<0.001		<0.5	<0.02
RS-491 0975-0980	<5		<0.001		<0.5	<0.02
RS-491 0980-0985	<5		<0.001		<0.5	<0.02
RS-491 0985-0990	<5		<0.001		<0.5	<0.02
RS-491 0990-0995	<5		<0.001		<0.5	<0.02
RS-491 0995-1000	<5		<0.001		<0.5	<0.02

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REFERENCE : RS-491

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-491 1000-1005	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 1005-1010	<5		<0.001		<0.5	<0.02
RS-491 1010-1015	<5		<0.001		<0.5	<0.02
RS-491 1015-1020	<5		<0.001		<0.5	<0.02
RS-491 1020-1025	<5		<0.001		<0.5	<0.02
RS-491 1025-1030	<5		<0.001		<0.5	<0.02
RS-491 1030-1035	<5		<0.001		<0.5	<0.02
RS-491 1035-1040	<5		<0.001		<0.5	<0.02
RS-491 1040-1045	<5		<0.001		<0.5	<0.02
RS-491 1045-1050	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 1050-1055	<5		<0.001		<0.5	<0.02
RS-491 1055-1060	<5		<0.001		<0.5	<0.02
RS-491 1060-1065	<5		<0.001		<0.5	<0.02
RS-491 1065-1070	<5		<0.001		<0.5	<0.02
RS-491 1070-1075	<5		<0.001		<0.5	<0.02
RS-491 1075-1080	<5		<0.001		<0.5	<0.02
RS-491 1080-1085	<5		<0.001		<0.5	<0.02
RS-491 1085-1090	<5		<0.001		<0.5	<0.02
RS-491 1090-1095	<5		<0.001		<0.5	<0.02
RS-491 1095-1100	<5		<0.001		<0.5	<0.02
RS-491 1100-1105	<5		<0.001		<0.5	<0.02
RS-491 1105-1110	<5		<0.001		1.3	0.04
RS-491 1110-1115	<5		<0.001		<0.5	<0.02
RS-491 1115-1120	<5		<0.001		<0.5	<0.02
RS-491 1120-1125	<5		<0.001		<0.5	<0.02

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-491 1125-1130	45		0.001		<0.5	<0.02
RS-491 1130-1135	45	40	0.001	0.001	<0.5	<0.02
RS-491 1135-1140	158		0.005		1.3	0.04
RS-491 1140-1145	327	370	0.010	0.011	1.9	0.06
RS-491 1145-1150	135		0.004		1.1	0.03
RS-491 1150-1155	173		0.005		2.0	0.06
RS-491 1155-1160	188		0.005		2.5	0.07
RS-491 1160-1165	69		0.002		1.6	0.05
RS-491 1165-1170	186		0.005		3.3	0.10
RS-491 1170-1175	268		0.008		5.5	0.16
RS-491 1175-1180	234		0.007		3.3	0.10
RS-491 1180-1185	341	354	0.010	0.010	1.1	0.03
RS-491 1185-1190	55		0.002		0.6	<0.02
RS-491 1190-1195	42		0.001		0.5	<0.02
RS-491 1195-1200	52		0.002		1.2	0.04
RS-491 1200-1205	66		0.002		3.0	0.09
RS-491 1205-1210	48		0.001		0.5	<0.02
RS-491 1210-1215	61		0.002		0.6	<0.02
RS-491 1215-1220	53		0.002		0.6	<0.02
RS-491 1220-1225	40		0.001		0.5	<0.02
RS-491 1225-1230	115		0.003		0.6	<0.02
RS-491 1230-1235	63		0.002		1.2	0.04
RS-491 1235-1240	88		0.003		0.7	0.02
RS-491 1240-1245	154		0.004		0.7	0.02
RS-491 1245-1250	63		0.002		1.0	0.03

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-491 1250-1255	60		0.002		0.7	0.02
RS-491 1255-1260	58		0.002		1.1	0.03
RS-491 1260-1265	56		0.002		<0.5	<0.02
RS-491 1265-1270	39		0.001		0.6	<0.02
RS-491 1270-1275	30		<0.001		0.5	<0.02
RS-491 1275-1280	64		0.002		2.1	0.06
RS-491 1280-1285	15		<0.001		0.9	0.03
RS-491 1285-1290	48		0.001		1.2	0.04
RS-491 1290-1295	12		<0.001		1.3	0.04
RS-491 1295-1300	45		0.001		0.9	0.03
RS-491 1300-1305	67		0.002		0.6	<0.02
RS-491 1305-1310	105	112	0.003	0.003	0.9	0.03
RS-491 1310-1315	33		<0.001		<0.5	<0.02
RS-491 1315-1320	6		<0.001		<0.5	<0.02
RS-491 1320-1325	5		<0.001		<0.5	<0.02
RS-491 1325-1330	66		0.002		<0.5	<0.02
RS-491 1330-1335	25		<0.001		<0.5	<0.02
RS-491 1335-1340	<5		<0.001		<0.5	<0.02
RS-491 1340-1345	<5		<0.001		<0.5	<0.02
RS-491 1345-1350	5		<0.001		<0.5	<0.02
RS-491 1350-1355	8		<0.001		<0.5	<0.02
RS-491 1355-1360	7		<0.001		<0.5	<0.02
RS-491 1360-1365	<5		<0.001		<0.5	<0.02
RS-491 1365-1370	6		<0.001		<0.5	<0.02
RS-491 1370-1375	7		<0.001		<0.5	<0.02

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-491 1375-1380	6		<0.001		<0.5	<0.02
RS-491 1380-1385	10		<0.001		1.4	0.04
RS-491 1385-1390	35		0.001		1.2	0.04
RS-491 1390-1395	86		0.003		2.4	0.07
RS-491 1395-1400	165		0.005		1.1	0.03
RS-491 1400-1405	67		0.002		1.3	0.04
RS-491 1405-1410	10		<0.001		<0.5	<0.02
RS-491 1410-1415	9		<0.001		<0.5	<0.02
RS-491 1415-1420	6		<0.001		<0.5	<0.02
RS-491 1420-1425	7		<0.001		<0.5	<0.02
RS-491 1425-1430	177		0.005		0.7	0.02
RS-491 1430-1435	39		0.001		0.9	0.03
RS-491 1435-1440	33		<0.001		0.9	0.03
RS-491 1440-1445	26		<0.001		1.0	0.03
RS-491 1445-1450	21		<0.001		1.1	0.03
RS-491 1450-1455	16		<0.001		1.2	0.04
RS-491 1455-1460	20		<0.001		0.9	0.03
RS-491 1460-1465	25		<0.001		0.9	0.03
RS-491 1465-1470	34		<0.001		1.4	0.04
RS-491 1470-1475	36		0.001		0.7	0.02
RS-491 1475-1480	31		<0.001		0.6	<0.02
RS-491 1480-1485	10		<0.001		0.7	0.02
RS-491 1485-1490	68		0.002		61.9	1.81
RS-491 1490-1495	18		<0.001		17.1	0.50
RS-491 1495-1500	30		<0.001		2.7	0.08

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-491 1500-1505	13		<0.001		1.4	0.04
RS-491 1505-1510	20		<0.001		0.7	0.02
RS-491 1510-1515	18	20	<0.001	<0.001	0.7	0.02
RS-491 1515-1520	12		<0.001		<0.5	<0.02
RS-491 1520-1525	8		<0.001		<0.5	<0.02
RS-491 1525-1530	35		0.001		1.2	0.04
RS-491 1530-1535	34		<0.001		1.0	0.03
RS-491 1535-1540	40		0.001		0.6	<0.02
RS-491 1540-1545	41		0.001		0.7	0.02
RS-491 1545-1550	30		<0.001		0.9	0.03
RS-491 1550-1555	20		<0.001		<0.5	<0.02
RS-491 1555-1560	67		0.002		0.5	<0.02
RS-491 1560-1565	12		<0.001		0.6	<0.02
RS-491 1565-1570	22	18	<0.001	<0.001	0.5	<0.02
RS-491 1570-1575	27		<0.001		<0.5	<0.02
RS-491 1575-1580	13		<0.001		<0.5	<0.02
RS-491 1580-1585	34		<0.001		0.7	0.02
89593	1860		0.054		ISF	ISF

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP056339

PO BOX 11550
RENO NV,USA
Ph.(775) 356-0606, Fax.(775) 356-1413

HECLA MINING COMPANY

COPIES TO : BRIAN MORRIS
: KURT ALLEN
:
:

CLIENT REFERENCE No: RS-491 RECEIVED : 25 FEB 2000

No. SAMPLES : 318 REPORTED : 13 MAR 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

PROVISIONAL REPORT SP056339

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-491

REPORTED : 13 MAR 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-491 0000-0005	<5		<0.001		<0.5	<0.02
RS-491 0005-0010	<5		<0.001		<0.5	<0.02
RS-491 0010-0015	<5		<0.001		<0.5	<0.02
RS-491 0015-0020	<5		<0.001		<0.5	<0.02
RS-491 0020-0025	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0025-0030	<5		<0.001		<0.5	<0.02
RS-491 0030-0035	<5		<0.001		<0.5	<0.02
RS-491 0035-0040	<5		<0.001		<0.5	<0.02
RS-491 0040-0045	<5		<0.001		<0.5	<0.02
RS-491 0045-0050	<5		<0.001		<0.5	<0.02
RS-491 0050-0055	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0055-0060	<5		<0.001		<0.5	<0.02
RS-491 0060-0065	<5		<0.001		<0.5	<0.02
RS-491 0065-0070	<5		<0.001		<0.5	<0.02
RS-491 0070-0075	<5		<0.001		<0.5	<0.02
RS-491 0075-0080	<5		<0.001		<0.5	<0.02
RS-491 0080-0085	<5		<0.001		<0.5	<0.02
RS-491 0085-0090	<5		<0.001		<0.5	<0.02
RS-491 0090-0095	<5		<0.001		<0.5	<0.02
RS-491 0095-0100	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0100-0105	<5		<0.001		<0.5	<0.02
RS-491 0105-0110	<5		<0.001		<0.5	<0.02
RS-491 0110-0115	<5		<0.001		<0.5	<0.02
RS-491 0115-0120	<5		<0.001		<0.5	<0.02
RS-491 0120-0125	<5		<0.001		<0.5	<0.02

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CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-491

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-491 0125-0130	<5		<0.001		<0.5	<0.02
RS-491 0130-0135	<5		<0.001		<0.5	<0.02
RS-491 0135-0140	<5		<0.001		<0.5	<0.02
RS-491 0140-0145	17		<0.001		<0.5	<0.02
RS-491 0145-0150	<5		<0.001		<0.5	<0.02
RS-491 0150-0155	<5		<0.001		<0.5	<0.02
RS-491 0155-0160	<5		<0.001		<0.5	<0.02
RS-491 0160-0165	<5		<0.001		<0.5	<0.02
RS-491 0165-0170	<5		<0.001		<0.5	<0.02
RS-491 0170-0175	<5		<0.001		<0.5	<0.02
RS-491 0175-0180	<5		<0.001		<0.5	<0.02
RS-491 0180-0185	<5		<0.001		<0.5	<0.02
RS-491 0185-0190	<5		<0.001		<0.5	<0.02
RS-491 0190-0195	<5		<0.001		<0.5	<0.02
RS-491 0195-0200	<5		<0.001		<0.5	<0.02
RS-491 0200-0205	<5		<0.001		<0.5	<0.02
RS-491 0205-0210	<5		<0.001		<0.5	<0.02
RS-491 0210-0215	<5		<0.001		<0.5	<0.02
RS-491 0215-0220	8		<0.001		<0.5	<0.02
RS-491 0220-0225	7		<0.001		<0.5	<0.02
RS-491 0225-0230	<5		<0.001		<0.5	<0.02
RS-491 0230-0235	5		<0.001		<0.5	<0.02
RS-491 0235-0240	<5		<0.001		<0.5	<0.02
RS-491 0240-0245	5		<0.001		<0.5	<0.02
RS-491 0245-0250	<5		<0.001		<0.5	<0.02

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-491 0250-0255	<5		<0.001		<0.5	<0.02
RS-491 0255-0260	<5		<0.001		<0.5	<0.02
RS-491 0260-0265	<5		<0.001		<0.5	<0.02
RS-491 0265-0270	<5		<0.001		<0.5	<0.02
RS-491 0270-0275	<5		<0.001		<0.5	<0.02
RS-491 0275-0280	11		<0.001		<0.5	<0.02
RS-491 0280-0285	89		0.003		<0.5	<0.02
RS-491 0285-0290	43	44	0.001	0.001	<0.5	<0.02
RS-491 0290-0295	60		0.002		0.5	<0.02
RS-491 0295-0300	75		0.002		0.5	<0.02
RS-491 0300-0305	115		0.003		<0.5	<0.02
RS-491 0305-0310	112		0.003		<0.5	<0.02
RS-491 0310-0315	13		<0.001		<0.5	<0.02
RS-491 0315-0320	5		<0.001		<0.5	<0.02
RS-491 0320-0325	7		<0.001		<0.5	<0.02
RS-491 0325-0330	303	304	0.009	0.009	1.3	0.04
RS-491 0330-0335	198		0.006		0.6	<0.02
RS-491 0335-0340	63		0.002		<0.5	<0.02
RS-491 0340-0345	39		0.001		<0.5	<0.02
RS-491 0345-0350	44		0.001		<0.5	<0.02
RS-491 0350-0355	15		<0.001		<0.5	<0.02
RS-491 0355-0360	37		0.001		<0.5	<0.02
RS-491 0360-0365	57		0.002		<0.5	<0.02
RS-491 0365-0370	57		0.002		<0.5	<0.02
RS-491 0370-0375	20		<0.001		<0.5	<0.02

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-491 0375-0380	54		0.002		<0.5	<0.02
RS-491 0380-0385	57		0.002		<0.5	<0.02
RS-491 0385-0390	91		0.003		<0.5	<0.02
RS-491 0390-0395	218	230	0.006	0.007	<0.5	<0.02
RS-491 0395-0400	49	50	0.001	0.001	<0.5	<0.02
RS-491 0400-0405	50		0.001		<0.5	<0.02
RS-491 0405-0410	100		0.003		<0.5	<0.02
RS-491 0410-0415	134		0.004		<0.5	<0.02
RS-491 0415-0420	128		0.004		<0.5	<0.02
RS-491 0420-0425	182		0.005		<0.5	<0.02
RS-491 0425-0430	197	230	0.006	0.007	<0.5	<0.02
RS-491 0430-0435	92		0.003		<0.5	<0.02
RS-491 0435-0440	73		0.002		<0.5	<0.02
RS-491 0440-0445	56		0.002		<0.5	<0.02
RS-491 0445-0450	77		0.002		<0.5	<0.02
RS-491 0450-0455	52		0.002		<0.5	<0.02
RS-491 0455-0460	20		<0.001		<0.5	<0.02
RS-491 0460-0465	8		<0.001		<0.5	<0.02
RS-491 0465-0470	13		<0.001		<0.5	<0.02
RS-491 0470-0475	15		<0.001		<0.5	<0.02
RS-491 0475-0480	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0480-0485	<5		<0.001		<0.5	<0.02
RS-491 0485-0490	12		<0.001		<0.5	<0.02
RS-491 0490-0495	<5		<0.001		<0.5	<0.02
RS-491 0495-0500	<5		<0.001		<0.5	<0.02

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REFERENCE : RS-491

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-491 0500-0505	<5		<0.001		<0.5	<0.02
RS-491 0505-0510	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0510-0515	<5		<0.001		<0.5	<0.02
RS-491 0515-0520	11		<0.001		<0.5	<0.02
RS-491 0520-0525	<5		<0.001		<0.5	<0.02
RS-491 0525-0530	<5		<0.001		<0.5	<0.02
RS-491 0530-0535	<5		<0.001		<0.5	<0.02
RS-491 0535-0540	<5		<0.001		<0.5	<0.02
RS-491 0540-0545	<5		<0.001		<0.5	<0.02
RS-491 0545-0550	<5		<0.001		<0.5	<0.02
RS-491 0550-0555	<5		<0.001		<0.5	<0.02
RS-491 0555-0560	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0560-0565	<5		<0.001		<0.5	<0.02
RS-491 0565-0570	<5		<0.001		<0.5	<0.02
RS-491 0570-0575	<5		<0.001		<0.5	<0.02
RS-491 0575-0580	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0580-0585	<5		<0.001		<0.5	<0.02
RS-491 0585-0590	<5		<0.001		<0.5	<0.02
RS-491 0590-0595	<5		<0.001		<0.5	<0.02
RS-491 0595-0600	<5		<0.001		<0.5	<0.02
RS-491 0600-0605	<5		<0.001		<0.5	<0.02
RS-491 0605-0610	<5		<0.001		<0.5	<0.02
RS-491 0610-0615	<5		<0.001		<0.5	<0.02
RS-491 0615-0620	<5		<0.001		<0.5	<0.02
RS-491 0620-0625	8	9	<0.001	<0.001	<0.5	<0.02

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REFERENCE : RS-491

REPORTED : 13 MAR 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-491 0625-0630	<5		<0.001		<0.5	<0.02
RS-491 0630-0635	<5		<0.001		<0.5	<0.02
RS-491 0635-0640	<5		<0.001		<0.5	<0.02
RS-491 0640-0645	<5		<0.001		<0.5	<0.02
RS-491 0645-0650	<5		<0.001		<0.5	<0.02
RS-491 0650-0655	<5		<0.001		<0.5	<0.02
RS-491 0655-0660	<5		<0.001		<0.5	<0.02
RS-491 0660-0665	<5		<0.001		<0.5	<0.02
RS-491 0665-0670	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0670-0675	<5		<0.001		<0.5	<0.02
RS-491 0675-0680	<5		<0.001		<0.5	<0.02
RS-491 0680-0685	<5		<0.001		<0.5	<0.02
RS-491 0685-0690	<5		<0.001		<0.5	<0.02
RS-491 0690-0695	<5		<0.001		<0.5	<0.02
RS-491 0695-0700	<5		<0.001		<0.5	<0.02
RS-491 0700-0705	<5		<0.001		<0.5	<0.02
RS-491 0705-0710	<5		<0.001		<0.5	<0.02
RS-491 0710-0715	<5		<0.001		<0.5	<0.02
RS-491 0715-0720	<5		<0.001		<0.5	<0.02
RS-491 0720-0725	<5		<0.001		<0.5	<0.02
RS-491 0725-0730	<5		<0.001		<0.5	<0.02
RS-491 0730-0735	<5		<0.001		<0.5	<0.02
RS-491 0735-0740	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0740-0745	<5		<0.001		<0.5	<0.02
RS-491 0745-0750	<5		<0.001		<0.5	<0.02

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-491 0750-0755	<5		<0.001		<0.5	<0.02
RS-491 0755-0760	<5		<0.001		<0.5	<0.02
RS-491 0760-0765	<5		<0.001		<0.5	<0.02
RS-491 0765-0770	<5		<0.001		<0.5	<0.02
RS-491 0770-0775	<5		<0.001		<0.5	<0.02
RS-491 0775-0780	<5		<0.001		<0.5	<0.02
RS-491 0780-0785	<5		<0.001		<0.5	<0.02
RS-491 0785-0790	<5		<0.001		<0.5	<0.02
RS-491 0790-0795	<5		<0.001		<0.5	<0.02
RS-491 0795-0800	<5		<0.001		<0.5	<0.02
RS-491 0800-0805	<5		<0.001		<0.5	<0.02
RS-491 0805-0810	<5		<0.001		<0.5	<0.02
RS-491 0810-0815	15		<0.001		<0.5	<0.02
RS-491 0815-0820	31		<0.001		0.7	0.02
RS-491 0820-0825	109	116	0.003	0.003	2.3	0.07
RS-491 0825-0830	55		0.002		2.3	0.07
RS-491 0830-0835	46		0.001		1.6	0.05
RS-491 0835-0840	34		<0.001		1.6	0.05
RS-491 0840-0845	27		<0.001		2.7	0.08
RS-491 0845-0850	5		<0.001		<0.5	<0.02
RS-491 0850-0855	<5		<0.001		<0.5	<0.02
RS-491 0855-0860	<5		<0.001		<0.5	<0.02
RS-491 0860-0865	<5		<0.001		<0.5	<0.02
RS-491 0865-0870	<5		<0.001		<0.5	<0.02
RS-491 0870-0875	13		<0.001		0.9	0.03

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-491 0875-0880	55	66	0.002	0.002	1.4	0.04
RS-491 0880-0885	23		<0.001		0.9	0.03
RS-491 0885-0890	<5		<0.001		<0.5	<0.02
RS-491 0890-0895	43		0.001		1.3	0.04
RS-491 0895-0900	<5		<0.001		<0.5	<0.02
RS-491 0900-0905	<5		<0.001		<0.5	<0.02
RS-491 0905-0910	13		<0.001		<0.5	<0.02
RS-491 0910-0915	<5		<0.001		<0.5	<0.02
RS-491 0915-0920	<5		<0.001		<0.5	<0.02
RS-491 0920-0925	<5		<0.001		<0.5	<0.02
RS-491 0925-0930	<5		<0.001		<0.5	<0.02
RS-491 0930-0935	<5		<0.001		<0.5	<0.02
RS-491 0935-0940	<5		<0.001		<0.5	<0.02
RS-491 0940-0945	<5		<0.001		<0.5	<0.02
RS-491 0945-0950	<5		<0.001		<0.5	<0.02
RS-491 0950-0955	<5		<0.001		<0.5	<0.02
RS-491 0955-0960	<5		<0.001		<0.5	<0.02
RS-491 0960-0965	<5		<0.001		<0.5	<0.02
RS-491 0965-0970	<5		<0.001		<0.5	<0.02
RS-491 0970-0975	<5		<0.001		<0.5	<0.02
RS-491 0975-0980	<5		<0.001		<0.5	<0.02
RS-491 0980-0985	<5		<0.001		<0.5	<0.02
RS-491 0985-0990	<5		<0.001		<0.5	<0.02
RS-491 0990-0995	<5		<0.001		<0.5	<0.02
RS-491 0995-1000	<5		<0.001		<0.5	<0.02

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SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-491 1000-1005	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 1005-1010	<5		<0.001		<0.5	<0.02
RS-491 1010-1015	<5		<0.001		<0.5	<0.02
RS-491 1015-1020	<5		<0.001		<0.5	<0.02
RS-491 1020-1025	<5		<0.001		<0.5	<0.02
RS-491 1025-1030	<5		<0.001		<0.5	<0.02
RS-491 1030-1035	<5		<0.001		<0.5	<0.02
RS-491 1035-1040	<5		<0.001		<0.5	<0.02
RS-491 1040-1045	<5		<0.001		<0.5	<0.02
RS-491 1045-1050	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 1050-1055	<5		<0.001		<0.5	<0.02
RS-491 1055-1060	<5		<0.001		<0.5	<0.02
RS-491 1060-1065	<5		<0.001		<0.5	<0.02
RS-491 1065-1070	<5		<0.001		<0.5	<0.02
RS-491 1070-1075	<5		<0.001		<0.5	<0.02
RS-491 1075-1080	<5		<0.001		<0.5	<0.02
RS-491 1080-1085	<5		<0.001		<0.5	<0.02
RS-491 1085-1090	<5		<0.001		<0.5	<0.02
RS-491 1090-1095	<5		<0.001		<0.5	<0.02
RS-491 1095-1100	<5		<0.001		<0.5	<0.02
RS-491 1100-1105	<5		<0.001		<0.5	<0.02
RS-491 1105-1110	<5		<0.001		1.3	0.04
RS-491 1110-1115	<5		<0.001		<0.5	<0.02
RS-491 1115-1120	<5		<0.001		<0.5	<0.02
RS-491 1120-1125	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP056339

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-491

REPORTED : 13 MAR 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-491 1125-1130	45		0.001		<0.5	<0.02
RS-491 1130-1135	45	40	0.001	0.001	<0.5	<0.02
RS-491 1135-1140	158		0.005		1.3	0.04
RS-491 1140-1145	327	370	0.010	0.011	1.9	0.06
RS-491 1145-1150	135		0.004		1.1	0.03
RS-491 1150-1155	173		0.005		2.0	0.06
RS-491 1155-1160	188		0.005		2.5	0.07
RS-491 1160-1165	69		0.002		1.6	0.05
RS-491 1165-1170	186		0.005		3.3	0.10
RS-491 1170-1175	268		0.008		5.5	0.16
RS-491 1175-1180	234		0.007		3.3	0.10
RS-491 1180-1185	341	354	0.010	0.010	1.1	0.03
RS-491 1185-1190	55		0.002		0.6	<0.02
RS-491 1190-1195	42		0.001		0.5	<0.02
RS-491 1195-1200	52		0.002		1.2	0.04
RS-491 1200-1205	66		0.002		3.0	0.09
RS-491 1205-1210	48		0.001		0.5	<0.02
RS-491 1210-1215	61		0.002		0.6	<0.02
RS-491 1215-1220	53		0.002		0.6	<0.02
RS-491 1220-1225	40		0.001		0.5	<0.02
RS-491 1225-1230	115		0.003		0.6	<0.02
RS-491 1230-1235	63		0.002		1.2	0.04
RS-491 1235-1240	88		0.003		0.7	0.02
RS-491 1240-1245	154		0.004		0.7	0.02
RS-491 1245-1250	63		0.002		1.0	0.03

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP056339

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-491

REPORTED : 13 MAR 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-491 1250-1255	60		0.002		0.7	0.02
RS-491 1255-1260	58		0.002		1.1	0.03
RS-491 1260-1265	56		0.002		<0.5	<0.02
RS-491 1265-1270	39		0.001		0.6	<0.02
RS-491 1270-1275	30		<0.001		0.5	<0.02
RS-491 1275-1280	64		0.002		2.1	0.06
RS-491 1280-1285	15		<0.001		0.9	0.03
RS-491 1285-1290	48		0.001		1.2	0.04
RS-491 1290-1295	12		<0.001		1.3	0.04
RS-491 1295-1300	45		0.001		0.9	0.03
RS-491 1300-1305	67		0.002		0.6	<0.02
RS-491 1305-1310	105	112	0.003	0.003	0.9	0.03
RS-491 1310-1315	33		<0.001		<0.5	<0.02
RS-491 1315-1320	6		<0.001		<0.5	<0.02
RS-491 1320-1325	5		<0.001		<0.5	<0.02
RS-491 1325-1330	66		0.002		<0.5	<0.02
RS-491 1330-1335	25		<0.001		<0.5	<0.02
RS-491 1335-1340	<5		<0.001		<0.5	<0.02
RS-491 1340-1345	<5		<0.001		<0.5	<0.02
RS-491 1345-1350	5		<0.001		<0.5	<0.02
RS-491 1350-1355	8		<0.001		<0.5	<0.02
RS-491 1355-1360	7		<0.001		<0.5	<0.02
RS-491 1360-1365	<5		<0.001		<0.5	<0.02
RS-491 1365-1370	6		<0.001		<0.5	<0.02
RS-491 1370-1375	7		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP056339

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-491

REPORTED : 13 MAR 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-491 1375-1380	6		<0.001		<0.5	<0.02
RS-491 1380-1385	10		<0.001		1.4	0.04
RS-491 1385-1390	35		0.001		1.2	0.04
RS-491 1390-1395	86		0.003		2.4	0.07
RS-491 1395-1400	165		0.005		1.1	0.03
RS-491 1400-1405	67		0.002		1.3	0.04
RS-491 1405-1410	10		<0.001		<0.5	<0.02
RS-491 1410-1415	9		<0.001		<0.5	<0.02
RS-491 1415-1420	6		<0.001		<0.5	<0.02
RS-491 1420-1425	7		<0.001		<0.5	<0.02
RS-491 1425-1430	177		0.005		0.7	0.02
RS-491 1430-1435	39		0.001		0.9	0.03
RS-491 1435-1440	33		<0.001		0.9	0.03
RS-491 1440-1445	26		<0.001		1.0	0.03
RS-491 1445-1450	21		<0.001		1.1	0.03
RS-491 1450-1455	16		<0.001		1.2	0.04
RS-491 1455-1460	20		<0.001		0.9	0.03
RS-491 1460-1465	25		<0.001		0.9	0.03
RS-491 1465-1470	34		<0.001		1.4	0.04
RS-491 1470-1475	38		0.001		0.7	0.02
RS-491 1475-1480	31		<0.001		0.6	<0.02
RS-491 1480-1485	10		<0.001		0.7	0.02
RS-491 1485-1490	68		0.002		61.9	1.81
RS-491 1490-1495	18		<0.001		17.1	0.50
RS-491 1495-1500	30		<0.001		2.7	0.08

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP056339

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PROJECT : ROSEBUD
REFERENCE : RS-491

REPORTED : 13 MAR 2000

SAMPLES	Au	Au(R)	Au(OZ)	Au(RZ)	Ag	Ag(OZ)
RS-491 1500-1505	13		<0.001		1.4	0.04
RS-491 1505-1510	20		<0.001		0.7	0.02
RS-491 1510-1515	18	20	<0.001	<0.001	0.7	0.02
RS-491 1515-1520	12		<0.001		<0.5	<0.02
RS-491 1520-1525	8		<0.001		<0.5	<0.02
RS-491 1525-1530	35		0.001		1.2	0.04
RS-491 1530-1535	34		<0.001		1.0	0.03
RS-491 1535-1540	40		0.001		0.6	<0.02
RS-491 1540-1545	41		0.001		0.7	0.02
RS-491 1545-1550	30		<0.001		0.9	0.03
RS-491 1550-1555	20		<0.001		<0.5	<0.02
RS-491 1555-1560	67		0.002		0.5	<0.02
RS-491 1560-1565	12		<0.001		0.6	<0.02
RS-491 1565-1570	22	18	<0.001	<0.001	0.5	<0.02
RS-491 1570-1575	27		<0.001		<0.5	<0.02
RS-491 1575-1580	13		<0.001		<0.5	<0.02
RS-491 1580-1585	34		<0.001		0.7	0.02
89593	1860		0.054		ISF	ISF

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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(702) 356-1413

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Tucson, AZ 85706
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(520) 294-6352

Elko Office
2320 Last Chance Rd.
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: Wildrose East Purchase Order Number:

Date Submitted: 22 Feb 2000 Number of Samples: 317

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

SAMPLE IDENTIFICATION	TYPE	ELEMENTS REQUIRED
Drill Hole RS-491	RC	Au & Ag - Use Rosebud exploration
0 to 1585		Protocol sample prep &
		assays
Note: Please make up 20 ft. composits of		
the pulps for ICP + Se trace elements		
1 (one) Pulp - Rosebud		
Production standard		
at 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 0056339-IN
INVOICE DATE: 04/07/00

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-491	KURT ALLEN	NET 30 - DUE IN U.S. DOLLARS

QUANTITY	DESCRIPTION	PRICE	AMOUNT
318	SAMPLES RECEIVED	.00	.00
1	NO PREPARATION REQUIRED	.00	.00
317	DRY/JAW CRUSH ENTIRE SAMPLE	2.30	729.10
317	"JONES" RIFFLE SPLIT	2.40	760.80
317	RING/PUCK MILL	2.00	634.00
318	Au (1 A.T. FIRE ASSAY)	8.00	2,544.00
317	HYDROCHLORIC/NITRIC DIGESTION	2.00	634.00
317	Ag ANALYSES	1.00	317.00
317	COMPOSITE CHARGE	1.25	396.25
79	MULTI-ELEMENT ICP PACKAGE	13.75	1,086.25

86-2510-477
KAA

NET INVOICE:	7,101.40
LESS DISCOUNT:	2,485.49
FREIGHT:	.00
INVOICE TOTAL:	4,615.91

xAMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056339

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-491 RECEIVED : 25 FEB 2000

No. SAMPLES : 318 REPORTED : 7 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 SP056339

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-491

REPORTED : 7 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-491 0000-0005	<5		<0.001		<0.5	<0.02
RS-491 0005-0010	<5		<0.001		<0.5	<0.02
RS-491 0010-0015	<5		<0.001		<0.5	<0.02
RS-491 0015-0020	<5		<0.001		<0.5	<0.02
RS-491 0020-0025	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0025-0030	<5		<0.001		<0.5	<0.02
RS-491 0030-0035	<5		<0.001		<0.5	<0.02
RS-491 0035-0040	<5		<0.001		<0.5	<0.02
RS-491 0040-0045	<5		<0.001		<0.5	<0.02
RS-491 0045-0050	<5		<0.001		<0.5	<0.02
RS-491 0050-0055	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0055-0060	<5		<0.001		<0.5	<0.02
RS-491 0060-0065	<5		<0.001		<0.5	<0.02
RS-491 0065-0070	<5		<0.001		<0.5	<0.02
RS-491 0070-0075	<5		<0.001		<0.5	<0.02
RS-491 0075-0080	<5		<0.001		<0.5	<0.02
RS-491 0080-0085	<5		<0.001		<0.5	<0.02
RS-491 0085-0090	<5		<0.001		<0.5	<0.02
RS-491 0090-0095	<5		<0.001		<0.5	<0.02
RS-491 0095-0100	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0100-0105	<5		<0.001		<0.5	<0.02
RS-491 0105-0110	<5		<0.001		<0.5	<0.02
RS-491 0110-0115	<5		<0.001		<0.5	<0.02
RS-491 0115-0120	<5		<0.001		<0.5	<0.02
RS-491 0120-0125	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056339

American Assay Laboratories

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PROJECT : ROSEBUD
REFERENCE : RS-491

REPORTED : 7 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-491 0125-0130	<5		<0.001		<0.5	<0.02
RS-491 0130-0135	<5		<0.001		<0.5	<0.02
RS-491 0135-0140	<5		<0.001		<0.5	<0.02
RS-491 0140-0145	17		<0.001		<0.5	<0.02
RS-491 0145-0150	<5		<0.001		<0.5	<0.02
RS-491 0150-0155	<5		<0.001		<0.5	<0.02
RS-491 0155-0160	<5		<0.001		<0.5	<0.02
RS-491 0160-0165	<5		<0.001		<0.5	<0.02
RS-491 0165-0170	<5		<0.001		<0.5	<0.02
RS-491 0170-0175	<5		<0.001		<0.5	<0.02
RS-491 0175-0180	<5		<0.001		<0.5	<0.02
RS-491 0180-0185	<5		<0.001		<0.5	<0.02
RS-491 0185-0190	<5		<0.001		<0.5	<0.02
RS-491 0190-0195	<5		<0.001		<0.5	<0.02
RS-491 0195-0200	<5		<0.001		<0.5	<0.02
RS-491 0200-0205	<5		<0.001		<0.5	<0.02
RS-491 0205-0210	<5		<0.001		<0.5	<0.02
RS-491 0210-0215	<5		<0.001		<0.5	<0.02
RS-491 0215-0220	8		<0.001		<0.5	<0.02
RS-491 0220-0225	7		<0.001		<0.5	<0.02
RS-491 0225-0230	<5		<0.001		<0.5	<0.02
RS-491 0230-0235	5		<0.001		<0.5	<0.02
RS-491 0235-0240	<5		<0.001		<0.5	<0.02
RS-491 0240-0245	5		<0.001		<0.5	<0.02
RS-491 0245-0250	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056339

American Assay Laboratories

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REFERENCE : RS-491

REPORTED : 7 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-491 0250-0255	<5		<0.001		<0.5	<0.02
RS-491 0255-0260	<5		<0.001		<0.5	<0.02
RS-491 0260-0265	<5		<0.001		<0.5	<0.02
RS-491 0265-0270	<5		<0.001		<0.5	<0.02
RS-491 0270-0275	<5		<0.001		<0.5	<0.02
RS-491 0275-0280	11		<0.001		<0.5	<0.02
RS-491 0280-0285	89		0.003		<0.5	<0.02
RS-491 0285-0290	43	44	0.001	0.001	<0.5	<0.02
RS-491 0290-0295	60		0.002		0.5	<0.02
RS-491 0295-0300	75		0.002		0.5	<0.02
RS-491 0300-0305	115		0.003		<0.5	<0.02
RS-491 0305-0310	112		0.003		<0.5	<0.02
RS-491 0310-0315	13		<0.001		<0.5	<0.02
RS-491 0315-0320	5		<0.001		<0.5	<0.02
RS-491 0320-0325	7		<0.001		<0.5	<0.02
RS-491 0325-0330	303	304	0.009	0.009	1.3	0.04
RS-491 0330-0335	198		0.006		0.6	<0.02
RS-491 0335-0340	63		0.002		<0.5	<0.02
RS-491 0340-0345	39		0.001		<0.5	<0.02
RS-491 0345-0350	44		0.001		<0.5	<0.02
RS-491 0350-0355	15		<0.001		<0.5	<0.02
RS-491 0355-0360	37		0.001		<0.5	<0.02
RS-491 0360-0365	57		0.002		<0.5	<0.02
RS-491 0365-0370	57		0.002		<0.5	<0.02
RS-491 0370-0375	20		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056339

American Assay Laboratories

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REFERENCE : RS-491

REPORTED : 7 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-491 0375-0380	54		0.002		<0.5	<0.02
RS-491 0380-0385	57		0.002		<0.5	<0.02
RS-491 0385-0390	91		0.003		<0.5	<0.02
RS-491 0390-0395	218	230	0.006	0.007	<0.5	<0.02
RS-491 0395-0400	49	50	0.001	0.001	<0.5	<0.02
RS-491 0400-0405	50		0.001		<0.5	<0.02
RS-491 0405-0410	100		0.003		<0.5	<0.02
RS-491 0410-0415	134		0.004		<0.5	<0.02
RS-491 0415-0420	128		0.004		<0.5	<0.02
RS-491 0420-0425	182		0.005		<0.5	<0.02
RS-491 0425-0430	197	230	0.006	0.007	<0.5	<0.02
RS-491 0430-0435	92		0.003		<0.5	<0.02
RS-491 0435-0440	73		0.002		<0.5	<0.02
RS-491 0440-0445	56		0.002		<0.5	<0.02
RS-491 0445-0450	77		0.002		<0.5	<0.02
RS-491 0450-0455	52		0.002		<0.5	<0.02
RS-491 0455-0460	20		<0.001		<0.5	<0.02
RS-491 0460-0465	8		<0.001		<0.5	<0.02
RS-491 0465-0470	13		<0.001		<0.5	<0.02
RS-491 0470-0475	15		<0.001		<0.5	<0.02
RS-491 0475-0480	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0480-0485	<5		<0.001		<0.5	<0.02
RS-491 0485-0490	12		<0.001		<0.5	<0.02
RS-491 0490-0495	<5		<0.001		<0.5	<0.02
RS-491 0495-0500	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056339

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-491

REPORTED : 7 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-491 0500-0505	<5		<0.001		<0.5	<0.02
RS-491 0505-0510	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0510-0515	<5		<0.001		<0.5	<0.02
RS-491 0515-0520	11		<0.001		<0.5	<0.02
RS-491 0520-0525	<5		<0.001		<0.5	<0.02
RS-491 0525-0530	<5		<0.001		<0.5	<0.02
RS-491 0530-0535	<5		<0.001		<0.5	<0.02
RS-491 0535-0540	<5		<0.001		<0.5	<0.02
RS-491 0540-0545	<5		<0.001		<0.5	<0.02
RS-491 0545-0550	<5		<0.001		<0.5	<0.02
RS-491 0550-0555	<5		<0.001		<0.5	<0.02
RS-491 0555-0560	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0560-0565	<5		<0.001		<0.5	<0.02
RS-491 0565-0570	<5		<0.001		<0.5	<0.02
RS-491 0570-0575	<5		<0.001		<0.5	<0.02
RS-491 0575-0580	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0580-0585	<5		<0.001		<0.5	<0.02
RS-491 0585-0590	<5		<0.001		<0.5	<0.02
RS-491 0590-0595	<5		<0.001		<0.5	<0.02
RS-491 0595-0600	<5		<0.001		<0.5	<0.02
RS-491 0600-0605	<5		<0.001		<0.5	<0.02
RS-491 0605-0610	<5		<0.001		<0.5	<0.02
RS-491 0610-0615	<5		<0.001		<0.5	<0.02
RS-491 0615-0620	<5		<0.001		<0.5	<0.02
RS-491 0620-0625	8	9	<0.001	<0.001	<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056339

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-491

REPORTED : 7 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-491 0625-0630	<5		<0.001		<0.5	<0.02
RS-491 0630-0635	<5		<0.001		<0.5	<0.02
RS-491 0635-0640	<5		<0.001		<0.5	<0.02
RS-491 0640-0645	<5		<0.001		<0.5	<0.02
RS-491 0645-0650	<5		<0.001		<0.5	<0.02
RS-491 0650-0655	<5		<0.001		<0.5	<0.02
RS-491 0655-0660	<5		<0.001		<0.5	<0.02
RS-491 0660-0665	<5		<0.001		<0.5	<0.02
RS-491 0665-0670	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0670-0675	<5		<0.001		<0.5	<0.02
RS-491 0675-0680	<5		<0.001		<0.5	<0.02
RS-491 0680-0685	<5		<0.001		<0.5	<0.02
RS-491 0685-0690	<5		<0.001		<0.5	<0.02
RS-491 0690-0695	<5		<0.001		<0.5	<0.02
RS-491 0695-0700	<5		<0.001		<0.5	<0.02
RS-491 0700-0705	<5		<0.001		<0.5	<0.02
RS-491 0705-0710	<5		<0.001		<0.5	<0.02
RS-491 0710-0715	<5		<0.001		<0.5	<0.02
RS-491 0715-0720	<5		<0.001		<0.5	<0.02
RS-491 0720-0725	<5		<0.001		<0.5	<0.02
RS-491 0725-0730	<5		<0.001		<0.5	<0.02
RS-491 0730-0735	<5		<0.001		<0.5	<0.02
RS-491 0735-0740	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0740-0745	<5		<0.001		<0.5	<0.02
RS-491 0745-0750	<5		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056339

American Assay Laboratories

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REFERENCE : RS-491

REPORTED : 7 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-491 0750-0755	<5		<0.001		<0.5	<0.02
RS-491 0755-0760	<5		<0.001		<0.5	<0.02
RS-491 0760-0765	<5		<0.001		<0.5	<0.02
RS-491 0765-0770	<5		<0.001		<0.5	<0.02
RS-491 0770-0775	<5		<0.001		<0.5	<0.02
RS-491 0775-0780	<5		<0.001		<0.5	<0.02
RS-491 0780-0785	<5		<0.001		<0.5	<0.02
RS-491 0785-0790	<5		<0.001		<0.5	<0.02
RS-491 0790-0795	<5		<0.001		<0.5	<0.02
RS-491 0795-0800	<5		<0.001		<0.5	<0.02
RS-491 0800-0805	<5		<0.001		<0.5	<0.02
RS-491 0805-0810	<5		<0.001		<0.5	<0.02
RS-491 0810-0815	15		<0.001		<0.5	<0.02
RS-491 0815-0820	31		<0.001		0.7	0.02
RS-491 0820-0825	109	116	0.003	0.003	2.3	0.07
RS-491 0825-0830	55		0.002		2.3	0.07
RS-491 0830-0835	46		0.001		1.6	0.05
RS-491 0835-0840	34		<0.001		1.6	0.05
RS-491 0840-0845	27		<0.001		2.7	0.08
RS-491 0845-0850	5		<0.001		<0.5	<0.02
RS-491 0850-0855	<5		<0.001		<0.5	<0.02
RS-491 0855-0860	<5		<0.001		<0.5	<0.02
RS-491 0860-0865	<5		<0.001		<0.5	<0.02
RS-491 0865-0870	<5		<0.001		<0.5	<0.02
RS-491 0870-0875	13		<0.001		0.9	0.03

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REFERENCE : RS-491

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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-491 0875-0880	55	66	0.002	0.002	1.4	0.04
RS-491 0880-0885	23		<0.001		0.9	0.03
RS-491 0885-0890	<5		<0.001		<0.5	<0.02
RS-491 0890-0895	43		0.001		1.3	0.04
RS-491 0895-0900	<5		<0.001		<0.5	<0.02
RS-491 0900-0905	<5		<0.001		<0.5	<0.02
RS-491 0905-0910	13		<0.001		<0.5	<0.02
RS-491 0910-0915	<5		<0.001		<0.5	<0.02
RS-491 0915-0920	<5		<0.001		<0.5	<0.02
RS-491 0920-0925	<5		<0.001		<0.5	<0.02
RS-491 0925-0930	<5		<0.001		<0.5	<0.02
RS-491 0930-0935	<5		<0.001		<0.5	<0.02
RS-491 0935-0940	<5		<0.001		<0.5	<0.02
RS-491 0940-0945	<5		<0.001		<0.5	<0.02
RS-491 0945-0950	<5		<0.001		<0.5	<0.02
RS-491 0950-0955	<5		<0.001		<0.5	<0.02
RS-491 0955-0960	<5		<0.001		<0.5	<0.02
RS-491 0960-0965	<5		<0.001		<0.5	<0.02
RS-491 0965-0970	<5		<0.001		<0.5	<0.02
RS-491 0970-0975	<5		<0.001		<0.5	<0.02
RS-491 0975-0980	<5		<0.001		<0.5	<0.02
RS-491 0980-0985	<5		<0.001		<0.5	<0.02
RS-491 0985-0990	<5		<0.001		<0.5	<0.02
RS-491 0990-0995	<5		<0.001		<0.5	<0.02
RS-491 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-491 1000-1005	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 1005-1010	<5		<0.001		<0.5	<0.02
RS-491 1010-1015	<5		<0.001		<0.5	<0.02
RS-491 1015-1020	<5		<0.001		<0.5	<0.02
RS-491 1020-1025	<5		<0.001		<0.5	<0.02
RS-491 1025-1030	<5		<0.001		<0.5	<0.02
RS-491 1030-1035	<5		<0.001		<0.5	<0.02
RS-491 1035-1040	<5		<0.001		<0.5	<0.02
RS-491 1040-1045	<5		<0.001		<0.5	<0.02
RS-491 1045-1050	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 1050-1055	<5		<0.001		<0.5	<0.02
RS-491 1055-1060	<5		<0.001		<0.5	<0.02
RS-491 1060-1065	<5		<0.001		<0.5	<0.02
RS-491 1065-1070	<5		<0.001		<0.5	<0.02
RS-491 1070-1075	<5		<0.001		<0.5	<0.02
RS-491 1075-1080	<5		<0.001		<0.5	<0.02
RS-491 1080-1085	<5		<0.001		<0.5	<0.02
RS-491 1085-1090	<5		<0.001		<0.5	<0.02
RS-491 1090-1095	<5		<0.001		<0.5	<0.02
RS-491 1095-1100	<5		<0.001		<0.5	<0.02
RS-491 1100-1105	<5		<0.001		<0.5	<0.02
RS-491 1105-1110	<5		<0.001		1.3	0.04
RS-491 1110-1115	<5		<0.001		<0.5	<0.02
RS-491 1115-1120	<5		<0.001		<0.5	<0.02
RS-491 1120-1125	<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-491 1125-1130	45		0.001		<0.5	<0.02
RS-491 1130-1135	45	40	0.001	0.001	<0.5	<0.02
RS-491 1135-1140	158		0.005		1.3	0.04
RS-491 1140-1145	327	370	0.010	0.011	1.9	0.06
RS-491 1145-1150	135		0.004		1.1	0.03
RS-491 1150-1155	173		0.005		2.0	0.06
RS-491 1155-1160	188		0.005		2.5	0.07
RS-491 1160-1165	69		0.002		1.6	0.05
RS-491 1165-1170	186		0.005		3.3	0.10
RS-491 1170-1175	268		0.008		5.5	0.16
RS-491 1175-1180	234		0.007		3.3	0.10
RS-491 1180-1185	341	354	0.010	0.010	1.1	0.03
RS-491 1185-1190	55		0.002		0.6	<0.02
RS-491 1190-1195	42		0.001		0.5	<0.02
RS-491 1195-1200	52		0.002		1.2	0.04
RS-491 1200-1205	66		0.002		3.0	0.09
RS-491 1205-1210	48		0.001		0.5	<0.02
RS-491 1210-1215	61		0.002		0.6	<0.02
RS-491 1215-1220	53		0.002		0.6	<0.02
RS-491 1220-1225	40		0.001		0.5	<0.02
RS-491 1225-1230	115		0.003		0.6	<0.02
RS-491 1230-1235	63		0.002		1.2	0.04
RS-491 1235-1240	88		0.003		0.7	0.02
RS-491 1240-1245	154		0.004		0.7	0.02
RS-491 1245-1250	63		0.002		1.0	0.03

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REFERENCE : RS-491

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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-491 1250-1255	60		0.002		0.7	0.02
RS-491 1255-1260	58		0.002		1.1	0.03
RS-491 1260-1265	56		0.002		<0.5	<0.02
RS-491 1265-1270	39		0.001		0.6	<0.02
RS-491 1270-1275	30		<0.001		0.5	<0.02
RS-491 1275-1280	64		0.002		2.1	0.06
RS-491 1280-1285	15		<0.001		0.9	0.03
RS-491 1285-1290	48		0.001		1.2	0.04
RS-491 1290-1295	12		<0.001		1.3	0.04
RS-491 1295-1300	45		0.001		0.9	0.03
RS-491 1300-1305	67		0.002		0.6	<0.02
RS-491 1305-1310	105	112	0.003	0.003	0.9	0.03
RS-491 1310-1315	33		<0.001		<0.5	<0.02
RS-491 1315-1320	6		<0.001		<0.5	<0.02
RS-491 1320-1325	5		<0.001		<0.5	<0.02
RS-491 1325-1330	66		0.002		<0.5	<0.02
RS-491 1330-1335	25		<0.001		<0.5	<0.02
RS-491 1335-1340	<5		<0.001		<0.5	<0.02
RS-491 1340-1345	<5		<0.001		<0.5	<0.02
RS-491 1345-1350	5		<0.001		<0.5	<0.02
RS-491 1350-1355	8		<0.001		<0.5	<0.02
RS-491 1355-1360	7		<0.001		<0.5	<0.02
RS-491 1360-1365	<5		<0.001		<0.5	<0.02
RS-491 1365-1370	6		<0.001		<0.5	<0.02
RS-491 1370-1375	7		<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-491 1375-1380	6		<0.001		<0.5	<0.02
RS-491 1380-1385	10		<0.001		1.4	0.04
RS-491 1385-1390	35		0.001		1.2	0.04
RS-491 1390-1395	86		0.003		2.4	0.07
RS-491 1395-1400	165		0.005		1.1	0.03
RS-491 1400-1405	67		0.002		1.3	0.04
RS-491 1405-1410	10		<0.001		<0.5	<0.02
RS-491 1410-1415	9		<0.001		<0.5	<0.02
RS-491 1415-1420	6		<0.001		<0.5	<0.02
RS-491 1420-1425	7		<0.001		<0.5	<0.02
RS-491 1425-1430	177		0.005		0.7	0.02
RS-491 1430-1435	39		0.001		0.9	0.03
RS-491 1435-1440	33		<0.001		0.9	0.03
RS-491 1440-1445	26		<0.001		1.0	0.03
RS-491 1445-1450	21		<0.001		1.1	0.03
RS-491 1450-1455	16		<0.001		1.2	0.04
RS-491 1455-1460	20		<0.001		0.9	0.03
RS-491 1460-1465	25		<0.001		0.9	0.03
RS-491 1465-1470	34		<0.001		1.4	0.04
RS-491 1470-1475	36		0.001		0.7	0.02
RS-491 1475-1480	31		<0.001		0.6	<0.02
RS-491 1480-1485	10		<0.001		0.7	0.02
RS-491 1485-1490	68		0.002		61.9	1.81
RS-491 1490-1495	18		<0.001		17.1	0.50
RS-491 1495-1500	30		<0.001		2.7	0.08

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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-491 1500-1505	13		<0.001		1.4	0.04
RS-491 1505-1510	20		<0.001		0.7	0.02
RS-491 1510-1515	18	20	<0.001	<0.001	0.7	0.02
RS-491 1515-1520	12		<0.001		<0.5	<0.02
RS-491 1520-1525	8		<0.001		<0.5	<0.02
RS-491 1525-1530	35		0.001		1.2	0.04
RS-491 1530-1535	34		<0.001		1.0	0.03
RS-491 1535-1540	40		0.001		0.6	<0.02
RS-491 1540-1545	41		0.001		0.7	0.02
RS-491 1545-1550	30		<0.001		0.9	0.03
RS-491 1550-1555	20		<0.001		<0.5	<0.02
RS-491 1555-1560	67		0.002		0.5	<0.02
RS-491 1560-1565	12		<0.001		0.6	<0.02
RS-491 1565-1570	22	18	<0.001	<0.001	0.5	<0.02
RS-491 1570-1575	27		<0.001		<0.5	<0.02
RS-491 1575-1580	13		<0.001		<0.5	<0.02
RS-491 1580-1585	34		<0.001		0.7	0.02
89593	1860		0.054		ISF	ISF

xAMERICAN ASSAY LABORATORIES
ANALYSIS REPORT SP056339

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HECLA MINING COMPANY

COPIES TO : BRIAN MORRIS

: KURT ALLEN

:

:

CLIENT REFERENCE No: RS-491 RECEIVED : 25 FEB 2000

No. SAMPLES : 318 REPORTED : 7 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 SP056339

American Assay Laboratories

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PROJECT : ROSEBUD
REFERENCE : RS-491

REPORTED : 7 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-491 0000-0005	<5		<0.001		<0.5	<0.02
RS-491 0005-0010	<5		<0.001		<0.5	<0.02
RS-491 0010-0015	<5		<0.001		<0.5	<0.02
RS-491 0015-0020	<5		<0.001		<0.5	<0.02
RS-491 0020-0025	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0025-0030	<5		<0.001		<0.5	<0.02
RS-491 0030-0035	<5		<0.001		<0.5	<0.02
RS-491 0035-0040	<5		<0.001		<0.5	<0.02
RS-491 0040-0045	<5		<0.001		<0.5	<0.02
RS-491 0045-0050	<5		<0.001		<0.5	<0.02
RS-491 0050-0055	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0055-0060	<5		<0.001		<0.5	<0.02
RS-491 0060-0065	<5		<0.001		<0.5	<0.02
RS-491 0065-0070	<5		<0.001		<0.5	<0.02
RS-491 0070-0075	<5		<0.001		<0.5	<0.02
RS-491 0075-0080	<5		<0.001		<0.5	<0.02
RS-491 0080-0085	<5		<0.001		<0.5	<0.02
RS-491 0085-0090	<5		<0.001		<0.5	<0.02
RS-491 0090-0095	<5		<0.001		<0.5	<0.02
RS-491 0095-0100	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0100-0105	<5		<0.001		<0.5	<0.02
RS-491 0105-0110	<5		<0.001		<0.5	<0.02
RS-491 0110-0115	<5		<0.001		<0.5	<0.02
RS-491 0115-0120	<5		<0.001		<0.5	<0.02
RS-491 0120-0125	<5		<0.001		<0.5	<0.02

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American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-491

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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-491 0125-0130	<5		<0.001		<0.5	<0.02
RS-491 0130-0135	<5		<0.001		<0.5	<0.02
RS-491 0135-0140	<5		<0.001		<0.5	<0.02
RS-491 0140-0145	17		<0.001		<0.5	<0.02
RS-491 0145-0150	<5		<0.001		<0.5	<0.02
RS-491 0150-0155	<5		<0.001		<0.5	<0.02
RS-491 0155-0160	<5		<0.001		<0.5	<0.02
RS-491 0160-0165	<5		<0.001		<0.5	<0.02
RS-491 0165-0170	<5		<0.001		<0.5	<0.02
RS-491 0170-0175	<5		<0.001		<0.5	<0.02
RS-491 0175-0180	<5		<0.001		<0.5	<0.02
RS-491 0180-0185	<5		<0.001		<0.5	<0.02
RS-491 0185-0190	<5		<0.001		<0.5	<0.02
RS-491 0190-0195	<5		<0.001		<0.5	<0.02
RS-491 0195-0200	<5		<0.001		<0.5	<0.02
RS-491 0200-0205	<5		<0.001		<0.5	<0.02
RS-491 0205-0210	<5		<0.001		<0.5	<0.02
RS-491 0210-0215	<5		<0.001		<0.5	<0.02
RS-491 0215-0220	8		<0.001		<0.5	<0.02
RS-491 0220-0225	7		<0.001		<0.5	<0.02
RS-491 0225-0230	<5		<0.001		<0.5	<0.02
RS-491 0230-0235	5		<0.001		<0.5	<0.02
RS-491 0235-0240	<5		<0.001		<0.5	<0.02
RS-491 0240-0245	5		<0.001		<0.5	<0.02
RS-491 0245-0250	<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-491 0250-0255	<5		<0.001		<0.5	<0.02
RS-491 0255-0260	<5		<0.001		<0.5	<0.02
RS-491 0260-0265	<5		<0.001		<0.5	<0.02
RS-491 0265-0270	<5		<0.001		<0.5	<0.02
RS-491 0270-0275	<5		<0.001		<0.5	<0.02
RS-491 0275-0280	11		<0.001		<0.5	<0.02
RS-491 0280-0285	89		0.003		<0.5	<0.02
RS-491 0285-0290	43	44	0.001	0.001	<0.5	<0.02
RS-491 0290-0295	60		0.002		0.5	<0.02
RS-491 0295-0300	75		0.002		0.5	<0.02
RS-491 0300-0305	115		0.003		<0.5	<0.02
RS-491 0305-0310	112		0.003		<0.5	<0.02
RS-491 0310-0315	13		<0.001		<0.5	<0.02
RS-491 0315-0320	5		<0.001		<0.5	<0.02
RS-491 0320-0325	7		<0.001		<0.5	<0.02
RS-491 0325-0330	303	304	0.009	0.009	1.3	0.04
RS-491 0330-0335	198		0.006		0.6	<0.02
RS-491 0335-0340	63		0.002		<0.5	<0.02
RS-491 0340-0345	39		0.001		<0.5	<0.02
RS-491 0345-0350	44		0.001		<0.5	<0.02
RS-491 0350-0355	15		<0.001		<0.5	<0.02
RS-491 0355-0360	37		0.001		<0.5	<0.02
RS-491 0360-0365	57		0.002		<0.5	<0.02
RS-491 0365-0370	57		0.002		<0.5	<0.02
RS-491 0370-0375	20		<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-491 0375-0380	54		0.002		<0.5	<0.02
RS-491 0380-0385	57		0.002		<0.5	<0.02
RS-491 0385-0390	91		0.003		<0.5	<0.02
RS-491 0390-0395	218	230	0.006	0.007	<0.5	<0.02
RS-491 0395-0400	49	50	0.001	0.001	<0.5	<0.02
RS-491 0400-0405	50		0.001		<0.5	<0.02
RS-491 0405-0410	100		0.003		<0.5	<0.02
RS-491 0410-0415	134		0.004		<0.5	<0.02
RS-491 0415-0420	128		0.004		<0.5	<0.02
RS-491 0420-0425	182		0.005		<0.5	<0.02
RS-491 0425-0430	197	230	0.006	0.007	<0.5	<0.02
RS-491 0430-0435	92		0.003		<0.5	<0.02
RS-491 0435-0440	73		0.002		<0.5	<0.02
RS-491 0440-0445	56		0.002		<0.5	<0.02
RS-491 0445-0450	77		0.002		<0.5	<0.02
RS-491 0450-0455	52		0.002		<0.5	<0.02
RS-491 0455-0460	20		<0.001		<0.5	<0.02
RS-491 0460-0465	8		<0.001		<0.5	<0.02
RS-491 0465-0470	13		<0.001		<0.5	<0.02
RS-491 0470-0475	15		<0.001		<0.5	<0.02
RS-491 0475-0480	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0480-0485	<5		<0.001		<0.5	<0.02
RS-491 0485-0490	12		<0.001		<0.5	<0.02
RS-491 0490-0495	<5		<0.001		<0.5	<0.02
RS-491 0495-0500	<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-491 0500-0505	<5		<0.001		<0.5	<0.02
RS-491 0505-0510	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0510-0515	<5		<0.001		<0.5	<0.02
RS-491 0515-0520	11		<0.001		<0.5	<0.02
RS-491 0520-0525	<5		<0.001		<0.5	<0.02
RS-491 0525-0530	<5		<0.001		<0.5	<0.02
RS-491 0530-0535	<5		<0.001		<0.5	<0.02
RS-491 0535-0540	<5		<0.001		<0.5	<0.02
RS-491 0540-0545	<5		<0.001		<0.5	<0.02
RS-491 0545-0550	<5		<0.001		<0.5	<0.02
RS-491 0550-0555	<5		<0.001		<0.5	<0.02
RS-491 0555-0560	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0560-0565	<5		<0.001		<0.5	<0.02
RS-491 0565-0570	<5		<0.001		<0.5	<0.02
RS-491 0570-0575	<5		<0.001		<0.5	<0.02
RS-491 0575-0580	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0580-0585	<5		<0.001		<0.5	<0.02
RS-491 0585-0590	<5		<0.001		<0.5	<0.02
RS-491 0590-0595	<5		<0.001		<0.5	<0.02
RS-491 0595-0600	<5		<0.001		<0.5	<0.02
RS-491 0600-0605	<5		<0.001		<0.5	<0.02
RS-491 0605-0610	<5		<0.001		<0.5	<0.02
RS-491 0610-0615	<5		<0.001		<0.5	<0.02
RS-491 0615-0620	<5		<0.001		<0.5	<0.02
RS-491 0620-0625	8	9	<0.001	<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-491 0625-0630	<5		<0.001		<0.5	<0.02
RS-491 0630-0635	<5		<0.001		<0.5	<0.02
RS-491 0635-0640	<5		<0.001		<0.5	<0.02
RS-491 0640-0645	<5		<0.001		<0.5	<0.02
RS-491 0645-0650	<5		<0.001		<0.5	<0.02
RS-491 0650-0655	<5		<0.001		<0.5	<0.02
RS-491 0655-0660	<5		<0.001		<0.5	<0.02
RS-491 0660-0665	<5		<0.001		<0.5	<0.02
RS-491 0665-0670	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0670-0675	<5		<0.001		<0.5	<0.02
RS-491 0675-0680	<5		<0.001		<0.5	<0.02
RS-491 0680-0685	<5		<0.001		<0.5	<0.02
RS-491 0685-0690	<5		<0.001		<0.5	<0.02
RS-491 0690-0695	<5		<0.001		<0.5	<0.02
RS-491 0695-0700	<5		<0.001		<0.5	<0.02
RS-491 0700-0705	<5		<0.001		<0.5	<0.02
RS-491 0705-0710	<5		<0.001		<0.5	<0.02
RS-491 0710-0715	<5		<0.001		<0.5	<0.02
RS-491 0715-0720	<5		<0.001		<0.5	<0.02
RS-491 0720-0725	<5		<0.001		<0.5	<0.02
RS-491 0725-0730	<5		<0.001		<0.5	<0.02
RS-491 0730-0735	<5		<0.001		<0.5	<0.02
RS-491 0735-0740	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 0740-0745	<5		<0.001		<0.5	<0.02
RS-491 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-491 0750-0755	<5		<0.001		<0.5	<0.02
RS-491 0755-0760	<5		<0.001		<0.5	<0.02
RS-491 0760-0765	<5		<0.001		<0.5	<0.02
RS-491 0765-0770	<5		<0.001		<0.5	<0.02
RS-491 0770-0775	<5		<0.001		<0.5	<0.02
RS-491 0775-0780	<5		<0.001		<0.5	<0.02
RS-491 0780-0785	<5		<0.001		<0.5	<0.02
RS-491 0785-0790	<5		<0.001		<0.5	<0.02
RS-491 0790-0795	<5		<0.001		<0.5	<0.02
RS-491 0795-0800	<5		<0.001		<0.5	<0.02
RS-491 0800-0805	<5		<0.001		<0.5	<0.02
RS-491 0805-0810	<5		<0.001		<0.5	<0.02
RS-491 0810-0815	15		<0.001		<0.5	<0.02
RS-491 0815-0820	31		<0.001		0.7	0.02
RS-491 0820-0825	109	116	0.003	0.003	2.3	0.07
RS-491 0825-0830	55		0.002		2.3	0.07
RS-491 0830-0835	46		0.001		1.6	0.05
RS-491 0835-0840	34		<0.001		1.6	0.05
RS-491 0840-0845	27		<0.001		2.7	0.08
RS-491 0845-0850	5		<0.001		<0.5	<0.02
RS-491 0850-0855	<5		<0.001		<0.5	<0.02
RS-491 0855-0860	<5		<0.001		<0.5	<0.02
RS-491 0860-0865	<5		<0.001		<0.5	<0.02
RS-491 0865-0870	<5		<0.001		<0.5	<0.02
RS-491 0870-0875	13		<0.001		0.9	0.03

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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-491 0875-0880	55	66	0.002	0.002	1.4	0.04
RS-491 0880-0885	23		<0.001		0.9	0.03
RS-491 0885-0890	<5		<0.001		<0.5	<0.02
RS-491 0890-0895	43		0.001		1.3	0.04
RS-491 0895-0900	<5		<0.001		<0.5	<0.02
RS-491 0900-0905	<5		<0.001		<0.5	<0.02
RS-491 0905-0910	13		<0.001		<0.5	<0.02
RS-491 0910-0915	<5		<0.001		<0.5	<0.02
RS-491 0915-0920	<5		<0.001		<0.5	<0.02
RS-491 0920-0925	<5		<0.001		<0.5	<0.02
RS-491 0925-0930	<5		<0.001		<0.5	<0.02
RS-491 0930-0935	<5		<0.001		<0.5	<0.02
RS-491 0935-0940	<5		<0.001		<0.5	<0.02
RS-491 0940-0945	<5		<0.001		<0.5	<0.02
RS-491 0945-0950	<5		<0.001		<0.5	<0.02
RS-491 0950-0955	<5		<0.001		<0.5	<0.02
RS-491 0955-0960	<5		<0.001		<0.5	<0.02
RS-491 0960-0965	<5		<0.001		<0.5	<0.02
RS-491 0965-0970	<5		<0.001		<0.5	<0.02
RS-491 0970-0975	<5		<0.001		<0.5	<0.02
RS-491 0975-0980	<5		<0.001		<0.5	<0.02
RS-491 0980-0985	<5		<0.001		<0.5	<0.02
RS-491 0985-0990	<5		<0.001		<0.5	<0.02
RS-491 0990-0995	<5		<0.001		<0.5	<0.02
RS-491 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-491 1000-1005	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 1005-1010	<5		<0.001		<0.5	<0.02
RS-491 1010-1015	<5		<0.001		<0.5	<0.02
RS-491 1015-1020	<5		<0.001		<0.5	<0.02
RS-491 1020-1025	<5		<0.001		<0.5	<0.02
RS-491 1025-1030	<5		<0.001		<0.5	<0.02
RS-491 1030-1035	<5		<0.001		<0.5	<0.02
RS-491 1035-1040	<5		<0.001		<0.5	<0.02
RS-491 1040-1045	<5		<0.001		<0.5	<0.02
RS-491 1045-1050	<5	<5	<0.001	<0.001	<0.5	<0.02
RS-491 1050-1055	<5		<0.001		<0.5	<0.02
RS-491 1055-1060	<5		<0.001		<0.5	<0.02
RS-491 1060-1065	<5		<0.001		<0.5	<0.02
RS-491 1065-1070	<5		<0.001		<0.5	<0.02
RS-491 1070-1075	<5		<0.001		<0.5	<0.02
RS-491 1075-1080	<5		<0.001		<0.5	<0.02
RS-491 1080-1085	<5		<0.001		<0.5	<0.02
RS-491 1085-1090	<5		<0.001		<0.5	<0.02
RS-491 1090-1095	<5		<0.001		<0.5	<0.02
RS-491 1095-1100	<5		<0.001		<0.5	<0.02
RS-491 1100-1105	<5		<0.001		<0.5	<0.02
RS-491 1105-1110	<5		<0.001		1.3	0.04
RS-491 1110-1115	<5		<0.001		<0.5	<0.02
RS-491 1115-1120	<5		<0.001		<0.5	<0.02
RS-491 1120-1125	<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-491 1125-1130	45		0.001		<0.5	<0.02
RS-491 1130-1135	45	40	0.001	0.001	<0.5	<0.02
RS-491 1135-1140	158		0.005		1.3	0.04
RS-491 1140-1145	327	370	0.010	0.011	1.9	0.06
RS-491 1145-1150	135		0.004		1.1	0.03
RS-491 1150-1155	173		0.005		2.0	0.06
RS-491 1155-1160	188		0.005		2.5	0.07
RS-491 1160-1165	69		0.002		1.6	0.05
RS-491 1165-1170	186		0.005		3.3	0.10
RS-491 1170-1175	268		0.008		5.5	0.16
RS-491 1175-1180	234		0.007		3.3	0.10
RS-491 1180-1185	341	354	0.010	0.010	1.1	0.03
RS-491 1185-1190	55		0.002		0.6	<0.02
RS-491 1190-1195	42		0.001		0.5	<0.02
RS-491 1195-1200	52		0.002		1.2	0.04
RS-491 1200-1205	66		0.002		3.0	0.09
RS-491 1205-1210	48		0.001		0.5	<0.02
RS-491 1210-1215	61		0.002		0.6	<0.02
RS-491 1215-1220	53		0.002		0.6	<0.02
RS-491 1220-1225	40		0.001		0.5	<0.02
RS-491 1225-1230	115		0.003		0.6	<0.02
RS-491 1230-1235	63		0.002		1.2	0.04
RS-491 1235-1240	88		0.003		0.7	0.02
RS-491 1240-1245	154		0.004		0.7	0.02
RS-491 1245-1250	63		0.002		1.0	0.03

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REFERENCE : RS-491

REPORTED : 7 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-491 1250-1255	60		0.002		0.7	0.02
RS-491 1255-1260	58		0.002		1.1	0.03
RS-491 1260-1265	56		0.002		<0.5	<0.02
RS-491 1265-1270	39		0.001		0.6	<0.02
RS-491 1270-1275	30		<0.001		0.5	<0.02
RS-491 1275-1280	64		0.002		2.1	0.06
RS-491 1280-1285	15		<0.001		0.9	0.03
RS-491 1285-1290	48		0.001		1.2	0.04
RS-491 1290-1295	12		<0.001		1.3	0.04
RS-491 1295-1300	45		0.001		0.9	0.03
RS-491 1300-1305	67		0.002		0.6	<0.02
RS-491 1305-1310	105	112	0.003	0.003	0.9	0.03
RS-491 1310-1315	33		<0.001		<0.5	<0.02
RS-491 1315-1320	6		<0.001		<0.5	<0.02
RS-491 1320-1325	5		<0.001		<0.5	<0.02
RS-491 1325-1330	66		0.002		<0.5	<0.02
RS-491 1330-1335	25		<0.001		<0.5	<0.02
RS-491 1335-1340	<5		<0.001		<0.5	<0.02
RS-491 1340-1345	<5		<0.001		<0.5	<0.02
RS-491 1345-1350	5		<0.001		<0.5	<0.02
RS-491 1350-1355	8		<0.001		<0.5	<0.02
RS-491 1355-1360	7		<0.001		<0.5	<0.02
RS-491 1360-1365	<5		<0.001		<0.5	<0.02
RS-491 1365-1370	6		<0.001		<0.5	<0.02
RS-491 1370-1375	7		<0.001		<0.5	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056339

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-491

REPORTED : 7 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-491 1375-1380	6		<0.001		<0.5	<0.02
RS-491 1380-1385	10		<0.001		1.4	0.04
RS-491 1385-1390	35		0.001		1.2	0.04
RS-491 1390-1395	86		0.003		2.4	0.07
RS-491 1395-1400	165		0.005		1.1	0.03
RS-491 1400-1405	67		0.002		1.3	0.04
RS-491 1405-1410	10		<0.001		<0.5	<0.02
RS-491 1410-1415	9		<0.001		<0.5	<0.02
RS-491 1415-1420	6		<0.001		<0.5	<0.02
RS-491 1420-1425	7		<0.001		<0.5	<0.02
RS-491 1425-1430	177		0.005		0.7	0.02
RS-491 1430-1435	39		0.001		0.9	0.03
RS-491 1435-1440	33		<0.001		0.9	0.03
RS-491 1440-1445	26		<0.001		1.0	0.03
RS-491 1445-1450	21		<0.001		1.1	0.03
RS-491 1450-1455	16		<0.001		1.2	0.04
RS-491 1455-1460	20		<0.001		0.9	0.03
RS-491 1460-1465	25		<0.001		0.9	0.03
RS-491 1465-1470	34		<0.001		1.4	0.04
RS-491 1470-1475	36		0.001		0.7	0.02
RS-491 1475-1480	31		<0.001		0.6	<0.02
RS-491 1480-1485	10		<0.001		0.7	0.02
RS-491 1485-1490	68		0.002		61.9	1.81
RS-491 1490-1495	18		<0.001		17.1	0.50
RS-491 1495-1500	30		<0.001		2.7	0.08

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP056339

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD
REFERENCE : RS-491

REPORTED : 7 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-491 1500-1505	13		<0.001		1.4	0.04
RS-491 1505-1510	20		<0.001		0.7	0.02
RS-491 1510-1515	18	20	<0.001	<0.001	0.7	0.02
RS-491 1515-1520	12		<0.001		<0.5	<0.02
RS-491 1520-1525	8		<0.001		<0.5	<0.02
RS-491 1525-1530	35		0.001		1.2	0.04
RS-491 1530-1535	34		<0.001		1.0	0.03
RS-491 1535-1540	40		0.001		0.6	<0.02
RS-491 1540-1545	41		0.001		0.7	0.02
RS-491 1545-1550	30		<0.001		0.9	0.03
RS-491 1550-1555	20		<0.001		<0.5	<0.02
RS-491 1555-1560	67		0.002		0.5	<0.02
RS-491 1560-1565	12		<0.001		0.6	<0.02
RS-491 1565-1570	22	18	<0.001	<0.001	0.5	<0.02
RS-491 1570-1575	27		<0.001		<0.5	<0.02
RS-491 1575-1580	13		<0.001		<0.5	<0.02
RS-491 1580-1585	34		<0.001		0.7	0.02
89593	1860		0.054		ISF	ISF

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.
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PHONE: (775) 356-0606
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CLIENT: *HECLA MINING CO.*
CLIENT REF: KURT ALLEN
AAL REF: SP56339
METHOD: AAL03-0

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	Se ppm	Sr ppm	Te ppm	Th ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
RS-491 0000-0020	87	0.67	5.2	0.8	< 1	100.8	0.05	0.17	0.25	1.4	10.9	24.63	4.37	3.6	161	0.2	19.5	0.09	1414	5.51	0.084	7.1	0.018	9.07	< .01	4.53	0.4	29	< .02	12.1	0.024	0.12	1.6	17	1.3	113.8
RS-491 0020-0040	59	0.47	4.3	1.4	< 1	71.8	0.06	0.13	0.19	0.9	8	20.05	3.09	3.2	94	0.14	18	0.07	697	4.3	0.06	5	0.022	31.79	< .01	2.34	0.5	16.9	< .02	12.5	0.019	0.07	1.5	8	1.2	93.6
RS-491 0040-0060	62	0.48	6.8	2	< 1	120.9	0.06	0.19	0.34	1	7.8	21.58	3.43	3.9	40	0.15	19.3	0.08	888	4.81	0.074	6	0.022	22.77	< .01	1.73	0.5	21.6	< .02	13.8	0.02	0.09	3.3	9	1.5	81.3
RS-491 0060-0080	51	0.45	6	1.2	< 1	108.8	0.02	0.16	0.25	0.7	5.3	13.32	2.52	3.1	24	0.11	22.2	0.06	987	3.51	0.057	3.3	0.021	15.52	0.01	1.15	0.4	21.1	< .02	12.9	0.013	0.1	2.6	8	1.6	55.8
RS-491 0080-0100	74	0.38	6	1	< 1	106.5	0.02	0.13	0.2	0.9	5.6	15.22	2.74	3.6	56	0.11	23.5	0.05	1253	3.95	0.049	3.7	0.023	9.54	< .01	2.26	0.4	26	< .02	14	0.011	0.07	1.6	7	1.7	59.8
RS-491 0100-0120	68	0.43	4.3	0.8	< 1	102.6	0.04	0.12	0.15	1	6.9	19.47	2.57	2.9	43	0.13	22.3	0.07	959	4.23	0.06	4.7	0.025	8.09	< .01	1.25	0.3	20.5	< .02	14.8	0.016	0.1	2.1	9	1.4	53
RS-491 0120-0140	78	0.57	1.9	0.8	< 1	59.1	0.04	0.16	0.39	1	10.2	22.63	2.43	3.1	14	0.14	19	0.1	446	4.03	0.057	7.1	0.022	6.86	< .01	0.71	0.4	17.7	< .02	13.3	0.01	0.08	3.3	6	0.7	67.7
RS-491 0140-0160	200	0.57	8	12.1	< 1	73.2	0.05	0.15	0.41	1	5	258.51	2.76	3.5	257	0.13	21.3	0.08	1016	3.08	0.039	5.3	0.018	23.49	< .01	4.93	1.8	33.6	< .02	12.6	0.011	0.15	2.9	5	1.3	236.8
RS-491 0160-0180	57	0.48	8.3	1.2	< 1	136.5	0.05	0.14	0.22	1	7.5	20.12	3.02	4.2	64	0.13	21.7	0.09	1319	4.3	0.042	5.1	0.026	8.86	< .01	1.02	0.3	19.6	< .02	13.6	0.018	0.1	1.7	6	2.1	79.6
RS-491 0180-0200	62	0.52	7.9	0.8	< 1	79.7	0.05	0.13	0.19	0.8	6.4	18.77	2.94	3.9	162	0.13	21.7	0.1	1034	3.77	0.039	4.2	0.02	8.25	< .01	6.32	0.3	19.2	< .02	13.5	0.016	0.07	1.6	5	2.1	73.2
RS-491 0200-0220	62	0.59	6.1	1	< 1	66.9	0.08	0.16	0.18	0.7	6.9	22.73	3.87	4.9	65	0.15	20.1	0.1	1004	4.1	0.044	4.2	0.025	7.71	< .01	1.22	0.3	17.9	< .02	13.2	0.021	0.08	2.1	11	2.1	87.1
RS-491 0220-0240	59	0.6	5	1.2	< 1	103	0.05	0.15	0.34	0.9	7.1	30.57	3.01	3.9	42	0.16	21	0.11	879	4.94	0.058	5	0.021	10.25	< .01	1.58	0.4	13	< .02	13.2	0.019	0.14	1.8	7	2	76.4
RS-491 0240-0260	52	0.74	3.2	1.6	< 1	94.1	0.07	0.15	0.22	1.2	4.3	15.09	2.47	4.2	32	0.15	23.9	0.1	766	3.17	0.038	2.5	0.013	10.65	< .01	3.7	0.4	15.3	< .02	13.7	0.014	0.45	2	7	2	100.2
RS-491 0260-0280	48	0.7	5.1	3.2	< 1	85.4	0.05	0.12	0.11	0.9	3.8	13.99	2.16	4.2	258	0.15	24.6	0.08	665	2.82	0.029	2.1	0.013	14.69	< .01	5.49	0.7	20.9	< .02	13.5	0.011	0.47	1.8	4	1.1	94.4
RS-491 0280-0300	273	0.49	48.3	58	< 1	48.8	0.05	0.04	0.06	0.6	6.7	27.33	2.88	3.4	2193	0.12	19.7	0.01	88	4.8	0.019	4.4	0.019	17.26	0.46	21.47	8.1	18.4	< .02	11.8	< .001	0.17	2.1	4	1.1	26.6
RS-491 0300-0320	171	0.42	22.3	49.6	< 1	23.9	0.05	0.05	0.23	1.6	6.6	24.21	3.15	2.5	878	0.11	21.5	0.01	81	5.54	0.014	4.6	0.006	14.98	2.41	17.73	6	6	< .02	11.2	< .001	0.89	3.7	3	0.7	65
RS-491 0320-0340	412	0.47	34.2	142.3	< 1	117.5	0.02	0.07	0.41	1.1	7.5	36.89	3.64	3.2	1502	0.11	21.5	0.02	605	6.67	0.016	8	0.015	12.59	1.52	19.7	8.7	8.4	< .02	10.2	< .001	0.87	7.5	5	0.9	128.8
RS-491 0340-0360	102	0.38	15.4	33	< 1	45.9	0.03	0.1	0.26	0.8	5.2	19.33	2.38	2.6	998	0.11	22.7	0.02	357	3.12	0.013	3.2	0.018	15.38	0.83	7.83	5.6	7.8	< .02	10.9	< .001	0.4	5.8	6	0.9	137.4
RS-491 0360-0380	82	0.31	11.8	40.2	< 1	42.3	< .02	0.07	0.08	0.5	4.8	27.11	2.01	1.7	785	0.09	16.9	0.01	89	2.24	0.01	2.3	0.017	11.85	0.92	9.61	4.8	9.8	< .02	7.6	< .001	0.25	3.5	3	0.6	85.8
RS-491 0380-0400	79	0.45	21.2	106.4	< 1	75.2	< .02	0.11	0.14	1.3	3.3	21.7	1.96	3	2452	0.12	25.5	0.02	1014	2.73	0.012	1.6	0.032	14.89	0.27	18.62	5.4	20.1	< .02	12.2	< .001	1.58	4.2	3	1.1	247.7
RS-491 0400-0420	77	0.43	19.4	106.5	< 1	44.2	< .02	0.11	0.22	0.9	3.4	25.04	2.28	2.5	3234	0.11	21.1	0.02	482	2.28	0.011	1.8	0.035	14.05	0.48	12.69	13.4	12.5	< .02	9.3	< .001	0.64	9	2	0.7	172.5
RS-491 0420-0440	142	0.41	23.6	122.8	< 1	62.8	< .02	0.12	0.25	2	6.1	22.96	3.04	2.5	2353	0.11	19.2	0.02	893	3.71	0.013	4.5	0.036	44.73	1.04	12.37	9.4	14	< .02	8.7	< .001	1.19	5.5	4	1	247.1
RS-491 0440-0460	179	0.25	25.5	38.4	< 1	21	< .02	0.07	0.13	2	6.5	18.63	3.12	1.2	1633	0.07	14.5	0.01	259	3.65	0.008	4.8	0.028	20.74	1.5	11.75	8.7	6.4	< .02	5.7	< .001	0.4	2.6	4	1.1	94.6
RS-491 0460-0480	84	0.51	4.8	7.5	< 1	45.3	0.03	0.12	0.24	0.7	3.3	7.55	2.48	3.5	465	0.14	22.7	0.05	298	2.25	0.014	1.7	0.026	19.34	0.9	5.11	3	16.6	< .02	10	0.014	0.16	1.5	11	1.7	123
RS-491 0480-0500	80	0.88	3	2	< 1	227.7	0.07	0.38	0.19	0.8	4.2	6.98	2.53	4.8	139	0.16	28.2	0.1	875	2.02	0.031	1.7	0.032	15.81	0.07	3.26	0.5	60.7	< .02	11	0.01	0.15	1	9	1.2	93.3
RS-491 0500-0520	48	1.24	1.9	2.5	< 1	150	0.17	1.22	0.13	1.9	3.7	9.56	3.11	5	83	0.18	29	0.13	768	1.8	0.034	1.5	0.05	27.66	0.04	1.46	0.3	85.4	< .02	9.7	0.014	0.13	2.1	14	0.7	49.6
RS-491 0520-0540	47	1.95	1.5	0.9	< 1	206.7	0.13	2.03	0.3	1.7	3.9	9.22	2.8	5.9	47	0.15	26	0.22	1046	1.67	0.041	1.7	0.044	21.91	0.01	0.36	0.2	154.7	0.03	7.1	0.004	0.08	2.7	10	0.2	40.3
RS-491 0540-0560	48	1.06	1.5	1.2	< 1	81.8	0.2	1.13	0.26	1.7	7.2	16.5	3.54	4	44	0.17	22.4	0.15	868	3.14	0.04	3.9	0.045	13.61	0.01	0.36	0.2	106.7	< .02	7.7	0.006	0.1	2.4	12	0.3	32.5
RS-491 0560-0580	46	1.36	2.2	0.4	< 1	111	0.14	1.07	0.23	1.8	6	14.42	3.39	4.6	28	0.17	23.6	0.2	595	2.55	0.043	3.4	0.056	13.26	< .01	0.36	0.3	140	< .02	7.7	0.007	0.08	3.1	11	0.3	39
RS-491 0580-0600	40	0.63	2.2	1.5	< 1	85.5	0.12	0.53	0.11	1.5	5.3	11.78	3.08	3.1	36	0.19	21.2	0.1	444	2.74	0.057	3	0.031	9.34	< .01	0.44	0.2	56	< .02	10.1	0.02	0.08	2	8	0.4	37.2
RS-491 0600-0620	38	0.99	3.1	0.3	< 1	257.1	0.14	0.88	0.11	1.6	5.5	13.45	3.27	3.6	25	0.21	21.2	0.13	581	2.66	0.046	3.3	0.035	9.77	0.01	0.35	0.2	121.8	< .02	8.2	0.011	0.08	1.8	9	0.3	37.5
RS-491 0620-0640	55	1.05	2.6	1.1	< 1	132.8	0.19	1.02	0.29	1.4	4.9	14.71	3	3.9	37	0.3	22.3	0.13	601	2.48	0.05	3	0.058	24.15	< .01	0.45	0.2	143.1	0.02	7.5	0.009	0.12	3.5	9	0.3	39.7
RS-491 0640-0660	91	1.31	1.7	8.5	< 1	169.8	0.19	0.94	0.27	1.2	5.9	14.55	2.09	4.3	39	0.26	25.9	0.15	393	2.24	0.046	3.1	0.037	25.87	0.01	0.31	0.2	185.5	< .02	5.5	0.003	0.09	0.8	6	0.2	51.5
STANDARD DS2	227	1.82	59.2	207.2	< 1	150.6	11.39	0.53	10.48	12.4	159.4	126.42	3.47	6.3	234	0.16	16.3	0.6	840	14.84	0.032	35.9	0.093	34.92	0.01	9.9	2.4	28.7	1.86	3.7	0.094	1.83	21.2	73	8.1	160
RS-491 0660-0680	62	1.04	0.8	0.5	< 1	76.8	0.19	0.9	0.24	1.9	2.1	10.11	1.75	3.4	15	0.15	22.6	0.12	431	0.89	0.044	1.3	0.057	26.62	< .01	0.48	0.2	172.1	< .02	3.7	0.009	0.05	1	9	0.2	61.6

AMERICAN ASSAY LABORATORIES
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CLIENT: *HECLA MINING CO.*
CLIENT REF: KURT ALLEN
AAL REF: SP56339
METHOD: AAL03-0

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	Se ppm	Sr ppm	Te ppm	Th ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
RS-491 0680-0700	60	0.99	1.1	0.3	< 1	189.9	0.2	1.01	0.15	1.8	2.2	4.73	1.79	3.9	16	0.2	24.4	0.13	630	0.83	0.045	0.3	0.059	14.36	< .01	0.41	0.2	154.1	< .02	3.7	0.027	0.09	1.1	10	0.2	65.9
RS-491 0700-0720	99	1	0.9	13.2	< 1	164.2	0.28	1.59	0.15	1.9	1.6	3.27	1.6	4.3	25	0.22	26.9	0.12	692	0.7	0.045	< .1	0.064	19.02	< .01	0.37	< .1	156.4	0.04	4.3	0.032	0.09	1.6	10	< .2	69.9
RS-491 0720-0740	98	0.7	1.5	1.1	< 1	240.3	0.4	0.67	0.13	1.7	1.3	2.41	1.52	3.3	59	0.22	27.9	0.09	296	0.55	0.041	< .1	0.069	20.77	0.03	0.46	0.1	104.3	< .02	4.5	0.039	0.08	1.4	9	< .2	66.3
RS-491 0740-0760	91	0.89	0.7	0.8	< 1	136	0.26	2.28	0.14	1.9	1.5	2.57	1.58	3.8	16	0.23	27.4	0.12	641	0.61	0.038	< .1	0.059	18.45	< .01	0.35	0.1	164.4	< .02	4.1	0.029	0.07	1.5	8	0.2	71.7
RS-491 0760-0780	82	1.04	0.9	0.5	< 1	87.8	0.23	1.66	0.26	1.8	0.8	1.56	1.59	4.4	23	0.23	28.2	0.15	733	0.63	0.038	< .1	0.067	18.54	< .01	0.29	0.2	150	< .02	4.5	0.02	0.07	2.3	5	0.2	74.9
RS-491 0780-0800	87	1.49	0.7	0.7	< 1	56.8	0.28	2.38	0.28	1.8	1.1	2.25	1.7	5.4	20	0.18	27.4	0.25	927	0.55	0.037	< .1	0.057	18.18	< .01	0.31	0.2	225.2	0.03	4	0.006	0.05	2	4	< .2	72.7
RS-491 0800-0820	264	1.48	6.2	10.5	< 1	301.3	0.26	2.8	0.22	2.5	1.7	4.29	1.98	5	105	0.21	25.9	0.22	1151	1.09	0.025	< .1	0.056	19.62	0.83	3.85	1.5	209.6	< .02	4.1	0.003	0.16	1.9	4	< .2	81
RS-491 0820-0840	1550	0.67	31	53.4	< 1	86.1	0.1	0.29	0.25	2.1	2.8	8.88	3.26	2.7	224	0.19	20.7	0.03	117	1.48	0.014	1.2	0.044	15.98	3.31	18.55	6.9	51	< .02	6	0.002	0.59	0.7	2	0.5	68.6
RS-491 0840-0860	636	1.32	7.6	9.3	< 1	163.6	0.03	1.67	0.15	2.5	2.6	8.13	2.8	5.1	113	0.24	20.3	0.14	1214	1.76	0.038	0.6	0.045	11.75	0.73	3.97	1.2	117.1	< .02	6.6	0.015	0.21	2	6	0.8	79.5
RS-491 0860-0880	512	1.42	17	22.9	< 1	151.9	0.02	1.73	0.15	2	1.7	6.2	2.56	5.2	164	0.25	18.8	0.14	1149	0.92	0.031	0.1	0.044	14.26	1.44	6.44	2.5	119.8	< .02	6.1	0.01	0.33	1	4	0.5	71.7
RS-491 0880-0900	534	1.43	13.3	21.9	< 1	146	0.04	1.78	0.14	2.4	1.9	5.57	2.84	5.2	270	0.24	18.7	0.11	1290	1.6	0.026	0.1	0.039	18.33	1.89	7.76	2.6	110.3	< .02	5.4	0.008	0.34	0.8	3	0.4	70.8
RS-491 0900-0920	168	0.99	8.5	5.2	< 1	101.3	0.02	1.68	0.12	2.1	2	4.77	2.38	3.9	94	0.2	21.4	0.09	1229	1.1	0.02	< .1	0.03	18.03	0.8	4.33	0.8	118.4	< .02	6.5	0.006	0.1	0.6	2	0.4	67.9
RS-491 0920-0940	117	1.36	1.7	1.1	< 1	119.3	0.08	1.79	0.17	2	2.7	5.41	2.03	4.5	17	0.26	26.3	0.2	899	1.13	0.052	0.6	0.046	14.1	0.02	0.68	0.2	217.6	< .02	5.5	0.008	0.08	1.8	8	0.2	68
RS-491 0940-0960	84	1.15	2.3	1	1	202.5	0.14	1.12	0.2	2.7	4.2	7.27	2.26	4.4	21	0.3	26.3	0.27	892	1.54	0.058	2.2	0.053	10.84	0.01	0.47	< .1	143	< .02	5.4	0.008	0.11	1	11	0.2	67.3
RS-491 0960-0980	89	0.89	1.6	0.4	1	174.7	0.16	0.89	0.18	2.1	5.2	10.89	2.29	3	16	0.27	24.1	0.17	725	1.92	0.128	3.6	0.047	8.92	0.02	0.36	< .1	272	< .02	4.1	0.01	0.09	0.7	8	0.2	60.2
RS-491 0980-1000	130	1	1.8	0.9	< 1	254.7	0.24	0.94	0.19	1.7	4.2	8.04	2.21	3.3	19	0.22	22.7	0.15	656	1.73	0.169	3	0.033	12.34	0.01	0.42	0.1	371.2	0.02	3.6	0.007	0.08	0.6	5	0.2	63.4
RS-491 1000-1020	103	0.83	1.7	0.9	< 1	189.7	0.37	0.73	0.21	1.6	4	6.99	2.04	3.9	19	0.28	23.7	0.12	539	1.64	0.056	2.6	0.037	13.07	0.01	0.46	0.2	89.8	< .02	4.4	0.012	0.11	0.7	4	0.2	66.9
RS-491 1020-1040	86	0.95	2.1	0.8	4	181	0.29	0.76	0.19	1.5	2.7	5.28	1.94	4.6	22	0.35	24.2	0.13	557	1.48	0.065	1.8	0.036	13.18	0.02	0.55	0.2	90.7	< .02	4.9	0.018	0.12	0.8	4	0.3	73.5
RS-491 1040-1060	108	1.01	1.3	0.3	1	164	0.26	0.93	0.29	1.7	4.6	13.35	2.36	4.1	23	0.28	24.1	0.13	667	2.16	0.053	3.1	0.037	12.86	0.03	0.47	0.1	125.8	0.03	3.7	0.007	0.08	0.7	4	0.4	67.6
RS-491 1060-1080	90	0.96	1.1	0.4	2	127.9	0.3	1.4	0.19	0.8	2.2	4.36	1.57	3.8	19	0.29	28.6	0.12	705	0.77	0.05	0.5	0.033	20.79	0.05	0.34	0.1	143.9	0.02	3.3	0.002	0.08	0.4	< 2	0.2	59.1
RS-491 1080-1100	94	1.07	1	1	< 1	207.2	0.29	2.24	0.41	0.6	1.4	3.31	1.27	3.6	27	0.31	28.7	0.12	905	0.39	0.041	< .1	0.031	20.76	0.03	0.16	0.2	177.9	0.03	2.7	0.002	0.08	0.3	< 2	< .2	56.9
RS-491 1100-1120	322	0.92	1.2	< .2	3	148.6	0.22	1.81	0.22	1.3	1	7.31	1.61	3.4	24	0.3	26.9	0.13	1179	0.55	0.034	< .1	0.037	17.25	0.06	0.28	0.1	133.9	0.03	2.7	0.004	0.08	0.6	3	0.2	69.9
RS-491 1120-1140	354	0.65	9.5	57.3	3	73.7	0.17	0.89	0.22	1.8	2.1	6.31	2.71	2.1	147	0.26	21.4	0.05	738	1.49	0.016	0.7	0.054	19.2	2.62	4.72	3.5	100.8	0.03	3.1	0.002	0.37	0.8	3	0.4	85.6
RS-491 1140-1160	1299	0.61	36.3	164.5	2	76.1	0.15	0.4	0.15	1.6	4.5	11.17	2.39	1.5	76	0.21	20.2	0.02	117	1.94	0.011	2.1	0.052	22.86	2	9.11	8.5	77.3	< .02	2.8	0.002	0.22	0.4	2	0.7	74.2
RS-491 1160-1180	2323	0.65	55.4	181.7	3	41.8	0.21	0.43	0.2	2.4	4.6	10.28	2.55	1.7	156	0.24	20.8	0.02	90	1.79	0.013	2.3	0.048	29.31	2.46	9.69	16.1	97.9	< .02	2.8	0.001	0.18	0.3	< 2	1.2	64.7
RS-491 1180-1200	679	0.62	17.6	114.5	2	43.2	0.25	0.42	0.28	1.9	2.8	6.41	3.98	1.6	166	0.28	19.7	0.03	150	1.47	0.012	1.5	0.044	24.44	4.38	8.14	10.9	84.2	< .02	2.9	< .001	0.81	0.5	< 2	1	82.2
RS-491 1200-1220	863	0.57	18.1	50.9	1	42.4	0.5	0.36	0.16	3.1	1.7	6.3	2.09	1.4	191	0.26	18.5	0.02	124	1.74	0.01	0.8	0.042	25.54	2.21	6.07	6.7	65.7	< .02	3.9	< .001	0.38	0.5	< 2	0.5	46
RS-491 1220-1240	648	0.59	17.2	71.5	< 1	79.9	0.1	0.32	0.15	1.2	2.3	7.57	2.31	1.6	312	0.24	19.8	0.02	115	2.55	0.009	1.1	0.046	24.54	2.4	6.58	8.1	61.7	< .02	4.6	0.001	0.4	0.5	< 2	0.5	64.8
RS-491 1240-1260	688	0.65	25.9	73.3	1	37.6	0.26	0.42	0.15	2	3.3	8.17	2.93	1.6	148	0.25	17.5	0.03	134	2.12	0.012	1.3	0.041	25.34	3.05	9.15	11.1	94.7	< .02	3.2	0.001	0.41	0.5	< 2	0.8	86.5
RS-491 1260-1280	799	0.61	22.5	52.3	3	70.7	0.14	0.39	0.15	0.9	3.7	10.62	3.48	1.6	276	0.24	17.1	0.03	126	2.7	0.012	1.7	0.046	22.78	3.6	9.1	9	86.7	< .02	4.3	0.001	0.38	0.6	< 2	0.8	64.5
RS-491 1280-1300	733	0.65	60	45.8	< 1	50.5	0.12	0.37	0.06	1	3.6	7.88	3.92	1.6	153	0.28	13.6	0.02	128	2.8	0.011	1.4	0.032	22.51	4.21	10.54	7.5	96.1	< .02	3.6	0.002	0.32	0.8	< 2	1.2	72.5
RS-491 1300-1320	284	0.6	21.4	46.9	2	93.9	0.33	0.48	0.08	1.1	4.2	9.06	2.79	1.6	191	0.26	17.6	0.03	1214	2.64	0.013	1.4	0.042	21.85	2.72	7.52	5.8	90.9	< .02	4.9	0.002	0.52	1.2	2	0.7	55.3
STANDARD DS2	236	1.81	60.5	202.3	< 1	150.5	10.51	0.53	10.01	11.4	160.4	126.92	3.42	6	232	0.16	15.6	0.6	839	14.63	0.032	36.2	0.09	31.78	0.03	9.78	2.2	27.9	1.9	3.6	0.09	1.78	18.8	74	6.8	162.4
RS-491 1320-1340	76	0.63	4.7	3.5	4	94.5	0.06	0.16	0.27	1.3	10	23.67	4.07	3.8	176	0.19	20	0.09	1382	5.74	0.084	6.9	0.019	9.02	< .01	5.09	0.2	29.4	0.09	12.8	0.023	0.13	1.5	17	1.4	114.4
RS-491 1340-1360	126	1.55	3.4	6	3	84.5	0.1	1.44	0.31	0.7	4.7	13.81	3.94	6.1	92	0.46	26.1	0.09	443	3.67	0.045	2	0.048	15	0.62	1.74	0.7	108.6	0.05	8	0.006	0.21	0.9	2	0.3	70.7

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431
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CLIENT: *HECLA MINING CO.*
CLIENT REF: KURT ALLEN
AAL REF: SP56339
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-491 1360-1380	111	1.38	2.9	3.7	1	89.2	0.08	0.8	0.12	1.2	5.1	13.92	3.7	6.8	68	0.38	26.1	0.12	565	3.71	0.049	3.1	0.048	12.66	0.35	1.73	0.7	69.6	0.05	8.9	0.003	0.14	0.7	3	0.3	76
RS-491 1380-1400	1100	1.3	39	37	< 1	44.4	0.15	0.51	0.16	0.9	5.8	11.24	2.4	4.7	205	0.54	41.7	0.05	360	4.87	0.018	2.4	0.02	24.54	1.55	7.2	7.6	124.4	0.07	11.1	0.001	0.25	2	2	0.5	85.7
RS-491 1400-1420	534	0.77	14	13.8	2	43.2	0.08	0.87	0.12	0.4	5.4	11.08	1.86	3	72	0.43	49.1	0.03	688	3.46	0.022	1.6	0.012	25.01	1.04	4.04	4	113.6	0.06	15.1	< .001	0.23	2.4	2	0.4	89.4
RS-491 1420-1440	580	0.71	15.2	16	< 1	43.2	0.14	0.93	0.21	0.7	5.1	12.41	2.04	2.8	81	0.4	50.1	0.03	755	3.15	0.029	1.9	0.015	30.68	1.06	4.06	4.2	114.7	0.08	14.7	< .001	0.21	2.5	2	0.3	96.7
RS-491 1440-1460	779	0.52	26.8	23.3	< 1	21.6	0.07	0.27	0.22	0.3	5.8	7.16	1.51	1.4	57	0.33	38.3	0.01	154	2.6	0.012	1.5	0.009	32.4	1.23	7.38	5.8	117.7	< .02	12.7	< .001	0.22	1.2	< 2	1.3	77.6
RS-491 1460-1480	809	0.54	35	29.3	< 1	32.6	0.11	0.32	0.38	0.4	3.8	8.03	1.71	1.7	52	0.33	36	0.02	205	2.63	0.012	1.4	0.012	33.34	1.42	8.6	7.4	111.4	< .02	11.9	< .001	0.2	1.2	2	0.9	75.7
RS-491 1480-1500	25357	0.7	25.7	38.3	< 1	64.8	0.14	0.39	0.41	0.6	4.8	9.08	1.67	2.5	138	0.37	39.6	0.03	221	3.65	0.015	1.3	0.014	29.56	1.36	31.54	10.1	116.6	< .02	12.5	0.001	0.3	5.2	2	0.7	93.8
RS-491 1500-1520	563	0.64	9.5	10.3	< 1	61.9	0.1	0.9	0.16	0.5	4.9	8.98	1.41	2.8	49	0.37	36.3	0.03	358	1.82	0.035	1.4	0.014	20.94	0.57	2.29	1.9	93.1	< .02	12.7	0.001	0.15	2.7	2	0.5	66.2
RS-491 1520-1540	786	0.74	14.9	14.1	< 1	88.9	0.18	0.9	0.18	0.9	6.1	10.8	1.69	3	57	0.39	36.5	0.03	371	2.12	0.033	1.7	0.017	26.31	0.92	2.92	4.1	114	0.07	11.6	0.002	0.17	1.9	2	0.3	80.4
RS-491 1540-1560	509	0.78	10.2	13.8	1	40.4	0.1	0.6	0.13	0.4	6.6	11.19	1.6	3.3	49	0.43	34.9	0.02	493	2.18	0.039	1.5	0.01	23.11	1.19	2.32	4.1	103.7	0.14	11.3	0.002	0.17	2.3	2	0.4	105.4
RS-491 1560-1585	454	0.51	8.5	15.6	< 1	25.8	0.08	0.45	0.08	0.5	12.8	12.46	1.78	2.3	37	0.33	33.5	0.02	574	3	0.034	2.7	0.008	34.14	0.99	1.78	2.9	84.9	0.13	10.5	< .001	0.12	4	< 2	0.8	100.5
STANDARD DS2	255	1.91	58.7	218.8	< 1	155.8	11.6	0.56	10.71	11.4	168.5	131.79	3.42	6.5	260	0.18	17.2	0.62	848	14.45	0.032	37.4	0.097	34.33	0.03	9.58	2.3	31.5	1.95	4	0.1	1.98	20.4	77	6.6	169

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
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CLIENT: *HECLA MINING CO.*
CLIENT REF: KURT ALLEN
AAL REF: SP56339
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-491 0000-0020	87	0.67	5.2	0.8	< 1	100.8	0.05	0.17	0.25	1.4	10.9	24.63	4.37	3.6	161	0.2	19.5	0.09	1414	5.51	0.084	7.1	0.018	9.07	< .01	4.53	0.4	29	< .02	12.1	0.024	0.12	1.6	17	1.3	113.8
RS-491 0020-0040	59	0.47	4.3	1.4	< 1	71.8	0.06	0.13	0.19	0.9	8	20.05	3.09	3.2	94	0.14	18	0.07	697	4.3	0.06	5	0.022	31.79	< .01	2.34	0.5	16.9	< .02	12.5	0.019	0.07	1.5	8	1.2	93.6
RS-491 0040-0060	62	0.48	6.8	2	< 1	120.9	0.06	0.19	0.34	1	7.8	21.58	3.43	3.9	40	0.15	19.3	0.08	888	4.81	0.074	6	0.022	22.77	< .01	1.73	0.5	21.6	< .02	13.8	0.02	0.09	3.3	9	1.5	81.3
RS-491 0060-0080	51	0.45	6	1.2	< 1	108.8	0.02	0.16	0.25	0.7	5.3	13.32	2.52	3.1	24	0.11	22.2	0.06	987	3.51	0.057	3.3	0.021	15.52	0.01	1.15	0.4	21.1	< .02	12.9	0.013	0.1	2.6	8	1.6	55.8
RS-491 0080-0100	74	0.38	6	1	< 1	106.5	0.02	0.13	0.2	0.9	5.6	15.22	2.74	3.6	56	0.11	23.5	0.05	1253	3.95	0.049	3.7	0.023	9.54	< .01	2.26	0.4	26	< .02	14	0.011	0.07	1.6	7	1.7	59.8
RS-491 0100-0120	68	0.43	4.3	0.8	< 1	102.6	0.04	0.12	0.15	1	6.9	19.47	2.57	2.9	43	0.13	22.3	0.07	959	4.23	0.06	4.7	0.025	8.09	< .01	1.25	0.3	20.5	< .02	14.8	0.016	0.1	2.1	9	1.4	53
RS-491 0120-0140	78	0.57	1.9	0.8	< 1	59.1	0.04	0.16	0.39	1	10.2	22.63	2.43	3.1	14	0.14	19	0.1	446	4.03	0.057	7.1	0.022	6.86	< .01	0.71	0.4	17.7	< .02	13.3	0.01	0.08	3.3	6	0.7	67.7
RS-491 0140-0160	200	0.57	8	12.1	< 1	73.2	0.05	0.15	0.41	1	5	258.51	2.76	3.5	257	0.13	21.3	0.08	1016	3.08	0.039	5.3	0.018	23.49	< .01	4.93	1.8	33.6	< .02	12.6	0.011	0.15	2.9	5	1.3	236.8
RS-491 0160-0180	57	0.48	8.3	1.2	< 1	136.5	0.05	0.14	0.22	1	7.5	20.12	3.02	4.2	64	0.13	21.7	0.09	1319	4.3	0.042	5.1	0.026	8.86	< .01	1.02	0.3	19.6	< .02	13.6	0.018	0.1	1.7	6	2.1	79.6
RS-491 0180-0200	62	0.52	7.9	0.8	< 1	79.7	0.05	0.13	0.19	0.8	6.4	18.77	2.94	3.9	162	0.13	21.7	0.1	1034	3.77	0.039	4.2	0.02	8.25	< .01	6.32	0.3	19.2	< .02	13.5	0.016	0.07	1.6	5	2.1	73.2
RS-491 0200-0220	62	0.59	6.1	1	< 1	66.9	0.08	0.16	0.18	0.7	6.9	22.73	3.87	4.9	65	0.15	20.1	0.1	1004	4.1	0.044	4.2	0.025	7.71	< .01	1.22	0.3	17.9	< .02	13.2	0.021	0.08	2.1	11	2.1	87.1
RS-491 0220-0240	59	0.6	5	1.2	< 1	103	0.05	0.15	0.34	0.9	7.1	30.57	3.01	3.9	42	0.16	21	0.11	879	4.94	0.058	5	0.021	10.25	< .01	1.58	0.4	13	< .02	13.2	0.019	0.14	1.8	7	2	76.4
RS-491 0240-0260	52	0.74	3.2	1.6	< 1	94.1	0.07	0.15	0.22	1.2	4.3	15.09	2.47	4.2	32	0.15	23.9	0.1	766	3.17	0.038	2.5	0.013	10.65	< .01	3.7	0.4	15.3	< .02	13.7	0.014	0.45	2	7	2	100.2
RS-491 0260-0280	48	0.7	5.1	3.2	< 1	85.4	0.05	0.12	0.11	0.9	3.8	13.99	2.16	4.2	258	0.15	24.6	0.08	665	2.82	0.029	2.1	0.013	14.69	< .01	5.49	0.7	20.9	< .02	13.5	0.011	0.47	1.8	4	1.1	94.4
RS-491 0280-0300	273	0.49	48.3	58	< 1	48.8	0.05	0.04	0.06	0.6	6.7	27.33	2.88	3.4	2193	0.12	19.7	0.01	88	4.8	0.019	4.4	0.019	17.26	0.46	21.47	8.1	18.4	< .02	11.8	< .001	0.17	2.1	4	1.1	26.6
RS-491 0300-0320	171	0.42	22.3	49.6	< 1	23.9	0.05	0.05	0.23	1.6	6.6	24.21	3.15	2.5	878	0.11	21.5	0.01	81	5.54	0.014	4.6	0.006	14.98	2.41	17.73	6	6	< .02	11.2	< .001	0.89	3.7	3	0.7	65
RS-491 0320-0340	412	0.47	34.2	142.3	< 1	117.5	0.02	0.07	0.41	1.1	7.5	36.89	3.64	3.2	1502	0.11	21.5	0.02	605	6.67	0.016	8	0.015	12.59	1.52	19.7	8.7	8.4	< .02	10.2	< .001	0.87	7.5	5	0.9	128.8
RS-491 0340-0360	102	0.38	15.4	33	< 1	45.9	0.03	0.1	0.26	0.8	5.2	19.33	2.38	2.6	998	0.11	22.7	0.02	357	3.12	0.013	3.2	0.018	15.38	0.83	7.83	5.6	7.8	< .02	10.9	< .001	0.4	5.8	6	0.9	137.4
RS-491 0360-0380	82	0.31	11.8	40.2	< 1	42.3	< .02	0.07	0.08	0.5	4.8	27.11	2.01	1.7	785	0.09	16.9	0.01	89	2.24	0.01	2.3	0.017	11.85	0.92	9.61	4.8	9.8	< .02	7.6	< .001	0.25	3.5	3	0.6	85.8
RS-491 0380-0400	79	0.45	21.2	106.4	< 1	75.2	< .02	0.11	0.14	1.3	3.3	21.7	1.96	3	2452	0.12	25.5	0.02	1014	2.73	0.012	1.6	0.032	14.89	0.27	18.62	5.4	20.1	< .02	12.2	< .001	1.58	4.2	3	1.1	247.7
RS-491 0400-0420	77	0.43	19.4	106.5	< 1	44.2	< .02	0.11	0.22	0.9	3.4	25.04	2.28	2.5	3234	0.11	21.1	0.02	482	2.28	0.011	1.8	0.035	14.05	0.48	12.69	13.4	12.5	< .02	9.3	< .001	0.64	9	2	0.7	172.5
RS-491 0420-0440	142	0.41	23.6	122.8	< 1	62.8	< .02	0.12	0.25	2	6.1	22.96	3.04	2.5	2353	0.11	19.2	0.02	893	3.71	0.013	4.5	0.036	44.73	1.04	12.37	9.4	14	< .02	8.7	< .001	1.19	5.5	4	1	247.1
RS-491 0440-0460	179	0.25	25.5	38.4	< 1	21	< .02	0.07	0.13	2	6.5	18.63	3.12	1.2	1633	0.07	14.5	0.01	259	3.65	0.008	4.8	0.028	20.74	1.5	11.75	8.7	6.4	< .02	5.7	< .001	0.4	2.6	4	1.1	94.6
RS-491 0460-0480	84	0.51	4.8	7.5	< 1	45.3	0.03	0.12	0.24	0.7	3.3	7.55	2.48	3.5	465	0.14	22.7	0.05	298	2.25	0.014	1.7	0.026	19.34	0.9	5.11	3	16.6	< .02	10	0.014	0.16	1.5	11	1.7	123
RS-491 0480-0500	80	0.88	3	2	< 1	227.7	0.07	0.38	0.19	0.8	4.2	6.98	2.53	4.8	139	0.16	28.2	0.1	875	2.02	0.031	1.7	0.032	15.81	0.07	3.26	0.5	60.7	< .02	11	0.01	0.15	1	9	1.2	93.3
RS-491 0500-0520	48	1.24	1.9	2.5	< 1	150	0.17	1.22	0.13	1.9	3.7	9.56	3.11	5	83	0.18	29	0.13	768	1.8	0.034	1.5	0.05	27.66	0.04	1.46	0.3	85.4	< .02	9.7	0.014	0.13	2.1	14	0.7	49.6
RS-491 0520-0540	47	1.95	1.5	0.9	< 1	206.7	0.13	2.03	0.3	1.7	3.9	9.22	2.8	5.9	47	0.15	26	0.22	1046	1.67	0.041	1.7	0.044	21.91	0.01	0.36	0.2	154.7	0.03	7.1	0.004	0.08	2.7	10	0.2	40.3
RS-491 0540-0560	48	1.06	1.5	1.2	< 1	81.8	0.2	1.13	0.26	1.7	7.2	16.5	3.54	4	44	0.17	22.4	0.15	868	3.14	0.04	3.9	0.045	13.61	0.01	0.36	0.2	106.7	< .02	7.7	0.006	0.1	2.4	12	0.3	32.5
RS-491 0560-0580	46	1.36	2.2	0.4	< 1	111	0.14	1.07	0.23	1.8	6	14.42	3.39	4.6	28	0.17	23.6	0.2	595	2.55	0.043	3.4	0.056	13.26	< .01	0.36	0.3	140	< .02	7.7	0.007	0.08	3.1	11	0.3	39
RS-491 0580-0600	40	0.63	2.2	1.5	< 1	85.5	0.12	0.53	0.11	1.5	5.3	11.78	3.08	3.1	36	0.19	21.2	0.1	444	2.74	0.057	3	0.031	9.34	< .01	0.44	0.2	56	< .02	10.1	0.02	0.08	2	8	0.4	37.2
RS-491 0600-0620	38	0.99	3.1	0.3	< 1	257.1	0.14	0.88	0.11	1.6	5.5	13.45	3.27	3.6	25	0.21	21.2	0.13	581	2.66	0.046	3.3	0.035	9.77	0.01	0.35	0.2	121.8	< .02	8.2	0.011	0.08	1.8	9	0.3	37.5
RS-491 0620-0640	55	1.05	2.6	1.1	< 1	132.8	0.19	1.02	0.29	1.4	4.9	14.71	3	3.9	37	0.3	22.3	0.13	601	2.48	0.05	3	0.058	24.15	< .01	0.45	0.2	143.1	0.02	7.5	0.009	0.12	3.5	9	0.3	39.7
RS-491 0640-0660	91	1.31	1.7	8.5	< 1	169.8	0.19	0.94	0.27	1.2	5.9	14.55	2.09	4.3	39	0.26	25.9	0.15	393	2.24	0.046	3.1	0.037	25.87	0.01	0.31	0.2	185.5	< .02	5.5	0.003	0.09	0.8	6	0.2	51.5
STANDARD DS2	227	1.82	59.2	207.2	< 1	150.6	11.39	0.53	10.48	12.4	159.4	126.42	3.47	6.3	234	0.16	16.3	0.6	840	14.84	0.032	35.9	0.093	34.92	0.01	9.9	2.4	28.7	1.86	3.7	0.094	1.83	21.2	73	8.1	160
RS-491 0660-0680	62	1.04	0.8	0.5	< 1	76.8	0.19	0.9	0.24	1.9	2.1	10.11	1.75	3.4	15	0.15	22.6	0.12	431	0.89	0.044	1.3	0.057	26.62	< .01	0.48	0.2	172.1	< .02	3.7	0.009	0.05	1	9	0.2	61.6

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CLIENT: *HECLA MINING CO.*
CLIENT REF: KURT ALLEN
AAL REF: SP56339
METHOD: AAL03-0

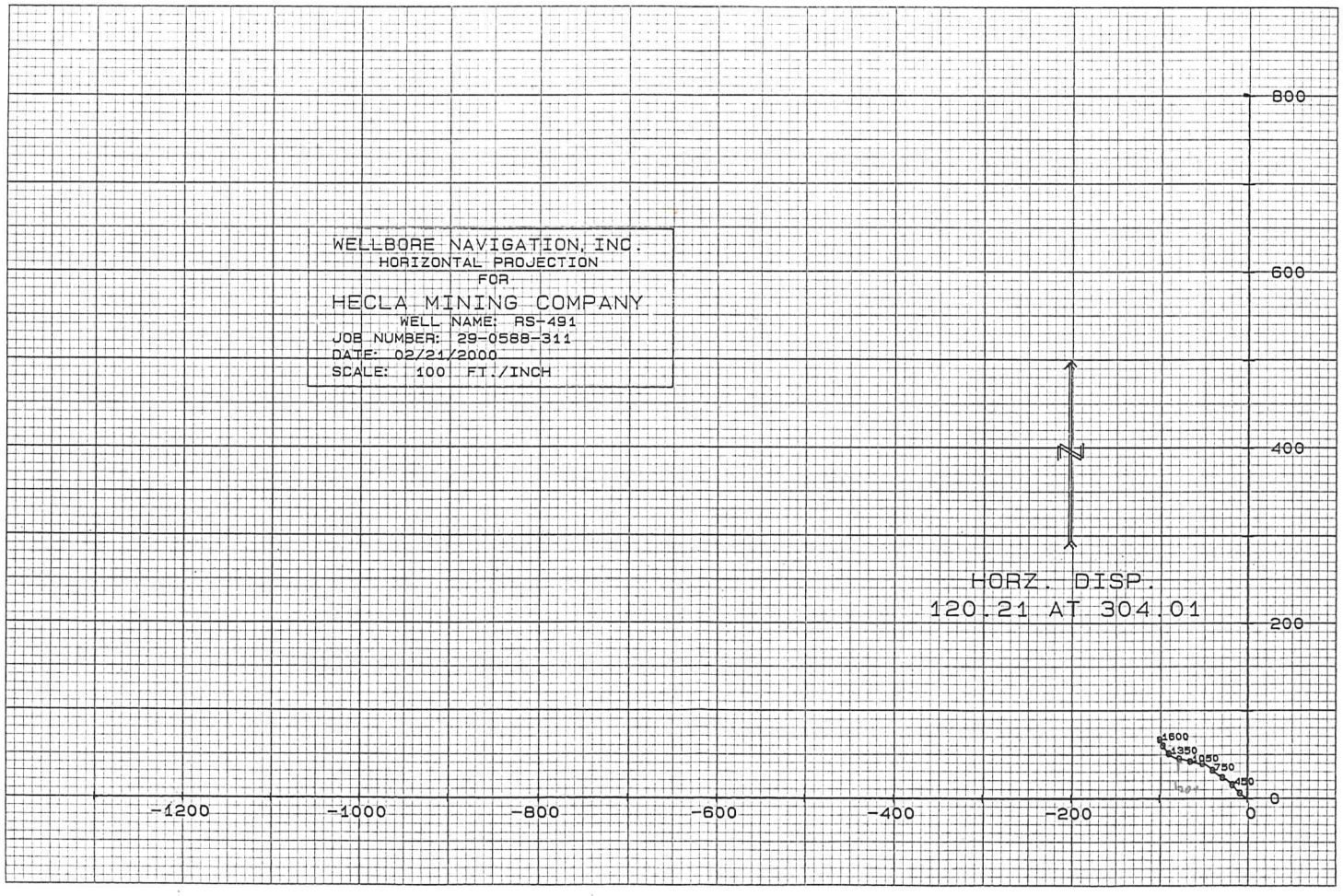
ELEMENT	Ag	Al	As	Au	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Se	Sr	Te	Th	Ti	Tl	U	V	W	Zn
SAMPLES	ppb	%	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppb	%	ppm	%	ppm	ppm	%	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
RS-491 0680-0700	60	0.99	1.1	0.3	< 1	189.9	0.2	1.01	0.15	1.8	2.2	4.73	1.79	3.9	16	0.2	24.4	0.13	630	0.83	0.045	0.3	0.059	14.36	< .01	0.41	0.2	154.1	< .02	3.7	0.027	0.09	1.1	10	0.2	65.9
RS-491 0700-0720	99	1	0.9	13.2	< 1	164.2	0.28	1.59	0.15	1.9	1.6	3.27	1.6	4.3	25	0.22	26.9	0.12	692	0.7	0.045	< .1	0.064	19.02	< .01	0.37	< .1	156.4	0.04	4.3	0.032	0.09	1.6	10	< .2	69.9
RS-491 0720-0740	98	0.7	1.5	1.1	< 1	240.3	0.4	0.67	0.13	1.7	1.3	2.41	1.52	3.3	59	0.22	27.9	0.09	296	0.55	0.041	< .1	0.069	20.77	0.03	0.46	0.1	104.3	< .02	4.5	0.039	0.08	1.4	9	< .2	66.3
RS-491 0740-0760	91	0.89	0.7	0.8	< 1	136	0.26	2.28	0.14	1.9	1.5	2.57	1.58	3.8	16	0.23	27.4	0.12	641	0.61	0.038	< .1	0.059	18.45	< .01	0.35	0.1	164.4	< .02	4.1	0.029	0.07	1.5	8	0.2	71.7
RS-491 0760-0780	82	1.04	0.9	0.5	< 1	87.8	0.23	1.66	0.26	1.8	0.8	1.56	1.59	4.4	23	0.23	28.2	0.15	733	0.63	0.038	< .1	0.067	18.54	< .01	0.29	0.2	150	< .02	4.5	0.02	0.07	2.3	5	0.2	74.9
RS-491 0780-0800	87	1.49	0.7	0.7	< 1	56.8	0.28	2.38	0.28	1.8	1.1	2.25	1.7	5.4	20	0.18	27.4	0.25	927	0.55	0.037	< .1	0.057	18.18	< .01	0.31	0.2	225.2	0.03	4	0.006	0.05	2	4	< .2	72.7
RS-491 0800-0820	264	1.48	6.2	10.5	< 1	301.3	0.26	2.8	0.22	2.5	1.7	4.29	1.98	5	105	0.21	25.9	0.22	1151	1.09	0.025	< .1	0.056	19.62	0.83	3.85	1.5	209.6	< .02	4.1	0.003	0.16	1.9	4	< .2	81
RS-491 0820-0840	1550	0.67	31	53.4	< 1	86.1	0.1	0.29	0.25	2.1	2.8	8.88	3.26	2.7	224	0.19	20.7	0.03	117	1.48	0.014	1.2	0.044	15.98	3.31	18.55	6.9	51	< .02	6	0.002	0.59	0.7	2	0.5	68.6
RS-491 0840-0860	636	1.32	7.6	9.3	< 1	163.6	0.03	1.67	0.15	2.5	2.6	8.13	2.8	5.1	113	0.24	20.3	0.14	1214	1.76	0.038	0.6	0.045	11.75	0.73	3.97	1.2	117.1	< .02	6.6	0.015	0.21	2	6	0.8	79.5
RS-491 0860-0880	512	1.42	17	22.9	< 1	151.9	0.02	1.73	0.15	2	1.7	6.2	2.56	5.2	164	0.25	18.8	0.14	1149	0.92	0.031	0.1	0.044	14.26	1.44	6.44	2.5	119.8	< .02	6.1	0.01	0.33	1	4	0.5	71.7
RS-491 0880-0900	534	1.43	13.3	21.9	< 1	146	0.04	1.78	0.14	2.4	1.9	5.57	2.84	5.2	270	0.24	18.7	0.11	1290	1.6	0.026	0.1	0.039	18.33	1.89	7.76	2.6	110.3	< .02	5.4	0.008	0.34	0.8	3	0.4	70.8
RS-491 0900-0920	168	0.99	8.5	5.2	< 1	101.3	0.02	1.68	0.12	2.1	2	4.77	2.38	3.9	94	0.2	21.4	0.09	1229	1.1	0.02	< .1	0.03	18.03	0.8	4.33	0.8	118.4	< .02	6.5	0.006	0.1	0.6	2	0.4	67.9
RS-491 0920-0940	117	1.36	1.7	1.1	< 1	119.3	0.08	1.79	0.17	2	2.7	5.41	2.03	4.5	17	0.26	26.3	0.2	899	1.13	0.052	0.6	0.046	14.1	0.02	0.68	0.2	217.6	< .02	5.5	0.008	0.08	1.8	8	0.2	68
RS-491 0940-0960	84	1.15	2.3	1	1	202.5	0.14	1.12	0.2	2.7	4.2	7.27	2.26	4.4	21	0.3	26.3	0.27	892	1.54	0.058	2.2	0.053	10.84	0.01	0.47	< .1	143	< .02	5.4	0.008	0.11	1	11	0.2	67.3
RS-491 0960-0980	89	0.89	1.6	0.4	1	174.7	0.16	0.89	0.18	2.1	5.2	10.89	2.29	3	16	0.27	24.1	0.17	725	1.92	0.128	3.6	0.047	8.92	0.02	0.36	< .1	272	< .02	4.1	0.01	0.09	0.7	8	0.2	60.2
RS-491 0980-1000	130	1	1.8	0.9	< 1	254.7	0.24	0.94	0.19	1.7	4.2	8.04	2.21	3.3	19	0.22	22.7	0.15	656	1.73	0.169	3	0.033	12.34	0.01	0.42	0.1	371.2	0.02	3.6	0.007	0.08	0.6	5	0.2	63.4
RS-491 1000-1020	103	0.83	1.7	0.9	< 1	189.7	0.37	0.73	0.21	1.6	4	6.99	2.04	3.9	19	0.28	23.7	0.12	539	1.64	0.056	2.6	0.037	13.07	0.01	0.46	0.2	89.8	< .02	4.4	0.012	0.11	0.7	4	0.2	66.9
RS-491 1020-1040	86	0.95	2.1	0.8	4	181	0.29	0.76	0.19	1.5	2.7	5.28	1.94	4.6	22	0.35	24.2	0.13	557	1.48	0.065	1.8	0.036	13.18	0.02	0.55	0.2	90.7	< .02	4.9	0.018	0.12	0.8	4	0.3	73.5
RS-491 1040-1060	108	1.01	1.3	0.3	1	164	0.26	0.93	0.29	1.7	4.6	13.35	2.36	4.1	23	0.28	24.1	0.13	667	2.16	0.053	3.1	0.037	12.86	0.03	0.47	0.1	125.8	0.03	3.7	0.007	0.08	0.7	4	0.4	67.6
RS-491 1060-1080	90	0.96	1.1	0.4	2	127.9	0.3	1.4	0.19	0.8	2.2	4.36	1.57	3.8	19	0.29	28.6	0.12	705	0.77	0.05	0.5	0.033	20.79	0.05	0.34	0.1	143.9	0.02	3.3	0.002	0.08	0.4	< 2	0.2	59.1
RS-491 1080-1100	94	1.07	1	1	< 1	207.2	0.29	2.24	0.41	0.6	1.4	3.31	1.27	3.6	27	0.31	28.7	0.12	905	0.39	0.041	< .1	0.031	20.76	0.03	0.16	0.2	177.9	0.03	2.7	0.002	0.08	0.3	< 2	< .2	56.9
RS-491 1100-1120	322	0.92	1.2	< .2	3	148.6	0.22	1.81	0.22	1.3	1	7.31	1.61	3.4	24	0.3	26.9	0.13	1179	0.55	0.034	< .1	0.037	17.25	0.06	0.28	0.1	133.9	0.03	2.7	0.004	0.08	0.6	3	0.2	69.9
RS-491 1120-1140	354	0.65	9.5	57.3	3	73.7	0.17	0.89	0.22	1.8	2.1	6.31	2.71	2.1	147	0.26	21.4	0.05	738	1.49	0.016	0.7	0.054	19.2	2.62	4.72	3.5	100.8	0.03	3.1	0.002	0.37	0.8	3	0.4	85.6
RS-491 1140-1160	1299	0.61	36.3	164.5	2	76.1	0.15	0.4	0.15	1.6	4.5	11.17	2.39	1.5	76	0.21	20.2	0.02	117	1.94	0.011	2.1	0.052	22.86	2	9.11	8.5	77.3	< .02	2.8	0.002	0.22	0.4	2	0.7	74.2
RS-491 1160-1180	2323	0.65	55.4	181.7	3	41.8	0.21	0.43	0.2	2.4	4.6	10.28	2.55	1.7	156	0.24	20.8	0.02	90	1.79	0.013	2.3	0.048	29.31	2.46	9.69	16.1	97.9	< .02	2.8	0.001	0.18	0.3	< 2	1.2	64.7
RS-491 1180-1200	679	0.62	17.6	114.5	2	43.2	0.25	0.42	0.28	1.9	2.8	6.41	3.98	1.6	166	0.28	19.7	0.03	150	1.47	0.012	1.5	0.044	24.44	4.38	8.14	10.9	84.2	< .02	2.9	< .001	0.81	0.5	< 2	1	82.2
RS-491 1200-1220	863	0.57	18.1	50.9	1	42.4	0.5	0.36	0.16	3.1	1.7	6.3	2.09	1.4	191	0.26	18.5	0.02	124	1.74	0.01	0.8	0.042	25.54	2.21	6.07	6.7	65.7	< .02	3.9	< .001	0.38	0.5	< 2	0.5	46
RS-491 1220-1240	648	0.59	17.2	71.5	< 1	79.9	0.1	0.32	0.15	1.2	2.3	7.57	2.31	1.6	312	0.24	19.8	0.02	115	2.55	0.009	1.1	0.046	24.54	2.4	6.58	8.1	61.7	< .02	4.6	0.001	0.4	0.5	< 2	0.5	64.8
RS-491 1240-1260	688	0.65	25.9	73.3	1	37.6	0.26	0.42	0.15	2	3.3	8.17	2.93	1.6	148	0.25	17.5	0.03	134	2.12	0.012	1.3	0.041	25.34	3.05	9.15	11.1	94.7	< .02	3.2	0.001	0.41	0.5	< 2	0.8	86.5
RS-491 1260-1280	799	0.61	22.5	52.3	3	70.7	0.14	0.39	0.15	0.9	3.7	10.62	3.48	1.6	276	0.24	17.1	0.03	126	2.7	0.012	1.7	0.046	22.78	3.6	9.1	9	86.7	< .02	4.3	0.001	0.38	0.6	< 2	0.8	64.5
RS-491 1280-1300	733	0.65	60	45.8	< 1	50.5	0.12	0.37	0.06	1	3.6	7.88	3.92	1.6	153	0.28	13.6	0.02	128	2.8	0.011	1.4	0.032	22.51	4.21	10.54	7.5	96.1	< .02	3.6	0.002	0.32	0.8	< 2	1.2	72.5
RS-491 1300-1320	284	0.6	21.4	46.9	2	93.9	0.33	0.48	0.08	1.1	4.2	9.06	2.79	1.6	191	0.26	17.6	0.03	1214	2.64	0.013	1.4	0.042	21.85	2.72	7.52	5.8	90.9	< .02	4.9	0.002	0.52	1.2	2	0.7	55.3
STANDARD DS2	236	1.81	60.5	202.3	< 1	150.5	10.51	0.53	10.01	11.4	160.4	126.92	3.42	6	232	0.16	15.6	0.6	839	14.63	0.032	36.2	0.09	31.78	0.03	9.78	2.2	27.9	1.9	3.6	0.09	1.78	18.8	74	6.8	162.4
RS-491 1320-1340	76	0.63	4.7	3.5	4	94.5	0.06	0.16	0.27	1.3	10	23.67	4.07	3.8	176	0.19	20	0.09	1382	5.74	0.084	6.9	0.019	9.02	< .01	5.09	0.2	29.4	0.09	12.8	0.023	0.13	1.5	17	1.4	114.4
RS-491 1340-1360	126	1.55	3.4	6	3	84.5	0.1	1.44	0.31	0.7	4.7	13.81	3.94	6.1	92	0.46	26.1	0.09	443	3.67	0.045	2	0.048	15	0.62	1.74	0.7	108.6	0.05	8	0.006	0.21	0.9	2	0.3	70.7

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: SP56339
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-491 1360-1380	111	1.38	2.9	3.7	1	89.2	0.08	0.8	0.12	1.2	5.1	13.92	3.7	6.8	68	0.38	26.1	0.12	565	3.71	0.049	3.1	0.048	12.66	0.35	1.73	0.7	69.6	0.05	8.9	0.003	0.14	0.7	3	0.3	76
RS-491 1380-1400	1100	1.3	39	37	< 1	44.4	0.15	0.51	0.16	0.9	5.8	11.24	2.4	4.7	205	0.54	41.7	0.05	360	4.87	0.018	2.4	0.02	24.54	1.55	7.2	7.6	124.4	0.07	11.1	0.001	0.25	2	2	0.5	85.7
RS-491 1400-1420	534	0.77	14	13.8	2	43.2	0.08	0.87	0.12	0.4	5.4	11.08	1.86	3	72	0.43	49.1	0.03	688	3.46	0.022	1.6	0.012	25.01	1.04	4.04	4	113.6	0.06	15.1	< .001	0.23	2.4	2	0.4	89.4
RS-491 1420-1440	580	0.71	15.2	16	< 1	43.2	0.14	0.93	0.21	0.7	5.1	12.41	2.04	2.8	81	0.4	50.1	0.03	755	3.15	0.029	1.9	0.015	30.68	1.06	4.06	4.2	114.7	0.08	14.7	< .001	0.21	2.5	2	0.3	96.7
RS-491 1440-1460	779	0.52	26.8	23.3	< 1	21.6	0.07	0.27	0.22	0.3	5.8	7.16	1.51	1.4	57	0.33	38.3	0.01	154	2.6	0.012	1.5	0.009	32.4	1.23	7.38	5.8	117.7	< .02	12.7	< .001	0.22	1.2	< 2	1.3	77.6
RS-491 1460-1480	809	0.54	35	29.3	< 1	32.6	0.11	0.32	0.38	0.4	3.8	8.03	1.71	1.7	52	0.33	36	0.02	205	2.63	0.012	1.4	0.012	33.34	1.42	8.6	7.4	111.4	< .02	11.9	< .001	0.2	1.2	2	0.9	75.7
RS-491 1480-1500	25357	0.7	25.7	38.3	< 1	64.8	0.14	0.39	0.41	0.6	4.8	9.08	1.67	2.5	138	0.37	39.6	0.03	221	3.65	0.015	1.3	0.014	29.56	1.36	31.54	10.1	116.6	< .02	12.5	0.001	0.3	5.2	2	0.7	93.8
RS-491 1500-1520	563	0.64	9.5	10.3	< 1	61.9	0.1	0.9	0.16	0.5	4.9	8.98	1.41	2.8	49	0.37	36.3	0.03	358	1.82	0.035	1.4	0.014	20.94	0.57	2.29	1.9	93.1	< .02	12.7	0.001	0.15	2.7	2	0.5	66.2
RS-491 1520-1540	786	0.74	14.9	14.1	< 1	88.9	0.18	0.9	0.18	0.9	6.1	10.8	1.69	3	57	0.39	36.5	0.03	371	2.12	0.033	1.7	0.017	26.31	0.92	2.92	4.1	114	0.07	11.6	0.002	0.17	1.9	2	0.3	80.4
RS-491 1540-1560	509	0.78	10.2	13.8	1	40.4	0.1	0.6	0.13	0.4	6.6	11.19	1.6	3.3	49	0.43	34.9	0.02	493	2.18	0.039	1.5	0.01	23.11	1.19	2.32	4.1	103.7	0.14	11.3	0.002	0.17	2.3	2	0.4	105.4
RS-491 1560-1585	454	0.51	8.5	15.6	< 1	25.8	0.08	0.45	0.08	0.5	12.8	12.46	1.78	2.3	37	0.33	33.5	0.02	574	3	0.034	2.7	0.008	34.14	0.99	1.78	2.9	84.9	0.13	10.5	< .001	0.12	4	< 2	0.8	100.5
STANDARD DS2	255	1.91	58.7	218.8	< 1	155.8	11.6	0.56	10.71	11.4	168.5	131.79	3.42	6.5	260	0.18	17.2	0.62	848	14.45	0.032	37.4	0.097	34.33	0.03	9.58	2.3	31.5	1.95	4	0.1	1.98	20.4	77	6.6	169

491


WELLBORE NAVIGATION, INC.
HORIZONTAL PROJECTION
FOR
HECLA MINING COMPANY
WELL NAME: RS-491
JOB NUMBER: 29-0588-311
DATE: 02/21/2000
SCALE: 100 FT./INCH
N
HORZ. DISP.
120.21 AT 304.01
800
600
400
200
0
-1200
-1000
-800
-600
-400
-200
0
1600
1350
1050
750
450
304

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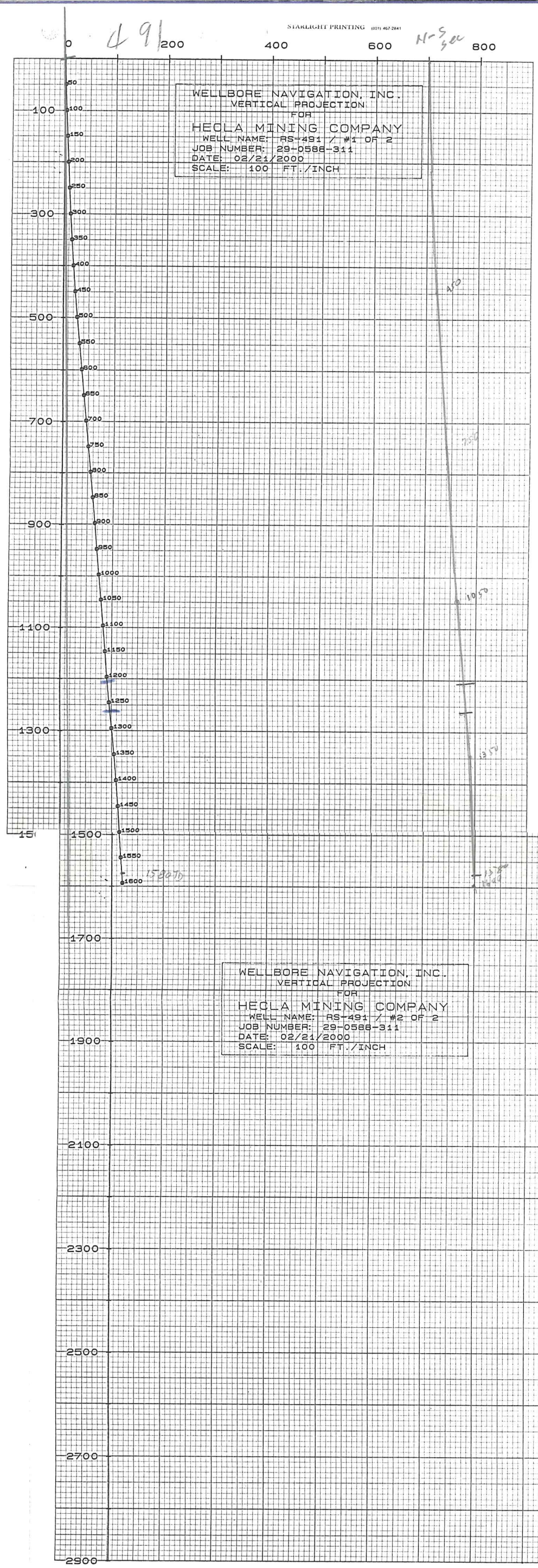


WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

JOB NUMBER: 29-0588-311 WELL NAME: RS-491

INRUN SURVEY
BY MINIMUM CURVATURE

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	L/R CLOS.	INCL HORZ	BEARING AZIMUTH	COORDINATES LATITUDE	COORDINATES DEPARTURE	D-LEG /100	D-LEG /CL	STATION DISP.	DISPLACEMENT DIRECTION	TEMP. DEG F
0.0	0.00	0.00	0.000	-88.51	303.72	0.00 N	0.00 E	0.00		0.00	AT 000.00	
50.0	49.98	1.47	-0.095	-88.12	297.60	0.74 N	1.27 W	0.86	0.43	1.47	AT 300.31	064.90
100.0	99.94	3.29	-0.159	-87.68	305.59	1.71 N	2.82 W	1.05	0.53	3.30	AT 301.25	064.76
150.0	149.90	5.44	-0.134	-87.40	303.85	2.93 N	4.58 W	0.58	0.29	5.44	AT 302.60	064.62
200.0	199.85	7.71	0.047	-87.35	313.19	4.35 N	6.37 W	0.86	0.43	7.71	AT 304.36	064.44
250.0	249.79	10.03	0.407	-87.28	312.49	5.95 N	8.08 W	0.15	0.08	10.04	AT 306.33	064.40
300.0	299.73	12.52	0.754	-86.94	311.43	7.63 N	9.96 W	0.69	0.34	12.55	AT 307.46	064.30
350.0	349.64	15.48	1.333	-86.15	318.04	9.76 N	12.08 W	1.77	0.88	15.53	AT 308.93	064.03
400.0	399.51	18.89	2.489	-85.55	326.70	12.63 N	14.27 W	1.73	0.87	19.06	AT 311.51	063.72
450.0	449.34	22.78	3.425	-85.17	309.15	15.58 N	16.97 W	2.93	1.46	23.04	AT 312.56	063.38
500.0	499.15	27.13	4.119	-84.70	316.64	18.59 N	20.19 W	1.62	0.81	27.44	AT 312.64	062.96
550.0	548.94	31.71	4.519	-84.66	301.43	21.48 N	23.76 W	2.81	1.41	32.03	AT 312.12	062.73
600.0	598.73	36.24	4.020	-84.85	293.88	23.60 N	27.79 W	1.43	0.72	36.46	AT 310.34	061.80
650.0	648.52	40.77	3.740	-84.68	306.85	25.90 N	31.70 W	2.39	1.19	40.94	AT 309.25	064.76
700.0	698.30	45.48	4.098	-84.46	309.79	28.84 N	35.41 W	0.71	0.35	45.67	AT 309.16	067.46
750.0	748.06	50.29	4.682	-84.41	312.06	32.01 N	39.07 W	0.45	0.23	50.51	AT 309.33	069.75
800.0	797.82	55.10	5.411	-84.43	313.21	35.31 N	42.65 W	0.23	0.11	55.37	AT 309.62	072.10
850.0	847.59	59.92	5.872	-84.44	305.75	38.38 N	46.38 W	1.45	0.72	60.21	AT 309.61	073.69
900.0	897.36	64.45	4.585	-84.24	271.17	39.85 N	50.86 W	6.73	3.36	64.61	AT 308.08	074.39
950.0	947.12	68.64	2.047	-84.50	274.58	40.09 N	55.76 W	0.85	0.42	68.67	AT 305.72	075.03
1000.0	996.88	73.14	0.233	-84.29	289.18	41.10 N	60.49 W	2.87	1.44	73.14	AT 304.19	076.19
1050.0	1046.66	77.66	-1.057	-84.91	286.87	42.56 N	64.97 W	1.31	0.66	77.67	AT 303.23	077.27
1100.0	1096.45	81.99	-2.392	-84.68	286.92	43.88 N	69.31 W	0.46	0.23	82.03	AT 302.34	078.28
1150.0	1146.25	86.29	-3.654	-85.04	288.44	45.24 N	73.57 W	0.77	0.38	86.37	AT 301.59	080.03
1200.0	1196.08	90.05	-5.496	-85.18	267.09	45.81 N	77.72 W	3.63	1.81	90.22	AT 300.52	081.31
1250.0	1245.86	94.19	-7.397	-84.18	289.40	46.55 N	82.21 W	4.56	2.28	94.48	AT 299.52	084.04
1300.0	1295.62	99.07	-7.844	-84.40	308.54	48.91 N	86.51 W	3.82	1.91	99.38	AT 299.48	086.77
1350.0	1345.44	103.30	-7.207	-85.76	317.93	51.80 N	89.66 W	3.15	1.58	103.55	AT 300.02	087.91
1400.0	1395.30	106.88	-6.218	-85.72	320.98	54.63 N	92.07 W	0.46	0.23	107.06	AT 300.68	089.90
1450.0	1445.17	110.28	-5.045	-86.02	325.22	57.50 N	94.24 W	0.86	0.43	110.40	AT 301.39	091.57
1500.0	1495.04	113.56	-3.525	-85.68	332.29	60.59 N	96.10 W	1.23	0.61	113.61	AT 302.23	093.04
1550.0	1544.90	116.88	-1.755	-85.68	331.81	63.92 N	97.87 W	0.07	0.04	116.89	AT 303.15	093.17
1600.0	1594.75	120.21	0.003	-85.69	331.93	67.24 N	99.64 W	0.03	0.01	120.21	AT 304.01	093.16

****
* ******** *
* THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF *
* ******** *
* 1600.0 FEET EQUALS 120.21 FEET AT 304.01 *
* ******** *
****

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

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

JOB NUMBER: 29-0588-311

WELL NAME: RS-491

LOCATION: ROSEBUD MINE

SURVEY DATE: 02/21/2000

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: TRUE NORTH

TIE-ON COORDINATES AT: 0 M.D.
TAKEN FROM: COLLAR
WATER CONTACT= 581'

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

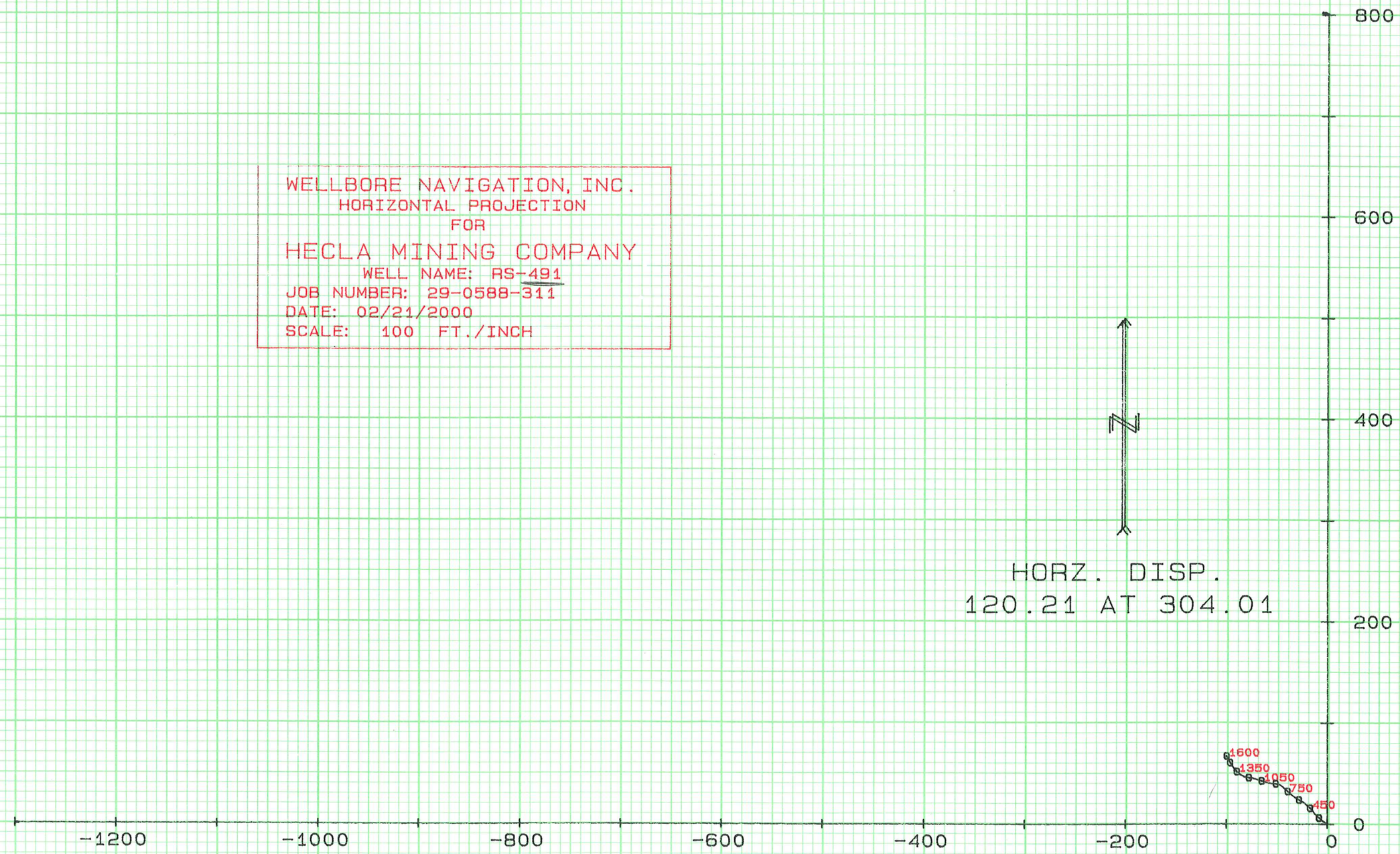
COMMENTS: **** EKLUND ****
** DON SCHOORL **

PROJECTED F/1525' T/1600'.

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

STARLIGHT PRINTING (801) 467-2841

WELLBORE NAVIGATION, INC.
HORIZONTAL PROJECTION
FOR
HECLA MINING COMPANY
WELL NAME: RS-491
JOB NUMBER: 29-0588-311
DATE: 02/21/2000
SCALE: 100 FT./INCH



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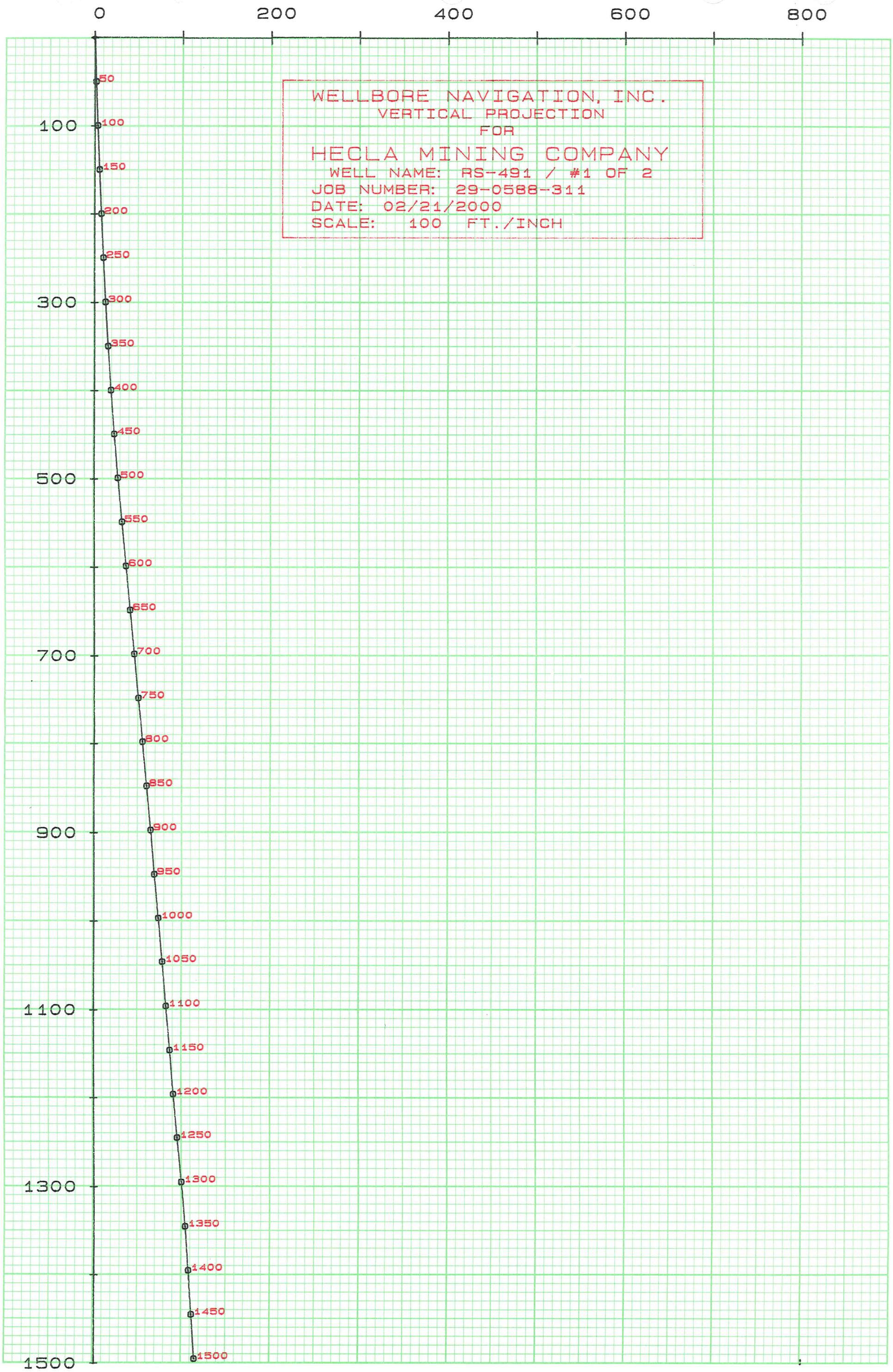
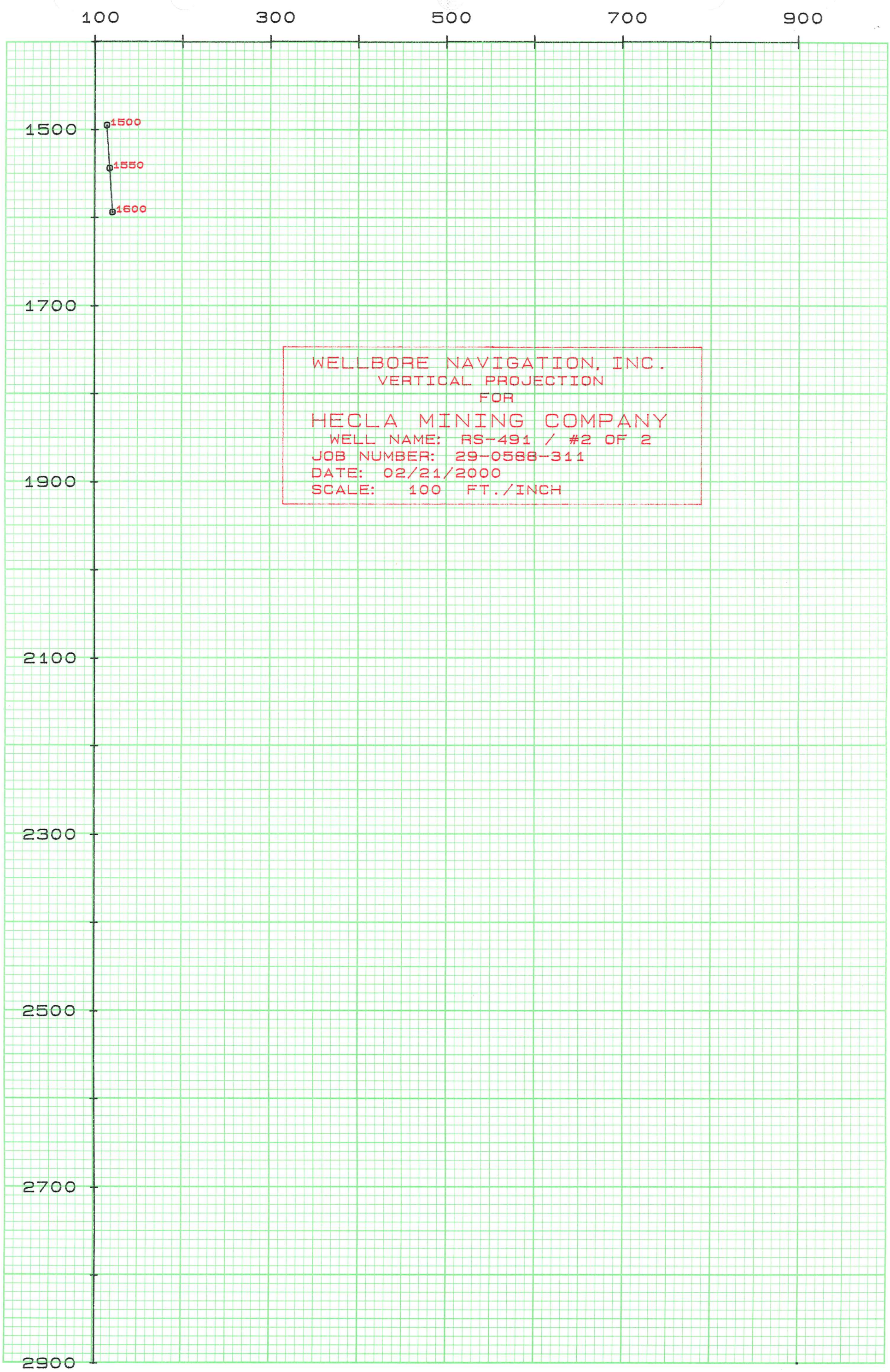
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