60000600

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 479-99
AUTHOR	D.G. Mackerrow; K.D. Allen; W Ehlund
DATE OF DOC(S)	1999
MULTI_DIST Y / N? Additional Dist_Nos:	
QUAD_NAME	Sulphur 7.5'
P_M_C_NAME (mine, claim & company names)	Rosebud Mine; Rosebud Project; Hecla Mining Co.; Rosebud Mining Co., LLC Wild Rose
COMMODITY If not obvious	gold; silver
NOTES	drill logs; geology; assay; total depth 1280'; invoices 33p.

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-479-99
Wild Rose

6000 0600
4010

6000 0600

Hecla MINING COMPANY

ROSEBUD PROJECT
DRILL LOG

PAGE 10 OF 12
DATE 9-30-77
LOGGED BY D.G. MacBride
TOTAL DEPTH 1280

NORTHING
EASTING
ELEVATION
AZIMUTH S 81E
INCLINATION -56

AREA Wind River
DRILLING CO. Gardner
RIG TYPE RC
HOLE SIZE
DOWN HOLE SURVEY BY

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION WHITE	SILICIFICATION QUARTZITE	ARGILLIC 5%	ARGILLIC 15%	ARGILLIC +25%	ARGILLIC TYPE	PROPYLITIC % GLOBULE	PROPYLITIC % CALCITE	POTASSIC % 11-5%	POTASSIC % TUMINE	OXIDATION 5%	OXIDATION 15%	OXIDATION +25%	VEINING %	VEINING TYPE	MINERALIZATION: SULFIDES 5%	SULFIDES 15%	SULFIDES +25%	PY %	CPY %	MAR %	K-SUL %	SPHENE %	BARITE %	[illegible]
100			[illegible]																														
			[illegible]																X					X			1%						T
110			[illegible]			X													X					X			1%						
						X													Tr														
120																			Tr			Tr	1% Tr										
																			Tr			1%	wht cly				Tr						
130																			Tr			1%	cly										
						Tr													Tr			1%	cly										
140																			Tr			1%	wht cly										
																						1%	Tr										
150																																	
			Trace [illegible] Dark																														
160			Trace [illegible]																			1%	Tr										
170			975-1000 [illegible]																			2%	Tr										
180			Trace [illegible]																X														
																			X					X			1%						T
190																			Tr					X			1%						
						Tr									Tr				Tr					X			1%						
200						X									Tr				Tr					X		T	1%						
210																																	
220																																	
230																																	
240																																	
250																																	
260																																	
270																																	
280																																	
290																																	
300																																	
310																																	
320																																	
330																																	
340																																	
350																																	
360																																	
370																																	
380																																	
390																																	
400																																	
410																																	
420																																	
430																																	
440																																	
450																																	
460																																	
470																																	
480																																	
490																																	
500																																	
510																																	
520																																	
530																																	
540																																	
550																																	
560																																	
570																																	
580																																	
590																																	
600																																	

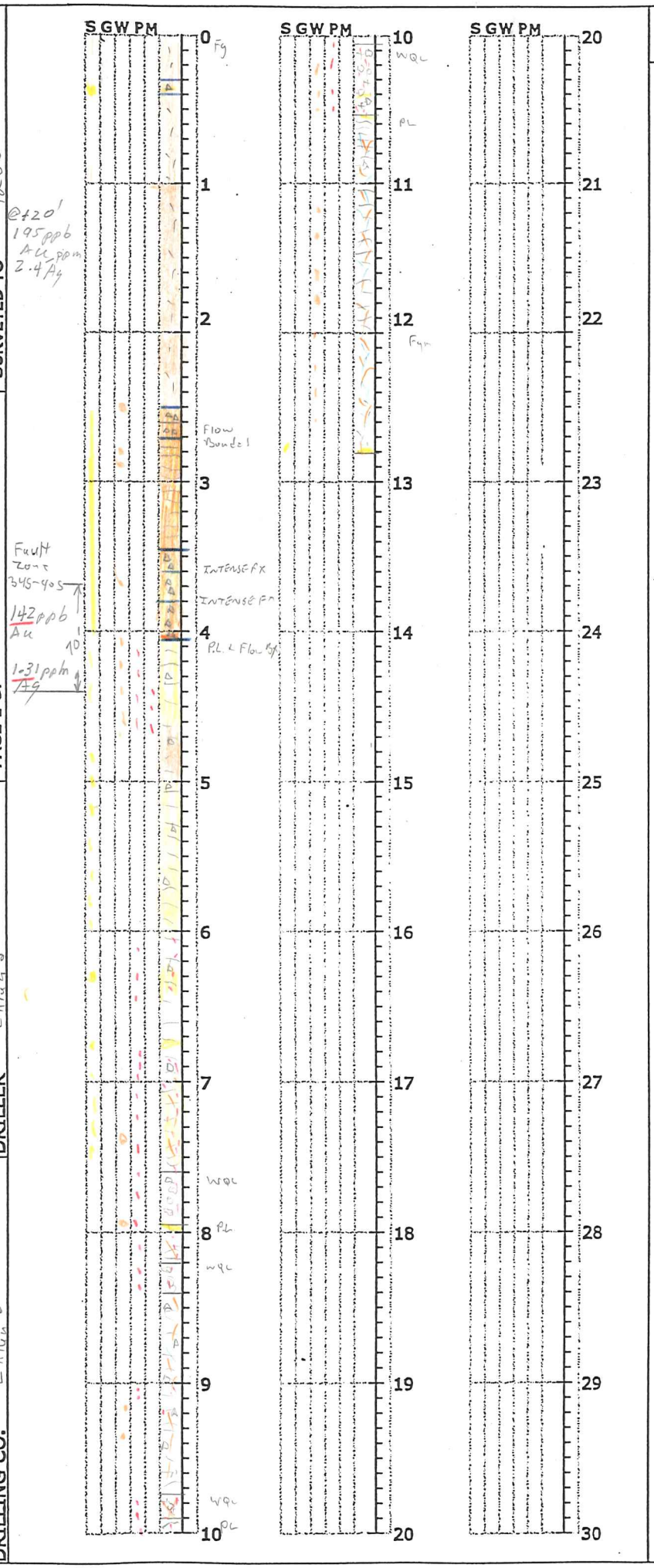
RS479

HOLE #	RS-479-99
FINISH HOLE	8/24/99
LOGGED BY	D.G. MacKrow
T.D	1280
SURVEYED TO	1280
START HOLE	
HOLE TYPE	RC
ANGLE	~90
BEARING	S 81 E
PAGE 1 OF	

ROSEBUD MINING COMPANY, LLC.

COLLAR COORDINATES	
NORTH	2,219,723
EAST	473,230
ELEV	3507
DRILLER	Eklund
DRILLING CO.	Eklund

Wildcat



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

Calcite VN
Oxidation
Silicification
Argillization/clay
Pyrite/marcasite

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

HOLE NUMBER: RS-479-99
PAGE: 1 OF
DATE: 11-22-91
LOGGED BY: D.G. Macherrow
TOTAL DEPTH: 1280

LOCATION: Wildrose
NORTHING: 2,219,723
EASTING: 475,230
ELEVATION: 5507
AZIMUTH: S 81E
INCLINATION: -50

AREA: Wildrose
DRILLING CO.: Eklund
RIG TYPE: RC
HOLE SIZE:
DOWN HOLE SURVEY BY: Well Nav

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION MASSIVE	SILICIFICATION QUARTZ	ARGILLIC 5%	ARGILLIC 15%	ARGILLIC +25%	ARGILLIC TYPE	PROPYLITIC % CHLORITE	PROPYLITIC % CALCITE	POTASSIC % K-SPAR	POTASSIC % ALUNITE	OXIDATION 5%	OXIDATION 15%	OXIDATION +25%	VIENING %	VIENING TYPE	MINERALIZATION: SULFIDES 5%	SULFIDES 15%	SULFIDES +25%	PY %	CPY %	MAR %	AS-SULF %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	AU	AG
5		Wild Rose Rhy Lst	0-20 Mixed sample	M	Fg						X										X												X								
10			interval fine grained								X										X	1%	wht clay										X								
15			medium brown rhyolite								X										X												X								
20			20-30 - bleach and argillized								X										X												X								
25			rhyolite								X									XX		1%	wht qtz										X								
30			30-35 Highly silicified chip and clay Fault 30-40	MS/H							XX																						X								
35			Bleached white chip	MS			XX					XX			Bleached				X			3%	qtz										X								
40												XX							X			2%	qtz										X								
45			silicified breccia								X								X			1%	"										X								
50			Trace of pyrite on silicified chip 60-			X					X								X								Tr						X								
55			55-80 Mod to heavy clay from white clay or altered feldspar phenocrysts	S							X																						X								
60			White clay on fractures Breccia										XXX																				X								
65			<.5% biotite in fine grained										XXX									10%	white clay										X								
70			Mod. brown rhyolite										XX																				X								
75												XXX																					X								
80												XX																					X								
85			Flow Breccia								X																						X								
90											X									X													X								
95			Flow breccia								X																						X								
100											X					Tr						1%	white qtz										X								

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

HOLE NUMBER RS-479-99
PAGE 2 OF 12
DATE 11-22-99
LOGGED BY D.G. Mackenzie
TOTAL DEPTH 1280

LOCATION
NORTHING
EASTING
ELEVATION
AZIMUTH S 81E
INCLINATION -50

AREA Wildrose
DRILLING CO. Eklund
RIG TYPE RC
HOLE SIZE
DOWN HOLE SURVEY BY WelNAV

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION MASSIVE	SILICIFICATION QUARTZ	ARGILLIC 5%	ARGILLIC 15%	ARGILLIC +25%	ARGILLIC TYPE	PROPYLITIC % CHLORITE	PROPYLITIC % CALCITE	POTASSIC % K-SPAR	POTASSIC % ALUNITE	OXIDATION 5%	OXIDATION 15%	OXIDATION +25%	VIENING %	VIENING TYPE	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
100		Wildrose Rhy	Gray brown Flow Breccia?	S	Fg										X																		X								
			weak calcareous rxn in 5% of								X																														
110			chips from 105'	S							X				X							1%	wht qtz										X								
			100-200 General weak								Tr											Tr	cal										X								
			alteration								X											Tr	cal										X								
120		water Porphyry	Porphyry? white altered feldspar phenocryst of		P? Breccia																																				
			Flow breccia								XX											Tr	cal										X								
			grain matrix of breccia fragment																																						
130											XX								X			1%	cal										X								
					Fg																																				
											X											Tr	cal										X								
140											X											1%	Calcite										X								
											X					X						1%	cal										X								
			150-165 2-15% bleached clay																																						
150			with oxidation on bleached clay	MS							X					X						1%	cal										X								
			150-165 Possible wht cut																			2%	wht qtz																		
											X					X			X			Tr	cal										X								
160											X					X				XX		Tr	cal										X								
											X									XX		Tr	cal										X								
			very fine specular Hematite																																						
170											X					X						Tr	cal										X								
											X											Tr	cal										X								
																						≤1%	qtz																		
180											X											Tr	cal										X								
											X											Tr	cal										X								
190			Increase calcareous rxn								X											Tr	cal										X								
											X					X						Tr	cal										X								
200											X					X			X			Tr	cal										X								

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

HOLE NUMBER RS-D479-99
PAGE 3 OF 12
DATE 11-23-99
LOGGED BY D.G. Mackerrow
TOTAL DEPTH 1280

LOCATION
NORTHING
EASTING
ELEVATION
AZIMUTH S 81E
INCLINATION -50

AREA Wild Rose
DRILLING CO. EHLUND
RIG TYPE RC
HOLE SIZE
DOWN HOLE SURVEY BY Well Navi

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION MASSIVE	SILICIFICATION QUARTZITE	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 %	AC-SUL %	SULFIDE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
200		Wild Rose Rhy	Fine grained flow and flow breccias	MS	Fg						X					X			Tr			1%	cal										X								
			Flow breccia								X					X			Tr			Tr	cal										X								
210			Flow breccia								X								Tr			1%	cal										X	X							
			Flow breccia								X								Tr			2%	cal										X	X							
220											X								Tr			1%	cal										X	X							
			Flow breccia								X								Tr			Tr	cal										X								
230				M							X								Tr			Tr	cal										X	X							
											X								Tr			Tr	cal										X								
240											X								Tr			Tr	cal qtz										X								
						X													Tr			1%											X								
250			250–270 Fault zone			X													Tr			1%	qtz										X								
				MMH		X													X			Tr	wht clay										X								
260		Wild Rose Flow Rhy	Flow banded rhyolite & zone Brecciated rhyolite 260 to 275		Flow banded		XX												X			Tr	qtz										X								
			cherty silica fragments				X													X		1%	qtz										X								
270			cherty silica fragment				XX													X		1%	qtz										X								
			Red brown flow banded rhy				XX													X													X								
280			clast of highly siliceous				XX								Tr					X		2%	qtz										X								
			Silicified flow			X									Tr					X		Tr	wht clay										X								
290						X														X		Tr	wht clay										X								
						X									Tr					X		1%	qtz										X								
300						Tr									X					X		1%	qtz										X								

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

HOLE NUMBER RS-D 479-99
PAGE 4 OF 12
DATE 11-23-99
LOGGED BY D.G. Mucherron
TOTAL DEPTH 1280

LOCATION
NORTHING
EASTING
ELEVATION
AZIMUTH S 81 E
INCLINATION -50

AREA Wild rose
DRILLING CO. Eklund
RIG TYPE RC
HOLE SIZE
DOWN HOLE SURVEY BY Wel Nav

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION ±25%	SILICIFICATION MASS	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 %	K-SULF %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	OXIDE/SULF	MOCURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
300		Wildrose Flow Brx	Rhyolite Flow breccia Heavy geothite and hematite			X									X				X														X								
310						X									X				X														X								
			310-320 Hematite veinlets			X									X					X		2%	Hem										X								
320			320-345 Dark brown flow 320-345 spotty silicification			X									X				X														X								
						X									Tr				X														X								
330						X									Tr				X														X								
						X													X														X								
																						Tr	Wht clay																	
340			Fault Zone From 345-405			X													X														X								
			350-405 Fractuie/Fault Zone. Bleaching This should be the low angle zone access. Drainage			X													X														X								
350						X														X		1%	Wht qtz										X								
							XX													X		1%	Wet clay qtz										X								
			Highly Fractured with oxide coating white clays				XX													XX		3%	Wht qtz										X								
360			360-380 Quartz stockworks				XX													XX		3%											X								
			Hydrothermally altered clay				XX												X			3%											X								
370			" "				XX												X			2%	Wht clay										X								
			Highly Fractured				XX															1%	qtz										X								
							XX												X			1%	Wht clay										X								
380							XX												X			1%	qtz										X								
							XX												X			1%											X								
390							XX												X			1%											X								
						XX													X			1%											X								
400							XX												X			1%											X								

Page 4 of 12

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

HOLE NUMBER: RS-479-99
PAGE: 5 OF
DATE: 11-23-99
LOGGED BY: D.G. Macherrow
TOTAL DEPTH:

LOCATION:
NORTHING:
EASTING:
ELEVATION:
AZIMUTH: S 81E
INCLINATION: -50

AREA: Wildrose
DRILLING CO.: Ehlund
RIG TYPE: RC
HOLE SIZE:
DOWN HOLE SURVEY BY:

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION MASS	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 %	SULFATE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	AU	AG
400		Wild Rose Flow Bxx	Flow breccia continues																			2%	qtz wht																		
			Sulfide ≈ 404 Fault Footwall	H			X												X			2%	clay wht	X			1%						X								
			405-425 1-3% oxide contamination																																						
410			410 + 460 Clamnud. laminated textures present	MH		X																1%	clay	X			2%							X							
					Flow Banded																	1%	wtfy wht																		
			Flow breccia clast clay	MH							Tr.											2%	qtz	X			2%							X							
420											Tr.											2%	qtz	X			2%							X							
			Sanadine crystal 5% contamination												Tr							1%		X			2%							X							
430															Tr							1%		X			2%							X							
															Tr							1%		X			2%							X							
			Trace dark marcasite on fracture surface												Tr							1%		X			2%		Tr.					X							
440															Tr							1%		X			1%		Tr.					X							
			White clay with marcasite												Tr							2%		X			1%		≤5%					X							
450															Tr.							2	wht clay																		
			Hydrothermally altered clay white clay with marcasite												Tr.							2	qtz	X			1%		≤5%					Y							
			Micro Bxx and flow banding																																						
460															X							2%	qtz	XX			1%		Tr.					X							
			Sanadine																																						
			440-460 Marcasite/Pyrite mix found on fracture surface																			1%		X			Tr.							X							
470																						2%	wtf ch.	X										Y							
			Low level silicification begins in flow breccia flow 425		Flow Bxx P.L.														X																						
480				MH H		X																											X							
						X																											X							
						X																											X							
490						X																											X							
						X																											X							
500						X																											X							

Footer: Page 5 of 5

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

HOLE NUMBER RS-479-99
PAGE 6 OF 12
DATE 11-23-99
LOGGED BY D.G. Macherron
TOTAL DEPTH 1280

LOCATION
NORTHING
EASTING
ELEVATION
AZIMUTH S 81 E
INCLINATION -50

AREA Wildrose
DRILLING CO. Eklund
RIG TYPE RC
HOLE SIZE
DOWN HOLE SURVEY BY Well Nav

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION MASSIVE	SILICIFICATION QUARTZ	ARGILLIC 5%	ARGILLIC 15%	ARGILLIC +25%	ARGILLIC TYPE	PROPYLITIC % CHLORITE	PROPYLITIC % CALCITE	POTASSIC % K-SPAR	POTASSIC % ALUNITE	OXIDATION 5%	OXIDATION 15%	OXIDATION +25%	VIENING %	VIENING TYPE	MINERALIZATION: SULFIDES 5%	SULFIDES 15%	SULFIDES +25%	PY %	CPY %	MAR %	AC-SULF %	SULFATE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	AU	AG
500		Wildrose Flow Brx.		M H	Flow Brx Fragmental Lump	X													Tr														X	X							
			Dark gray to black flow breccia continues																																						
510						X													Tr															X							
						X													Tr															X							
520						X													Tr															X							
				M M H		X													Tr															X							
530				M		X													Tr															X							
				M M H		X													Tr															X							
			Increased flow banding with small micro breccia																																						
540						XX													Tr															X							
						X													Tr															X							
550						X									Tr																			X							
			Tabular crystals Barite but yellow clear in color			X									X																			X							
560						X																1%	qtz											X							
						X																												X							
			570-600 Traces of ox. sulfide on fractures																																						
570						X													Tr															X							
						X													Tr															X							
580						X													Tr															X							
			Yellow tint crystal			X													Tr															X							
590						X									Tr				Tr															X							
			595 Lightening of chips to pale grey white			X									Tr				Tr															X							
600						X									Tr				Tr															X							

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

HOLE NUMBER RS-479-99
PAGE 7 OF 12
DATE 12-1-99
LOGGED BY D.G. MacKerron
TOTAL DEPTH 1280

LOCATION
NORTHING
EASTING
ELEVATION
AZIMUTH S 81E
INCLINATION -50

AREA Wildrose
DRILLING CO. Eklund
RIG TYPE RC
HOLE SIZE
DOWN HOLE SURVEY BY Wel Nav

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 %	K-SULF %	SULFATE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
600		Wildrose Flow Bxa	Flow bxa continues 600-640' Bleached chips off white Pyrite in veinlets Spherulitic crystal growth muscovite/biotite ingtz	M-MH	Flow, Breccia F.L.																	1%	9%	XX		Tr								X							
610															Tr									X			1%							X							
																								X			1%							X							
620																								X			1%							X							
																								X			1%							X							
			Sunshine																					X			1%							X							
630							XX																	X			1%							X							
						X													Tr					X			1%							X							
640							X												Tr					X			1%							X							
			Medium gray Flow bxa 640-680																Tr					X			1%							X							
			Translucent clay with shiny/micaceous specks																					Tr			<5%							X							
650			645-665 Fx coated with oxide																X															X							
																			X															X							
660			Polished oxide Fracture Fill																X					Tr			<5%							X							
																			X					Tr			<5%							X							
670						X													X															X							
			whitish gray Flow breccia																X															X							
680																																		X							
			Gray white Flow breccia																					X			1%							X							
690																								X			1%							X							
																								X			1%							X							
700																								X			1%							X							

Hecla MINING COMPANY

ROSEBUD PROJECT
DRILL LOG

HOLE NUMBER RS-479-99
PAGE 8 OF
DATE 11-29-99
LOGGED BY D.G. Mackerrow
TOTAL DEPTH 1280

LOCATION
NORTHING
EASTING
ELEVATION
AZIMUTH S 81E
INCLINATION -50

AREA Wild Rose
DRILLING CO. Ehlund
RIG TYPE RC
HOLE SIZE
DOWN HOLE SURVEY BY Wel Nav

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION MAGRO	SILICIFICATION QZ VSTS	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
700		Wild Rose Rhy Flow brx	Micro breccia	M-MH	Breccia	X													Tr			1%	qtz	X			2%							X							
						X													Tr			1%	qtz	X			3%							X							
						X													Tr			1%	qtz	X			2%							X							
720			Sanidine Flow banding and microbxo			X													Tr			2%	qtz	X			2%							X							
			Micro Bxo			X													Tr			1%	qtz	X			2%							X							
730			Cherty Silica with Py 710 755 microbxo			X													Tr			1%	qtz	X			2%							X							
			Goethite fracture filling Pyrite after marcasite			XX													Tr			1 ≤1	qtz wht cly	X			2%							X							
740			Pyrite associated with cherty silica			X									Tr					X		1%	qtz	X			1%							X							
							X												Tr			1%	qtz	X			1%							X							
750			Silicified laminate				X												Tr			1%	qtz	X			1%							X							
			Sanidine			X													Tr			1%	qtz	X			1%							X							
760		WQLp	Contamination 50% 760-765 Wild rose porphyry? Grey white in color		Breccia Porphyry														Tr			1%	qtz	X			1%							X							
			Contamination 30% 765-770 Silicified micro bxo																Tr			1%	qtz	X			1%							X							
770			White fine grained flow 765-795 qtz phenocryst																Tr			1%	qtz	X			1%							X							
																			Tr			1%	qtz	X			2%							X							
780			Brown silicified micro bxo																Tr			1%	qtz	X			1%							X							
																			Tr			1%	qtz	X			1%							X							
																			Tr			1%	wht cly qtz	X			1%							X							
800		WLD Rose Rhyolite Flow	Dark gray brown color Flow banded wild rose	M	Flow Banding	X													X			1%	qtz	V			1%							X							

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

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LOGGED BY D.G. Mackerrow
TOTAL DEPTH 1280

LOCATION
NORTHING
EASTING
ELEVATION
AZIMUTH S 81 E
INCLINATION -50

AREA Wildrose
DRILLING CO. Ehlund
RIG TYPE RC
HOLE SIZE
DOWN HOLE SURVEY BY Wolf Nav

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION MASSIVE	SILICIFICATION QUARTZ	ARGILLIC 5%	ARGILLIC 15%	ARGILLIC +25%	ARGILLIC TYPE	PROPYLITIC % CHLORITE	PROPYLITIC % CALCITE	POTASSIC % K-SPAR	POTASSIC % ALUNITE	OXIDATION 5%	OXIDATION 15%	OXIDATION +25%	VEINING %	VEINING TYPE	MINERALIZATION: SULFIDES 5%	SULFIDES 15%	SULFIDES +25%	PY %	CPY %	MAR %	AS-SUL %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	OXIDE SULF	MIXTURE	ANALYTICAL DATA: FROM	TO	W	AU	AG
800		Wildrose Flow Bxx	Micro flow Bxx continue contamination 5% 800-815	MMN	Flow Breccia P.L.														Tr					X			1%							X								
			800-840 Possible Bleaching contaminated																																						
810			Fruitish white 815-830																Tr					X			1%								Y							
			815-830 Weak flow banding																Tr			1%	QTZ	X			1%								Y							
820																			Tr					X			1%								X							
		WRLP	Wildrose quartz latite Porphyry																Tr					X			1%								X							
830		WQL P	830-840 Transition to Dark Flow Bxx Hematite traces QTZ Phenocrysts		Porphyry														Tr					X			1%								X							
			Dark gray Rhyolite Flow																Tr					X			<.5								X							
840			Uniform Flow 845-900																Tr					X			<.5								X							
			similar to flow breccia																Tr																X							
			Scan up the hole																																						
		Wildrose Flow Breccia	840-975 Flow Banded and Micro flow breccia		P.L. Flow B.X.														Tr																X							
850																			Tr																X							
			860-870 Goethite on Fractures																Tr																X							
860																			Tr																X							
																			Tr																X							
870																			Tr																X							
			Calcite Rxn																Tr																X							
880																			Tr			1%	cal												X							
																			Tr			Tr	cal												X							
890			Increased Fracturing																Tr																X							
			Traces of silicifiirtic																X														Tr		X							
900						X													Tr																X							

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

HOLE NUMBER RS-479-99
PAGE 10 OF 12
DATE 11-30-99
LOGGED BY D.G. MacHerron
TOTAL DEPTH 1280

LOCATION
NORTHING
EASTING
ELEVATION
AZIMUTH S 81E
INCLINATION -50

AREA Wild rose
DRILLING CO. Ehlund
RIG TYPE RC
HOLE SIZE
DOWN HOLE SURVEY BY Wel Nav

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION MASSIVE	SILICIFICATION QUARTZ	ARGILLIC 5%	ARGILLIC 15%	ARGILLIC +25%	ARGILLIC TYPE	PROPYLITIC % CHLORITE	PROPYLITIC % CALCITE	POTASSIC % K-SPAR	POTASSIC % ALUNITE	OXIDATION 5%	OXIDATION 15%	OXIDATION +25%	VEINING %	VEINING 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
900		Wild Rose Flow	Dark brownish gray Pyrite with Silica oxide on Fx Flow Bxa Rhyolite. Pyrite associated with silica	M M M	P. Lrg Flow Bxa														X					X			1%						Tr	X							
910			Planar laminations	M		X													X					X			1%							X							
						X													Tr															X							
920																			Tr			Tr	qtz											X							
																			Tr			1%	wht cly				Tr							X							
930																			Tr			1%	wht cly											X							
						Tr													Tr			1%	wht cly											X							
940																			Tr			1%	wht cly qtz											X							
																																		X							
950			Traces of Intrusive caught in flow bndry Broken																			1%	qtz											X							
			Traces of white Intrusive porphyry?																															X							
960																							qtz											X							
																						2%												X							
			975-1000 Bleach chipts																															X							
970																																		X							
																																		X							
		Wav ?	Stronger micro Breccia texture And possible wal or Sreehle Bxx. Traces of oxidation on Fx tint core Tan Faint lamination Rhy breccia		Weak Porphyry														X															X							
980																			X					X			1%						Tr	X							
																			Tr					X			1%						Tr	X							
990		Wild Rose			Planar Laminate Flow Bxa	Tr									Tr				tr					X			1%							X							
1000				M M M		X									Tr				Tr					X			1%							X							

Hecla MINING COMPANY

ROSEBUD PROJECT
DRILL LOG

HOLE NUMBER RS-479-99
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DATE 11-30-99
LOGGED BY D.G. Mackerrow
TOTAL DEPTH

LOCATION
NORTHING
EASTING
ELEVATION
AZIMUTH 15 81E
INCLINATION -50

AREA Wild Rose
DRILLING CO. Eklund
RIG TYPE RC
HOLE SIZE
DOWN HOLE SURVEY BY Wel Nav

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION MAJOR %	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 %	AS-SUL %	SILBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
1000		Wild Rose Flow Breccia	Flow banding Dark gray Intrusive?	MH	Breccia Planar laminate Fg	X													Tr			2	qtz	Tr			Tr							X							
		WQL?	Light white qtz Bleached to 1050																																						
1010			1005-1010 Fine grained Intrusive												Tr				X					X			1%							X							
																								X			1%							X							
			Argillic alteration of breccia clast																			Tr	wht cly																		
1020			Py after marcasite at three levels								Tr													X			1%							X							
																								X			1%							X							
			1/4" Pyrite vein fragments																																						
1030			1020-1040 Fine disseminated Py																			1%	wht cly	X			3%							X							
			1035-1050 Stry flow micro bxx																			1%	wht cly	X			1%							X							
1040						X													Tr			Tr	wht cly	X			2%							X							
																			Tr			1%	wht cly	X			2%							X							
1050																			X			1%	wht cly	X			1%							X							
			Traces py after marcasite very fine																																						
																			X			Tr	wht cly	Tr			Tr							X							
		Wild Rose wp	Planner laminate Wildrose with micro flow bxx		Planner lam flow bxx																	Tr	qtz																		
1060			Microbxx Hematite stained matrix	M		X												X	X															X							
						X													X															Y							
			planar laminate Calcite traces from 1070-1100																																						
1070																			X			Tr	Cal											X							
																			X			Tr	Cal											X							
			Planner laminated rhyolite with oxide on fractures																																						
1080			Dark gray rhyolite																X			Tr	Cal											X							
																			X			Tr	Cal											X							
			Bxx in hematite matrix																																						
1090																			Tr			Tr	Cal											X							
			micro flow bxx																																						
																			Tr			Tr	Cal											Y							
1100																			Tr			Tr	Cal											Y							

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

HOLE NUMBER RS-479-99
PAGE 12 OF 12
DATE 12-1-99
LOGGED BY D.G. Mackenzie
TOTAL DEPTH 1280

LOCATION
NORTHING
EASTING
ELEVATION
AZIMUTH S 81E
INCLINATION -50

AREA Wildrose
DRILLING CO. Eklund
RIG TYPE RC
HOLE SIZE
DOWN HOLE SURVEY BY Wel Nuu

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 %	AG-SUL %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
1100		Wildrose Planner Laminated	Dark gray Planner laminated Rhyolite flow	M	Planner Laminated														Tr			Tr	Cal											X							
1110			Minor micro flow Bxi																Tr			Tr 5%	Cal Cal											X							
																			Tr			1%	Cal											X							
1120			Micro Bxi and flow banding																Tr			Tr	wht cly											X							
																			Tr			1% Tr	wht cly wht cly											X							
1130																			Tr			1% Tr	Cal wht cly											X							
			1140–1170 CRACKLE BXO with hematite surface coatings																Tr			1% 1%	Cal Cal											X							
1140											Tr								Tr			Tr	wht cly											X							
			micro Bxi with hematite matrix																Tr			1%	Cal											X							
1150			Feox fracture coatings increase																X			1%	Cal											X							
			1050–1100 Transition to massive texture																X			1%	Cal											X							
1160			moderate calcite veining																Tr			1% 1%	Cal wht cly											X							
																			Tr			2% 3%	Cal wht cly											X							
1170			Flow breccia																Tr			5%	Cal											X							
																			Tr			Tr Tr Tr	Cal CaCO3 wht cly											X							
1180			Trace flow Bxi																Tr															X							
																			Tr															X							
1190																			Tr			Tr	Cal											X							
																			Tr			Tr	Cal											X							
1200																			Tr			Tr	Cal											X							

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

HOLE NUMBER RS-479-99
PAGE 12 OF 12
DATE 12-1-99
LOGGED BY D.G. MacKerron
TOTAL DEPTH 1280

LOCATION
NORTHING
EASTING
ELEVATION
AZIMUTH S 81E
INCLINATION -50

AREA Wildrose
DRILLING CO. Ethland
RIG TYPE RC
HOLE SIZE
DOWN HOLE SURVEY BY Wel Nav

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 %	AG-SULF %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOCURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
1200		Wildrose Rhy	Medium gray rhyolite flow Fine hematite crystals	M	Fgm														X			Tr 2%	wht cly Cal				Tr							X							
1210															Tr				X			1%	Cal											X							
																			X			1%	Cal											X							
1220			Feox stained Rf and Flow banding																X			Tr	Cal											X							
			Hematite matrix crackle Bxo																X			1%	Cal											X							
1230																			X			1% 2%	Cal wht cly											X							
																			Tr			1% 1%	Cal QTZ wht cly											X							
1240																			Tr			1%	wht cly											X							
			Traces of Silicification micro qtz phenocryst		micro porphyry	Tr													Tr			1%	wht cly											X							
1250			micro qtz phenocryst		micro porphyry														Tr			1%	Cal wht cly											X							
			Traces of bleaching 1055-1065		Fgm														Tr			1%	Cal wht clay											X							
1260																			Tr			Tr	qtz Cal											X							
			Silicious	MH		X													Tr			Tr	Cal											X							
1270			Silicious			X													Tr			1%	Cal											X							
			Silicious			X													Tr			3%	Cal											X							
1280			T.D. 1280																																						
1290																																									
1300																																									

RMGN Job Number: _____

Date Received: 11/24/99

Rocky Mountain Geochemical of Nevada

840 GREG STREET

SPARKS, NEVADA 89431

Phone: (702) 359-6311, Fax: (702) 359-2944

SAMPLE SUBMITTAL SHEET

Address Report To:
KURT D. ALLEN
ROSEBUD MINING CO.

Phone/Fax: (775) 623-6912 / 6967

Send Invoice To: KURT D. ALLEN

Client's Project No. _____

Shipment No. _____

Date Shipped: 11/24/99

No. of Cartons: _____

No. of Samples: 256 RVC SAMPLES

Copy of Report To: _____

List Sample Numbers	Material Description	List Elements To Be Determined	Indicate Method Fire/Grav.	Fire/AA	Geochem
RS-479 0'-1280'	RVC SAMPLES	Au/Ag as per ROSEBUD Drilling Protocol			
		BAGS from 0-140 ARE OK @ 140 ⇒ the Bag goes to 150 "140-150" this sample SHOULD be 140-145			
		Please change IS on BAGS when you line them out for ASSAY. FROM: 140-150 = 140-145, 145-150			
		280-285 = 275-280			
		there should be a Duplicate of 280-285 this Dup is Actually 280-285.			
		The REMAINING BAGS ARE Correct. Call Kurt ALLEN if you HAVE Questions.			

NOT RESPONSIBLE FOR LOSS OF SAMPLES DUE TO FIRE OR THEFT.

Pulp & Reject Disposition: Pulps and Rejects will be discarded unless otherwise noted.

	Bulk Rejects	Pulp
Return at Customer's Expense	X	X
via:		
Store at $1.00 per 100 lbs/month		
Discard immediately		

White Copy: Send to RMGN
Yellow Copy: Customer's Copy
Pink Copy: Enclose with Samples

THE ABOVE WORK IS AUTHORIZED BY: [signature] DATE: 11/24/99

INSPECTORATE

INSPECTORATE AMERICA CORPORATION
840 Greg Street
Sparks, Nevada 89431
Tel:775-359-6511 Fax: 775-359-2944

Certificate of Analysis

29-Dec-99

ROSEBUD MINING COMPANY
P.O. BOX 2610
58 MILES WEST OF
WINNEMUCCA, NV 89446

Page: 1
Copy: 1 of 2
Set : 1

Attn: Kurt Allen
Project: RS-479

Received: 30-Nov-99 07:28
PO #: Ref:99-46-08

Job: 993832R

Status: Final

Drill Core

Sample Id	Au FA/AA/AAS ppb	Au FA/AA/AAS oz/ton	Ag AA oz/ton	Ag AA ppm
RS-479 0-20	143	0.004	0.020	0.7
RS-479 20-25	27	0.001	0.006	0.2
RS-479 25-30	13	0.000	0.003	0.1
RS-479 30-35	19	0.001	0.008	0.3
RS-479 35-40	24	0.001	0.025	0.9
RS-479 40-45	2	0.000	0.001	0.0
RS-479 45-50	3	0.000	0.009	0.3
RS-479 50-55	12	0.000	0.001	0.0
RS-479 55-60	10	0.000	0.001	0.0
RS-479 60-65	5	0.000	<0.001	0.0
RS-479 65-70	<2	0.000	0.004	0.1
RS-479 70-75	<2	0.000	0.004	0.1
RS-479 75-80	<2	0.000	0.003	0.1
RS-479 80-85	14	0.000	0.006	0.2
RS-479 85-90	6	0.000	0.003	0.1
RS-479 90-95	7	0.000	0.020	0.7
RS-479 95-100	<2	0.000	0.002	0.1
RS-479 100-105	7	0.000	0.004	0.1
RS-479 105-110	20	0.001	0.006	0.2
RS-479 110-115	3	0.000	0.003	0.1
RS-479 115-120	195	0.006	0.069	2.4
RS-479 120-125	74	0.002	0.089	3.0
RS-479 125-130	2	0.000	0.013	0.4
RS-479 130-135	19	0.001	0.019	0.7
RS-479 135-140	8	0.000	0.053	1.8
RS-479 140-145	78	0.002	0.030	1.0
RS-479 145-150	<2	0.000	0.005	0.2
RS-479 150-155	<2	0.000	<0.001	0.0
RS-479 155-160	3	0.000	0.034	1.2
RS-479 160-165	3	0.000	0.008	0.3

INSPECTORATE

INSPECTORATE AMERICA CORPORATION
840 Greg Street
Sparks, Nevada 89431
Tel:775-359-6311 Fax: 775-359-2944

Certificate of Analysis

29-Dec-99

ROSEBUD MINING COMPANY
P.O. BOX 2610
58 MILES WEST OF
WINNEMUCCA, NV 89446

Page: 2
Copy: 1 of 2
Set : 1

Attn: Kurt Allen
Project: RS-479

Received: 30-Nov-99 07:28
PO #: Ref:99-46-08

Job: 993832R

Status: Final

Drill Core

Sample Id	Au FA/AA/AAS ppb	Au FA/AA/AAS oz/ton	Ag AA oz/ton	Ag AA ppm
RS-479 165-170	<2	0.000	<0.001	0.0
RS-479 170-175	2	0.000	0.005	0.2
RS-479 175-180	<2	0.000	0.001	0.0
RS-479 180-185	2	0.000	0.006	0.2
RS-479 185-190	9	0.000	0.011	0.4
RS-479 190-195	<2	0.000	0.005	0.2
RS-479 195-200	<2	0.000	0.002	0.1
RS-479 200-205	28	0.001	0.013	0.4
RS-479 205-210	<2	0.000	0.010	0.3
RS-479 210-215	<2	0.000	0.009	0.3
RS-479 215-220	<2	0.000	0.004	0.1
RS-479 220-225	<2	0.000	0.006	0.2
RS-479 225-230	6	0.000	0.012	0.4
RS-479 230-235	6	0.000	0.012	0.4
RS-479 235-240	<2	0.000	0.008	0.3
RS-479 240-245	<2	0.000	0.009	0.3
RS-479 245-250	11	0.000	0.008	0.3
RS-479 250-255	70	0.002	0.019	0.7
RS-479 255-260	78	0.002	0.018	0.6
RS-479 260-265	4	0.000	0.007	0.2
RS-479 265-270	3	0.000	0.005	0.2
RS-479 270-275	<2	0.000	0.003	0.1
RS-479 275-280	7	0.000	0.002	0.1
RS-479 280-285	4	0.000	<0.001	0.0
RS-479 285-290	3	0.000	0.008	0.3
RS-479 290-295	5	0.000	0.003	0.1
RS-479 295-300	3	0.000	0.010	0.3
RS-479 300-305	15	0.000	0.013	0.4
RS-479 305-310	<2	0.000	0.005	0.2
RS-479 310-315	<2	0.000	0.007	0.2

INSPECTORATE

INSPECTORATE AMERICA CORPORATION
840 Greg Street
Sparks, Nevada 89431
Tel:775-359-6311 Fax: 775-359-2944

Certificate of Analysis

29-Dec-99

ROSEBUD MINING COMPANY
P.O. BOX 2610
58 MILES WEST OF
WINNEMUCCA, NV 89446

Page: 3
Copy: 1 of 2
Set : 1

Attn: Kurt Allen
Project: RS-479

Received: 30-Nov-99 07:28
PO #: Ref:99-46-08

Job: 993832R

Status: Final

Drill Core

Sample Id	Au FA/AA/AAS ppb	Au FA/AA/AAS oz/ton	Ag AA oz/ton	Ag AA ppm
RS-479 315-320	2	0.000	0.004	0.1
RS-479 320-325	<2	0.000	0.001	0.0
RS-479 325-330	<2	0.000	0.009	0.3
RS-479 330-335	<2	0.000	0.003	0.1
RS-479 335-340	<2	0.000	0.003	0.1
RS-479 340-345	<2	0.000	0.003	0.1
RS-479 345-350	4	0.000	0.005	0.2
RS-479 350-355	32	0.001	0.013	0.4
RS-479 355-360	43	0.001	0.013	0.4
RS-479 360-365	99	0.003	0.021	0.7
RS-479 365-370	20	0.001	0.003	0.1
RS-479 370-375	131	0.004	0.037	1.3
RS-479 375-380	142	0.004	0.050	1.7
RS-479 380-385	88	0.003	0.031	1.1
RS-479 385-390	99	0.003	0.074	2.5
RS-479 390-395	195	0.006	0.037	1.3
RS-479 395-400	172	0.005	0.027	0.9
RS-479 400-405	120	0.004	0.045	1.5
RS-479 405-410	168	0.005	0.044	1.5
RS-479 410-415	183	0.005	0.035	1.2
RS-479 415-420	166	0.005	0.028	1.0
RS-479 420-425	114	0.003	0.028	1.0
RS-479 425-430	149	0.004	0.025	0.9
RS-479 430-435	134	0.004	0.026	0.9
RS-479 435-440	123	0.004	0.043	1.5
RS-479 440-445	61	0.002	0.190	6.5
RS-479 445-450	19	0.001	0.005	0.2
RS-479 450-455	7	0.000	0.004	0.1
RS-479 455-460	2	0.000	0.009	0.3
RS-479 460-465	8	0.000	0.007	0.2

70'
142
1984
18.3
1.3

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29-Dec-99

ROSEBUD MINING COMPANY
P.O. BOX 2610
58 MILES WEST OF
WINNEMUCCA, NV 89446

Page: 4
Copy: 1 of 2
Set : 1

Attn: Kurt Allen
Project: RS-479

Received: 30-Nov-99 07:28
PO #: Ref:99-46-08

Job: 993832R

Status: Final

Drill Core

Sample Id	Au FA/AA/AAS ppb	Au FA/AA/AAS oz/ton	Ag AA oz/ton	Ag AA ppm
RS-479 465-470	<2	0.000	0.004	0.1
RS-479 470-475	<2	0.000	0.016	0.5
RS-479 475-480	<2	0.000	0.024	0.8
RS-479 480-485	2	0.000	0.003	0.1
RS-479 485-490	4	0.000	0.004	0.1
RS-479 490-495	3	0.000	0.003	0.1
RS-479 495-500	10	0.000	0.012	0.4
RS-479 500-505	5	0.000	0.006	0.2
RS-479 505-510	2	0.000	0.005	0.2
RS-479 510-515	2	0.000	0.009	0.3
RS-479 515-520	8	0.000	0.003	0.1
RS-479 520-525	4	0.000	0.009	0.3
RS-479 525-530	4	0.000	0.004	0.1
RS-479 530-535	3	0.000	0.005	0.2
RS-479 535-540	5	0.000	0.009	0.3
RS-479 540-545	9	0.000	0.006	0.2
RS-479 545-550	6	0.000	0.005	0.2
RS-479 550-555	2	0.000	0.008	0.3
RS-479 555-560	<2	0.000	0.002	0.1
RS-479 560-565	15	0.000	0.014	0.5
RS-479 565-570	<2	0.000	0.005	0.2
RS-479 570-575	5	0.000	0.009	0.3
RS-479 575-580	90	0.003	0.022	0.8
RS-479 580-585	7	0.000	0.004	0.1
RS-479 585-590	<2	0.000	0.006	0.2
RS-479 590-595	2	0.000	0.005	0.2
RS-479 595-600	<2	0.000	0.006	0.2
RS-479 600-605	3	0.000	0.006	0.2
RS-479 605-610	24	0.001	0.004	0.1
RS-479 610-615	3	0.000	0.004	0.1

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Certificate of Analysis

29-Dec-99

ROSEBUD MINING COMPANY
P.O. BOX 2610
58 MILES WEST OF
WINNEMUCCA, NV 89446

Page: 5
Copy: 1 of 2
Set : 1

Attn: Kurt Allen
Project: RS-479

Received: 30-Nov-99 07:28
PO #: Ref:99-46-08

Job: 993832R

Status: Final

Drill Core

INSPECTORATE

INSPECTORATE AMERICA CORPORATION
840 Greg Street
Sparks, Nevada 89431
Tel:775-359-6011 Fax:775-355-0944

Certificate of Analysis

29-Dec-99

ROSEBUD MINING COMPANY
P.O. BOX 2610
58 MILES WEST OF
WINNEMUCCA, NV 89446

Page: 6
Copy: 1 of 2
Set : 1

Attn: Kurt Allen
Project: RS-479

Received: 30-Nov-99 07:28
PO #: Ref:99-46-08

Job: 993832R

Status: Final

Drill Core

Sample Id	Au FA/AA/AAS ppb	Au FA/AA/AAS oz/ton	Ag AA oz/ton	Ag AA ppm
RS-479 765-770	20	0.001	0.011	0.4
RS-479 770-775	11	0.000	0.012	0.4
RS-479 775-780	8	0.000	0.008	0.3
RS-479 780-785	17	0.000	0.050	1.7
RS-479 785-790	20	0.001	0.012	0.4
RS-479 790-795	9	0.000	0.003	0.1
RS-479 795-800	<2	0.000	0.010	0.3
RS-479 800-805	26	0.001	0.009	0.3
RS-479 805-810	41	0.001	0.009	0.3
RS-479 810-815	16	0.000	0.015	0.5
RS-479 815-820	<2	0.000	0.004	0.1
RS-479 820-825	<2	0.000	0.003	0.1
RS-479 825-830	<2	0.000	0.004	0.1
RS-479 830-835	<2	0.000	0.002	0.1
RS-479 835-840	<2	0.000	0.004	0.1
RS-479 840-845	<2	0.000	0.004	0.1
RS-479 845-850	<2	0.000	0.003	0.1
RS-479 850-855	<2	0.000	0.008	0.3
RS-479 855-860	<2	0.000	0.007	0.2
RS-479 860-865	<2	0.000	0.002	0.1
RS-479 865-870	<2	0.000	0.003	0.1
RS-479 870-875	<2	0.000	0.001	0.0
RS-479 875-880	18	0.001	0.010	0.3
RS-479 880-885	<2	0.000	0.008	0.3
RS-479 885-890	<2	0.000	<0.001	0.0
RS-479 890-895	<2	0.000	0.004	0.1
RS-479 895-900	<2	0.000	<0.001	0.0
RS-479 900-905	<2	0.000	0.004	0.1
RS-479 905-910	<2	0.000	0.005	0.2
RS-479 910-915	<2	0.000	0.006	0.2

INSPECTORATE

INSPECTORATE AMERICA CORPORATION
840 Greg Street
Sparks, Nevada 89431
Tel:775-358-6311 Fax:775-358-2944

Certificate of Analysis

29-Dec-99

ROSEBUD MINING COMPANY
P.O. BOX 2610
58 MILES WEST OF
WINNEMUCCA, NV 89446

Page: 7
Copy: 1 of 2
Set : 1

Attn: Kurt Allen
Project: RS-479

Received: 30-Nov-99 07:28
PO #: Ref:99-46-08

Job: 993832R

Status: Final

Drill Core

Sample Id	Au FA/AA/AAS ppb	Au FA/AA/AAS oz/ton	Ag AA oz/ton	Ag AA ppm
RS-479 915-920	<2	0.000	0.003	0.1
RS-479 920-925	<2	0.000	0.002	0.1
RS-479 925-930	<2	0.000	0.004	0.1
RS-479 930-935	<2	0.000	0.004	0.1
RS-479 935-940	<2	0.000	0.004	0.1
RS-479 940-945	<2	0.000	0.005	0.2
RS-479 945-950	<2	0.000	0.006	0.2
RS-479 950-955	<2	0.000	0.005	0.2
RS-479 955-960	<2	0.000	0.004	0.1
RS-479 960-965	<2	0.000	0.001	0.0
RS-479 965-970	<2	0.000	0.010	0.3
RS-479 970-975	<2	0.000	0.008	0.3
RS-479 975-980	18	0.001	0.007	0.2
RS-479 980-985	<2	0.000	0.009	0.3
RS-479 985-990	29	0.001	0.014	0.5
RS-479 990-995	<2	0.000	0.007	0.2
RS-479 995-1000	<2	0.000	0.006	0.2
RS-479 1000-1005	<2	0.000	0.010	0.3
RS-479 1005-1010	<2	0.000	0.008	0.3
RS-479 1010-1015	11	0.000	0.013	0.4
RS-479 1015-1020	<2	0.000	0.080	2.7
RS-479 1020-1025	<2	0.000	0.002	0.1
RS-479 1025-1030	31	0.001	0.006	0.2
RS-479 1030-1035	56	0.002	0.008	0.3
RS-479 1035-1040	23	0.001	0.008	0.3
RS-479 1040-1045	10	0.000	0.006	0.2
RS-479 1045-1050	<2	0.000	0.002	0.1
RS-479 1050-1055	<2	0.000	0.002	0.1
RS-479 1055-1060	<2	0.000	0.003	0.1
RS-479 1060-1065	<2	0.000	0.005	0.2

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29-Dec-99

ROSEBUD MINING COMPANY
P.O. BOX 2610
58 MILES WEST OF
WINNEMUCCA, NV 89446

Page: 8
Copy: 1 of 2
Set : 1

Attn: Kurt Allen
Project: RS-479

Received: 30-Nov-99 07:28
PO #: Ref:99-46-08

Job: 993832R

Status: Final

Drill Core

Sample Id	Au FA/AA/AAS ppb	Au FA/AA/AAS oz/ton	Ag AA oz/ton	Ag AA ppm
RS-479 1065-1070	<2	0.000	0.014	0.5
RS-479 1070-1075	<2	0.000	0.006	0.2
RS-479 1075-1080	<2	0.000	0.009	0.3
RS-479 1080-1085	<2	0.000	0.003	0.1
RS-479 1085-1090	<2	0.000	0.005	0.2
RS-479 1090-1095	<2	0.000	0.012	0.4
RS-479 1095-1100	4	0.000	0.002	0.1
RS-479 1100-1105	<2	0.000	0.013	0.4
RS-479 1105-1110	<2	0.000	0.006	0.2
RS-479 1110-1115	<2	0.000	0.013	0.4
RS-479 1115-1120	<2	0.000	0.011	0.4
RS-479 1120-1125	<2	0.000	0.039	1.3
RS-479 1125-1130	3	0.000	0.012	0.4
RS-479 1130-1135	<2	0.000	0.007	0.2
RS-479 1135-1140	<2	0.000	0.012	0.4
RS-479 1140-1145	<2	0.000	0.016	0.5
RS-479 1145-1150	<2	0.000	0.031	1.1
RS-479 1150-1155	7	0.000	0.014	0.5
RS-479 1155-1160	<2	0.000	0.003	0.1
RS-479 1160-1165	6	0.000	0.020	0.7
RS-479 1165-1170	<2	0.000	0.013	0.4
RS-479 1170-1175	<2	0.000	0.002	0.1
RS-479 1175-1180	<2	0.000	0.002	0.1
RS-479 1180-1185	2	0.000	0.010	0.3
RS-479 1185-1190	<2	0.000	0.004	0.1
RS-479 1190-1195	<2	0.000	0.016	0.5
RS-479 1195-1200	2	0.000	0.015	0.5
RS-479 1200-1205	<2	0.000	0.005	0.2
RS-479 1205-1210	2	0.000	0.004	0.1
RS-479 1210-1215	<2	0.000	0.003	0.1

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INSPECTORATE AMERICA CORPORATION
840 Greg Street
Sparks, Nevada 89431
Tel:775-359-5311 Fax: 775-359-2944

Certificate of Analysis

29-Dec-99

ROSEBUD MINING COMPANY
P.O. BOX 2610
58 MILES WEST OF
WINNEMUCCA, NV 89446

Page: 9
Copy: 1 of 2
Set : 1

Attn: Kurt Allen
Project: RS-479

Received: 30-Nov-99 07:28
PO #: Ref:99-46-08

Job: 993832R

Status: Final

Drill Core

Sample Id	Au FA/AA/AAS ppb	Au FA/AA/AAS oz/ton	Ag AA oz/ton	Ag AA ppm
RS-479 1215-1220	<2	0.000	0.002	0.1
RS-479 1220-1225	<2	0.000	0.025	0.9
RS-479 1225-1230	<2	0.000	0.010	0.3
RS-479 1230-1235	<2	0.000	0.002	0.1
RS-479 1235-1240	<2	0.000	0.003	0.1
RS-479 1240-1245	<2	0.000	0.004	0.1
RS-479 1245-1250	<2	0.000	<0.001	0.0
RS-479 1250-1255	<2	0.000	0.003	0.1
RS-479 1255-1260	12	0.000	0.009	0.3
RS-479 1260-1265	6	0.000	0.013	0.4
RS-479 1265-1270	4	0.000	0.002	0.1
RS-479 1270-1275	5	0.000	0.014	0.5
RS-479 1275-1280	<2	0.000	0.009	0.3
STD # 68644	2383	0.070	0.195	6.7

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Certificate of Analysis

ROSEBUD MINING COMPANY
P.O. BOX 2610
58 MILES WEST OF
WINNEMUCCA, NV 89446

29-Dec-99

Page: 10
Copy: 1 of 2
Set : 2

Attn: Kurt Allen
Project: RS-479

Received: 30-Nov-99 07:28
PO #: Ref:99-46-08

Job: 993832R

Status: Final

Abbreviations:

Parameters:

Au	: Gold
Ag	: Silver

Methods:

FA/AA/AAS	: Fire Assay/Atomic Absorption Finish
AA	: Atomic Absorption

Units:

ppb	: Parts per billion
oz/ton	: ounces per ton
ppm	: Parts per million

Quality codes:

<	: Less than

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29-Dec-99

ROSEBUD MINING COMPANY
P.O. BOX 2610
58 MILES WEST OF
WINNEMUCCA, NV 89446

Page: 11
Copy: 1 of 2

Attn: Kurt Allen
Project: RS-479

Received: 30-Nov-99 07:28
PO #: Ref:99-46-08

Job: 993832R

Status: Final

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 geologic 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.

Job approved by:

Signed:

.....
Dave Francisco
Laboratory Manager

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

JOB NUMBER: 29-0588-311 WELL NAME: RS-479 / VS 000.00

INRUN SURVEY
BY MINIMUM CURVATURE

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	L/R PROP.	INCL HORZ	BEARING AZIMUTH	COORDINATES LATITUDE	COORDINATES DEPARTURE	D-LEG /100	D-LEG /CL	STATION DISP.	DISPLACEMENT DIRECTION	TEMP. DEG F
0.0	0.00	0.00	0.000	-49.84	098.79	0.00 N	0.00 E	0.00		0.00	AT 000.00	
50.0	38.59	31.39	5.078	-51.18	099.60	5.08 S	31.39 E	2.87	1.44	31.80	AT 099.19	057.70
100.0	78.05	61.58	10.652	-53.05	101.36	10.65 S	61.58 E	4.32	2.16	62.49	AT 099.81	059.21
150.0	118.42	90.52	16.327	-54.66	100.82	16.33 S	90.52 E	3.28	1.64	91.98	AT 100.22	059.80
200.0	159.75	118.16	21.567	-56.84	100.64	21.57 S	118.16 E	4.36	2.18	120.11	AT 100.34	060.53
250.0	202.04	144.38	26.456	-58.68	100.48	26.46 S	144.38 E	3.68	1.84	146.79	AT 100.38	061.24
300.0	245.16	169.23	31.262	-60.50	101.44	31.26 S	169.23 E	3.77	1.88	172.09	AT 100.47	062.00
350.0	288.82	193.16	35.890	-61.15	100.44	35.89 S	193.16 E	1.62	0.81	196.47	AT 100.53	062.80
400.0	332.86	216.46	39.967	-62.37	099.39	39.97 S	216.46 E	2.63	1.32	220.12	AT 100.46	063.59
450.0	377.45	238.81	43.533	-63.80	098.72	43.53 S	238.81 E	2.92	1.46	242.75	AT 100.33	064.50
500.0	422.57	260.10	46.807	-65.17	098.77	46.81 S	260.10 E	2.74	1.37	264.28	AT 100.20	065.48
550.0	468.12	280.47	50.039	-66.10	099.27	50.04 S	280.47 E	1.91	0.95	284.90	AT 100.12	066.49
600.0	514.03	300.03	53.127	-67.24	098.66	53.13 S	300.03 E	2.33	1.17	304.70	AT 100.04	067.49
650.0	560.28	318.83	55.834	-68.10	097.71	55.83 S	318.83 E	1.87	0.93	323.68	AT 099.93	068.80
700.0	606.90	336.70	58.525	-69.52	099.47	58.52 S	336.70 E	3.11	1.56	341.75	AT 099.86	069.68
750.0	653.90	353.51	61.404	-70.59	099.98	61.40 S	353.51 E	2.17	1.08	358.81	AT 099.85	070.57
800.0	701.28	369.23	64.174	-72.17	100.01	64.17 S	369.23 E	3.16	1.58	374.77	AT 099.86	071.51
850.0	749.04	383.80	66.752	-73.42	100.07	66.75 S	383.80 E	2.50	1.25	389.56	AT 099.87	072.50
900.0	797.11	397.32	69.270	-74.64	101.06	69.27 S	397.32 E	2.50	1.25	403.31	AT 099.89	073.44
950.0	845.37	410.13	71.899	-75.04	102.15	71.90 S	410.13 E	0.98	0.49	416.38	AT 099.94	074.62
1000.0	893.81	422.22	74.626	-76.24	103.31	74.63 S	422.22 E	2.47	1.23	428.77	AT 100.02	075.60
1050.0	942.48	433.34	77.273	-77.35	103.50	77.27 S	433.34 E	2.22	1.11	440.17	AT 100.11	082.31
1100.0	991.32	443.70	79.944	-77.92	105.44	79.94 S	443.70 E	1.41	0.71	450.85	AT 100.21	083.68
1150.0	1040.30	453.35	82.712	-78.91	106.61	82.71 S	453.35 E	2.03	1.02	460.84	AT 100.34	085.05
1200.0	1089.43	462.27	85.362	-79.65	106.50	85.36 S	462.27 E	1.48	0.74	470.08	AT 100.46	085.87
1250.0	1138.63	470.84	87.753	-79.84	104.65	87.75 S	470.84 E	0.76	0.38	478.95	AT 100.56	086.54
1280.0	1168.16	475.95	89.113	-79.87	105.17	89.11 S	475.95 E	0.32	0.10	484.22	AT 100.60	087.16

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*************************************************************
*                          ********                         *
*      THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF          *
*                          ********                         *
*  1280.0 FEET EQUALS    484.22    FEET AT   100.60         *
*                          ********                         *
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WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

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

JOB NUMBER: 29-0588-311

WELL NAME: RS-479 / VS 000.00

LOCATION: ROSEBUD MINE PROPERTY

SURVEY DATE: 11/23/99

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: TRUE NORTH

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

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 090.00
WATER CONTACT= 997' MD

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

COMMENTS: ***** EKLUND *****
** WARREN EKLUND **

PROJECTED F/1260' T/1280'.

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

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

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WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

JOB NUMBER: 29-0588-311 WELL NAME: RS-479 / VS 000.00

INRUN SURVEY
BY MINIMUM CURVATURE

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	L/R PROP.	INCL HORZ	BEARING AZIMUTH	COORDINATES LATITUDE	COORDINATES DEPARTURE	D-LEG /100	D-LEG /CL	STATION DISP.	DISPLACEMENT DIRECTION	TEMP. DEG F
0.0	0.00	0.00	0.000	-49.84	098.79	0.00 N	0.00 E	0.00		0.00	AT 000.00	
50.0	38.59	31.39	5.078	-51.18	099.60	5.08 S	31.39 E	2.87	1.44	31.80	AT 099.19	057.70
100.0	78.05	61.58	10.652	-53.05	101.36	10.65 S	61.58 E	4.32	2.16	62.49	AT 099.81	059.21
150.0	118.42	90.52	16.327	-54.66	100.82	16.33 S	90.52 E	3.28	1.64	91.98	AT 100.22	059.80
200.0	159.75	118.16	21.567	-56.84	100.64	21.57 S	118.16 E	4.36	2.18	120.11	AT 100.34	060.53
250.0	202.04	144.38	26.456	-58.68	100.48	26.46 S	144.38 E	3.68	1.84	146.79	AT 100.38	061.24
300.0	245.16	169.23	31.262	-60.50	101.44	31.26 S	169.23 E	3.77	1.88	172.09	AT 100.47	062.00
350.0	288.82	193.16	35.890	-61.15	100.44	35.89 S	193.16 E	1.62	0.81	196.47	AT 100.53	062.80
400.0	332.86	216.46	39.967	-62.37	099.39	39.97 S	216.46 E	2.63	1.32	220.12	AT 100.46	063.59
450.0	377.45	238.81	43.533	-63.80	098.72	43.53 S	238.81 E	2.92	1.46	242.75	AT 100.33	064.50
500.0	422.57	260.10	46.807	-65.17	098.77	46.81 S	260.10 E	2.74	1.37	264.28	AT 100.20	065.48
550.0	468.12	280.47	50.039	-66.10	099.27	50.04 S	280.47 E	1.91	0.95	284.90	AT 100.12	066.49
600.0	514.03	300.03	53.127	-67.24	098.66	53.13 S	300.03 E	2.33	1.17	304.70	AT 100.04	067.49
650.0	560.28	318.83	55.834	-68.10	097.71	55.83 S	318.83 E	1.87	0.93	323.68	AT 099.93	068.80
700.0	606.90	336.70	58.525	-69.52	099.47	58.52 S	336.70 E	3.11	1.56	341.75	AT 099.86	069.68
750.0	653.90	353.51	61.404	-70.59	099.98	61.40 S	353.51 E	2.17	1.08	358.81	AT 099.85	070.57
800.0	701.28	369.23	64.174	-72.17	100.01	64.17 S	369.23 E	3.16	1.58	374.77	AT 099.86	071.51
850.0	749.04	383.80	66.752	-73.42	100.07	66.75 S	383.80 E	2.50	1.25	389.56	AT 099.87	072.50
900.0	797.11	397.32	69.270	-74.64	101.06	69.27 S	397.32 E	2.50	1.25	403.31	AT 099.89	073.44
950.0	845.37	410.13	71.899	-75.04	102.15	71.90 S	410.13 E	0.98	0.49	416.38	AT 099.94	074.62
1000.0	893.81	422.22	74.626	-76.24	103.31	74.63 S	422.22 E	2.47	1.23	428.77	AT 100.02	075.60
1050.0	942.48	433.34	77.273	-77.35	103.50	77.27 S	433.34 E	2.22	1.11	440.17	AT 100.11	082.31
1100.0	991.32	443.70	79.944	-77.92	105.44	79.94 S	443.70 E	1.41	0.71	450.85	AT 100.21	083.68
1150.0	1040.30	453.35	82.712	-78.91	106.61	82.71 S	453.35 E	2.03	1.02	460.84	AT 100.34	085.05
1200.0	1089.43	462.27	85.362	-79.65	106.50	85.36 S	462.27 E	1.48	0.74	470.08	AT 100.46	085.87
1250.0	1138.63	470.84	87.753	-79.84	104.65	87.75 S	470.84 E	0.76	0.38	478.95	AT 100.56	086.54
1280.0	1168.16	475.95	89.113	-79.87	105.17	89.11 S	475.95 E	0.32	0.10	484.22	AT 100.60	087.16

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*                         ********                          *
*      THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF          *
*                         ********                          *
*  1280.0 FEET EQUALS    484.22    FEET AT   100.60         *
*                         ********                          *
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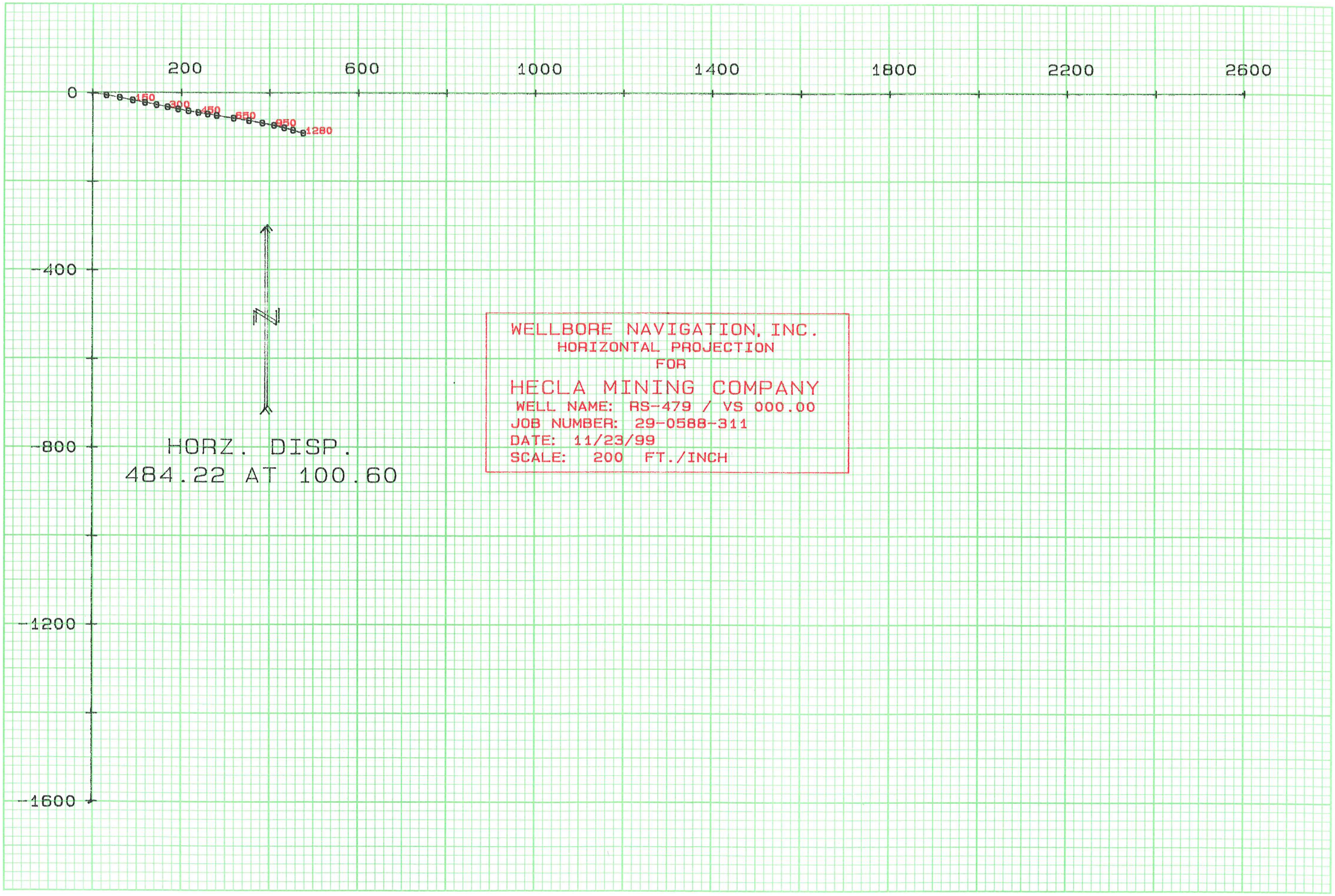

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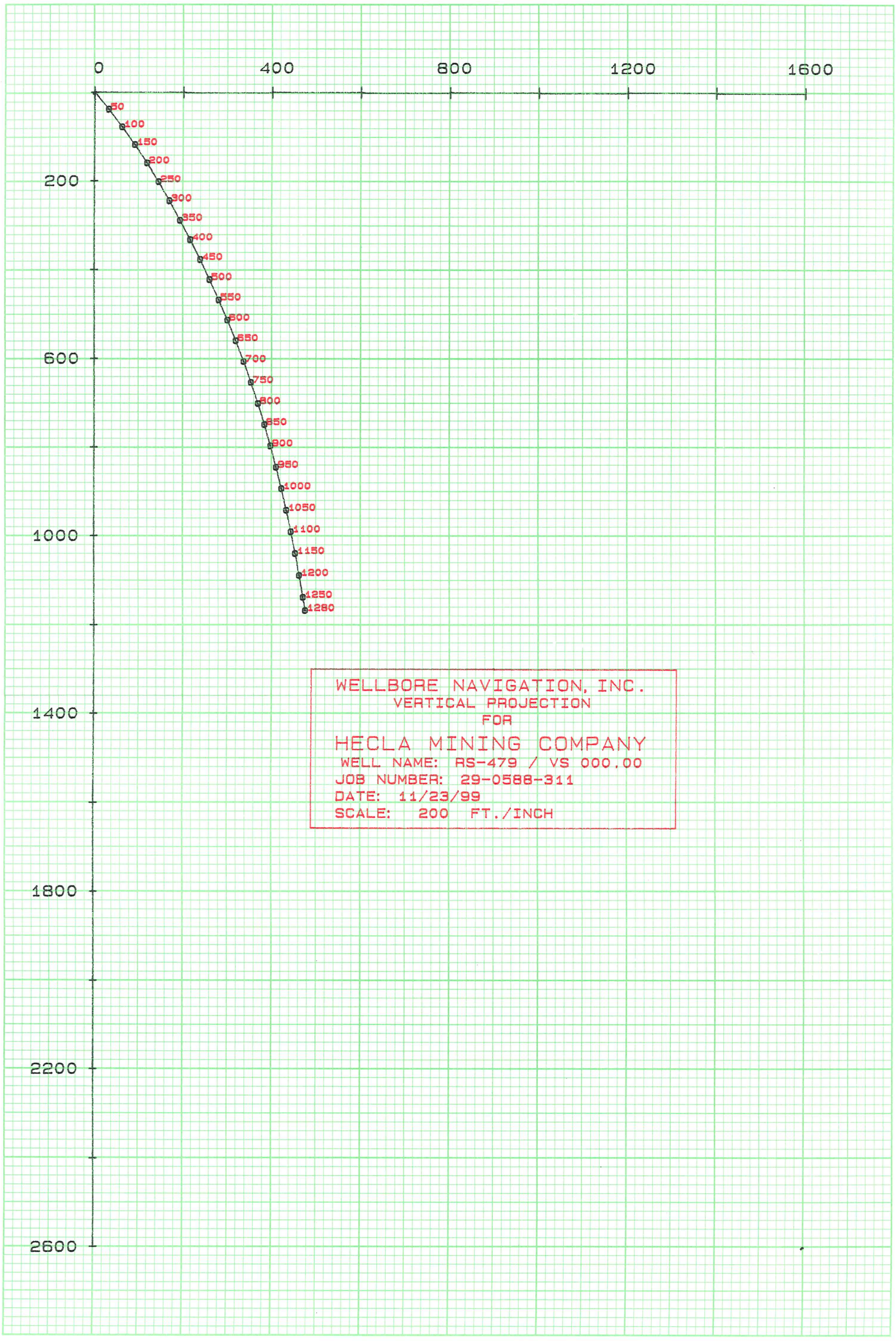
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