60000537

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-430
AUTHOR	K. Allen; S. King; V. Reid; N. Jex D. White
DATE OF DOC(S)	1998
MULTI_DIST Y / N? Additional Dist_Nos:	
QUAD_NAME	Sulphur 7.5'
P_M_C_NAME (mine, claim & company names)	Rosebud Mine; Hecla Mining Co.; Rosebud Mining Co.; Rosebud Project
COMMODITY If not obvious	gold; silver
NOTES	drill logs; assay; geology; photographs; geochemistry; total depth 800'; invoices 63 p.

Keep docs at about 250 pages if no oversized maps attached
(for every 1 oversized page (>11x17) with text reduce
the amount of pages by ~25)

SS: DD 3/18/08
Initials Date

DB:
Initials Date

SCANNED:
Initials Date

Revised: 1/22/08

RS-430

60000537
4010

6000 0537

Hecla MINING COMPANY

- quartz, chalcedony, silicification
- faults, fractures
- FeOx / BARITE
- sulfide
- calcite, carbonate
- argillization, white clays
- propylitization
- potassic alteration
- chlorite, chloritic clays

ROSEBUD PROJECT
DIAMOND DRILL LOG

HOLE NUMBER	RS-430	LOCATION	EAST, SURFACE
PAGE	1 OF 4	NORTHING	
DATE	03/27/98	EASTING	
LOGGED BY	ASM	ELEVATION	
SCALE	1" = 10'	AZIMUTH	–
TOTAL DEPTH	800'	INCLINATION	-90°

REMARKS: ~~INCOMPLETE~~ !!

TH.	OX/RED.	LITHOLOGY (CORE AT: 601')	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
601.0-644.4' FG PINK PORPHYRY? OR LBT SUB UNIT		601.0 – 639.0: DULL FLESH TAN APHANITIC FLOW FOLIATED GROUNDMASS. NUMEROUS 3-4 mm LONG PHENOCRYST RELICTS ALIGNED SUB // TO FLOW FOLIATION & PARTIALLY DEFINING IT. POSSIBLY BIOTITES OR AMPHIBOLES NOW SHOT TO PALE TAN CLAY. 604': PIMA 639-641': 4-5 cm WIDE STRANDS OF BLUE/GREEN CLAY ALTERED MATERIAL WITH SOME PERLITICALLY CRACKLED TEXTURE. IS THE UNDERLYING "VITROPHERE" INTRUSIVE?	600 610 620 630 640 650	50 90 65 65 60 60 50 20 40 10 75	PYRARGERITE + WHT CLAY MOD. JOINTING COMMONLY SUB // TO FOLIATION. 616-619': STRLY BROKEN. 636-642.5': MOD'LY BROKEN ZONE. 644.3'-647.3': WKLY SHEARED	601.0'-636': MOD./WK PY COATED FRAX OR VEINLETS, STR. PYRITE BLEBS IN WALLROCK. GRN SELVAGES & SOME GRN-BLUE CLAY COATING FRAX @ 618.0-619.0'. GROUNDMASS LARGELY UNALTERED. PYRITIC VNLTS & FRAX COATINGS AT HIGH ∠'S TO C/A. 635.8'-644.3': PYRITIC/MARC AND CLAY FRACTURE COATINGS AND INFILL. BOTH WHT AND GRN CLY. MOD. TO STR. 635.8-637.6: FRAX SEMI-HEALED WITH SILICA. UNHEALED BELOW. 644.3'-650.4': STR. DISS'D BRASSY PY; WK SILICA + PYRITE STRINGERS. MOD/STR. GRN CLY ALTERATN
644.4'-650.4' VITROPHYRE		644.3-650.4': LT. TO MEDIUM BLUE-GRN STR'LY CLAY ALTERED, WAXY MASSIVE MATERIAL. POSSIBLY "VITROPHYRE" SUBUNIT?. STRLY. TO MOD'LY SHEARED AT FAIRLY HI ∠'S TO C/A. ESSENTIALLY ALREADY PART OF FAULT ZONE.				

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag
601.0	605.5					
605.5	610.6					
610.6	616.0					
616.0	622.0					
622.0	628.0					
628.0	632.7					
632.7	635.8					
635.8	640.2					
640.2	644.3					
644.3	647.3					
647.3	650.4					

HOLE NUMBER RS-430 PAGE 2 OF 4

LITH.	OX/RED.	LITHOLOGY
650.4'-671.1 FAULT		650.4'-651.7': BLACK (SULFIDE?) SPLOTCHES ON MASSIVE BLUE-GREEN VITROPHYRE. GRADES INTO SPECKLED, BUD-LIKE BRECCIA FROM 652.0'-652.5'. 651.7'-656.4': LT. TO MED. GRN CLAY ALTERED, WEAKLY SHEARED BUD. 656.4'-658.4': UNHEALED, MILLED FAULT ZONE. LT. GRN GOUGE + GRIT. WK DISS'D PY. 658.4'-659.9': SILICA-FLOODED, MILLED, FULLY HEALED FAULT BRECCIA. GRY SILICA-SULFIDE VEINLETS. 659.9'-662.4': MOD'LY/STR'LY SILICIFIED, MED. GRN MUSH. ~~NO~~ PARTIALLY BUD DERIVED TEXTURALLY OBLITERATED, LOCAL VUGGY SEMI-HEALED ~~SH~~ SHEARING. 662.4'-665.2': TOTAL SILICA REPLACEMT TO STR'LY SILICIFIED, BELOW THIN GOUGY SHEAR AT 60° TO C/A. PURE WHT TO GRY SILICA GRADES DOWN INTO STR'LY SILICIFIED BUD-DERIVED RK.
671.1 - 800.0 DOZER		665.2-666.3': MANGLED BUD-DERIVED FAULT BXA. STR. GRN CLAY ALT'N IN SPECIFIED FRAGMTS. SILICA-POOR. 666.3'-671.1': BUD-DERIVED FAULT BRECCIA. MED. GRN, SPECKLED CLAY-ALTERED FRAGMTS IN STR'LY TO MOD'LY SILICIFIED GRN MATRIX, BUD-DERIVED. 671.1-672.3': SHEARED/MYLONITIZED LT. GRNISH-TAN DOZER LACED WITH GRYISH SILICA VNING & WALLRK SILICA. 672.3-674.4': LT. GRNISH-TAN DOZER. STR. SILICA + MARC VEINING. FIRST FAINT RUDDY-BRN FeOx (?) STAINING IN DOZER. PICKS OUT FLOW BANDING & AUTOBRECCIA FRAGMENTS. 690': PIMA 674.4'-800.0' LT. GRNISH-TAN AUTOBRECCIATED DOZER 717.9-720.0': DOZER CRACKLE BXA.

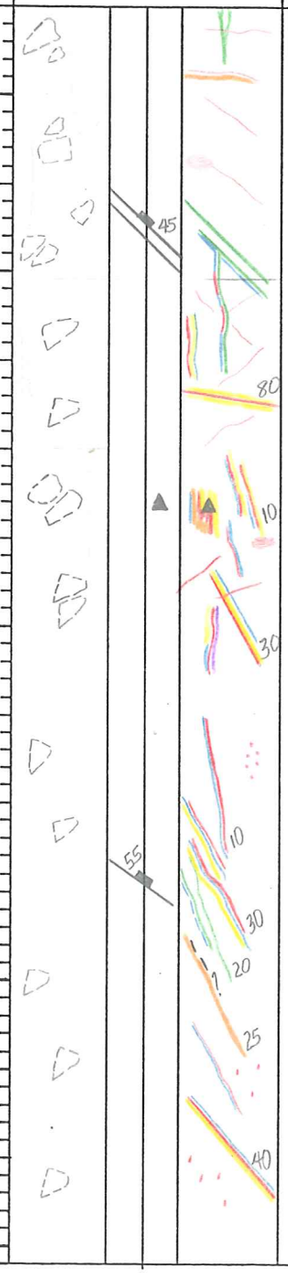
GRAPHIC LOG

STRUCTURE	ALTERATION AND MINERALIZATION
651.7-656.4': WKLY SHEARED 656.4-658.4': STR'LY MILLED FAULT BXA, UNHEALED. 658.4-659.9': HEALED BXA 659.9': MULLIONED, SLICKED JOINT. 663.5' ALSO. 662.4': GOUGY SHEAR 662.4-665.2': SILICA-FLOODED BRECCIA. 665.2- : MATRIX-SUPPORTED, WANING ALT BRECCIA. 717.9-720 : DOZER CRACKLE BRECCIA. DOMINANTLY HYDROTHERMAL.	650.4-651.7': MOD/STR GRN CLAY ALT'N. MOD. MARCASITE STRINGERS, STR. BLK SULFIDE 651.7-656.4': STR. GRN CLY ALTERATION, MOD/WK MARC STRINGERS. 656.4'-658.4': STR. GRN CLY, WK SULFIDES 658.4-659.9': STR. GRY SILICA + SULFIDE. NOT TOTAL REPLACEMT. 659.9'-662.4': STR/MOD. SILICIFICATN OVERPRINTS STR. GRN CLAY ALT'N. 662.4'-665.2': TOTAL SILICA REPLACEMT TO STR. SILICIFICATION. STR. DISS'D GRY SULFIDE W/ SILICA. 665.3-666.3': STR. GRN CLAY 666.3-672.3': STR/MOD. SILICIFICATN AND SILICA VNING. WK DISS'D PY. 672.3-674.4': STR. SILICA + MARCASITE VNING. 674.4'-688.7': WK/MOD. SILICA + MARC VNLTS, WK DISS'D MARC/PY. 688.7'- : STR., THICK SILICA + MARCASITE +/- WHT CLAY IN LATE VUGS. 717.9-720.0': BRECCIA VN AT 30° TO C/A. GRY SILICA + MARCASITE VNS IN DOZER CRACKLE BXA. STR. WAXY GRN CLAY IN RK FLOUR MATRIX

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2
650.4	651.7				
651.7	656.4				
656.4	658.4				
658.4	659.9				
659.9	662.4				
662.4	665.2				
665.2	666.3				
666.3	671.1	4.8	0.727		0.720
671.1	672.3				
672.3	674.4				
674.4	679.8				
679.8	684.3				
684.3	688.7				
688.7	691.9				
691.9	695.3				
695.3	700.0				
700.0	705.0				
705.0	710.0				
710.0	714.1				
714.1	717.9				
717.9	720.0				

HOLE NUMBER RS-430 PAGE 3 OF 4

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
671.1 – 800.0' DOZER		FROM 674.9' – ~745' : CONT'D LT. GRN DOZER AUTO-BRECCIA WITH A FAINT RUDDY BRN STAIN PICKING OUT INTERNAL TEXTURES. FROM 745': INTERMITTENT FAINT RUDDY OXIDE STAINING CONTINUES IN GROUNDMASS. THE DOZER CONTINUES LT. GRN TIGHTLY-PACKED AUTOBRECCIA. UNDISRUPTED BY LATER TECTONIC BRECCIATION. AUTOBRECCIA FABRIC WAXES AND WANES THRU THIS INTERVAL. LOCALLY THE BRECCIA FABRIC IS STR. ALMOST MILLED IN APPEARANCE. ELSEWHERE IT IS JUST TIGHTLY PACKED CRACKLE BXA W/O MATRIX. 778': PIMA	720 730 740 750 760 770 780 790			FROM ~708': MOD/WK LOCAL WAXY GRN CLAY VNLTS, + CALCITE. CONT'D TRACE PERVASIVE GREEN CLAY IN WALLROCK. CONT'D FAINT RUDDINESS FROM 745': WK/MOD. SILICA + MARCASITE VNLTS AT VARIED MODERATE ANGLES TO CIA. INFILLED WITH LATER WHITE CLAY AND/OR CALCITE. ~748': 4" OF BRECCIA VNING 769.0'-772.0': DARK GRN CHLORITE OR CLY STRINGER VNLTS. +/- CALCITE & MARC. 778.5': WHT CLAY VNLT W/ POSSIBLE VISIBLE PYRARGERITE; NO CALCITE.

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	
720.0	724.9					
724.9	730.0					
730.0	735.4					
735.4	740.0					
740.0	744.9					
744.9	750.0					
750.0	755.0					
755.0	760.0					
760.0	765.0					
765.0	770.0					
770.0	775.8					
775.8	780.0					
780.0	784.7					
784.7	790.0					

HOLE NUMBER RS-430 PAGE 4 OF 4

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2
671.1-800.0' DOZER		~792.0-794': OLD SHEAR FABRIC. APPEARS CONTEMPORANEOUS WITH AUTOBRECCIA.	790		~792.0-794.0': FULLY HEALED WK SHEAR ZONE IN DOZER. FT HI ∠ TO CA.	FROM 745.0-800.0': CONTINUED WK SILICA + CALCITE + MARL VNS. ~792-793': GREEN CLY SHEAR VEINS IN MYLONITIC FABRIC ~793-794': BLK SULFIDIC STRINGER VNLTS.	790.0	795.3				
		T.D. 800'	800				795.3	800.0				

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-430 DATE: 03/28/98 LOGGED BY: HJM PAGE 1 OF 2

DRILL RUN FROM	DRILL RUN TO	SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH DOWNHOLE DEPTH	ROCK STRENGTH POINT LOAD INDEX (psi)	FRACTURE DATA FRACTURE DENSITY (FT.)	FRACTURE DATA AVG. ANGLE TO C.A.	FRACTURE DATA ROUGHNESS	FRACTURE DATA INFILL	DENSITY DATA DOWNHOLE DEPTH	DENSITY DATA SAMPLE WEIGHT (g)	DENSITY DATA DISPLACEMENT (cc)	DENSITY DATA DENSITY (g/cc)
601.0	606.0	100.0	100.0	80.0										
606.0	616.0	103.0	103.0	52.0										
616.0	619.0	100.0	100.0	30.0										
619.0	628.7	100.0	100.0	78.0										
628.7	639.0	100.0	100.0	47.0										
639.0	649.0	100.0	100.0	32.0										
649.0	659.3	102.9	102.9	51.0										
659.3	669.5	96.1	96.1	87.0										
669.5	679.8	95.1	95.1	79.0										
679.8	690.0	98.0	98.0	85.0										
690.0	700.0	102.0	102.0	79.0										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # RS-430 DATE: 03/28/98 LOGGED BY: HSM PAGE 2 OF 2

DRILL RUN FROM	DRILL RUN TO	SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH DOWNHOLE DEPTH	ROCK STRENGTH POINT LOAD INDEX (psi)	FRACTURE DATA FRACTURE DENSITY (FT.)	FRACTURE DATA AVG. ANGLE TO C.A.	FRACTURE DATA ROUGHNESS	FRACTURE DATA INFILL	DENSITY DATA DOWNHOLE DEPTH	DENSITY DATA SAMPLE WEIGHT (g)	DENSITY DATA DISPLACEMENT (cc)	DENSITY DATA DENSITY (g/cc)
700.0	710.0	100.0	100.0	96.0										
710.0	720.0	100.0	100.0	77.0										
720.0	730.0	100.0	100.0	100.0										
730.0														
	750.0													
750.0	760.0	102.0	102.0	102.0										
760.0	770.0	98.0	98.0	98.0										
770.0	780.0	100.0	100.0	100.0										
780.0	790.0	101.0	101.0	101.0										
790.0	800.0	101.0	101.0	88.0										
	TD.													

Hecla MINING COMPANY
ROSEBUD PROJECT DRILL LOG

Quick 106

HOLE NUMBER RS-430
PAGE 1 OF 3
DATE 6/24/98
LOGGED BY KBA
TOTAL DEPTH RUC Pre-collar = 1000'

LOCATION EAST ZONE
NORTHING
EASTING
ELEVATION
AZIMUTH VERT
INCLINATION -90

AREA EAST ZONE
DRILLING CO. EKLUND
RIG TYPE RUC
HOLE SIZE 6 1/2
DOWN HOLE SURVEY BY WELNAV.

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 %	AC-SULF %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MIXTURE	ANALYTICAL DA: FROM	TO	W	Au
10		col	Colluvium																		X																			
20		col																			X																			
30		TCF6	FINE-GRAINED, LATITIC to ANDESITIC FLOW.																	X																				
40																				X																				
50																				X																				
60																				X																				
70																				X																				
80																				X																				
90																			X																					
100																																								
110																																								
120																																								
130																																								
140																																								
150																																								
160																																								
170																																								
180																																								
190																																								
200	FAULT FLT		CLAY FAULT GOUGE																																					

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

HOLE NUMBER RS-430
PAGE 2 OF 3
DATE
LOGGED BY
TOTAL DEPTH

LOCATION
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

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

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION																	MINERALIZATION									METALLURGY				ANALYTICAL DA			
						SILICIFICATION					ARGILLIC				PROPYLITIC %		POTASSIC %		OXIDATION			VIENING		SULFIDES			PY	CPY	MAR	AC-SULF	SULFATE	BARITE	OXIDE	SULF	CARBON	MIXTURE	FROM	TO	W	Au
						5%	15%	+25%	MATRIX %	CLASTS %	5%	15%	+25%	TYPE	CHLORITE	CALCITE	K-SPAR	ALUNITE	5%	15%	+25%	%	TYPE	5%	15%	+25%	%	%	%	%	%	%									
210		TCLT	FINE-GRAINED LATITIC TO ANDESITIC AUTO BRECCIA OR VOLCANIC BRECCIA																																					
220																																								
230																																								
240																																								
250																																								
260																																								
270																																								
280																																								
290																																								
300																																								
310																																								
320																																								
330																																								
340																																								
350																																								
360																																								
370																																								
380																																								
390																																								
400																																								

Hecla MINING COMPANY

ROSEBUD PROJECT DRILL LOG

HOLE NUMBER RS-430
PAGE 3 OF 3
DATE
LOGGED BY
TOTAL DEPTH

LOCATION
NORTHING
EASTING
ELEVATION
AZIMUTH
INCLINATION

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

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 %	AC-SULF %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MIXTURE	ANALYTICAL DA: FROM	TO	W	Au
410		TCLT																																						
420																																								
430																																								
440																																								
450																																								
460																																								
470																																								
470		UTRO	CLAY UTROPHURE																																					
480		FGPP	FINE-GRAINED, PINK, SLIGHTLY PORPHYRITIC INTRUSIVE (FLOW?) PROBABLY RHYOLITIC IN COMPOSITION																																					
500																																								
510																																								
520																																								
530																																								
540																																								
550																																								
560																																								
570																																								
580																																								
590																																								
600			RUC PRE-COLLAR TD = 600'																																					

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

(702) 356-0606

INVOICE NO: SP 0048410-IN
INVOICE DATE: 04/16/98

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-430	DEVELOPMENT	NET 30 - DUE IN U.S. DOLLARS

QUANTITY	DESCRIPTION	PRICE	AMOUNT
48	SAMPLES RECEIVED	.00	.00
48	DRYING	2.00	96.00
48	JAW CRUSHING CHARGE	2.60	124.80
48	COARSE MILLING CHARGE	9.00	432.00
48	SPLITTING CHARGE	2.40	115.20
48	RING MILLING CHARGE	2.00	96.00
48	Au (1 A.T. FIRE ASSAY)	8.00	384.00
7	Au ANALYSES/GRAVIMETRIC	8.75	61.25
48	HYDROCHLORIC/NITRIC DIGESTION	2.00	96.00
48	Ag ANALYSES	1.00	48.00
1	Ag (ore grade) ANALYSES	5.00	5.00

86-5210-477
EDA

NET INVOICE:	1,458.25
LESS DISCOUNT:	291.65
FREIGHT:	.00
INVOICE TOTAL:	1,166.60

xAMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048410

American Assay Laboratories

PO BOX 11530
RENO NV,USA
Ph.(702) 356-0606, Fax.(702) 356-1413

HECLA MINING COMPANY

COPIES TO : KURT ALLEN

:

:

:

CLIENT REFERENCE No: RS-430

No. SAMPLES : 48

MAIN SAMPLE TYPE : DRILL CORE

RECEIVED : 1 APR 1998

REPORTED : 9 APR 1998

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(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
AuGRAV	GRAV	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Susan King M.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048410

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-430

REPORTED : 9 APR 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
RS-430 601.0-605.5	0.002			0.96
RS-430 605.5-610.6	<0.001			0.03
RS-430 610.6-616.0	0.005	0.003		0.04
RS-430 616-622	0.013			0.12
RS-430 622-628	0.001			0.03
RS-430 628.0-632.7	0.001			0.05
RS-430 632.7-635.8	0.004			0.09
RS-430 635.8-640.2	0.001			0.05
RS-430 640.2-644.3	<0.001			0.04
RS-430 644.3-647.3	0.002			0.10
RS-430 647.3-650.4	0.007			0.16
RS-430 650.4-651.7	0.007			0.85
RS-430 651.7-656.4	0.004			0.24
RS-430 656.4-658.4	0.003			0.24
RS-430 658.4-659.9	0.014			0.94
RS-430 659.9-662.4	0.010			0.52
RS-430 662.4-665.2	0.023	0.018		0.44
RS-430 665.2-666.3	0.050		0.045	0.09
RS-430 666.3-671.1	0.727		0.720	0.60
RS-430 671.1-672.3	0.103		0.115	0.20
RS-430 672.3-674.4	0.108		0.084	0.34
RS-430 674.4-679.8	0.013			0.04
RS-430 679.8-684.3	0.027			0.08
RS-430 684.3-688.7	0.007			2.18
RS-430 688.7-691.9	0.012			0.34

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048410

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-430

REPORTED : 9 APR 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
RS-430 691.9-695.3	0.014			0.17
RS-430 695.3-700.0	0.008			0.04
RS-430 700-705	0.005			0.07
RS-430 705-710	0.022			0.07
RS-430 710.0-714.1	0.030			0.34
RS-430 714.1-717.9	0.088		0.064	0.12
RS-430 717.9-720.0	0.005			0.80
RS-430 720.0-724.9	0.057		0.044	0.11
RS-430 724.9-730.0	0.082		0.078	0.07
RS-430 730.0-735.4	0.004			0.10
RS-430 735.4-740.0	0.010			0.06
RS-430 740.0-744.9	0.003			0.05
RS-430 744.9-750.0	0.036	0.024		0.38
RS-430 750-755	0.004			0.05
RS-430 755-760	0.006			1.36
RS-430 760-765	0.007			0.06
RS-430 765-770	0.010			0.07
RS-430 770.0-775.8	0.015			0.29
RS-430 775.8-780.0	0.005			0.08
RS-430 780.0-784.7	0.012			0.07
RS-430 784.7-790.0	0.003			0.06
RS-430 790.0-795.3	0.005			0.06
RS-430 795.3-800.0	0.010			2.04

xAMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048410

American Assay Laboratories

PO BOX 11530
RENO NV,USA
Ph.(702) 356-0606, Fax.(702) 356-1413

HECLA MINING COMPANY

COPIES TO : KURT ALLEN

:

:

:

CLIENT REFERENCE No: RS-430 RECEIVED : 1 APR 1998

No. SAMPLES : 48 REPORTED : 9 APR 1998

MAIN SAMPLE TYPE : DRILL CORE

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

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
AuGRAV	GRAV	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Susan King M.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048410

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-430

REPORTED : 9 APR 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
RS-430 601.0-605.5	0.002			0.96
RS-430 605.5-610.6	<0.001			0.03
RS-430 610.6-616.0	0.005	0.003		0.04
RS-430 616-622	0.013			0.12
RS-430 622-628	0.001			0.03
RS-430 628.0-632.7	0.001			0.05
RS-430 632.7-635.8	0.004			0.09
RS-430 635.8-640.2	0.001			0.05
RS-430 640.2-644.3	<0.001			0.04
RS-430 644.3-647.3	0.002			0.10
RS-430 647.3-650.4	0.007			0.16
RS-430 650.4-651.7	0.007			0.85
RS-430 651.7-656.4	0.004			0.24
RS-430 656.4-658.4	0.003			0.24
RS-430 658.4-659.9	0.014			0.94
RS-430 659.9-662.4	0.010			0.52
RS-430 662.4-665.2	0.023	0.018		0.44
RS-430 665.2-666.3	0.050		0.045	0.09
RS-430 666.3-671.1	0.727		0.720	0.60
RS-430 671.1-672.3	0.103		0.115	0.20
RS-430 672.3-674.4	0.108		0.084	0.34
RS-430 674.4-679.8	0.013			0.04
RS-430 679.8-684.3	0.027			0.08
RS-430 684.3-688.7	0.007			2.18
RS-430 688.7-691.9	0.012			0.34

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048410

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-430

REPORTED : 9 APR 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
RS-430 691.9-695.3	0.014			0.17
RS-430 695.3-700.0	0.008			0.04
RS-430 700-705	0.005			0.07
RS-430 705-710	0.022			0.07
RS-430 710.0-714.1	0.030			0.34
RS-430 714.1-717.9	0.088		0.064	0.12
RS-430 717.9-720.0	0.005			0.80
RS-430 720.0-724.9	0.057		0.044	0.11
RS-430 724.9-730.0	0.082		0.078	0.07
RS-430 730.0-735.4	0.004			0.10
RS-430 735.4-740.0	0.010			0.06
RS-430 740.0-744.9	0.003			0.05
RS-430 744.9-750.0	0.036	0.024		0.38
RS-430 750-755	0.004			0.05
RS-430 755-760	0.006			1.36
RS-430 760-765	0.007			0.06
RS-430 765-770	0.010			0.07
RS-430 770.0-775.8	0.015			0.29
RS-430 775.8-780.0	0.005			0.08
RS-430 780.0-784.7	0.012			0.07
RS-430 784.7-790.0	0.003			0.06
RS-430 790.0-795.3	0.005			0.06
RS-430 795.3-800.0	0.010			2.04

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP048410

PO BOX 11530
RENO NV,USA
Ph.(702) 356-0606, Fax.(702) 356-1413

HECLA MINING COMPANY

COPIES TO : KURT ALLEN
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Cole

CLIENT REFERENCE No: RS-430 RECEIVED : 1 APR 1998

No. SAMPLES : 48 REPORTED : 9 APR 1998

MAIN SAMPLE TYPE : DRILL CORE

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

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
AuGRAV	GRAV	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Susan King M.S. Page : 1

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP048410

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-430

REPORTED : 9 APR 1998

SAMPLES	Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)
RS-430 601.0-605.5	0.002			0.96
RS-430 605.5-610.6	<0.001			0.03
RS-430 610.6-616.0	0.005	0.003		0.04
RS-430 616-622	0.013			0.12
RS-430 622-628	0.001			0.03
RS-430 628.0-632.7	0.001			0.05
RS-430 632.7-635.8	0.004			0.09
RS-430 635.8-640.2	0.001			0.05
RS-430 640.2-644.3	<0.001			0.04
RS-430 644.3-647.3	0.002			0.10
RS-430 647.3-650.4	0.007			0.16
RS-430 650.4-651.7	0.007			0.85
RS-430 651.7-656.4	0.004			0.24
RS-430 656.4-658.4	0.003			0.24
RS-430 658.4-659.9	0.014			0.94
RS-430 659.9-662.4	0.010			0.52
RS-430 662.4-665.2	0.023	0.018		0.44
RS-430 665.2-666.3	0.050		0.045	0.09
RS-430 666.3-671.1	0.727		0.720	0.60
RS-430 671.1-672.3	0.103		0.115	0.20
RS-430 672.3-674.4	0.108		0.084	0.34
RS-430 674.4-679.8	0.013			0.04
RS-430 679.8-684.3	0.027			0.08
RS-430 684.3-688.7	0.007			2.18
RS-430 688.7-691.9	0.012			0.34

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP048410

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-430

REPORTED : 9 APR 1998

SAMPLES	Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)
RS-430 691.9-695.3	0.014			0.17
RS-430 695.3-700.0	0.008			0.04
RS-430 700-705	0.005			0.07
RS-430 705-710	0.022			0.07
RS-430 710.0-714.1	0.030			0.34
RS-430 714.1-717.9	0.088		0.064	0.12
RS-430 717.9-720.0	0.005			0.80
RS-430 720.0-724.9	0.057		0.044	0.11
RS-430 724.9-730.0	0.082		0.078	0.07
RS-430 730.0-735.4	0.004			0.10
RS-430 735.4-740.0	0.010			0.06
RS-430 740.0-744.9	0.003			0.05
RS-430 744.9-750.0	0.036	0.024		0.38
RS-430 750-755	0.004			0.05
RS-430 755-760	0.006			1.36
RS-430 760-765	0.007			0.06
RS-430 765-770	0.010			0.07
RS-430 770.0-775.8	0.015			0.29
RS-430 775.8-780.0	0.005			0.08
RS-430 780.0-784.7	0.012			0.07
RS-430 784.7-790.0	0.003			0.06
RS-430 790.0-795.3	0.005			0.06
RS-430 795.3-800.0	0.010			2.04

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP048410

PO BOX 11538
RENO NV,USA
Ph.(702) 356-0606, Fax.(702) 356-1413

HECLA MINING COMPANY

COPIES TO : KURT ALLEN

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:

CLIENT REFERENCE No: RS-430 Core

RECEIVED : 1 APR 1998

No. SAMPLES : 48

REPORTED : 9 APR 1998

MAIN SAMPLE TYPE : DRILL CORE

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

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
AuGRAV	GRAV	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Susan King M.S.

04/09/1998 10:19 7023561413 AMERICAN ASSAY LABS PAGE 09

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP048410

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-430

REPORTED : 9 APR 1998

SAMPLES	Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)
RS-430 601.0-605.5	0.002			
RS-430 605.5-610.6	<0.001			
RS-430 610.6-616.0	0.005	0.003		
RS-430 616-622	0.013			
RS-430 622-628	0.001			
RS-430 628.0-632.7	0.001			
RS-430 632.7-635.8	0.004			
RS-430 635.8-640.2	0.001			
RS-430 640.2-644.3	<0.001			
RS-430 644.3-647.3	0.002			
RS-430 647.3-650.4	0.007			
RS-430 650.4-651.7	0.007			
RS-430 651.7-656.4	0.004			
RS-430 656.4-658.4	0.003			
RS-430 658.4-659.9	0.014			
RS-430 659.9-662.4	0.010			
RS-430 662.4-665.2	0.023	0.018		666.3-671.1 4.8'
RS-430 665.2-666.3	0.050		0.045	
RS-430 666.3-671.1	0.727		0.720	
RS-430 671.1-672.3	0.103		0.115	
RS-430 672.3-674.4	0.108		0.084	
RS-430 674.4-679.8	0.013			
RS-430 679.8-684.3	0.027			
RS-430 684.3-688.7	0.007			
RS-430 688.7-691.9	0.012			

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP048410

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-430

REPORTED : 9 APR 1998

SAMPLES	Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)
RS-430 691.9-695.3	0.014			
RS-430 695.3-700.0	0.008			
RS-430 700-705	0.005			
RS-430 705-710	0.022			
RS-430 710.0-714.1	0.030			
RS-430 714.1-717.9	0.088		0.064	
RS-430 717.9-720.0	0.005			
RS-430 720.0-724.9	0.057		0.044	
RS-430 724.9-730.0	0.082		0.078	
RS-430 730.0-735.4	0.004			
RS-430 735.4-740.0	0.010			
RS-430 740.0-744.9	0.003			
RS-430 744.9-750.0	0.036	0.024		
RS-430 750-755	0.004			
RS-430 755-760	0.006			
RS-430 760-765	0.007			
RS-430 765-770	0.010			
RS-430 770.0-775.8	0.015			
RS-430 775.8-780.0	0.005			
RS-430 780.0-784.7	0.012			
RS-430 784.7-790.0	0.003			
RS-430 790.0-795.3	0.005			
RS-430 795.3-800.0	0.010			

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP048282

PO BOX 11530
RENO NV.USA
Ph.(702) 356-0606, Fax.(702) 356-1413

HECLA MINING COMPANY

COPIES TO : KURT ALLEN

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CLIENT REFERENCE No: RS-430 RECEIVED : 12 MAR 1998

No. SAMPLES : 61 REPORTED : 18 MAR 1998

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(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Susan King M.S.

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP048282

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-430

REPORTED : 18 MAR 1998

SAMPLES	Au(OZ)	Au(RZ)	Ag(OZ)
RS-430 000-010	0.001		<0.02
RS-430 010-020	0.001		0.02
RS-430 020-030	0.001		<0.02
RS-430 030-040	0.001	0.001	<0.02
RS-430 040-050	0.001		0.02
RS-430 050-060	0.002		0.02
RS-430 060-070	<0.001		0.02
RS-430 070-080	0.001		0.02
RS-430 080-090	0.001		0.03
RS-430 090-100	0.001		0.05
RS-430 100-110	0.002		0.07
RS-430 110-120	0.001		0.05
RS-430 120-130	<0.001		0.04
RS-430 130-140	<0.001		0.06
RS-430 140-150	0.001		0.06
RS-430 150-160	0.001		0.05
RS-430 160-170	0.001		0.03
RS-430 170-180	<0.001		0.04
RS-430 180-190	0.002		0.05
RS-430 190-200	0.001		0.04
RS-430 200-210	0.001		0.05
RS-430 210-220	<0.001		0.04
RS-430 220-230	<0.001		0.02
RS-430 230-240	<0.001		<0.02
RS-430 240-250	0.001		0.04

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP048282

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-430

REPORTED : 18 MAR 1998

SAMPLES	Au(OZ)	Au(RZ)	Ag(OZ)
RS-430 250-260	<0.001		0.03
RS-430 260-270	<0.001		0.03
RS-430 270-280	<0.001		<0.02
RS-430 280-290	<0.001		<0.02
RS-430 290-300	<0.001		<0.02
RS-430 300-310	<0.001		<0.02
RS-430 310-320	<0.001		<0.02
RS-430 320-330	<0.001		<0.02
RS-430 330-340	<0.001		<0.02
RS-430 340-350	0.001		<0.02
RS-430 350-360	0.003		0.11
RS-430 360-370	0.002		0.05
RS-430 370-380	<0.001		0.07
RS-430 380-390	<0.001		0.04
RS-430 390-400	<0.001		0.02
RS-430 400-410	<0.001		<0.02
RS-430 410-420	0.001		0.04
RS-430 420-430	<0.001		<0.02
RS-430 430-440	<0.001		<0.02
RS-430 440-450	<0.001		<0.02
RS-430 450-460	<0.001		<0.02
RS-430 460-470	<0.001		<0.02
RS-430 470-480	<0.001	<0.001	<0.02
RS-430 480-490	0.004		0.09
RS-430 490-500	0.003		0.10

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP048282

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-430

REPORTED : 18 MAR 1998

SAMPLES	Au(OZ)	Au(RZ)	Ag(OZ)
RS-430 500-510	<0.001		0.05
RS-430 510-520	<0.001		<0.02
RS-430 520-530	<0.001		<0.02
RS-430 530-540	0.002		0.11
RS-430 540-550	0.002		0.05
RS-430 550-560	0.002		0.06
RS-430 560-570	0.006		0.06
RS-430 570-580	0.002		0.05
RS-430 580-590	0.008		0.09
RS-430 590-600	0.004		0.07
27772	0.121		2.92

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

(702) 356-0606

INVOICE NO: SP 0048282-IN
INVOICE DATE: 03/17/98

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-430	DEVELOPMENT	NET 30 - DUE IN U.S. DOLLARS

QUANTITY	DESCRIPTION	PRICE	AMOUNT
61	SAMPLES RECEIVED	.00	.00
60	DRYING	2.00	120.00
60	EXCESSIVE WETNESS	2.00	120.00
60	JAW CRUSHING CHARGE	2.60	156.00
60	SPLITTING CHARGE	1.80	108.00
60	FINE MILLING CHARGE	2.00	120.00
61	Au (1 A.T. FIRE ASSAY)	8.00	488.00
61	HYDROCHLORIC/NITRIC DIGESTION	2.00	122.00
61	Ag ANALYSES	1.00	61.00

86-5210-477
ISA

NET INVOICE:	1,295.00
LESS DISCOUNT:	388.50
FREIGHT:	.00
INVOICE TOTAL:	906.50

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ANALYSIS REPORT SP048282

American Assay Laboratories

PO BOX 11530
RENO NV,USA
Ph.(702) 356-0606, Fax.(702) 356-1413

HECLA MINING COMPANY

COPIES TO : KURT ALLEN

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:

:

CLIENT REFERENCE No: RS-430 RECEIVED : 12 MAR 1998

No. SAMPLES : 61 REPORTED : 18 MAR 1998

MAIN SAMPLE TYPE : DRILL CUTTINGS

NEVADA LEGISLATIVE DISCLAIMER :-
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ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Susan King M.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048282

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-430

REPORTED : 18 MAR 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
RS-430 000-010	0.001		<0.02
RS-430 010-020	0.001		0.02
RS-430 020-030	0.001		<0.02
RS-430 030-040	0.001	0.001	<0.02
RS-430 040-050	0.001		0.02
RS-430 050-060	0.002		0.02
RS-430 060-070	<0.001		0.02
RS-430 070-080	0.001		0.02
RS-430 080-090	0.001		0.03
RS-430 090-100	0.001		0.05
RS-430 100-110	0.002		0.07
RS-430 110-120	0.001		0.05
RS-430 120-130	<0.001		0.04
RS-430 130-140	<0.001		0.06
RS-430 140-150	0.001		0.06
RS-430 150-160	0.001		0.05
RS-430 160-170	0.001		0.03
RS-430 170-180	<0.001		0.04
RS-430 180-190	0.002		0.05
RS-430 190-200	0.001		0.04
RS-430 200-210	0.001		0.05
RS-430 210-220	<0.001		0.04
RS-430 220-230	<0.001		0.02
RS-430 230-240	<0.001		<0.02
RS-430 240-250	0.001		0.04

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048282

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-430

REPORTED : 18 MAR 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
RS-430 250-260	<0.001		0.03
RS-430 260-270	<0.001		0.03
RS-430 270-280	<0.001		<0.02
RS-430 280-290	<0.001		<0.02
RS-430 290-300	<0.001		<0.02
RS-430 300-310	<0.001		<0.02
RS-430 310-320	<0.001		<0.02
RS-430 320-330	<0.001		<0.02
RS-430 330-340	<0.001		<0.02
RS-430 340-350	0.001		<0.02
RS-430 350-360	0.003		0.11
RS-430 360-370	0.002		0.05
RS-430 370-380	<0.001		0.07
RS-430 380-390	<0.001		0.04
RS-430 390-400	<0.001		0.02
RS-430 400-410	<0.001		<0.02
RS-430 410-420	0.001		0.04
RS-430 420-430	<0.001		<0.02
RS-430 430-440	<0.001		<0.02
RS-430 440-450	<0.001		<0.02
RS-430 450-460	<0.001		<0.02
RS-430 460-470	<0.001		<0.02
RS-430 470-480	<0.001	<0.001	<0.02
RS-430 480-490	0.004		0.09
RS-430 490-500	0.003		0.10

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048282

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-430

REPORTED : 18 MAR 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
RS-430 500-510	<0.001		0.05
RS-430 510-520	<0.001		<0.02
RS-430 520-530	<0.001		<0.02
RS-430 530-540	0.002		0.11
RS-430 540-550	0.002		0.05
RS-430 550-560	0.002		0.06
RS-430 560-570	0.006		0.06
RS-430 570-580	0.002		0.05
RS-430 580-590	0.008		0.09
RS-430 590-600	0.004		0.07
27772	0.121		2.92

xAMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048282

American Assay Laboratories

PO BOX 11530
RENO NV,USA
Ph.(702) 356-0606, Fax.(702) 356-1413

HECLA MINING COMPANY

COPIES TO : KURT ALLEN

:

:

:

CLIENT REFERENCE No: RS-430 RECEIVED : 12 MAR 1998

No. SAMPLES : 61 REPORTED : 18 MAR 1998

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(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Susan King M.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048282

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-430

REPORTED : 18 MAR 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
RS-430 000-010	0.001		<0.02
RS-430 010-020	0.001		0.02
RS-430 020-030	0.001		<0.02
RS-430 030-040	0.001	0.001	<0.02
RS-430 040-050	0.001		0.02
RS-430 050-060	0.002		0.02
RS-430 060-070	<0.001		0.02
RS-430 070-080	0.001		0.02
RS-430 080-090	0.001		0.03
RS-430 090-100	0.001		0.05
RS-430 100-110	0.002		0.07
RS-430 110-120	0.001		0.05
RS-430 120-130	<0.001		0.04
RS-430 130-140	<0.001		0.06
RS-430 140-150	0.001		0.06
RS-430 150-160	0.001		0.05
RS-430 160-170	0.001		0.03
RS-430 170-180	<0.001		0.04
RS-430 180-190	0.002		0.05
RS-430 190-200	0.001		0.04
RS-430 200-210	0.001		0.05
RS-430 210-220	<0.001		0.04
RS-430 220-230	<0.001		0.02
RS-430 230-240	<0.001		<0.02
RS-430 240-250	0.001		0.04

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048282

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-430

REPORTED : 18 MAR 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
RS-430 250-260	<0.001		0.03
RS-430 260-270	<0.001		0.03
RS-430 270-280	<0.001		<0.02
RS-430 280-290	<0.001		<0.02
RS-430 290-300	<0.001		<0.02
RS-430 300-310	<0.001		<0.02
RS-430 310-320	<0.001		<0.02
RS-430 320-330	<0.001		<0.02
RS-430 330-340	<0.001		<0.02
RS-430 340-350	0.001		<0.02
RS-430 350-360	0.003		0.11
RS-430 360-370	0.002		0.05
RS-430 370-380	<0.001		0.07
RS-430 380-390	<0.001		0.04
RS-430 390-400	<0.001		0.02
RS-430 400-410	<0.001		<0.02
RS-430 410-420	0.001		0.04
RS-430 420-430	<0.001		<0.02
RS-430 430-440	<0.001		<0.02
RS-430 440-450	<0.001		<0.02
RS-430 450-460	<0.001		<0.02
RS-430 460-470	<0.001		<0.02
RS-430 470-480	<0.001	<0.001	<0.02
RS-430 480-490	0.004		0.09
RS-430 490-500	0.003		0.10

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP048282

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : RS-430

REPORTED : 18 MAR 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
RS-430 500-510	<0.001		0.05
RS-430 510-520	<0.001		<0.02
RS-430 520-530	<0.001		<0.02
RS-430 530-540	0.002		0.11
RS-430 540-550	0.002		0.05
RS-430 550-560	0.002		0.06
RS-430 560-570	0.006		0.06
RS-430 570-580	0.002		0.05
RS-430 580-590	0.008		0.09
RS-430 590-600	0.004		0.07
27772	0.121		2.92

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* ROSEBUD MINING COMPANY *
****

JOB NUMBER: 29-0588-311

WELL NAME: RS-430

LOCATION: ROSEBUD MINE

SURVEY DATE: 03/12/98

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: TRUE NORTH

WELNAV

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

COMMENTS: ** BOART LONGYEAR **
**** NORMAN JEX ****

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

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

JOB NUMBER: 29-0588-311 WELL NAME: RS-430

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
50.0	50.00	-0.06	-0.300	-89.30	203.39	0.28 S	0.12 W	1.40	0.70	0.31	AT 203.39
100.0	99.99	0.07	-0.946	-89.10	242.53	0.74 S	0.59 W	1.14	0.57	0.95	AT 218.54
150.0	149.99	0.51	-1.612	-89.06	253.47	1.04 S	1.33 W	0.36	0.18	1.69	AT 232.04
200.0	199.98	1.24	-2.099	-88.85	285.10	1.03 S	2.21 W	1.21	0.60	2.44	AT 245.11
250.0	249.97	2.28	-2.402	-88.67	291.01	0.69 S	3.24 W	0.44	0.22	3.31	AT 258.02
300.0	299.95	3.52	-2.647	-88.43	295.40	0.19 S	4.40 W	0.53	0.26	4.40	AT 267.59
350.0	349.93	4.88	-2.954	-88.36	288.50	0.34 N	5.69 W	0.41	0.21	5.70	AT 273.38
400.0	399.91	6.49	-3.281	-87.87	296.62	0.98 N	7.20 W	1.11	0.56	7.27	AT 277.74
450.0	449.87	8.40	-3.380	-87.73	306.28	1.98 N	8.83 W	0.79	0.40	9.05	AT 282.64
500.0	499.82	10.52	-3.186	-87.38	312.83	3.34 N	10.47 W	0.89	0.45	10.99	AT 287.72
550.0	549.77	12.80	-2.822	-87.32	314.42	4.94 N	12.14 W	0.19	0.09	13.11	AT 292.14
600.0	599.71	15.23	-2.300	-86.98	318.70	6.75 N	13.85 W	0.80	0.40	15.40	AT 295.98
650.0	649.64	17.80	-1.675	-86.95	317.77	8.72 N	15.61 W	0.12	0.06	17.88	AT 299.19
700.0	699.58	20.22	-1.099	-87.36	318.27	10.57 N	17.27 W	0.82	0.41	20.25	AT 301.46
750.0	749.52	22.48	-0.539	-87.29	318.60	12.31 N	18.82 W	0.14	0.07	22.49	AT 303.20
800.0	799.47	24.77	-0.000	-87.32	317.06	14.05 N	20.40 W	0.16	0.08	24.77	AT 304.57

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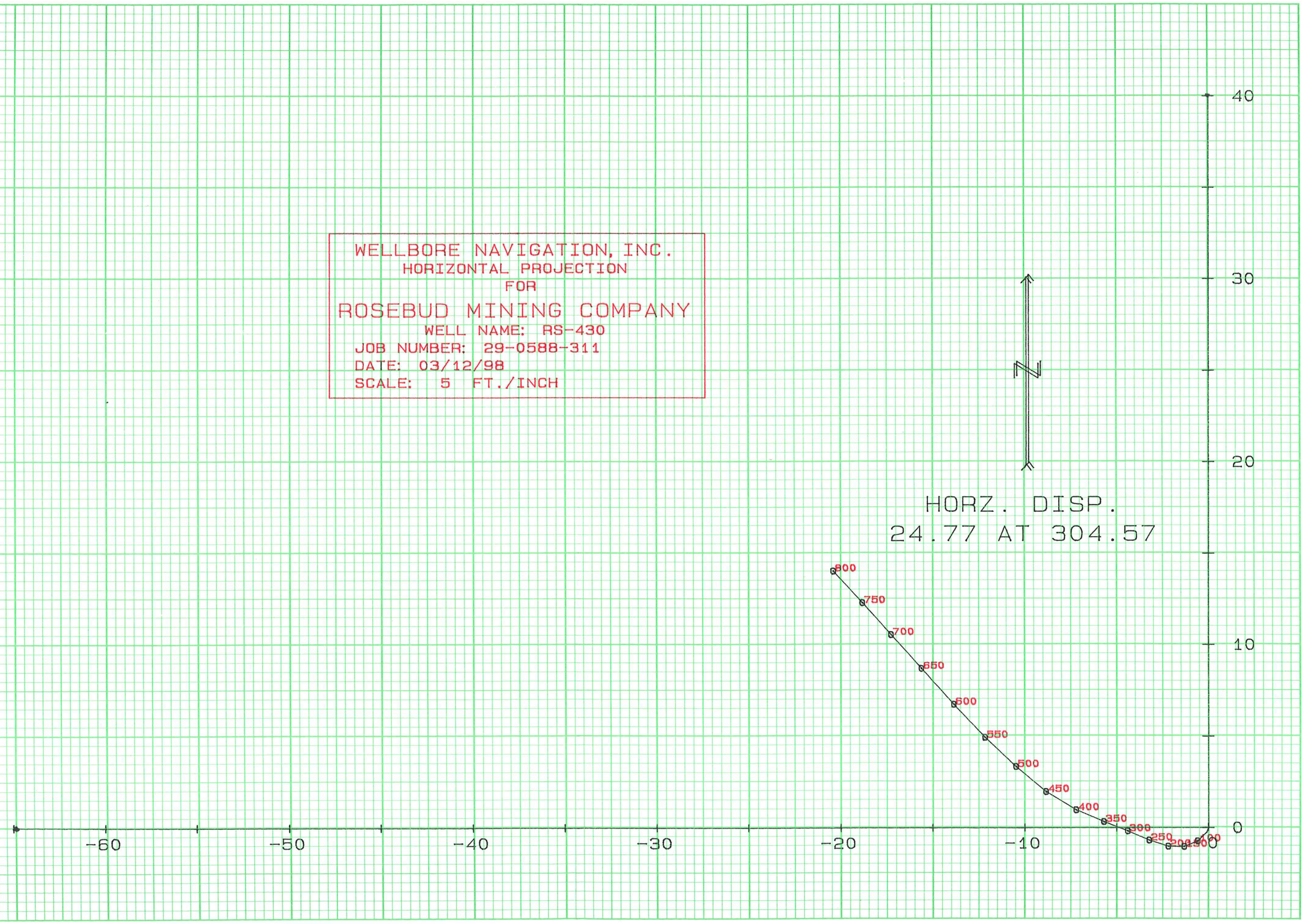
*************************************************************
*                         ********                          *
*     THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF           *
*                         ********                          *
*   800.0 FEET EQUALS     24.77    FEET AT   304.57         *
*                         ********                          *
*************************************************************
```

WELLBORE NAVIGATION, INC.
HORIZONTAL PROJECTION
FOR
ROSEBUD MINING COMPANY
WELL NAME: RS-430
JOB NUMBER: 29-0588-311
DATE: 03/12/98
SCALE: 5 FT./INCH



STARLIGHT PRINTING (801) 467-2841

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* **ROSEBUD MINING COMPANY** *
****

JOB NUMBER: 29-0588-311

WELL NAME: RS-430 / VS 305.00

LOCATION: ROSEBUD MINE

SURVEY DATE: 03/12/98

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: TRUE NORTH

WELNAV

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 035.00

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

COMMENTS: ** BOART LONGYEAR **
**** NORMAN JEX ****

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

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

JOB NUMBER: 29-0588-311

WELL NAME: RS-430 / VS 305.00

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
50.0	50.00	-0.30	0.061	-89.30	203.39	0.28 S	0.12 W	1.40	0.70	0.31	AT 203.39
100.0	99.99	-0.95	-0.059	-89.10	242.53	0.74 S	0.59 W	1.14	0.57	0.95	AT 218.54
150.0	149.99	-1.62	-0.495	-89.06	253.47	1.04 S	1.33 W	0.36	0.18	1.69	AT 232.04
200.0	199.98	-2.11	-1.222	-88.85	285.10	1.03 S	2.21 W	1.21	0.60	2.44	AT 245.11
250.0	249.97	-2.42	-2.257	-88.67	291.01	0.69 S	3.24 W	0.44	0.22	3.31	AT 258.02
300.0	299.95	-2.67	-3.495	-88.43	295.40	0.19 S	4.40 W	0.53	0.26	4.40	AT 267.59
350.0	349.93	-2.99	-4.857	-88.36	288.50	0.34 N	5.69 W	0.41	0.21	5.70	AT 273.38
400.0	399.91	-3.33	-6.462	-87.87	296.62	0.98 N	7.20 W	1.11	0.56	7.27	AT 277.74
450.0	449.87	-3.44	-8.371	-87.73	306.28	1.98 N	8.83 W	0.79	0.40	9.05	AT 282.64
500.0	499.82	-3.26	-10.493	-87.38	312.83	3.34 N	10.47 W	0.89	0.45	10.99	AT 287.72
550.0	549.77	-2.92	-12.779	-87.32	314.42	4.94 N	12.14 W	0.19	0.09	13.11	AT 292.14
600.0	599.71	-2.41	-15.212	-86.98	318.70	6.75 N	13.85 W	0.80	0.40	15.40	AT 295.98
650.0	649.64	-1.81	-17.789	-86.95	317.77	8.72 N	15.61 W	0.12	0.06	17.88	AT 299.19
700.0	699.58	-1.25	-20.207	-87.36	318.27	10.57 N	17.27 W	0.82	0.41	20.25	AT 301.46
750.0	749.52	-0.71	-22.476	-87.29	318.60	12.31 N	18.82 W	0.14	0.07	22.49	AT 303.20
800.0	799.47	-0.19	-24.768	-87.32	317.06	14.05 N	20.40 W	0.16	0.08	24.77	AT 304.57

```
*************************************************************
*                          ********                         *
*      THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF          *
*                          ********                         *
*   800.0 FEET EQUALS    24.77    FEET AT   304.57          *
*                          ********                         *
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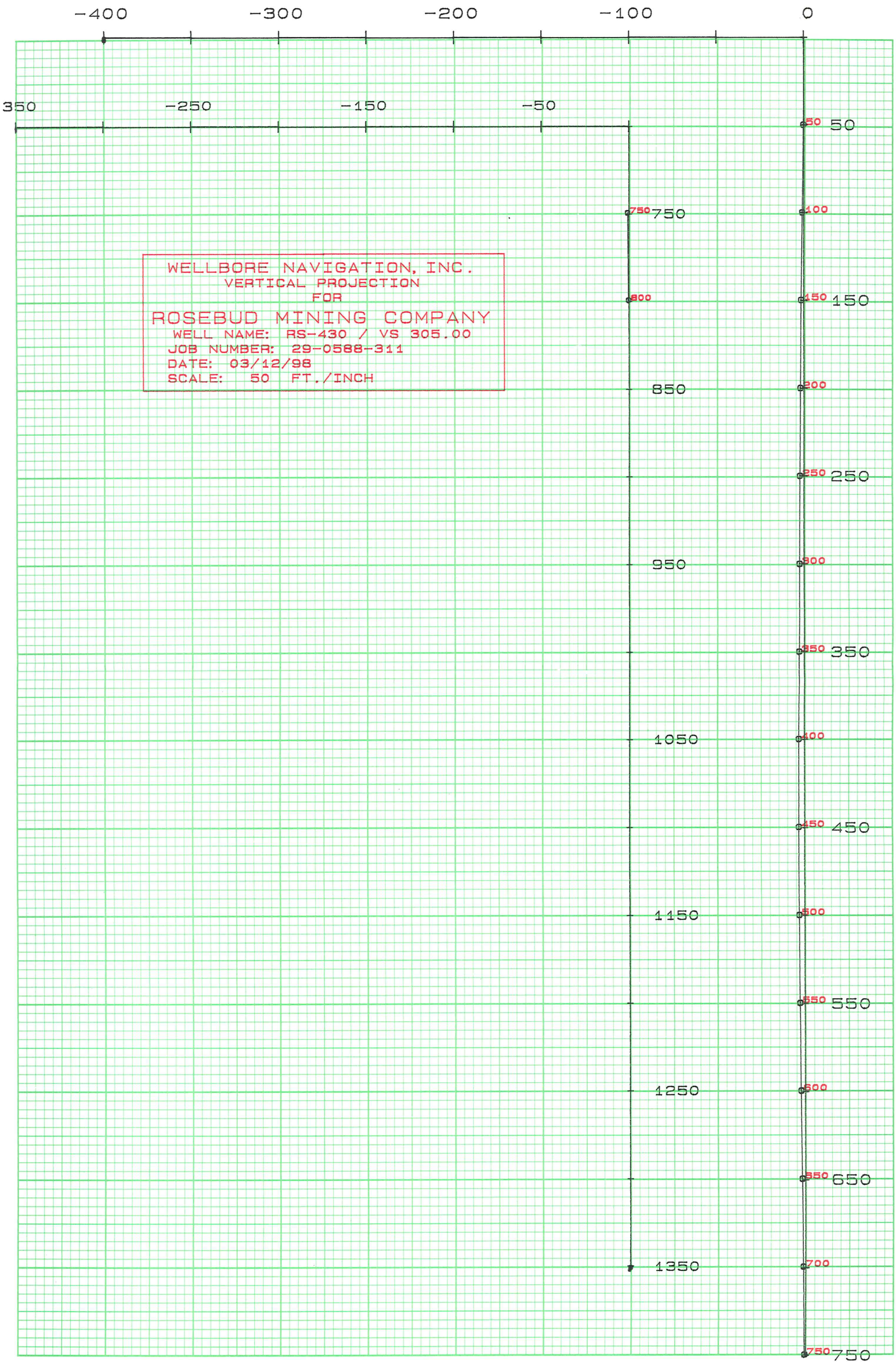

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* ROSEBUD MINING COMPANY *
****

JOB NUMBER: 29-0588-311

WELL NAME: RS-430 / VS 035.00

LOCATION: ROSEBUD MINE

SURVEY DATE: 03/12/98

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: TRUE NORTH

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 125.00

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

COMMENTS: ** BOART LONGYEAR **
**** NORMAN JEX ****

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

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

JOB NUMBER: 29-0588-311

WELL NAME: RS-430 / VS 035.00

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
50.0	50.00	0.06	0.299	-89.30	203.39	0.28 S	0.12 W	1.40	0.70	0.31	AT 203.39
100.0	99.99	-0.06	0.947	-89.10	242.53	0.74 S	0.59 W	1.14	0.57	0.95	AT 218.54
150.0	149.99	-0.50	1.616	-89.06	253.47	1.04 S	1.33 W	0.36	0.18	1.69	AT 232.04
200.0	199.98	-1.22	2.108	-88.85	285.10	1.03 S	2.21 W	1.21	0.60	2.44	AT 245.11
250.0	249.97	-2.26	2.419	-88.67	291.01	0.69 S	3.24 W	0.44	0.22	3.31	AT 258.02
300.0	299.95	-3.50	2.673	-88.43	295.40	0.19 S	4.40 W	0.53	0.26	4.40	AT 267.59
350.0	349.93	-4.86	2.991	-88.36	288.50	0.34 N	5.69 W	0.41	0.21	5.70	AT 273.38
400.0	399.91	-6.46	3.329	-87.87	296.62	0.98 N	7.20 W	1.11	0.56	7.27	AT 277.74
450.0	449.87	-8.37	3.443	-87.73	306.28	1.98 N	8.83 W	0.79	0.40	9.05	AT 282.64
500.0	499.82	-10.49	3.265	-87.38	312.83	3.34 N	10.47 W	0.89	0.45	10.99	AT 287.72
550.0	549.77	-12.78	2.918	-87.32	314.42	4.94 N	12.14 W	0.19	0.09	13.11	AT 292.14
600.0	599.71	-15.21	2.415	-86.98	318.70	6.75 N	13.85 W	0.80	0.40	15.40	AT 295.98
650.0	649.64	-17.79	1.809	-86.95	317.77	8.72 N	15.61 W	0.12	0.06	17.88	AT 299.19
700.0	699.58	-20.21	1.250	-87.36	318.27	10.57 N	17.27 W	0.82	0.41	20.25	AT 301.46
750.0	749.52	-22.48	0.708	-87.29	318.60	12.31 N	18.82 W	0.14	0.07	22.49	AT 303.20
800.0	799.47	-24.77	0.186	-87.32	317.06	14.05 N	20.40 W	0.16	0.08	24.77	AT 304.57

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*************************************************************
*                         ********                          *
*      THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF          *
*                         ********                          *
*   800.0 FEET EQUALS     24.77    FEET AT   304.57         *
*                         ********                          *
*************************************************************
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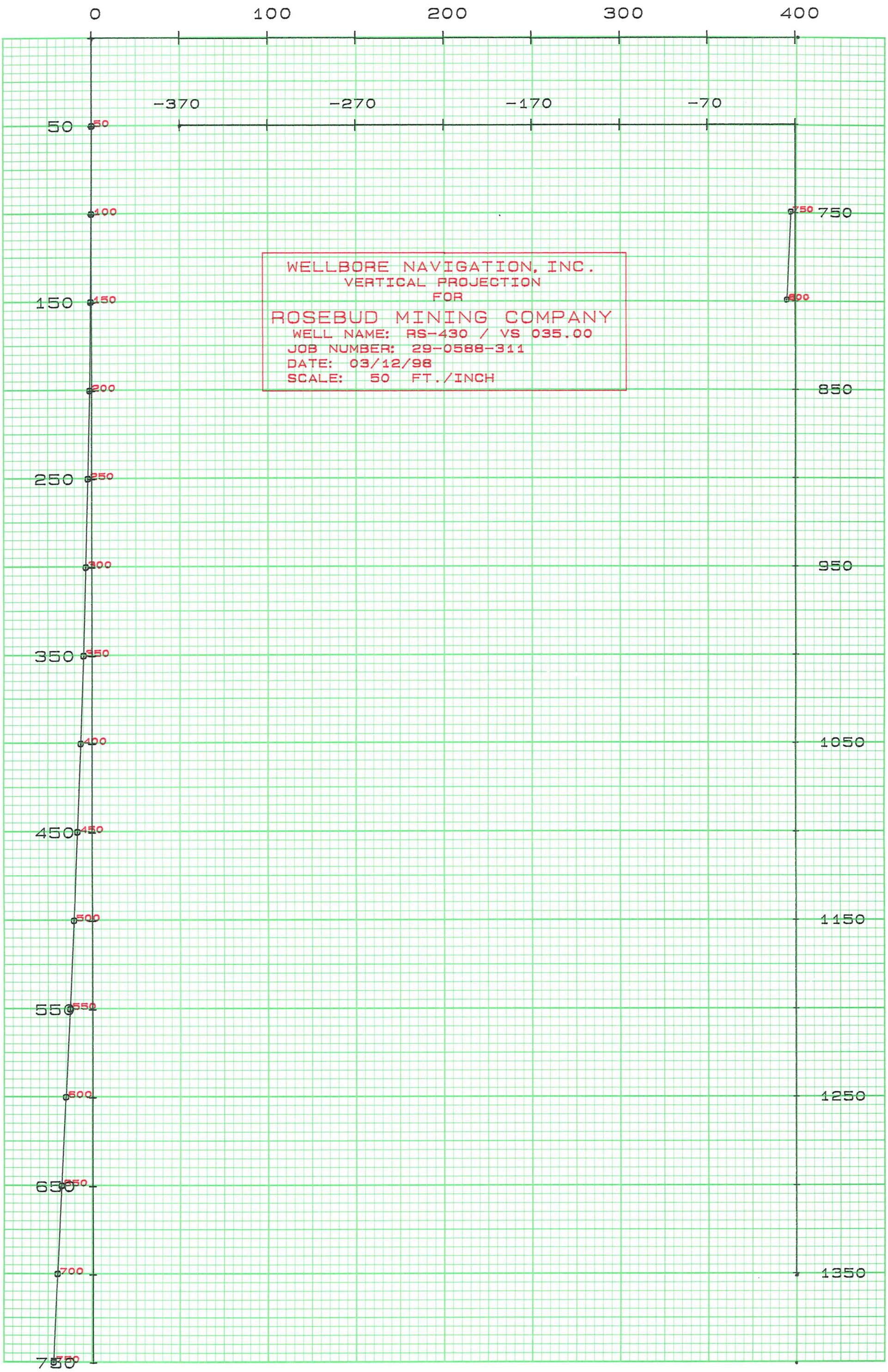

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* ROSEBUD MINING COMPANY *
****

JOB NUMBER: 29-0588-311

WELL NAME: RS-430

LOCATION: ROSEBUD MINE

SURVEY DATE: 03/09/98

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: TRUE NORTH

WELNAV

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

COMMENTS: ***** EKLUND *****
** DENNIS WHITE **

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

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

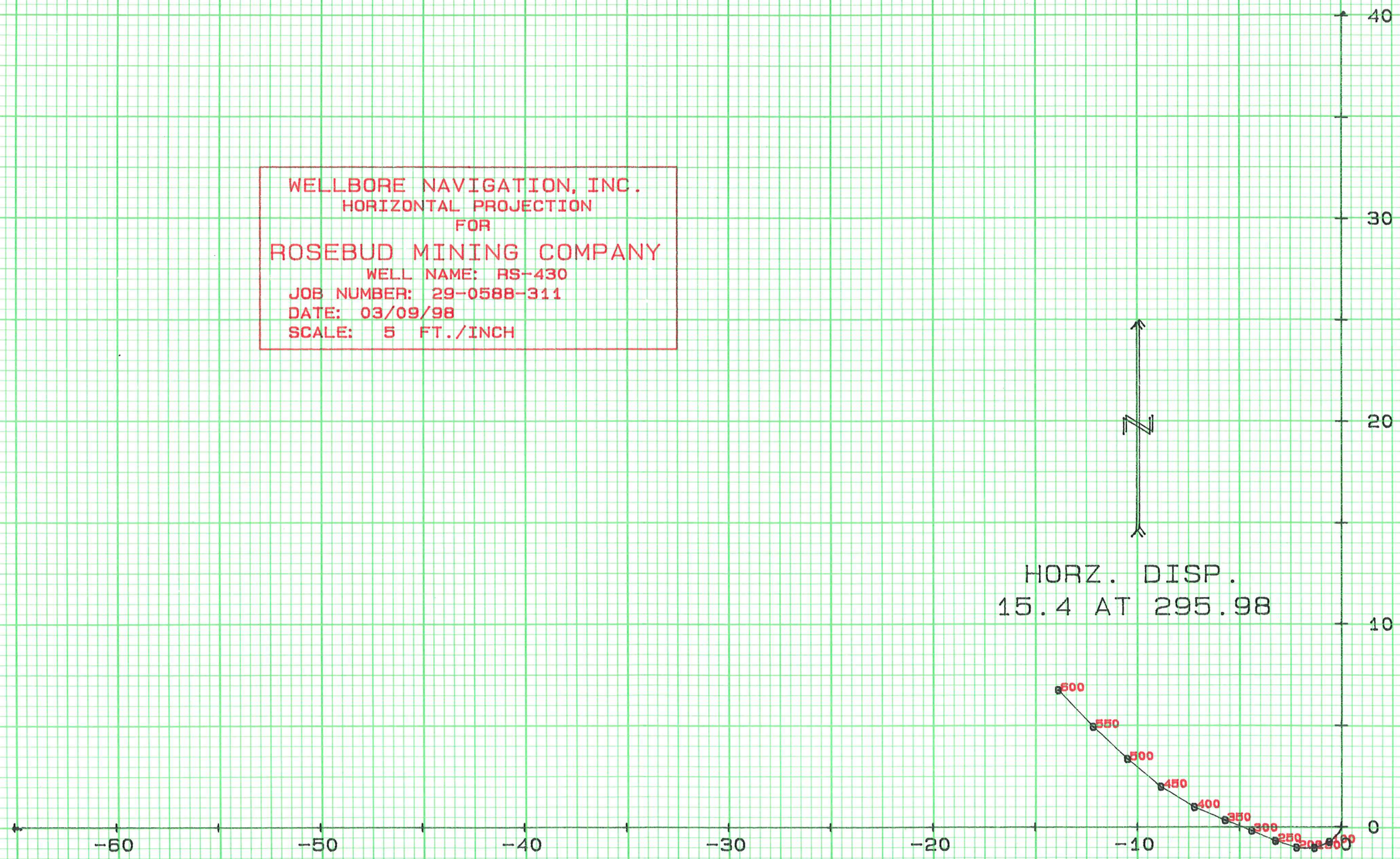
JOB NUMBER: 29-0588-311 WELL NAME: RS-430

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
50.0	50.00	-0.01	-0.305	-89.30	203.39	0.28 S	0.12 W	1.40	0.70	0.31	AT 203.39	073.61
100.0	99.99	0.21	-0.926	-89.10	242.53	0.74 S	0.59 W	1.14	0.57	0.95	AT 218.54	073.69
150.0	149.99	0.74	-1.518	-89.06	253.47	1.04 S	1.33 W	0.36	0.18	1.69	AT 232.04	072.95
200.0	199.98	1.54	-1.890	-88.85	285.10	1.03 S	2.21 W	1.21	0.60	2.44	AT 245.11	072.29
250.0	249.97	2.61	-2.035	-88.67	291.01	0.69 S	3.24 W	0.44	0.22	3.31	AT 258.02	071.57
300.0	299.95	3.87	-2.092	-88.43	295.40	0.18 S	4.40 W	0.53	0.26	4.40	AT 267.59	070.82
350.0	349.93	5.27	-2.192	-88.36	288.50	0.34 N	5.69 W	0.41	0.21	5.70	AT 273.38	069.98
400.0	399.91	6.90	-2.275	-87.87	296.62	0.98 N	7.20 W	1.11	0.56	7.27	AT 277.74	069.35
450.0	449.87	8.81	-2.088	-87.73	306.28	1.98 N	8.83 W	0.79	0.40	9.05	AT 282.65	068.46
500.0	499.82	10.88	-1.579	-87.38	312.83	3.34 N	10.47 W	0.89	0.45	10.99	AT 287.72	068.01
550.0	549.77	13.08	-0.878	-87.32	314.42	4.94 N	12.14 W	0.19	0.09	13.11	AT 292.14	067.38
600.0	599.71	15.40	0.000	-86.98	318.70	6.75 N	13.85 W	0.80	0.40	15.40	AT 295.98	063.65

```
*************************************************************
*                         ********                          *
*      THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF          *
*                         ********                          *
*   600.0 FEET EQUALS     15.40    FEET AT  295.98          *
*                         ********                          *
*************************************************************
```

WELLBORE NAVIGATION, INC.
HORIZONTAL PROJECTION
FOR
ROSEBUD MINING COMPANY
WELL NAME: RS-430
JOB NUMBER: 29-0588-311
DATE: 03/09/98
SCALE: 5 FT./INCH



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WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* **ROSEBUD MINING COMPANY** *
****

JOB NUMBER: 29-0588-311

WELL NAME: RS-430 / VS 305.00

LOCATION: ROSEBUD MINE

SURVEY DATE: 03/09/98

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: TRUE NORTH

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 035.00

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

COMMENTS: ***** EKLUND *****
** DENNIS WHITE **

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

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

JOB NUMBER: 29-0588-311

WELL NAME: RS-430 / VS 305.00

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
50.0	50.00	-0.30	0.061	-89.30	203.39	0.28 S	0.12 W	1.40	0.70	0.31	AT 203.39	073.61
100.0	99.99	-0.95	-0.059	-89.10	242.53	0.74 S	0.59 W	1.14	0.57	0.95	AT 218.54	073.69
150.0	149.99	-1.62	-0.495	-89.06	253.47	1.04 S	1.33 W	0.36	0.18	1.69	AT 232.04	072.95
200.0	199.98	-2.11	-1.222	-88.85	285.10	1.03 S	2.21 W	1.21	0.60	2.44	AT 245.11	072.29
250.0	249.97	-2.42	-2.257	-88.67	291.01	0.69 S	3.24 W	0.44	0.22	3.31	AT 258.02	071.57
300.0	299.95	-2.67	-3.496	-88.43	295.40	0.18 S	4.40 W	0.53	0.26	4.40	AT 267.59	070.82
350.0	349.93	-2.99	-4.857	-88.36	288.50	0.34 N	5.69 W	0.41	0.21	5.70	AT 273.38	069.98
400.0	399.91	-3.33	-6.462	-87.87	296.62	0.98 N	7.20 W	1.11	0.56	7.27	AT 277.74	069.35
450.0	449.87	-3.44	-8.371	-87.73	306.28	1.98 N	8.83 W	0.79	0.40	9.05	AT 282.65	068.46
500.0	499.82	-3.26	-10.494	-87.38	312.83	3.34 N	10.47 W	0.89	0.45	10.99	AT 287.72	068.01
550.0	549.77	-2.92	-12.779	-87.32	314.42	4.94 N	12.14 W	0.19	0.09	13.11	AT 292.14	067.38
600.0	599.71	-2.41	-15.212	-86.98	318.70	6.75 N	13.85 W	0.80	0.40	15.40	AT 295.98	063.65

```
*************************************************************
*                          ********                         *
*      THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF          *
*                          ********                         *
*   600.0 FEET EQUALS     15.40    FEET AT   295.98         *
*                          ********                         *
*************************************************************
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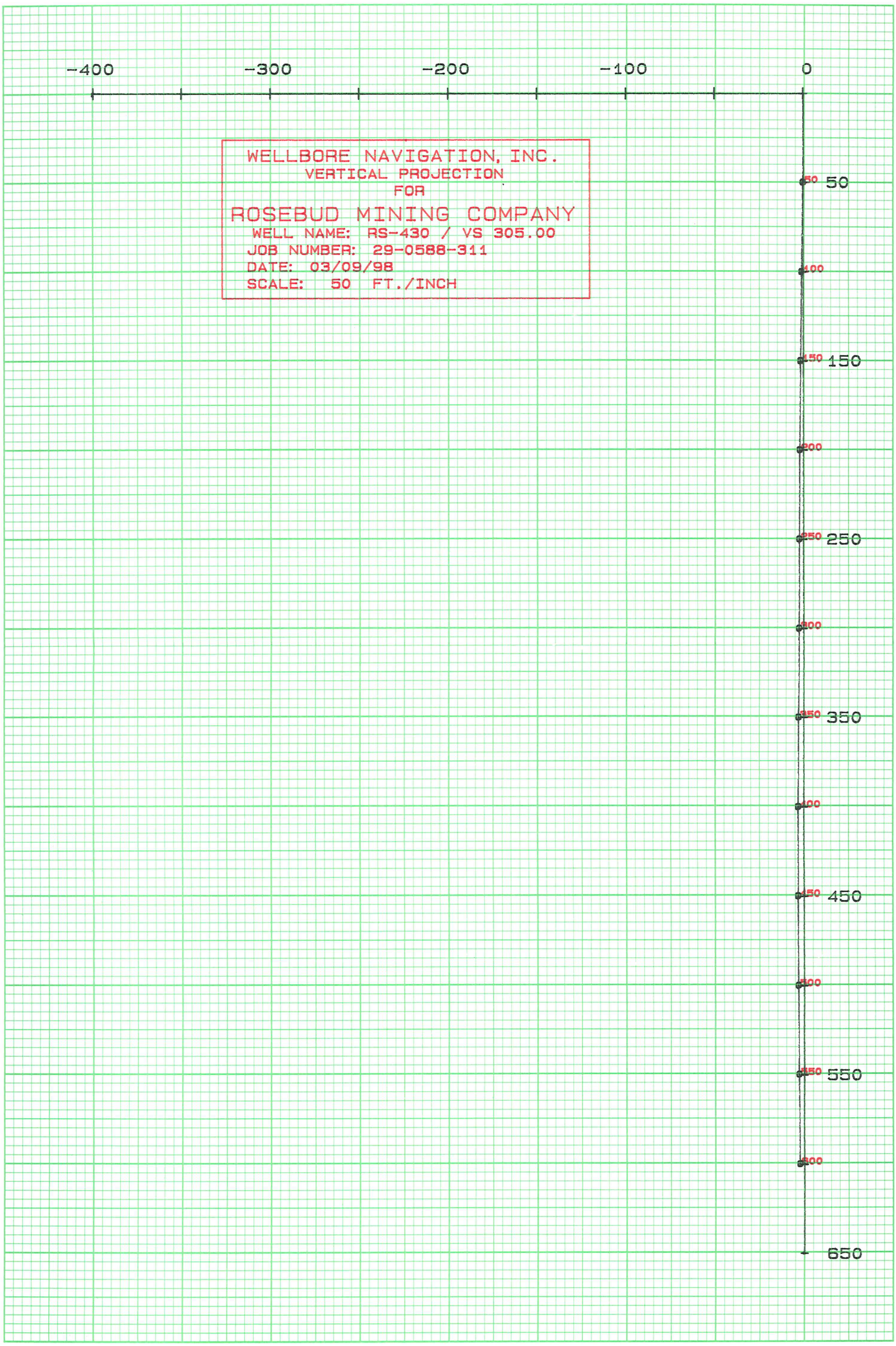

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* **ROSEBUD MINING COMPANY** *
****

JOB NUMBER: 29-0588-311

WELL NAME: RS-430 / VS 035.00

LOCATION: ROSEBUD MINE

SURVEY DATE: 03/09/98

SURVEY ENGINEER: VERN REID

GYRO REFERENCE BEARING: TRUE NORTH

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 125.00

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

COMMENTS: ***** EKLUND *****
** DENNIS WHITE **

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

WELLBORE NAVIGATION, INC.
WINNEMUCCA, NEVADA

JOB NUMBER: 29-0588-311 WELL NAME: RS-430 / VS 035.00

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
50.0	50.00	0.06	0.299	-89.30	203.39	0.28 S	0.12 W	1.40	0.70	0.31	AT 203.39	073.61
100.0	99.99	-0.06	0.947	-89.10	242.53	0.74 S	0.59 W	1.14	0.57	0.95	AT 218.54	073.69
150.0	149.99	-0.50	1.616	-89.06	253.47	1.04 S	1.33 W	0.36	0.18	1.69	AT 232.04	072.95
200.0	199.98	-1.22	2.108	-88.85	285.10	1.03 S	2.21 W	1.21	0.60	2.44	AT 245.11	072.29
250.0	249.97	-2.26	2.419	-88.67	291.01	0.69 S	3.24 W	0.44	0.22	3.31	AT 258.02	071.57
300.0	299.95	-3.50	2.673	-88.43	295.40	0.18 S	4.40 W	0.53	0.26	4.40	AT 267.59	070.82
350.0	349.93	-4.86	2.991	-88.36	288.50	0.34 N	5.69 W	0.41	0.21	5.70	AT 273.38	069.98
400.0	399.91	-6.46	3.329	-87.87	296.62	0.98 N	7.20 W	1.11	0.56	7.27	AT 277.74	069.35
450.0	449.87	-8.37	3.443	-87.73	306.28	1.98 N	8.83 W	0.79	0.40	9.05	AT 282.65	068.46
500.0	499.82	-10.49	3.265	-87.38	312.83	3.34 N	10.47 W	0.89	0.45	10.99	AT 287.72	068.01
550.0	549.77	-12.78	2.918	-87.32	314.42	4.94 N	12.14 W	0.19	0.09	13.11	AT 292.14	067.38
600.0	599.71	-15.21	2.415	-86.98	318.70	6.75 N	13.85 W	0.80	0.40	15.40	AT 295.98	063.65

```
*************************************************************
*                         ********                          *
*      THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF          *
*                         ********                          *
*   600.0 FEET EQUALS     15.40    FEET AT   295.98         *
*                         ********                          *
*************************************************************
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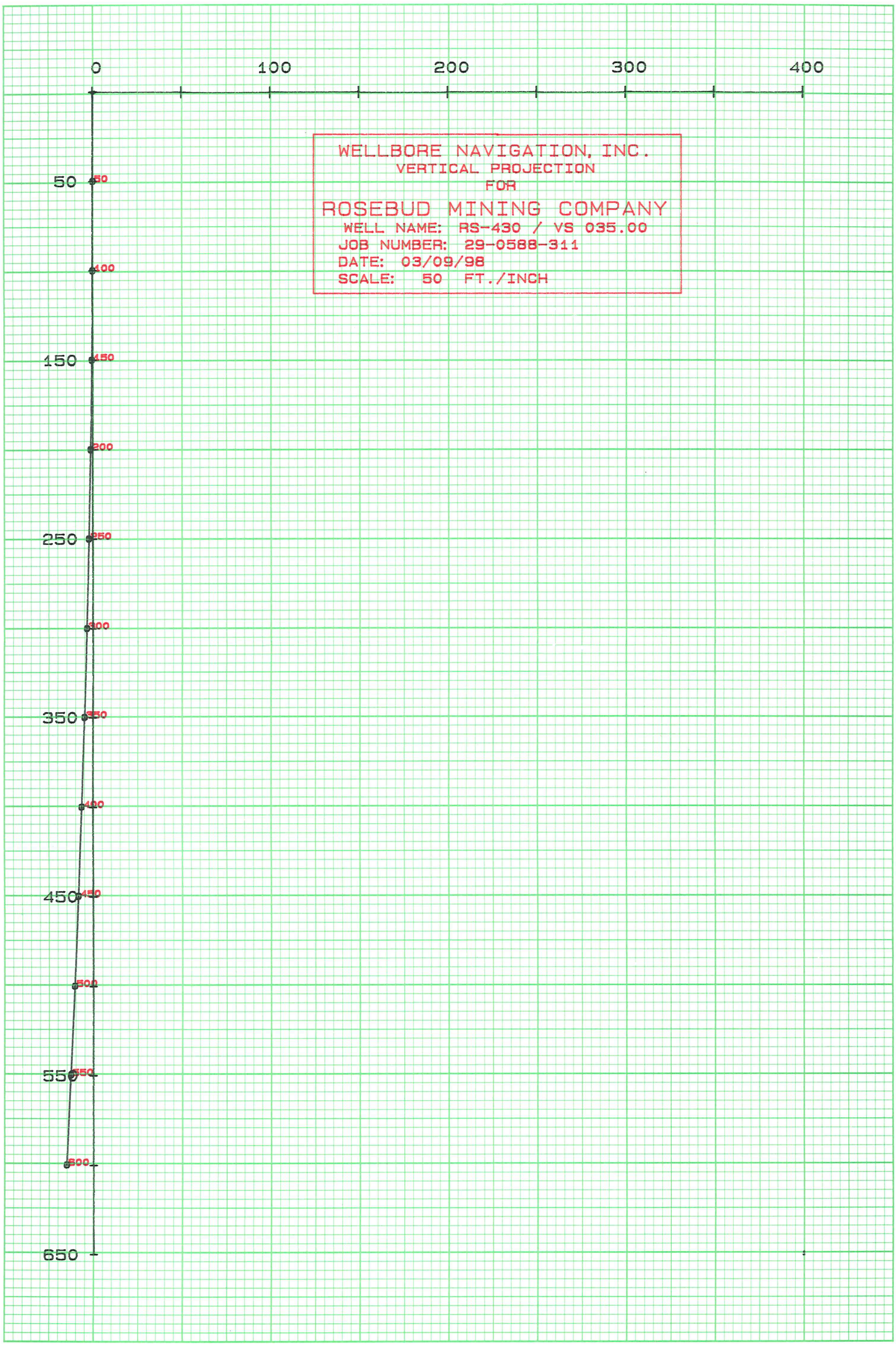

SP

SUBMITTAL FORM

American Assay Laboratories

Geochemical • Environmental • Metallurgical

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Other Offices
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Santiago, Chile
Mendoza, Argentina

Company: ROSEBUD MINING CO. LLT

Address: P.O. BOX 2610

City WINNEMUCCA State NV Zip 89446

Telephone Number: (702) 623-6912 Fax Number: (702) 623-6967

Project Name: DEVELOPMENT Purchase Order Number:

Date Submitted: 03/31/98 Number of Samples: 45

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

RS-430 SAMPLE IDENTIFICATION			TYPE	ELEMENTS REQUIRED
601.0 - 605.5	659.9 - 662.4	714.1-719.9	CORE	AU-AG ACCORDING TO
605.5 - 610.6	662.4 - 665.2	717.9-720		ROSEBUD MINE
610.6 - 616.0	665.2 - 666.3	720 - 724.9		PROTOCOL
616 - 622	666.3 - 671.1	724.9 - 730		
622 - 628	671.1 - 672.3	730 - 735.4		
628 - 632.7	672.3 - 674.4	735.4 - 740		
632.7 - 635.8	674.4 - 679.8	740 - 744.9		
635.8 - 640.2	679.8 - 684.3	744.9 - 750		
640.2 - 644.3	684.3 - 688.7	750 - 755		
644.3 - 647.3	688.7 - 691.9	755 - 760		
647.3 - 650.4	691.9 - 695.3	760 - 765		
650.4 - 651.7	695.3 - 700	765 - 770		
651.7 - 656.4	700 - 705	770 - 775.8		
656.4 - 658.4	705 - 710	775.8 - 780		
658.4 - 659.9	710 - 714.1	780 - 784.7		

COARSE REJECTS (Normally Discarded After 60 Days)

[ ] Return COD after analysis complete

PULPS (Normally Stored Free For One Month)

[ ] Discard after one month
[ ] Return COD after one month

RESULTS AND INVOICES TO BE SENT TO:

Invoice to:

KURT ALLEN

Results to:

KURT ALLEN

Comments:

PAGE 1 OF 2

CLIENT FILE COPY

SP

SUBMITTAL FORM

American Assay Laboratories

Geochemical • Environmental • Metallurgical

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Mazatlan Office
Telephone/Fax
011-52-69-170035

Other Offices
Lima, Peru
Santiago, Chile
Mendoza, Argentina

Company: ROSEBUD MINING Co LLT

Address: P.O. BOX 2610

City WINNEMUCCA State NV Zip 89446

Telephone Number: (702) 623-6912 Fax Number: (702) 623-6967

Project Name: DEVELOPMENT Purchase Order Number:

Date Submitted: 03/31/98 Number of Samples: 3

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

RS-430 SAMPLE IDENTIFICATION	TYPE	ELEMENTS REQUIRED
784.7-790	CORE	AU-AG ACCORDING TO ROSEBUD
790-795.3		& MINE PROTOCOL
795.3-800		

COARSE REJECTS (Normally Discarded After 60 Days)

[ ] Return COD after analysis complete

PULPS (Normally Stored Free For One Month)

[ ] Discard after one month
[ ] Return COD after one month

RESULTS AND INVOICES TO BE SENT TO:

Invoice to:

KURT ALLEN

Results to:

KURT ALLEN

Comments:

PAGE 2 OF 2

CLIENT FILE COPY

RS-430 - BOX NO 1
DEPTH 601 - 610.

RS-430 - BOX NO 2
DEPTH 610 - 618.

RS-430 - BOX NO 3
DEPTH 618 - 627.5

RS-430 - BOX NO 4
DEPTH 627.5- 636

RS-430 - BOX NO 5
DEPTH 636. - 645

RS-430 - BOX NO 6
DEPTH 645. - 654

6624
6564
6564
6599
6599
RS-430 - BOX NO 7
DEPTH 654. - 663

666.3
669.5
671.1
665.2
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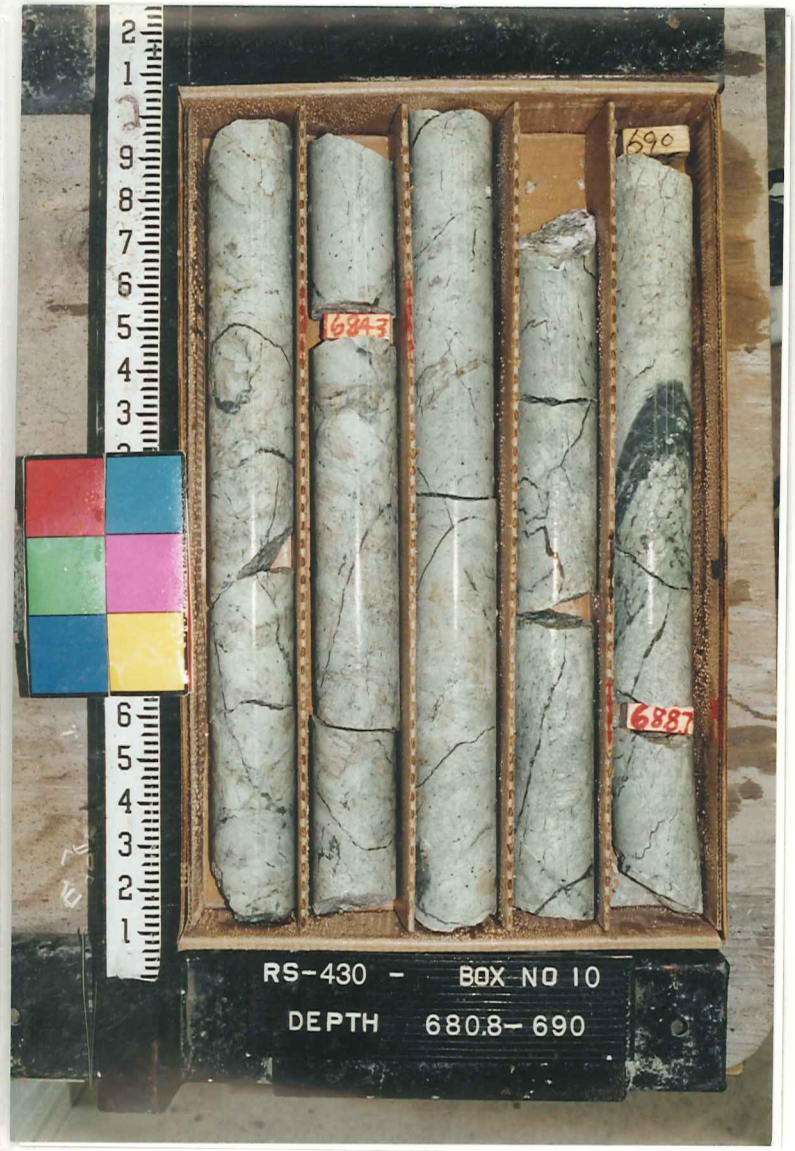
DEPTH 663 - 672

RS-430 - BOX NO 9
DEPTH 672 - 680.8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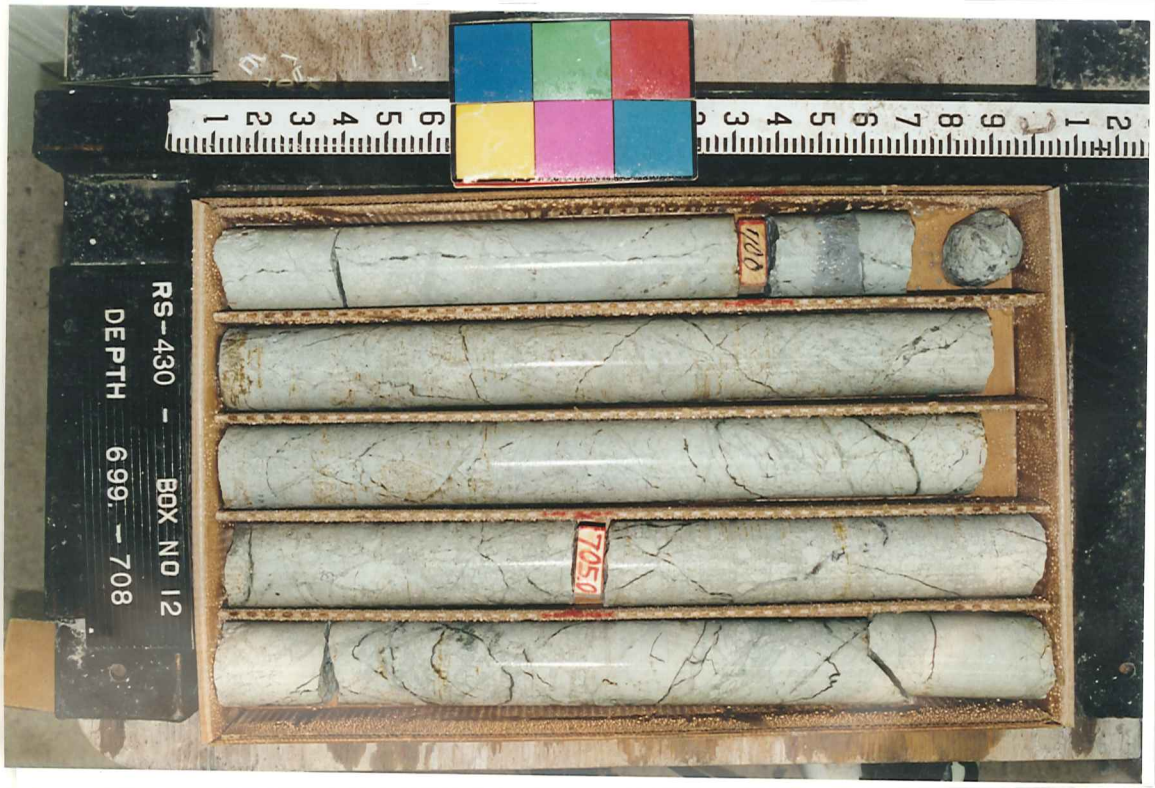
RS-430 - BOX NO 11
DEPTH 690. - 699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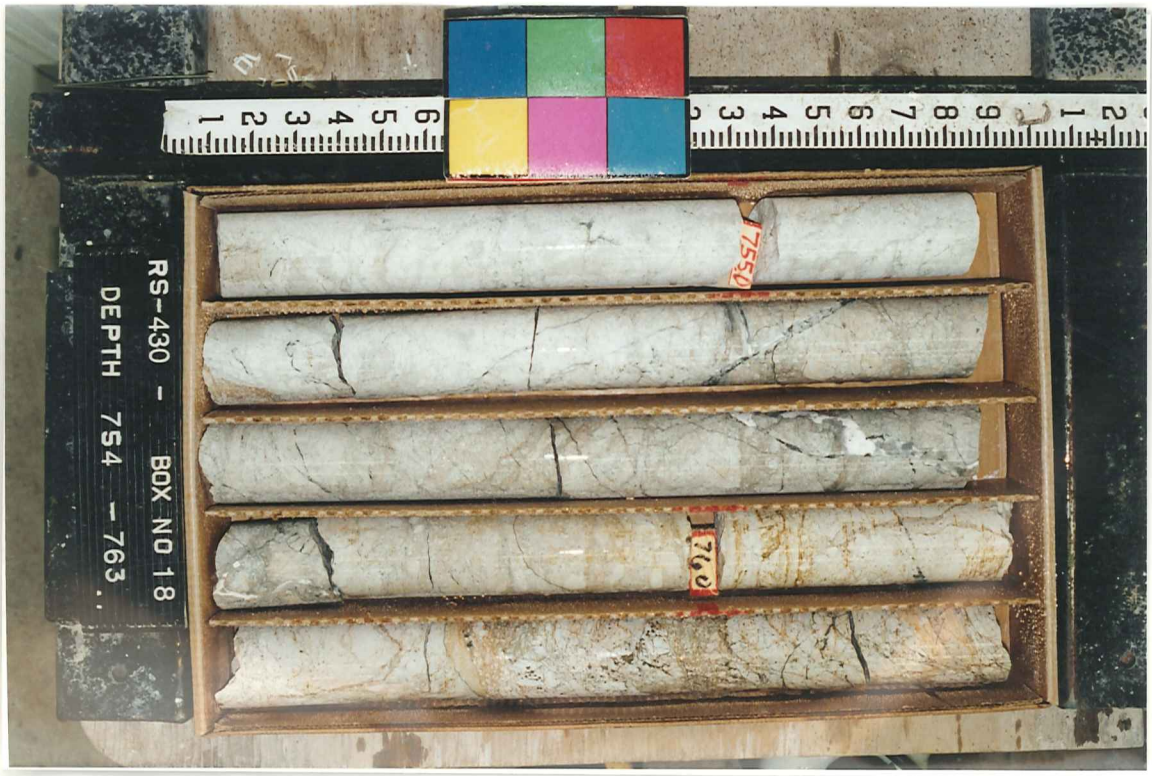
RS-430 - BOX NO 13
DEPTH 708. - 717
714.1
710

RS-430 - BOX NO 14
DEPTH 717. - 726
717.9
720
724.9

RS-430 - BOX NO 15
DEPTH 726 - 735.5
729

740
RS-430 - BOX NO 16
DEPTH 735.5-745

750
744.7
RS-430 - BOX NO 17
DEPTH 745 - 754


755.0
762.0
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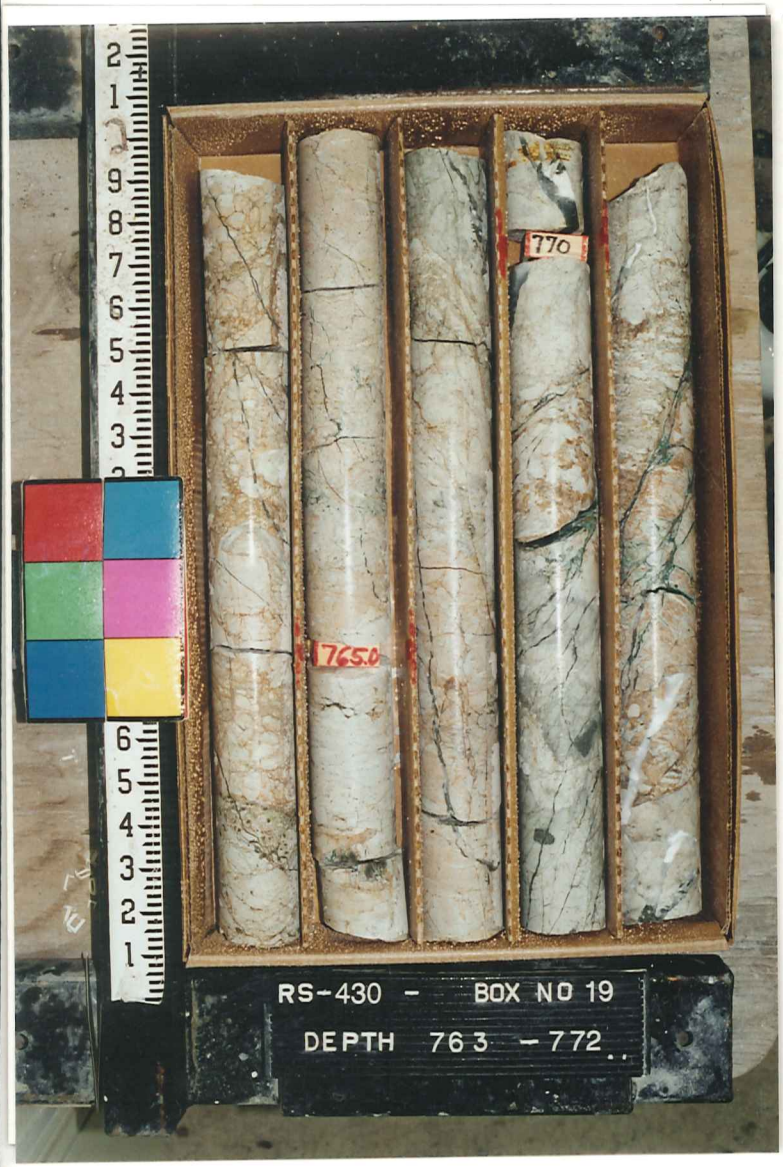
DEPTH 754 - 763


770
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DEPTH 763 - 772..

780
775.0
RS-430 - BOX NO 20
DEPTH 772 - 781..

RS-430 - BOX NO 21
DEPTH 781 - 790..

795.3
RS-430 - BOX NO 22
DEPTH 790 - 799

800
NO. 79738 HQ DIV.
RS-430 - BOX NO 23
DEPTH 799. - 800