60001442

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. 36-359
AUTHOR	M. Brady; Rogowski; S. King; C. Muerhoff, B. Thomas
DATE OF DOC(S)	1996; 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; Ekland Drilling; West Dozer Hill
COMMODITY If not obvious	gold silver
NOTES	Drill log; geology; assay; total depth 1150' handwritten notes; directional survey 24p.

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

SS: DD 5/22/08
Initials Date

DB: mch
Initials Date

SCANNED:
Initials Date

Revised: 1/22/08

Drill log 96-359
Rosebud

60001442

Hecla MINING COMPANY

ROSEBUD PROJECT
DRILL LOG

HOLE NUMBER 96-359
PAGE 1 OF 12
DATE 4/24/96
LOGGED BY M.W. Brady
TOTAL DEPTH 1150'

LOCATION
NORTHING 2,204,336.31
EASTING 480,712.67
ELEVATION 5,183.01
AZIMUTH —
INCLINATION VERTICAL

AREA WEST DOZER HILL
DRILLING CO. ERLUND
RIG TYPE TH 100 A TRACK-MOUNT RC
HOLE SIZE 5 1/4"
DOWN HOLE SURVEY BY WELNAV

6600 1442

FEET	GRAPHIC	ROCK TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION MATRIX	SILICIFICATION QUARTZ	ARGILLIC 5%	ARGILLIC 15%	ARGILLIC +25%	ARGILLIC TYPE	PROPYLITIC % CHLORITE	PROPYLITIC % CALCITE	POTASSIC % K-SPAR	POTASSIC % ALUNITE	OXIDATION 5%	OXIDATION 15%	OXIDATION +25%	VEINING %	VEINING TYPE	MINERALIZATION: SULFIDES 5%	SULFIDES 15%	SULFIDES +25%	PY %	CPY %	MAR %	K-SLF %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
0			Qal																																						
10																																									
20			wte-Ltgreen-Tan tuff w/ mod chy → Badger?			—						X			—				100			—					—														
30																																									
40																																									
50																																									
60																																									
70																																									
80																																									
90			Ltgreen-Tan equigranular tuff w/ tr diss py			—					—			✓				20				—					1-2														
100			w/ Lithics 10-20%											✓																											

SEE ASSAY CERTIFICATES

Hecla MINING COMPANY

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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 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 %	K-SUL %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
			Tan-wke-Lt green equigranular tuff w/wk diss py + wk min qtz py veinlets w/Lithics			—					—				✓				—			1-3	qtz + py				1-3														
110															✓																										
120															✓																										
130															✓																										
140															✓																										
150															✓																										
160															✓																										
170															✓																										
			Tan-wke-Lt green equigranular tuff w/wk diss py + wk clay			—					x				✓							—	—				L2														
180			Lithics												✓																										
190			a.a w/no clay			—					—				✓							—	—																		
200															✓																										

Hecla MINING COMPANY

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TOTAL DEPTH

LOCATION
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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 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	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
			Tan-Lt green fine equigranular tuff w/ Tr. diss py Lithics			–					–				✓				–			–					<1														
210															✓																										
220															✓																										
230			50% a.a / 50% red brn tuff			–					–				✓				–			–					–														
240			Red brn fine equigranular tuff - no sulf - andesite?			–					–								–			–																			
250			Wk-Lt green fine equigranular tuff w/ Tr. diss py Lithics			–					–				✓				–			–					<1														
260															✓																										
270			Dark red brn + Lt green (frags) no sulf - w/lithics?			–					–								–			–					–														
280																																									
290																																									
300																																									

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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 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 %	K-SUL %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOLYBDENITE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
310			Dark red brn w/ Lt green Lithics. → no sulf			—					—				✓				—			—					—														
320																																									
330																																									
340			Lt green tan tuff w/ bxa frags - no sulf. Lithic rich			—					—				✓				—			—					—														
350															✓																										
360															✓																										
370															✓																										
380															✓																										
390			wh-tan Lt green equigranular tuff w/ Tr diss py. Lithic rich			—					—				✓				—			—					4														
400															✓																										

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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 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 %	K-SUL %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
			wk-tan-Lt green equigranular tuff w/tr diss py			—					—				✓				—			—					<1														
			Lithic rich																																						
410															✓																										
420															✓																										
	✓		wk Lt green equigranular tuff w/tr diss py																																						
430															✓																										
	✓																																								
440															✓																										
	✓																																								
450						—					—				✓				—			—																			
	✓																																								
460															✓																										
	✓																																								
470															✓																										
	✓																																								
480															✓																										
	✓																																								
490															✓																										
	✓																																								
500																																									

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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 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 %	SULFATE %	BARITE %	METALLURGY: OXIDE	SULF	DIFSION	MIXCURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
	✓		wk fine equigranular tuff w/ tr diss py			–					–				✓				–			–																			
510	✓																																								
	✓														✓																										
520	✓																																								
	✓														✓																										
	✓		a.a w/ possible wk silica flooded zones			X					–								–			–																			
530																																									
	✓														✓																										
540	✓																																								
	✓														✓																										
550	✓																																								
	✓														✓																										
560	✓																																								
	✓														✓																										
	✓		a.a w/ no silica flooding lt green color			–					–								–			–																			
570	✓														✓																										
	✓														✓																										
580	✓														✓																										
	✓														✓																										
	✓		Lt gray - Lt green fine equigranular tuff w/ min fine diss py + wk silica flooding			X					–				✓				–			–																			
590	✓																																								
	✓														✓																										
600																																									

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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%	VEINING %	VEINING TYPE	MINERALIZATION: SULFIDES 5%	SULFIDES 15%	SULFIDES +25%	PY %	CPY %	MAR %	K-SILI %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOISTURE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
	✓		Gray-Lt green equigranular tuff w/ wk fine diss py poss wk silica flooded			X					—				✓				—			—																			
	✓																																								
610																																									
	✓														✓																										
	✓																																								
620																																									
	✓														✓																										
	✓																																								
630																																									
	✓														✓																										
	✓																																								
640																																									
	✓														✓																										
	✓																																								
650						—																																			
	✓		Gray-Lt green equigranular tuff w/ wk red brn frag. stains local												✓				—			—																			
	✓					—																																			
660																																									
	✓														✓																										
	✓																																								
670																																									
	✓														✓																										
	✓														✓																										
680																																									
	✓														✓																										
	✓														✓																										
690																																									
	✓														✓																										
700	✓														✓																										

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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 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 %	K-SILI %	STIBNITE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOLYBDENITE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
	✓		lt green to gray equigranular tuff w/tr. diss. py			–					–				✓				–			–																			
	✓														✓																										
710	✓														✓																										
	✓														✓																										
720	✓														✓																										
	✓														✓																										
730	✓														✓																										
	✓														✓																										
740	✓														✓																										
	✓														✓																										
750	✓														✓																										
	✓														✓																										
760	✓														✓																										
	✓														✓																										
770	✓														✓																										
	✓														✓																										
780	✓		a.a w/red brn stains 780-85												✓																										
	✓														✓																										
790	✓														✓																										
	✓														✓																										
800	✓														✓																										

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RIG TYPE
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DOWN HOLE SURVEY BY

FEET	GRAPHIC	BOX TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	15%	+25%	MASSIVE	QUARTZ	ARGILLIC 5%	15%	+25%	TYPE	PROPYLITIC %	POTASSIC %	OXIDATION 5%	15%	+25%	VEINING %	TYPE	MINERALIZATION: SULFIDES 5%	15%	+25%	PY %	CPY %	MAR %	K-SULF %	SULFATE %	BARITE %	METALLURGY: OXIDE	SULF	CARBON	MOLYBDENITE	ANALYTICAL DATA: FROM	TO	W	Au	Ag
	✓		Gray - Ltgreen equigranular tuff w/ to disc py.			–					–				✓				–		–																		
810	✓		g.a w/red brn stains 805-830																																				
	✓														✓																								
820	✓																																						
	✓														✓																								
830	✓																																						
	✓														✓																								
840	✓																																						
	✓														✓																								
850	✓																																						
	✓														✓																								
860	✓		g.a w/red brn stains 855-895																																				
	✓														✓																								
870	✓																																						
	✓														✓																								
880	✓																																						
	✓														✓																								
890	✓																																						
	✓														✓																								
900																																							

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RIG TYPE
HOLE SIZE
DOWN HOLE SURVEY BY

FEET	GRAPHIC	BOX TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION MAX	SILICIFICATION QUARTZ	ARGILLIC 5%	ARGILLIC 15%	ARGILLIC +25%	ARGILLIC TYPE	PROPYLITIC %	POTASSIC %	OXIDATION 5%	OXIDATION 15%	OXIDATION +25%	VEINING %	VEINING TYPE	MINERALIZATION: SULFIDES 5%	SULFIDES 15%	SULFIDES +25%	PY %	CPY %	MAR %	K-SUL %	SULFATE %	BARITE %	METALLURGY: OXIDE	SULF	OXIDE	MIXED	ANALYTICAL DATA: FROM	TO	W	Au	Ag
	✓		Gray-Lt green equigranular tuff w/ tr diss. py			—					—				✓					—	—				✓														
910	✓																✓																						
	✓														✓																								
	✓		a.a w/ red brn stains 915-990																																				
920	✓																																						
	✓														✓																								
	✓																																						
930																																							
	✓														✓																								
	✓																																						
940																																							
	✓														✓																								
	✓																																						
950																																							
	✓														✓																								
	✓																																						
960																																							
	✓														✓																								
	✓																																						
970																																							
	✓														✓																								
	✓																																						
980																																							
	✓		10-15 gpm												✓																								
	✓																																						
990																																							
	✓		30 gpm Lt green-Lt gray equigranular tuff w/ tr diss py			—					—				✓				—	—					<1														
	✓														✓																								
1000																																							

poss fault ?

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HOLE SIZE
DOWN HOLE SURVEY BY

FEET	GRAPHIC	BOX TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION MAS	SILICIFICATION QUARTZ	ARGILLIC 5%	ARGILLIC 15%	ARGILLIC +25%	ARGILLIC TYPE	PROPYLITIC % CHLORITE	PROPYLITIC % CALCITE	POTASSIC % K-SPAR	POTASSIC % INCLINE	OXIDATION 5%	OXIDATION 15%	OXIDATION +25%	VIENING %	VIENING TYPE	MINERALIZATION: SULFIDES 5%	SULFIDES 15%	SULFIDES +25%	PY %	CPY %	MAR %	K-SLF %	SLBNT %	BARITE %	METALLURGY: CODE	SULF	OXIDE	MOLR	ANALYTICAL DATA: FROM	TO	W	AU	AG
	✓		Gray + Lt green equigranular tuff w/ 1% diss. py + red. brn. Stains			–					–				✓				–			–					<1															
1010	✓																		✓																							
	✓														✓																											
1020	✓																																									
	✓														✓																											
1030	✓																																									
	✓														✓																											
1040	✓																																									
	✓														✓																											
1050	✓																																									
	✓														✓																											
1060	✓																																									
	✓														✓																											
1070	✓																																									
	✓														✓																											
1080	✓																																									
	✓														✓																											
1090	✓																																									
	✓														✓																											
1100	✓																																									

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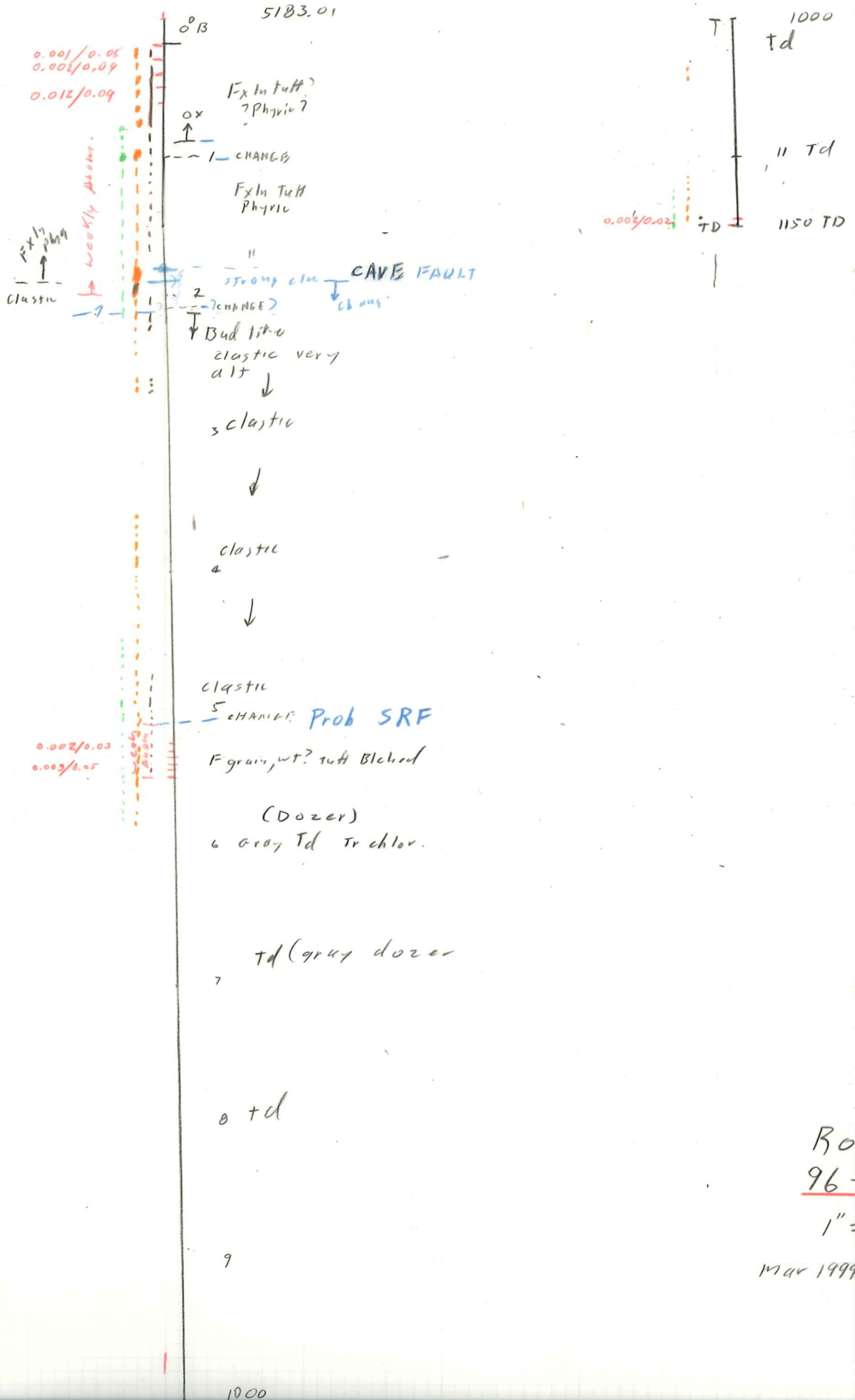
FEET	GRAPHIC	BOX TYPE	LITHOLOGY	HARDNESS	TEXTURE	ALTERATION: SILICIFICATION 5%	SILICIFICATION 15%	SILICIFICATION +25%	SILICIFICATION MAT'L	SILICIFICATION QUARTZ	ARGILLIC 5%	ARGILLIC 15%	ARGILLIC +25%	ARGILLIC TYPE	PROPYLITIC % CHLORITE	PROPYLITIC % CALCITE	POTASSIC % K-SPAR	POTASSIC % ALUNITE	OXIDATION 5%	OXIDATION 15%	OXIDATION +25%	VEINING %	VEINING TYPE	MINERALIZATION: SULFIDES 5%	SULFIDES 15%	SULFIDES +25%	PY %	CPY %	MAR %	K-SLF %	SLBNITE %	BARITE %	METALLURGY: OXIDE	SULF	SPECIAL	MOLE	ANALYTICAL DATA: FROM	TO	W	AU	AG
	✓		Gray-Lt green equigranular tuff w/tr. disseg. & red. brn. stains												✓																											
	✓																		✓																							
110			Lt green fine equigranular tuff w/tr. disseg. w/ Lithics												✓																											
120															✓																											
															✓																											
130															✓																											
															✓																											
140															✓																											
															✓																											
			Dozer fine equigranular Lt green												✓																											
150			TD 1150																																							

N 2,204,336.31
E 480,712.67



Rosebud
96-359
1" = 100'
Mar 1999 - Rogowski

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP038109

American Assay Laboratories

P.O. BOX 11530
RENO, NV,,USA
Ph.1-702-356-0606, Fax.1-702-356-1413

HECLA MINING CO.

COPIES TO : CHARLIE MUERHOFF
:
:
:

CLIENT REFERENCE No: 96-359 RECEIVED : 30 APR 1996

No. SAMPLES : 180 REPORTED : 14 MAY 1996

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)	FA60	15%	OPT	0.001
Au(RZ)	FA60	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Sue King M.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP038109

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : 96-359

REPORTED : 14 MAY 1996

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	Ag(OZ) D210 OPT
96-359 000-010	<0.001		0.02
96-359 010-020	<0.001		0.03
96-359 020-030	0.001		0.08
96-359 030-040	0.002		0.09
96-359 040-050	<0.001	<0.001	0.05
96-359 050-060	0.012		0.09
96-359 060-070	0.003		0.07
96-359 070-080	0.002		0.03
96-359 080-090	0.004		0.04
96-359 090-100	0.001		0.03
96-359 100-110	0.002		0.04
96-359 110-120	<0.001		0.04
96-359 120-130	0.001		0.05
96-359 130-140	0.001		0.06
96-359 140-150	0.001		0.07
96-359 150-160	0.002		0.07
96-359 160-170	0.001	0.001	0.07
96-359 170-180	0.001		0.06
96-359 180-190	0.002		0.06
96-359 190-200	0.001		0.04
96-359 200-210	<0.001		0.02
96-359 210-220	<0.001		0.02
96-359 220-230	<0.001		0.02
96-359 230-240	<0.001		<0.02
96-359 240-250	<0.001		<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP038109

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : 96-359

REPORTED : 14 MAY 1996

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	Ag(OZ) D210 OPT
96-359 250-260	<0.001		0.04
96-359 260-270	<0.001		0.02
96-359 270-280	<0.001		<0.02
96-359 280-290	<0.001	<0.001	<0.02
96-359 290-300	<0.001		<0.02
96-359 300-310	<0.001		<0.02
96-359 310-320	<0.001		<0.02
96-359 320-330	<0.001		<0.02
96-359 330-340	<0.001		0.02
96-359 340-350	<0.001		<0.02
96-359 350-360	<0.001		<0.02
96-359 360-370	<0.001		0.02
96-359 370-380	<0.001		0.02
96-359 380-390	<0.001		0.02
96-359 390-400	<0.001	<0.001	<0.02
96-359 400-410	<0.001		<0.02
96-359 410-420	<0.001		<0.02
96-359 420-430	<0.001		<0.02
96-359 430-440	<0.001		<0.02
96-359 440-450	<0.001		0.03
96-359 450-460	<0.001		0.03
96-359 460-470	<0.001		0.04
96-359 470-480	<0.001		0.02
96-359 480-490	<0.001		0.03
96-359 490-500	<0.001	<0.001	0.03

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP038109

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REFERENCE : 96-359

REPORTED : 14 MAY 1996

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	Ag(OZ) D210 OPT
96-359 500-505	0.001		0.04
96-359 505-510	<0.001		0.03
96-359 510-515	0.001		0.04
96-359 515-520	<0.001		<0.02
96-359 520-525	0.001		0.04
96-359 525-530	0.002		0.03
96-359 530-535	0.001		0.04
96-359 535-540	<0.001		0.04
96-359 540-545	0.003		0.05
96-359 545-550	0.001		0.03
96-359 550-555	<0.001		0.03
96-359 555-560	<0.001	<0.001	0.04
96-359 560-565	<0.001		0.04
96-359 565-570	<0.001		0.03
96-359 570-575	<0.001		0.02
96-359 575-580	<0.001		0.02
96-359 580-585	<0.001		<0.02
96-359 585-590	<0.001		<0.02
96-359 590-595	<0.001		<0.02
96-359 595-600	<0.001		<0.02
96-359 600-605	<0.001		<0.02
96-359 605-610	<0.001		<0.02
96-359 610-615	<0.001		<0.02
96-359 615-620	<0.001		<0.02
96-359 620-625	<0.001	<0.001	<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP038109

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PROJECT : ROSEBUD
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REPORTED : 14 MAY 1996

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	Ag(OZ) D210 OPT
96-359 625-630	<0.001		<0.02
96-359 630-635	<0.001		0.02
96-359 635-640	<0.001	<0.001	<0.02
96-359 640-645	<0.001		<0.02
96-359 645-650	<0.001		<0.02
96-359 650-655	<0.001		<0.02
96-359 655-660	<0.001		<0.02
96-359 660-665	<0.001		<0.02
96-359 665-670	<0.001		0.02
96-359 670-675	<0.001		<0.02
96-359 675-680	<0.001		<0.02
96-359 680-685	<0.001		<0.02
96-359 685-690	<0.001		<0.02
96-359 690-695	<0.001		0.02
96-359 695-700	<0.001		<0.02
96-359 700-705	<0.001		0.02
96-359 705-710	<0.001	<0.001	0.02
96-359 710-715	<0.001		0.03
96-359 715-720	<0.001		<0.02
96-359 720-725	<0.001		<0.02
96-359 725-730	<0.001		<0.02
96-359 730-735	<0.001		0.02
96-359 735-740	<0.001		0.02
96-359 740-745	<0.001		<0.02
96-359 745-750	<0.001		0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP038109

American Assay Laboratories

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PROJECT : ROSEBUD
REFERENCE : 96-359

REPORTED : 14 MAY 1996

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	Ag(OZ) D210 OPT
96-359 750-755	<0.001		0.02
96-359 755-760	<0.001		0.02
96-359 760-765	<0.001		0.02
96-359 765-770	<0.001		<0.02
96-359 770-775	<0.001		0.02
96-359 775-780	<0.001	<0.001	0.02
96-359 780-785	<0.001		0.02
96-359 785-790	<0.001		<0.02
96-359 790-795	<0.001		0.02
96-359 795-800	<0.001		<0.02
96-359 800-805	<0.001		0.02
96-359 805-810	<0.001		0.02
96-359 810-815	<0.001		0.02
96-359 815-820	<0.001		0.02
96-359 820-825	<0.001	<0.001	0.02
96-359 825-830	<0.001		0.04
96-359 830-835	<0.001		0.02
96-359 835-840	<0.001		0.02
96-359 840-845	<0.001		0.02
96-359 845-850	<0.001		0.02
96-359 850-855	<0.001		0.03
96-359 855-860	<0.001		0.03
96-359 860-865	<0.001		0.08
96-359 865-870	<0.001	<0.001	0.02
96-359 870-875	<0.001		0.03

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP038109

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PROJECT : ROSEBUD
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REPORTED : 14 MAY 1996

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	Ag(OZ) D210 OPT
96-359 875-880	<0.001		0.04
96-359 880-885	<0.001		0.02
96-359 885-890	<0.001		0.03
96-359 890-895	<0.001		<0.02
96-359 895-900	<0.001		<0.02
96-359 900-905	<0.001		<0.02
96-359 905-910	<0.001		0.02
96-359 910-915	<0.001		0.02
96-359 915-920	<0.001		<0.02
96-359 920-925	<0.001		<0.02
96-359 925-930	<0.001		<0.02
96-359 930-935	<0.001		<0.02
96-359 935-940	<0.001		<0.02
96-359 940-945	<0.001		<0.02
96-359 945-950	<0.001		<0.02
96-359 950-955	<0.001		<0.02
96-359 955-960	<0.001	<0.001	0.02
96-359 960-965	<0.001		<0.02
96-359 965-970	<0.001		<0.02
96-359 970-975	<0.001		<0.02
96-359 975-980	<0.001		<0.02
96-359 980-985	<0.001		0.02
96-359 985-990	<0.001		0.02
96-359 990-995	<0.001		<0.02
96-359 995-1000	<0.001		0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP038109

American Assay Laboratories

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REFERENCE : 96-359

REPORTED : 14 MAY 1996

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	Ag(OZ) D210 OPT
96-359 1000-1005	<0.001		0.03
96-359 1005-1010	<0.001		0.02
96-359 1010-1015	<0.001		0.02
96-359 1015-1020	<0.001		0.02
96-359 1020-1025	<0.001		<0.02
96-359 1025-1030	<0.001		0.03
96-359 1030-1035	<0.001		0.02
96-359 1035-1040	<0.001		0.02
96-359 1040-1045	<0.001		0.02
96-359 1045-1050	<0.001		<0.02
96-359 1050-1055	<0.001		0.04
96-359 1055-1060	<0.001		0.02
96-359 1060-1065	<0.001		<0.02
96-359 1065-1070	<0.001		<0.02
96-359 1070-1075	<0.001		0.02
96-359 1075-1080	<0.001		0.02
96-359 1080-1085	<0.001		0.02
96-359 1085-1090	<0.001		<0.02
96-359 1090-1095	<0.001		<0.02
96-359 1095-1100	<0.001		0.02
96-359 1100-1105	<0.001		0.02
96-359 1105-1110	<0.001		0.02
96-359 1110-1115	<0.001		0.02
96-359 1115-1120	<0.001		<0.02
96-359 1120-1125	<0.001		0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP038109

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : 96-359

REPORTED : 14 MAY 1996

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	Ag(OZ) D210 OPT
96-359 1125-1130	<0.001		0.02
96-359 1130-1135	<0.001		0.02
96-359 1135-1140	<0.001		<0.02
96-359 1140-1145	<0.001		<0.02
96-359 1145-1150	0.002		0.02

WELNAV
ELKO,NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* HECLA MINING CO. *
****

JOB NUMBER: 29-0588-311

WELL NAME: ~~98-357~~ 96-359

LOCATION: ROSEBUD PROJECT

SURVEY DATE: 4-26-96

SURVEY ENGINEER: B.THOMAS

GYRO REFERENCE BEARING: 112.50

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

COMMENTS: *** EKLUND ***

PROJECT F/1135' T/1160'

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

WELNAV
ELKO,NEVADA

JOB NUMBER: 29-0588-311

WELL NAME: ~~78-357~~ 96-359

INRUN SURVEY
BY MINIMUM CURVATURE

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	L/R CLOS.	INCL	BEARING AZIMUTH	COORDINATES LATITUDE	COORDINATES DEPARTURE	D-LEG /100	D-LEG /CL	STATION DISP.	DISPLACEMENT DIRECTION
50.0	50.00	-0.05	-0.200	-89.53	034.20	0.17 N	0.12 E	0.94	0.47	0.21	AT 034.20
100.0	100.00	0.01	-0.441	-89.75	114.98	0.29 N	0.33 E	0.99	0.50	0.44	AT 048.33
150.0	150.00	0.36	-0.449	-89.42	145.06	0.04 N	0.57 E	0.77	0.38	0.57	AT 086.04
200.0	199.99	0.90	-0.328	-89.31	154.21	0.44 S	0.85 E	0.30	0.15	0.96	AT 117.33
250.0	249.99	1.73	-0.137	-88.74	148.22	1.18 S	1.27 E	1.16	0.58	1.73	AT 132.84
300.0	299.97	2.86	0.216	-88.52	160.15	2.25 S	1.78 E	0.72	0.36	2.87	AT 141.70
350.0	349.96	3.81	0.749	-88.97	176.51	3.31 S	2.02 E	1.14	0.57	3.88	AT 148.53
400.0	399.95	4.51	1.287	-89.00	172.97	4.19 S	2.11 E	0.14	0.07	4.69	AT 153.31
450.0	449.94	5.19	1.866	-88.94	182.19	5.08 S	2.14 E	0.35	0.18	5.52	AT 157.16
500.0	499.94	5.88	2.357	-89.10	162.23	5.92 S	2.24 E	0.75	0.37	6.33	AT 159.25
550.0	549.93	6.61	2.733	-89.00	166.30	6.72 S	2.47 E	0.24	0.12	7.16	AT 159.84
600.0	599.92	7.40	3.106	-89.00	159.15	7.55 S	2.73 E	0.25	0.12	8.03	AT 160.15
650.0	649.91	8.29	3.425	-88.83	155.40	8.42 S	3.09 E	0.37	0.18	8.97	AT 159.83
700.0	699.91	9.17	3.736	-89.03	158.54	9.28 S	3.46 E	0.42	0.21	9.90	AT 159.55
750.0	749.90	10.01	3.964	-88.97	147.11	10.05 S	3.86 E	0.42	0.21	10.77	AT 159.00
800.0	799.89	10.86	4.120	-89.05	148.45	10.78 S	4.32 E	0.17	0.08	11.62	AT 158.16
850.0	849.88	11.81	4.202	-88.76	137.64	11.53 S	4.90 E	0.71	0.35	12.53	AT 156.98
900.0	899.87	12.94	4.177	-88.64	134.76	12.35 S	5.69 E	0.27	0.14	13.60	AT 155.28
950.0	949.85	14.16	4.067	-88.55	129.85	13.18 S	6.59 E	0.30	0.15	14.73	AT 153.41
1000.0	999.83	15.50	3.742	-88.28	118.61	13.94 S	7.74 E	0.82	0.41	15.94	AT 150.96
1050.0	1049.81	16.95	3.048	-88.02	105.78	14.53 S	9.23 E	0.98	0.49	17.22	AT 147.59
1100.0	1099.77	18.68	1.927	-87.25	103.58	15.05 S	11.23 E	1.55	0.78	18.78	AT 143.28
1135.0	1134.72	20.19	0.862	-86.69	101.10	15.44 S	13.03 E	1.64	0.58	20.21	AT 139.84
1160.0	1159.67	21.34	-0.000	-86.70	100.16	15.71 S	14.45 E	0.22	0.05	21.34	AT 137.39

```
*************************************************************
*                         ********                          *
*      THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF          *
*                         ********                          *
*  1160.0 FEET EQUALS     21.34    FEET AT   137.39         *
*                         ********                          *
*************************************************************
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