60001391

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. RL-164
AUTHOR	P. Graffe
DATE OF DOC(S)	1990
MULTI_DIST Y / (N?) Additional Dist_Nos:	
QUAD_NAME	Sulphur 7.5'
P_M_C_NAME (mine, claim & company names)	Rosebud Mine; Rosebud Project; Eklund Drilling; Lac Minerals (USA), Inc
COMMODITY If not obvious	gold silver
NOTES	Drill log; geology; assay; total depth 545' handwritten notes; directional survey 14 p. 1 long paper strip

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)

	Initials	Date
SS:	DD	5/20/08
DB:	mah	
SCANNED:		

Revised: 1/22/08

DRILL LOGS RL-164
Rosebud

6000 1391 4010

60001391

LAC MINERALS (U.S.A.) INC.

DRILL LOG SUMMARY SHEET

PROJECT ROSEBUD

HOLE NUMBER RL-164 TOTAL DEPTH 545 LOGGED BY _____

Date started 11.10.90

Date completed 11.10.90

Initial bearing —

Initial inclination -90° (VERTICAL)

Elevation 5321.3

Collar coordinates:

N 2,205,452

E 481,430.4

Contractor: ERLUND

Drill Type: MPD-1000

Hole Size: 4 3/4

Drilling Conditions: HARD

Footage: Wet / Dry 125'

Comments: VERY HARD ROCK, PIECES OF HAMMER LEFT IN BOTTOM OF HOLE

DOWN HOLE SURVEY INFORMATION

FROM	TO	SURVEY POINT	INCLINATION	BEARING	X (Northing)	Y (Easting)	Z (Elevation)
0	25		-90	—			
25	75		-89	N 68.5 W			
75	125		-88.9	S 78.0 W			
125	175		-88.5	S 54 W			
175	225		-88.0	S 50.4 W			
225	275		-87.4	S 53.1 W			
275	325		-87.3	S 54.4 W			
325	375		-87.5	S 57.2 W			
375	425		-87.7	S 40.6 W			
425	475		-87.7	S 33.3 W			
475	520.5		-86.5	S 32.1 W			
520.5	545		-85.5	S 34 W			

LAC MINERALS (U.S.A.) INC.
ROSEBUD PROJECT

FINE-GRAINED TUFF
LITHIC LAPILLI TUFF
CHOCOLATE TUFF

ARGILLIC
XX SILICIFICATION
OX OXIDIZED
XXXXXX DRUZY QUARTZ
XC CHALCEDONIC QUARTZ
XK STOCKWORK QUARTZ
P P P PROPYLITIZATION
Ca CALCITE

DRILL HOLE RL-164

Page 1 of 6

LOGGED BY DAM

	LITH.	ALT.	% ARG. ALT. W	M	S	% SIL'N W	M	S	COLOR	% FeOx W	M	S	% SULF.	COMMENTS	Au	Ag	CHECK	% WASH RECOV.
														0-25 OVERBURDEN QAF	.001	<		
05															<			
10																		
15																		
20																		
25									PURPLE RD BRN					25-545' CHOCOLATE FINE GRAIN TUFF - FINE MAFICS IN GROUNDMASS LOCALLY BLEACHED TO "DOLERESQUE" APPEARENCE				
30																		
35																		
40																		
45																		
50																		
55																		
60																		
65																		
70																		
75															.001			
80															<			
85															<			
90															<			
95															<			
100															<			

LAC MINERALS (U.S.A.) INC.
ROSEBUD PROJECT

FINE-GRAINED TUFF
LITHIC LAPILLI TUFF

ARGILLIC
XX SILICIFICATION
OX OXIDIZED
XXXXXX DRUZY QUARTZ
XC CHALCEDONIC QUARTZ
XK STOCKWORK QUARTZ
P P P PROPYLITIZATION
Ca CALCITE

DRILL HOLE RL-164

Page 2 of 6

LOGGED BY Dan

	LITH.	ALT.	% ARG. ALT. W	M	S	% SIL'N W	M	S	COLOR	% FeOx W	M	S	% SULF.	COMMENTS	Au	Ag	CHECK	% WASH RECOV.
									PURPLE Rd BRN					FGT	<	<		
105																		
110																		
115																		
120																		
125														- SMALL H_2O FRACTURE IN ROCK <3gpm				
WET															.001			
130																		
135															<			
140																		
145																		
150																		
155																		
160																		
165																		
170																		
175																		
180																.11		
185															<	<		
190															.001	<		
195															<	<		
200															<	<		

LAC MINERALS (U.S.A.) INC.
ROSEBUD PROJECT

FINE-GRAINED TUFF
LITHIC LAPILLI TUFF

ARGILLIC
XX SILICIFICATION
OX OXIDIZED
XXXXXX DRUZY QUARTZ
XC CHALCEDONIC QUARTZ
XK STOCKWORK QUARTZ
P P P PROPYLITIZATION
Ca CALCITE

DRILL HOLE RL-164

Page 3 of 6

LOGGED BY DAM

	LITH.	ALT.	% ARG. ALT. W	M	S	% SIL'N W	M	S	COLOR	% FeOx W	M	S	% SULF.	COMMENTS	Au	Ag	CHECK	% WASH RECOV
									PURPLE Rd BRN						<	<		
205																		
210															<			
215									LT GRN					H_2O INCREASE to ≈ 20 ppm BL ↑ 215-240	<			
220															.001			
225															.001			
230															<			
235															.001	.12		
240															<	<		
245									PURPLE Rd BRN						<			
250															.002			
255															.001			
260															.001			
265															.001			
270															<			
275															<			
280															.001			
285															.001			
290															<			
295															.001			
300															.001			

LAC MINERALS (U.S.A.) INC.
ROSEBUD PROJECT

FINE-GRAINED TUFF
LITHIC LAPILLI TUFF

ARGILLIC
XX SILICIFICATION
OX OXIDIZED
XXXXXX DRUZY QUARTZ
XC CHALCEDONIC QUARTZ
XK STOCKWORK QUARTZ
P P P PROPYLITIZATION
Ca CALCITE

DRILL HOLE RL-164

Page 4 of 6

LOGGED BY DAM

	LITH.	ALT.	% ARG. ALT. W	M	S	% SIL'N W	M	S	COLOR	% FeOx W	M	S	% SULF.	COMMENTS	Au	Ag	CHECK	% WASH RECOV
									PURPLE RD BRN						.001	<		
305																		
310															<			
315															<			
		~							LT GRN					315-360 BL ↑	.001			
320																		
325															.001			
															<			
330																		
															.001			
335																		
															<			
340														Q_{BUCKET} = 32 gpm				
															.002			
345																		
															.008			
350																		
															.001			
355																		
360																		
									PURPLE RD BRN									
365																		
370																		
375																		
380																		
															<			
385																		
															<			
390																		
															.001			
395																		
400															.001			

LAC MINERALS (U.S.A.) INC.
ROSEBUD PROJECT

FINE-GRAINED TUFF
LITHIC LAPILLI TUFF

ARGILLIC
XX SILICIFICATION
OX OXIDIZED
XXXXXX DRUZY QUARTZ
XC CHALCEDONIC QUARTZ
XK STOCKWORK QUARTZ
P P P PROPYLITIZATION
Ca CALCITE

DRILL HOLE RC-164

Page 5 of 6

LOGGED BY DAM

	LITH.	ALT.	% ARG. ALT. W	M	S	% SIL'N W	M	S	COLOR	% FeOx W	M	S	% SULF.	COMMENTS	Au	Ag	CHECK	% WASH RECOV.
									RED BRN						<	<		
405									PURPLE									
410																		
415																		
420																		
425																		
430																		
435																		
440																		
445																		
450																		
455																		
460														GREEN CLAY VEINS 460-465				
465									LT GRN									
470																		
475																		
480																		
485																		
490																		
495																		
500																		

LAC MINERALS (U.S.A.) INC.
ROSEBUD PROJECT

FINE-GRAINED TUFF
LITHIC LAPILLI TUFF

ARGILLIC
XX SILICIFICATION
OX OXIDIZED
XXXXXX DRUZY QUARTZ
XC CHALCEDONIC QUARTZ
XK STOCKWORK QUARTZ
P P P PROPYLITIZATION
Ca CALCITE

DRILL HOLE RL-164

Page 6 of 6

LOGGED BY DAM

	LITH.	ALT.	% ARG. ALT. W	M	S	% SIL'N W	M	S	COLOR	% FeOx W	M	S	% SULF.	COMMENTS	Au	Ag	CHECK	% WASH RECOV.
									RD BRN					CHLORITE TUFF	<	<		
505																		
510															<			
		~							LT GREEN					BL 1 510-545	<			
515																		
															.001			
520																		
															.002			
525																		
															.001			
530																		
															<			
535																		
															.001			
540																		
															<			
545																		
50														T.D.= 545' (bucket=4 gpm				
55														WATERED OUT				
60														HAMMER SHELLED, PIECES OF METAL LEFT IN HOLE.				
65																		
70																		
75																		
80																		
85																		
90																		
95																		
00																		

RL-164
0 - 545 TD

NEVADA GSI, INC.

GEOCHEMICAL ANALYSIS REPORT

Job No.: LOAS8797

No.	Sample Id			Au opt	Ag opt
251	RL-163	505	510	0.0050	0.1500
252	RL-163	510	515	0.0030	-0.1000
253	RL-163	515	520	0.0070	0.2600
254	RL-163	520	525	0.0110	0.8200
255	RL-163	525	530	0.0100	0.7400
256	RL-163	530	535	0.0060	0.3000
257	RL-163	535	540	0.0040	0.2200
258	RL-163	540	545	0.0050	0.2100
259	RL-163	545	550	0.0060	0.6500
260	RL-163	550	555	0.0120	1.9900
261	RL-163	555	560	0.0330	3.2700
262	R-66			0.0310	0.2300
263	RL-163	560	565	0.0540	3.6500
264	RL-163	565	570	0.0130	0.8400
265	RL-163	570	575	0.0080	0.4100
266	RL-163	575	580	0.0060	0.3200
267	RL-163	580	585	0.0080	-0.1000
268	RL-163	585	590	0.0130	-0.1000
269	RL-163	590	595	0.0370	-0.1000
270	RL-163	595	600	0.0040	-0.1000
271	RL-164	0	5	0.0010	-0.1000
272	RL-164	5	10	-0.0010	-0.1000
273	RL-164	10	15	-0.0010	-0.1000
274	RL-164	15	20	-0.0010	-0.1000
275	RL-164	20	25	-0.0010	-0.1000
276	RL-164	25	30	-0.0010	-0.1000
277	RL-164	30	35	-0.0010	-0.1000
278	RL-164	35	40	-0.0010	-0.1000
279	RL-164	40	45	-0.0010	-0.1000
280	RL-164	45	50	-0.0010	-0.1000
281	RL-164	50	55	-0.0010	-0.1000
282	R-67			0.0540	-0.1000
283	RL-164	55	60	-0.0010	-0.1000
284	RL-164	60	65	-0.0010	-0.1000
285	RL-164	65	70	-0.0010	-0.1000
286	RL-164	70	75	0.0010	-0.1000
287	RL-164	75	80	-0.0010	-0.1000
288	RL-164	80	85	-0.0010	-0.1000
289	RL-164	85	90	-0.0010	-0.1000
290	RL-164	90	95	-0.0010	-0.1000
291	RL-164	95	100	-0.0010	-0.1000
292	RL-164	100	105	-0.0010	-0.1000
293	RL-164	105	110	-0.0010	-0.1000
294	RL-164	110	115	-0.0010	-0.1000
295	RL-164	115	120	-0.0010	-0.1000
296	RL-164	120	125	-0.0010	-0.1000
297	RL-164	125	130	0.0010	-0.1000
298	RL-164	130	135	-0.0010	-0.1000
299	RL-164	135	140	-0.0010	-0.1000
300	RL-164	140	145	-0.0010	-0.1000

1498 Kleppe Lane • Sparks, Nevada 89431 • (702)359-6600 • FAX: (702)359-6605

No.	Sample Id			Au opt	Ag opt
301	RL-164	145	150	-0.0010	-0.1000
302	R-68			0.0520	-0.1000
303	RL-164	150	155	-0.0010	-0.1000
304	RL-164	155	160	-0.0010	-0.1000
305	RL-164	160	165	-0.0010	-0.1000
306	RL-164	165	170	-0.0010	-0.1000
307	RL-164	170	175	-0.0010	-0.1000
308	RL-164	175	180	-0.0010	0.1100
309	RL-164	180	185	-0.0010	-0.1000
310	RL-164	185	190	0.0010	-0.1000
311	RL-164	190	195	-0.0010	-0.1000
312	RL-164	195	200	-0.0010	-0.1000
313	RL-164	200	205	-0.0010	-0.1000
314	RL-164	205	210	-0.0010	-0.1000
315	RL-164	210	215	-0.0010	-0.1000
316	RL-164	215	220	0.0010	-0.1000
317	RL-164	220	225	0.0010	-0.1000
318	RL-164	225	230	-0.0010	-0.1000
319	RL-164	230	235	0.0010	0.1200
320	RL-164	235	240	-0.0010	-0.1000
321	RL-164	240	245	-0.0010	-0.1000
322	R-69			0.0980	-0.1000
323	RL-164	245	250	0.0020	-0.1000
324	RL-164	250	255	0.0010	-0.1000
325	RL-164	255	260	0.0010	-0.1000
326	RL-164	260	265	0.0010	-0.1000
327	RL-164	265	270	-0.0010	-0.1000
328	RL-164	270	275	-0.0010	-0.1000
329	RL-164	275	280	0.0010	-0.1000
330	RL-164	280	285	0.0010	-0.1000
331	RL-164	285	290	-0.0010	-0.1000
332	RL-164	290	295	0.0010	-0.1000
333	RL-164	295	300	0.0010	-0.1000
334	RL-164	300	305	0.0010	-0.1000
335	RL-164	305	310	-0.0010	-0.1000
336	RL-164	310	315	-0.0010	-0.1000
337	RL-164	315	320	0.0010	-0.1000
338	RL-164	320	325	0.0010	-0.1000
339	RL-164	325	330	-0.0010	-0.1000
340	RL-164	330	335	0.0010	-0.1000
341	RL-164	335	340	-0.0010	-0.1000
342	R-70			0.0910	-0.1000
343	RL-164	340	345	0.0020	-0.1000
344	RL-164	345	350	0.0080	-0.1000
345	RL-164	350	355	0.0010	-0.1000
346	RL-164	355	360	0.0010	-0.1000
347	RL-164	360	365	0.0010	-0.1000
348	RL-164	365	370	0.0010	-0.1000
349	RL-164	370	375	0.0010	-0.1000
350	RL-164	375	380	0.0010	-0.1000

Job No.: LOAS8797

No.	Sample Id			Au opt	Ag opt
351	RL-164	380	385	-0.0010	-0.1000
352	RL-164	385	390	-0.0010	-0.1000
353	RL-164	390	395	0.0010	-0.1000
354	RL-164	395	400	0.0010	-0.1000
355	RL-164	400	405	-0.0010	-0.1000
356	RL-164	405	410	-0.0010	-0.1000
357	RL-164	410	415	-0.0010	-0.1000
358	RL-164	415	420	-0.0010	-0.1000
359	RL-164	420	425	-0.0010	-0.1000
360	RL-164	425	430	-0.0010	-0.1000
361	RL-164	430	435	-0.0010	-0.1000
362	R-70			0.0340	-0.1000
363	RL-164	435	440	-0.0010	-0.1000
364	RL-164	440	445	-0.0010	-0.1000
365	RL-164	445	450	-0.0010	-0.1000
366	RL-164	450	455	-0.0010	-0.1000
367	RL-164	455	460	-0.0010	-0.1000
368	RL-164	460	465	-0.0010	-0.1000
369	RL-164	465	470	-0.0010	-0.1000
370	RL-164	470	475	-0.0010	-0.1000
371	RL-164	475	480	-0.0010	-0.1000
372	RL-164	480	485	-0.0010	-0.1000
373	RL-164	485	490	-0.0010	-0.1000
374	RL-164	490	495	-0.0010	-0.1000
375	RL-164	495	500	-0.0010	-0.1000
376	RL-164	500	505	-0.0010	-0.1000
377	RL-164	505	510	-0.0010	-0.1000
378	RL-164	510	515	-0.0010	-0.1000
379	RL-164	515	520	0.0010	-0.1000
380	RL-164	520	525	0.0020	-0.1000
381	RL-164	525	530	0.0010	-0.1000
382	R-72			0.0410	-0.1000
383	RL-164	530	535	-0.0010	-0.1000
384	RL-164	535	540	0.0010	-0.1000
385	RL-164	540	545	-0.0010	-0.1000

BOYLES-WELNAV
RENO,NEVADA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

****
* LAC MINERALS USA INC. *
****

JOB NUMBER: 029-0313-12CCGY

WELL NAME: RL-164

LOCATION: ROSEBUD

SURVEY DATE: 11-14-90

SURVEY ENGINEER: PHIL GRAFFT

GYRO REFERENCE BEARING: S47.00W

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

COMMENTS:

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

BOYLES-WELNAV
RENO,NEVADA

JOB NUMBER: 029-0313-12CCGY

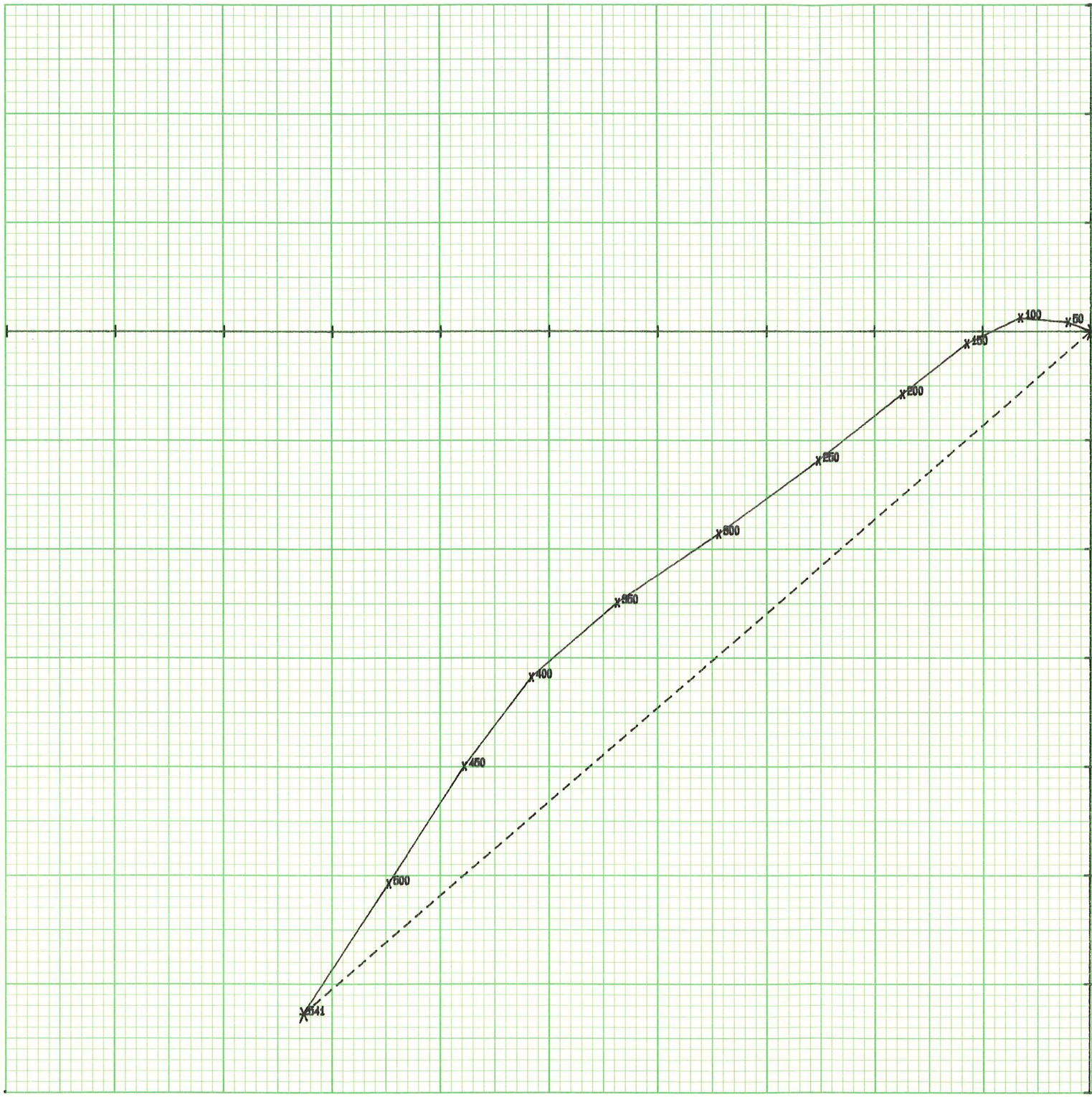
WELL NAME: RL-164

INRUN SURVEY
BY

THE MINIMUM CURVATURE

MEAS. DEPTH	VERT. DEPTH	VERT. SECT.	COURSE DEV.	INCL	BEARING AZIMUTH	COORDINATES LATITUDE	COORDINATES DEPARTURE	D-LEG PER 50	STATION DISPLACEMENT DISP. DIRECTION
50.0	50.00	0.21	0.46	-88.95	291.800	0.17 N	0.43 W	1.05	0.46 AT 291.80 DEG
100.0	99.99	0.82	0.92	-88.93	258.83	0.25 N	1.31 W	0.60	1.33 AT 280.83 DEG
150.0	149.98	1.89	1.13	-88.48	234.03	0.23 S	2.30 W	0.71	2.31 AT 264.32 DEG
200.0	199.95	3.40	1.51	-88.05	230.43	1.16 S	3.49 W	0.45	3.68 AT 251.63 DEG
250.0	249.91	5.37	1.97	-87.43	233.08	2.37 S	5.04 W	0.63	5.57 AT 244.79 DEG
300.0	299.86	7.64	2.28	-87.33	234.42	3.72 S	6.88 W	0.12	7.82 AT 241.59 DEG
350.0	349.81	9.88	2.25	-87.50	237.17	4.99 S	8.74 W	0.21	10.07 AT 240.29 DEG
400.0	399.77	11.97	2.12	-87.65	220.55	6.36 S	10.33 W	0.72	12.13 AT 238.37 DEG
450.0	449.73	13.97	2.05	-87.65	213.33	8.00 S	11.56 W	0.30	14.05 AT 235.32 DEG
500.0	499.66	16.43	2.57	-86.47	212.13	10.16 S	12.94 W	1.18	16.45 AT 231.87 DEG
541.0	540.56	19.20	2.88	-85.48	214.07	12.56 S	14.52 W	1.21	19.20 AT 229.12 DEG

```
*************************************************************
*                         ********                          *
*     THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF           *
*                         ********                          *
*  541.0 FEET EQUALS    19.20   FEET AT   229.12 DEG.       *
*                         ********                          *
*************************************************************
```



BOYLES-WELNAV

RENO, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY

FOR

LAC MINERALS USA INC.

WELL NAME: RL-164

JOB NUMBER: 029-0313-12CCGY

DATE: 11-14-90

INRUN SURVEY BY MINIMUM CURVATURE

HORIZONTAL DISPLACEMENT (* --- *) AT 541.0 FEET

EQUALS 19.20 FEET AT S 49.12 W

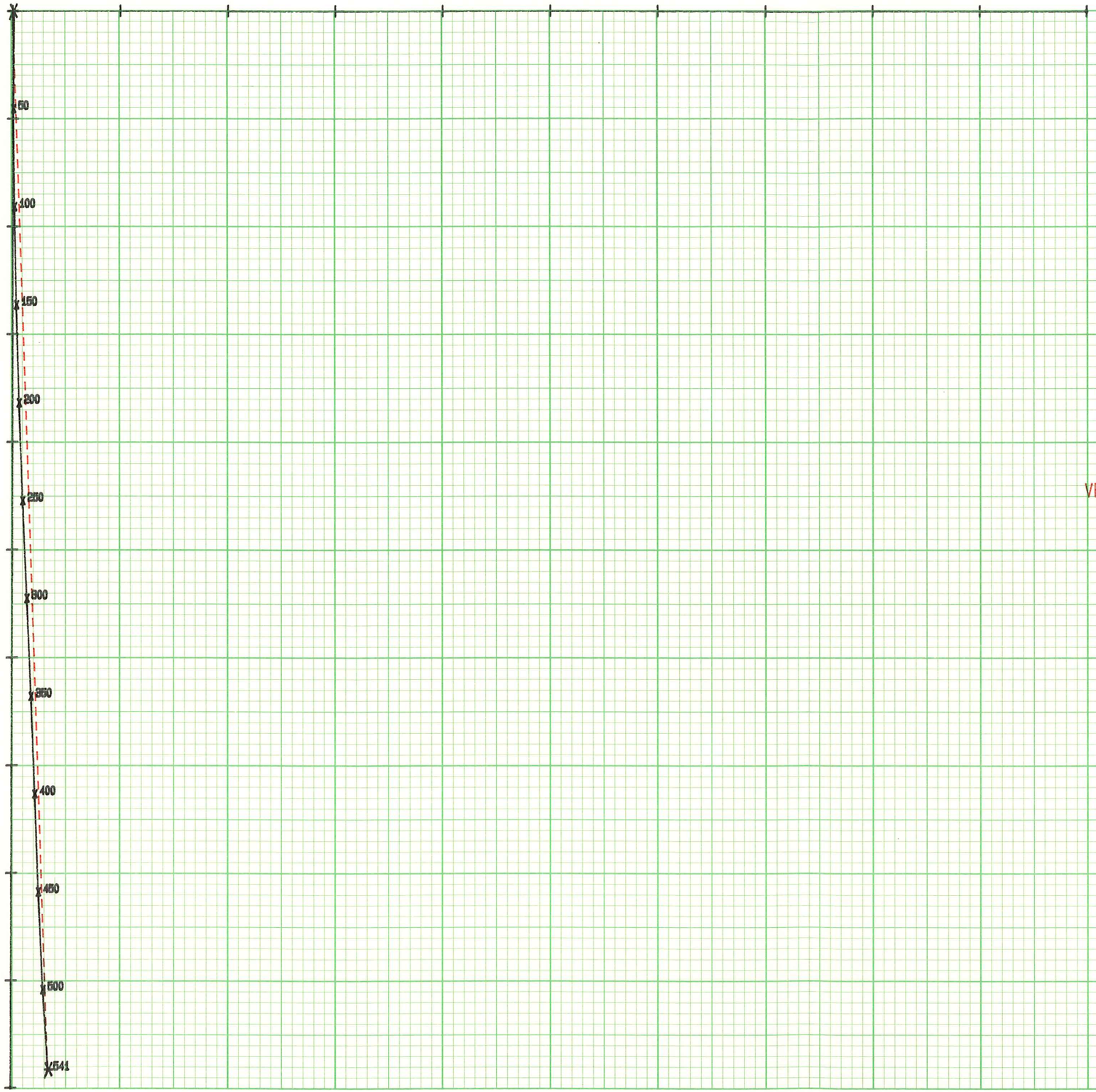
X DENOTES EVERY 1 STATION(S)

N

PLAN VIEW

SCALE = 2 FEET/INCH

HEWLETT-PACKARD 9270-1004



BOYLES-WELNAV

RENO, NEVADA

GYROSCOPIC DIRECTIONAL SURVEY

FOR

LAC MINERALS USA INC.

WELL NAME: RL-164

JOB NUMBER: 029-0313-12CCGY

DATE: 11-14-90

INRUN SURVEY BY MINIMUM CURVATURE

VERTICAL PROJECTION (* --- *) AT 540.56 FEET

EQUALS 540.90 FEET AT 02.03

X DENOTES EVERY 1 STATION(S)

HORIZONTAL SCALE = 55 FEET/INCH

VERTICAL SCALE = 55 FEET/INCH

VERTICAL SECTION

PERPENDICULAR TO CLOSURE

HEWLETT-PACKARD 9270-1004

****
JOB NUMBER
029-0313-12CCGY

WELL NAME*
RL-164

MINIMUM CUR.
****

DEPTH:	50.00
TVD:	50.00
SECT:	0.21
C.D.:	0.46
INCL:	-88.95
AZI:	291.80
LAT:	0.17N
DEP:	0.43W
DOG-LEG:	2.10

DEPTH:	100.00
TVD:	99.99
SECT:	0.82
C.D.:	0.92
INCL:	-88.93
AZI:	258.83
LAT:	0.25N
DEP:	1.31W
DOG-LEG:	1.20

DEPTH:	150.00
TVD:	149.98
SECT:	1.89
C.D.:	1.13
INCL:	-88.48
AZI:	234.04
LAT:	0.23S
DEP:	2.30W
DOG-LEG:	1.42

DEPTH:	200.00
TVD:	199.95
SECT:	3.40
C.D.:	1.51
INCL:	-88.05
AZI:	230.44
LAT:	1.16S
DEP:	3.49W
DOG-LEG:	0.89

DEPTH:	250.00
TVD:	249.91
SECT:	5.37
C.D.:	1.97
INCL:	-87.43
AZI:	233.09
LAT:	2.37S
DEP:	5.04W
DOG-LEG:	1.25

DEPTH:	300.00
TVD:	299.86
SECT:	7.64
C.D.:	2.28
INCL:	-87.33
AZI:	234.42
LAT:	3.72S
DEP:	6.88W
DOG-LEG:	0.23

DEPTH:	350.00
TVD:	349.81
SECT:	9.85
C.D.:	2.22
INCL:	-87.50
AZI:	237.16
LAT:	4.97S
DEP:	8.72W
DOG-LEG:	0.32

DEPTH:	400.00
TVD:	399.77
SECT:	11.94
C.D.:	2.12
INCL:	-87.65
AZI:	220.55
LAT:	6.34S
DEP:	10.30W
DOG-LEG:	1.43

DEPTH:	450.00
TVD:	449.73
SECT:	13.94
C.D.:	2.05
INCL:	-87.65
AZI:	213.33
LAT:	7.98S
DEP:	11.53W
DOG-LEG:	0.59

DEPTH:	500.00
TVD:	499.66
SECT:	16.40
C.D.:	2.57
INCL:	-86.47
AZI:	212.14
LAT:	10.14S
DEP:	12.92W
DOG-LEG:	2.37

DEPTH:	541.00
TVD:	540.56
SECT:	19.17
C.D.:	2.88
INCL:	-85.48
AZI:	214.07
LAT:	12.55S
DEP:	14.49W
DOG-LEG:	2.42

****
19.17 FEET
AT 229.12 DEG.