

GL03906

#19a

TEMPERATURE AND PRESSURE SURVEYS

BACA WELL NO. 4

EXTRA

BACA PROJECT  
DATA AND REPORTS

WELLS

<u>No.</u>	<u>Transfer Date</u>	<u>Release Date</u>	<u>Title</u>
1.	A	A	Summary sheet for Baca Wells No's 1-3.
2.	A	A	Baca Wells No's 4-16 summary sheet.
3.	A	A	Well summary reports and Drilling Histories-- Baca Wells No's 4-16.
4.	B	B	Lithology logs--Baca Wells No's 4-16.
5.	A	A	Temperature and Pressure Surveys--Baca Wells No's 4-8 and 10-16.
	B	B	Electric logs for Baca Wells No's 10-14.

76

UNION

GEOHERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B#4 S-69 T

OWNER UNION Oil of CAL. FIELD Valle Grande

WELL NAME BACA #4

CASING 1 7/8" AT 1441' ELEV. 9318'

DATE: 10-12-76

LINER DESCRIPTION: 7/8" AT 3182  
7" SURFACE TO 3051'

ZERO POINT

DEPTH ~~2095~~ 2095

TUBING DETAIL:

PURPOSE Pre-logging Temp. Survey

REMARKS:

ELEMENT 100°F - 792°F SERIAL NO. 10098 CLOCK 12 hr 15 TURN

STABILIZATION PERIOD

ENGAGE STYLUS 1401 DISENGAGE STYLUS 1610

WELL HEAD

PICKUP @ 2095 TIME ON BOTTOM 1534 To 1549 MAX. °F 199.7

WELL STATUS

SHUT IN:

ON PRODUCTION:

RATE

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	
						1534-1549	2095	.248	199.7									

COMMENTS:

111

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UNION

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

8-4-5-68 T

OWNER UNION oil of cal. FIELD Valle Grande WELL NAME BACA #4  
 CASING 7" FROM 0 TO 318 ELEV. 9318' DATE: 10-11-76  
 LINER DESCRIPTION: 13 3/8" AT 1441' ZERO POINT  
 9 5/8" AT 3182' DEPTH 2057  
 TUBING DETAIL: 7" SURFACE TO 3031'

PURPOSE Find TOP OF CEMENT

REMARKS:

ELEMENT 100°F - 792°F SERIAL NO. 10098 CLOCK 12 hr 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS 1734 hz DISENGAGE STYLUS 2051 hz  
 WELL HEAD  
 PICKUP @ 2057 TIME ON BOTTOM 2025-2040 MAX. °F 331.0  
 WELL STATUS  
 SHUT IN: ON PRODUCTION:  
 RATE

TEMPERATURE

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1829	0	0	0														
1840	100	.008	10.3														
1851	200	.078	132.7														
1902	300	.145	159.6														
1913	400	.188	176.3														
1924	500	.240	196.6														
1935	600	.293	217.3														
1946	700	.307	222.5														
1957	800	.318	226.5														
2008	900	.328	230.0														
2019	1000	.348	237.3														
2040	2057	.603	331.0														

COMMENTS:

11110

# GEOTHERMAL DIVISION

## SUBSURFACE TEMPERATURE SURVEY

B4 568 T

216

OWNER UNION OIL COMPANY FIELD DALE GEWADE WELL NAME BACA #4

CASING 13 3/8 AT 1441' DATE: 10-11-76

LINER DESCRIPTION: 9 5/8" AT 3182' ZERO POINT RK15

7" - SURFACE TO 3031 DEPTH: 2057'

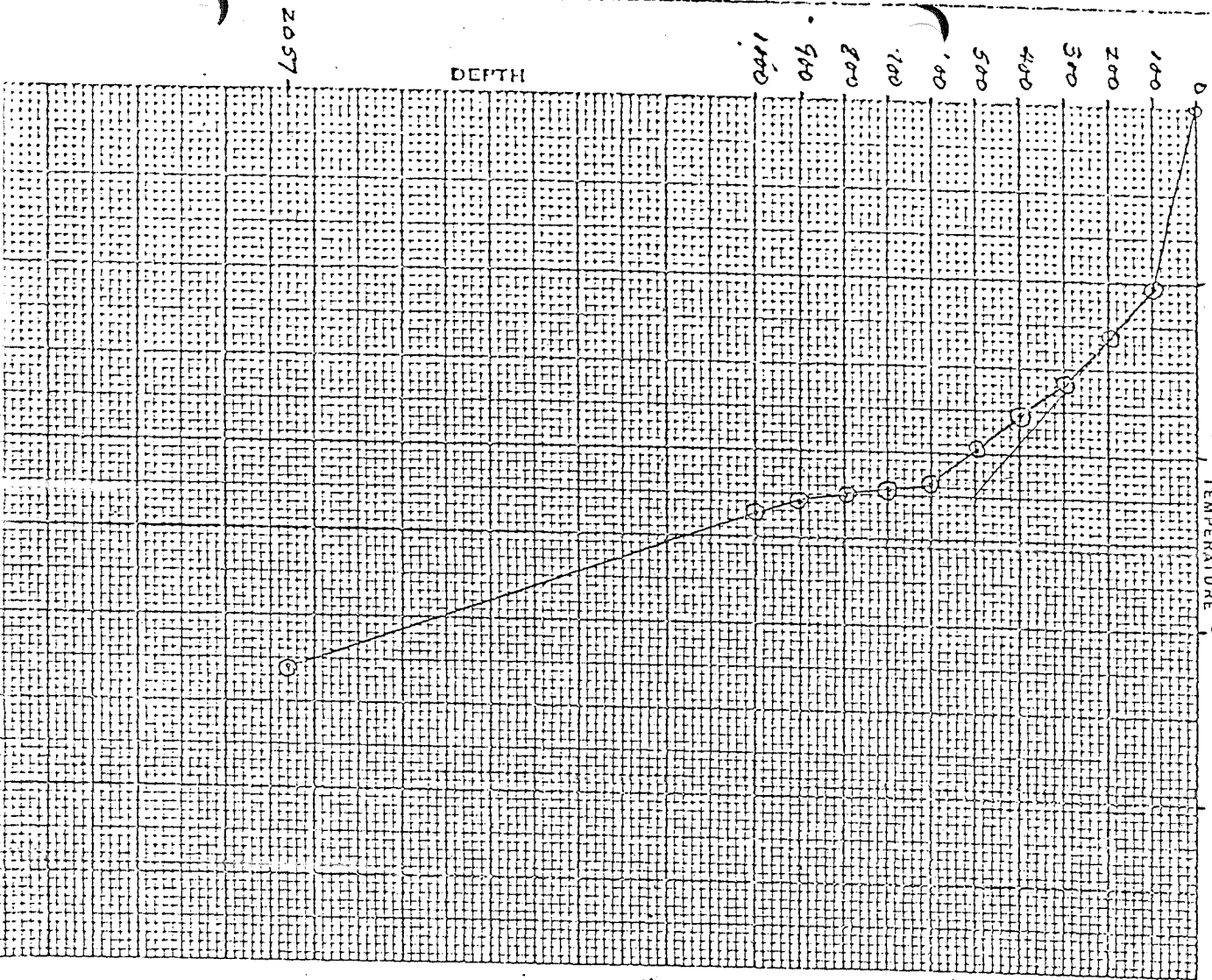
HOLE DESCRIPTION: \_\_\_\_\_

INSTRUMENT 100-792 SERIAL NO 10098

PURPOSE \_\_\_\_\_ MAX TEMP 531 OF @ 2057'

REMARKS: \_\_\_\_\_

STABILIZATION PERIOD \_\_\_\_\_



DEPTH	TEMP.	DEPTH	TEMP.
0	105		
100	132.7		
200	159.6		
300	176.3		
400	196.6		
500	217.3		
600	222.5		
700	226.5		
800	232.0		
900	237.3		
1000	237.3		
1100	237.3		
1200	237.3		
1300	237.3		
1400	237.3		
1500	237.3		
1600	237.3		
1700	237.3		
1800	237.3		
1900	237.3		
2000	237.3		
2057	331.0		

115

76

UNION  
GEOHERMAL DIVISION

SUBSURFACE SURVEY  
Field Work Sheet

BH-567-T

OWNER UNION OIL CO CALIF FIELD VALLE GRANDE WELL NAME BH#4  
CASING 13 7/8" 144' ELEV. 9315' DATE: 9/22/76  
LINER DESCRIPTION: 9 5/8" 3152' ZERO POINT 61762  
7" 3231-T.O. DEPTH 4000

TUBING DETAIL:

PURPOSE PRE LOGGING TEMP. SURVEY

REMARKS:

ELEMENT F-80F-6460 SERIAL NO. 10052 CLOCK 12HR 15TURN STABILIZATION PERIOD  
ENGAGE STYLUS T-1217 DISENGAGE STYLUS T-1640  
WELL HEAD VAC  
PICKUP @ 3031' TIME ON BOTTOM 15:54-16:10 MAX. F 258  
WELL STATUS ON VAC.  
SHUT IN: ON PRODUCTION:  
RATE

TEMP

TIME	DEPTH	DEFL	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
4:21	3031'	253	258														

COMMENTS:

76

union

GEOTHERMAL DIVISION DEL PYLE

SUBSURFACE SURVEY  
Field Work Sheet

DEC 9 1976

BH-566-P/T

OWNER UNION OIL CO. CALIF FIELD VALLE GRANDE WELL NAME BAAAH  
 CASING 13-3/8" @ 1441' ELEV. 9318' DATE: 9/20/76  
 LINER DESCRIPTION: 9-5/8" @ 3182' ZERO POINT GLT 12'  
 7" - 3031' - T.O. DEPTH 4100'

TUBING DETAIL:

PURPOSE

REMARKS:

P-O-4700 - 13012 12hr 15  
 ELEMENT 30-646°F SERIAL NO. 10052 CLOCK 12/12 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-1347 T-1349 DIS-ENGAGE STYLUS P-1700 T-1701  
 WELL HEAD 392  
 PICKUP @ 4000 TIME ON BOTTOM 1605-1615 MAX. °F 514  
 WELL STATUS SHUT IN.  
 SHUT IN: ON PRODUCTION:  
 RATE 7516 TEMP

TIME	DEPTH	DEFL.	P-T	GRAD.	DEFL.	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1519	100	0.070	86														
1532	1000	0.514	240														
1546	2000	1.216	444														
1600	3000	1.764	454														
1615	4000	1.478	514														

COMMENTS:

BY: J.M. CRO

76

UNION

GEOHERMAL DIVISION

SUBSURFACE SURVEY

AUG 1976

Field Work Sheet

B4 565 PIP

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #4  
 CASING 13 5/8 AT 1441 ELEV. 9318 DATE: 7/8/76  
 LINER DESCRIPTION: 9 5/8 AT 3182 ZERO POINT 6' + 7"  
 3031 = 7" DEPTH 4000

TUBING DETAIL:

PURPOSE FANGLUM PSI RUNS

REMARKS:

ELEMENT P<sub>1</sub> - 0-4700 PSI SN 13012 CL 12 hr 15 T

ELEMENT P<sub>2</sub> 0-2950 SERIAL NO. 9235 CLOCK 12 hr 15 TURN STABILIZATION PERIOD

ENGAGE STYLUS P<sub>1</sub> 1023' P<sub>2</sub> 1022 DISENGAGE STYLUS P<sub>1</sub> 1247' P<sub>2</sub> 1248

WELL HEAD 377 PSI9

PICKUP @ 4000 TIME ON BOTTOM 1155-1225 MAX. IF 506

WELL STATUS

SHUT IN: ON PRODUCTION:

RATE

P<sub>1</sub> - 0-4700 PSI

P<sub>2</sub> 0-2950 PSI

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	
	100	152	380		-0.007	1115	100	255	406		-0.012							
112	1000	159	396		-0.004	1127	1000	265	419		0.007							
1140	2000	161	401		-0.001	1140	2000	273	431		0							
1152	3000	235	576		0	1152	3000	396	615		+0.001							
1155	4000	374	905		0	1155	4000	616	943		+0.001							
1225	4000	374	905		0	1225	4000	616	943		+0.001							
	0-4700						0-2950											
	CALIBRATION CHECK						CALIBRATION CHECK WITH											
	WITH D.W.I @ 75°F						D.W.I @ 75°F											
	DEF = 1.013						DEF = 1.690											
	PSIG = 2477						PSIG = 2525											

COMMENTS: TEMPERATURE FROM B4 564 WERE USED FOR COLLECTIONS



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# UNION GEO THERMAL DIVISION

## SUBSURFACE PRESSURE SURVEY

B4 564 P/T

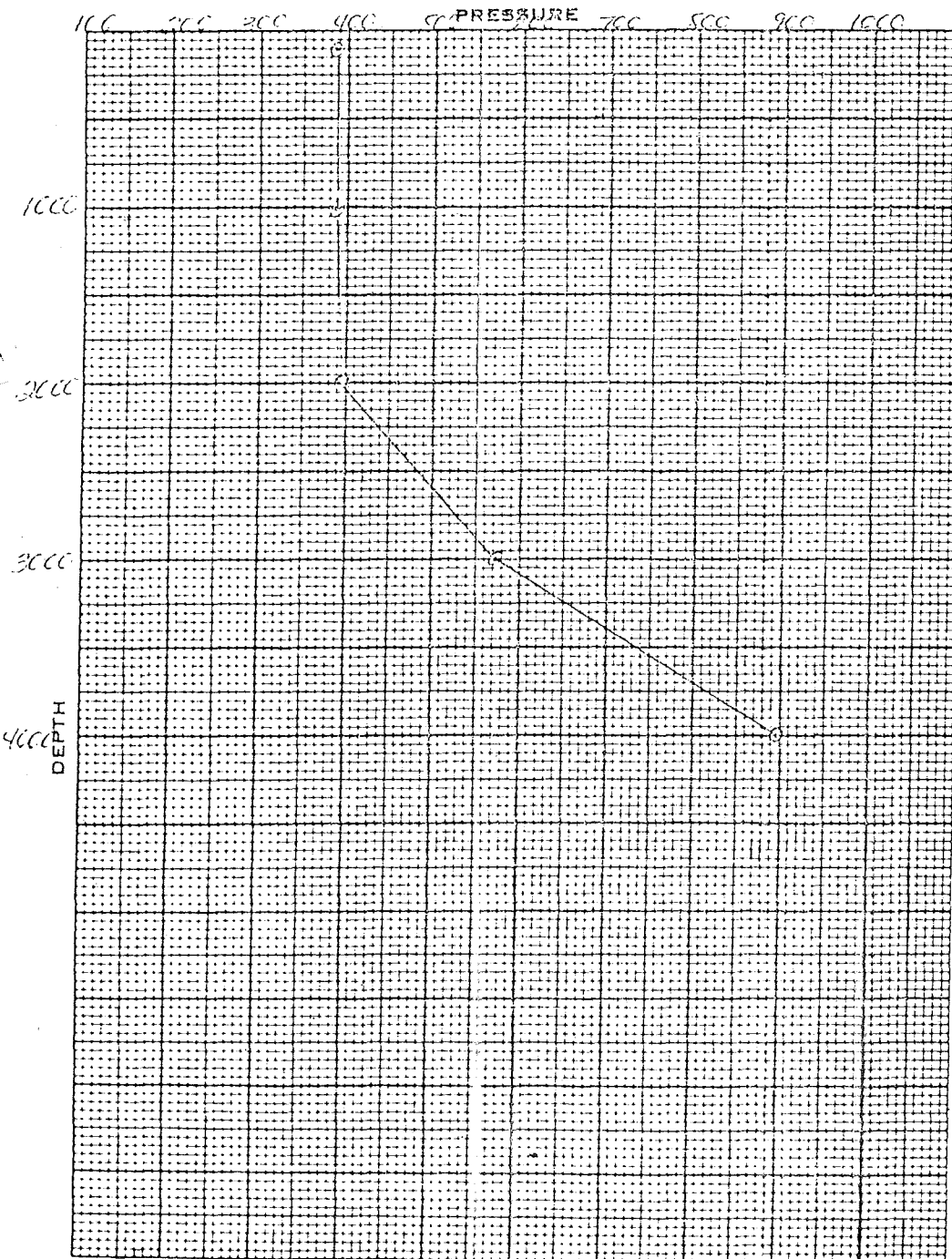
OWNER \_\_\_\_\_ FIELD VALLE GRANDE WELL NAME BACA #4  
 CASING \_\_\_\_\_ ELEV 9315 DATE 7-2-76  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT GL + 7'  
 \_\_\_\_\_ DEPTH 4000'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT \_\_\_\_\_ PSIG  
 \_\_\_\_\_ SERIAL NO 10052

PURPOSE \_\_\_\_\_ MAX TEMP 506 °F @ 4000

REMARKS: \_\_\_\_\_

STABILIZATION PERIOD \_\_\_\_\_



PRESSURES	GAUGE	BOMB
CASING. PSI		

DEPTH	PRESSURE	GRADIENT
100	388	
1000	389	
2000	391	
3000	571	
4000	897	

BY: \_\_\_\_\_

76

UNION

DEL 1976

GEO THERMAL DIVISION

SUBSURFACE SURVEY  
Field Work Sheet

64  
BA 563 PIT

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #4  
 CASING 13 7/8" AT 1441' 9 5/8" AT 3182' ELEV. 9318 DATE: 7/2/76  
 LINER DESCRIPTION: 7" AT 3031' ZERO POINT CLT 7'  
 DEPTH 4000'

TUBING DETAIL:

PURPOSE

REMARKS:

ELEMENT- 0-4700 PSI SN 13012 CL 12 HR 15 T  
 ELEMENT 80-646 SERIAL NO. 10052 CLOCK 12 HR 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P1035 ; T1036 DISENGAGE STYLUS P1500 ; T1500  
 WELL HEAD 377  
 PICKUP @ 4000 TIME ON BOTTOM 1148-1218 MAX. IF 506  
 WELL STATUS SHUT IN.  
 SHUT IN: ON PRODUCTION:  
 RATE

PSI

TEMP

TIME	DEPTH	DEFL.	P-T	GRAD.	GRAD.	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
	100	.154	388			100		.2010	93								
112-1132	1000	.156	389		-1.004	1000		.531	245								
24-1134	2500	.157	391		-1.001	2000		1.205	411								
36-1146	3000	.233	571		0	3000		1.348	480								
48-1218	4000	.370	897		0	4000		1.446	506								

COMMENTS:

RV:

76

UNION

GEOTHERMAL DIVISION

SUBSURFACE TEMPERATURE SURVEY

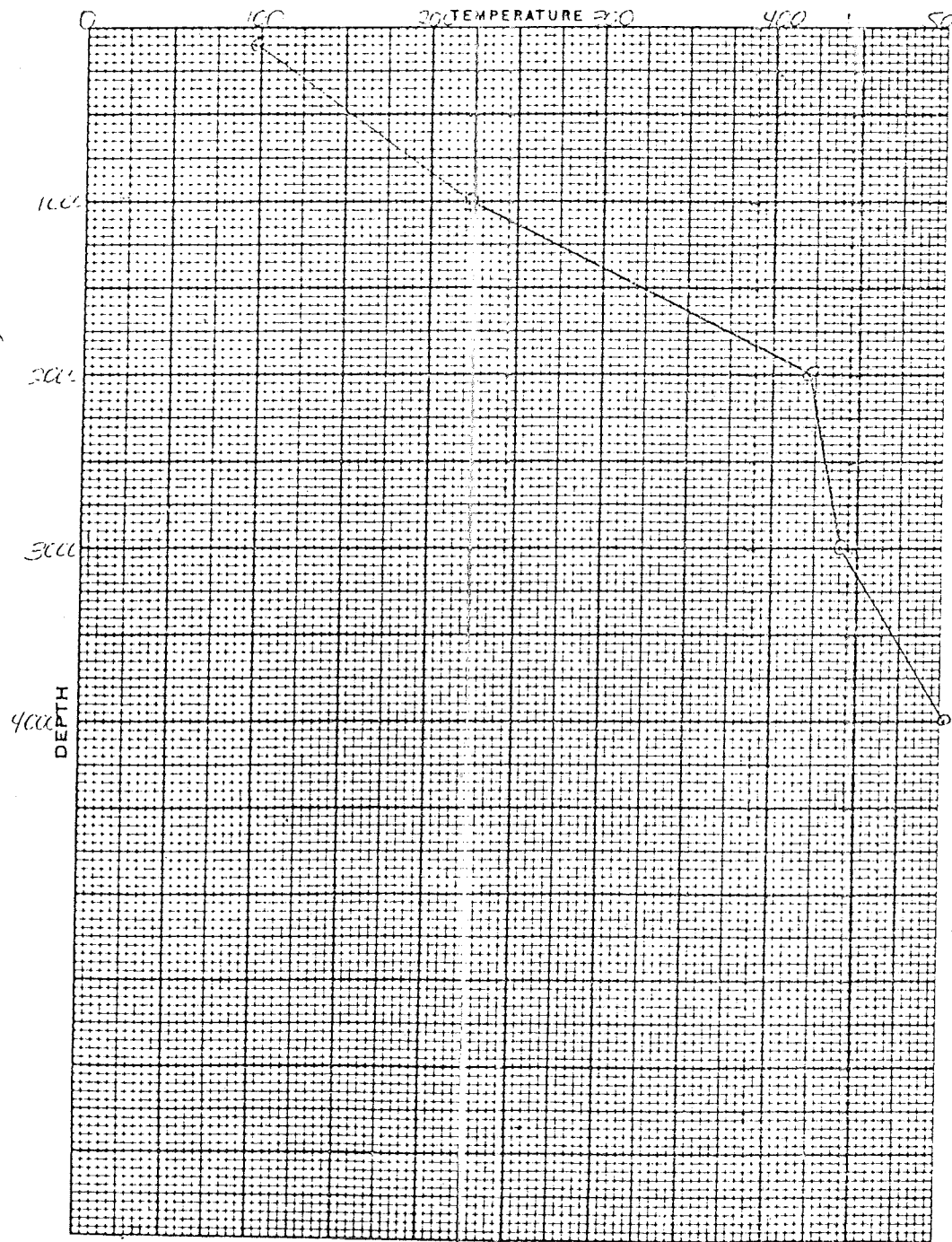
B4 564 P/T

OWNER \_\_\_\_\_ FIELD VALLE GRANDE WELL NAME PACA #4  
 CASING \_\_\_\_\_ ELEV 9318' DATE 7-2-76  
 LINER DESCRIPTION \_\_\_\_\_ ZERO POINT G.L. + 7'  
 \_\_\_\_\_ DEPTH 4000'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT \_\_\_\_\_ FAHF  
 \_\_\_\_\_ SERIAL NO 10052

PURPOSE \_\_\_\_\_ MAX TEMP 506 °F @ 4000'  
 REMARKS \_\_\_\_\_

STABILIZATION PERIOD \_\_\_\_\_



PRESSURES	GAUGE	BOMB
CASING PSI		

DEPTH	TEMP.	DEPTH	TEMP.
100	93		
1000	245		
2000	441		
3000	480		
4000	506		

BY: \_\_\_\_\_

576

UNION

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

BH-563-P/T

OWNER UNION OIL CO CALIF FIELD VALLE GRANDE  
 CASING 1 1/2" @ 1111'; 9 5/8" @ 518' ELEV. 9318'  
 LINER DESCRIPTION: 7" @ 5031'

WELL NAME BACA H.  
 DATE: 6/29/76  
 ZERO POINT 61+7'  
 DEPTH 4000'

TUBING DETAIL:

PURPOSE

REMARKS:

P-C-2950 9435 12 HR 15

ELEMENT T-50-6469 SERIAL NO. 10052 CLOCK 12 HR 15 TURN STABILIZATION PERIOD

ENGAGE STYLUS P-1014 T-1016 DISENGAGE STYLUS P-1755 T-1756

WELL HEAD 533 PSIG

PICKUP @ 4000' TIME ON BOTTOM 11:55-12:25 MAX. P 506

WELL STATUS SHUT IN

SHUT IN: ON PRODUCTION:

RATE

PSIG

TEMP

ID	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	
1115	100	241	243		1115	100	241	243										
1128	1000	255	400		1128	1000	255	400										
1141	2000	268	418		1141	2000	268	418										
1153	3000	285	519		1153	3000	285	519										
1225	4000	600	928		1225	4000	600	928										

COMMENTS:



76

UNION  
GEOHERMAL DIVISION

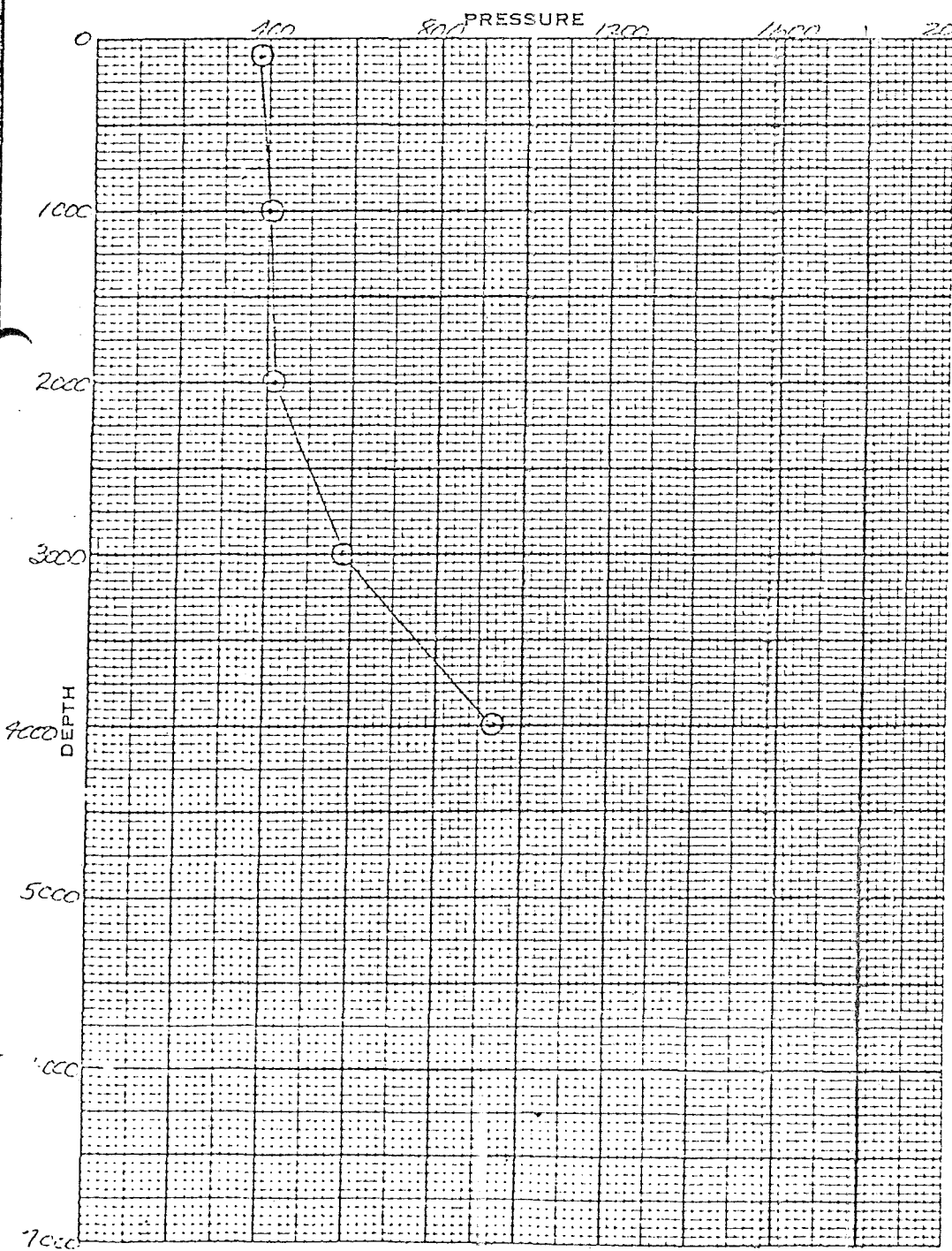
SUBSURFACE PRESSURE SURVEY

B4-563-DT

OWNER \_\_\_\_\_ FIELD Walk Grants WELL NAME BACA #4  
 CAGING \_\_\_\_\_ ELEV 9318' DATE 6/27/76  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT GL +7'  
 \_\_\_\_\_ DEPTH 4000'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT \_\_\_\_\_ PSIG  
 \_\_\_\_\_ SERIAL NO 9235

PURPOSE \_\_\_\_\_ MAX TEMP 506 °F @ 4000'  
 REMARKS: \_\_\_\_\_



STABILIZATION PERIOD \_\_\_\_\_

PRESSURES	GAUGE	BOMB
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
100	383	
1000	406	
2000	418	
3000	528	
4000	928	

BY: \_\_\_\_\_

576

UNION

GEOHERMAL DIVISION

SUBSURFACE SURVEY  
Field Work Sheet

B4 562 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #4  
 CASING 1 5/8" AT 1441' 9 5/8" AT 3182' ELEV. 9318' DATE: 6/22/76  
 LINER DESCRIPTION: 7" AT 3031' ZERO POINT CL + 7'  
 DEPTH 4000'

TUBING DETAIL:

PURPOSE

REMARKS:

ELEMENT 0-2950 PSI SN 9235 CL-12 HR. 15 TURN

ELEMENT 50°-646 °F SERIAL NO. 100.52 CLOCK 12 HR 15 TURN STABILIZATION PERIOD

ENGAGE STYLUS P 1250 T 1450 DISENGAGE STYLUS P 1251 T 145

WELL HEAD 378 PSI9

PICKUP @ 4000 TIME ON BOTTOM 1407-1422 MAX. °F 506

WELL STATUS

SHUT IN: ON PRODUCTION:

RATE

PRESSURE

TEMPERATURE

TIME	PRESSURE					TEMPERATURE				
	DEPTH	DEFL.	P-T	GRAD.	ID	DEPTH	DEFL.	P-T	GRAD.	ID
13	100	.246	391		-012	1328	100	.048	95	
1340	1000	.256	406		-008	1340	1000	.525	244	
1352	2000	.266	421		0	1352	2000	1.205	441	
1401	3000	.335	549		+001	1404	3000	1.348	480	
1422	4000	.606	928		+002	1422	4000	1.446	506	

COMMENTS:

76

**UNION**  
**GEO THERMAL DIVISION**  
**SUBSURFACE PRESSURE SURVEY**

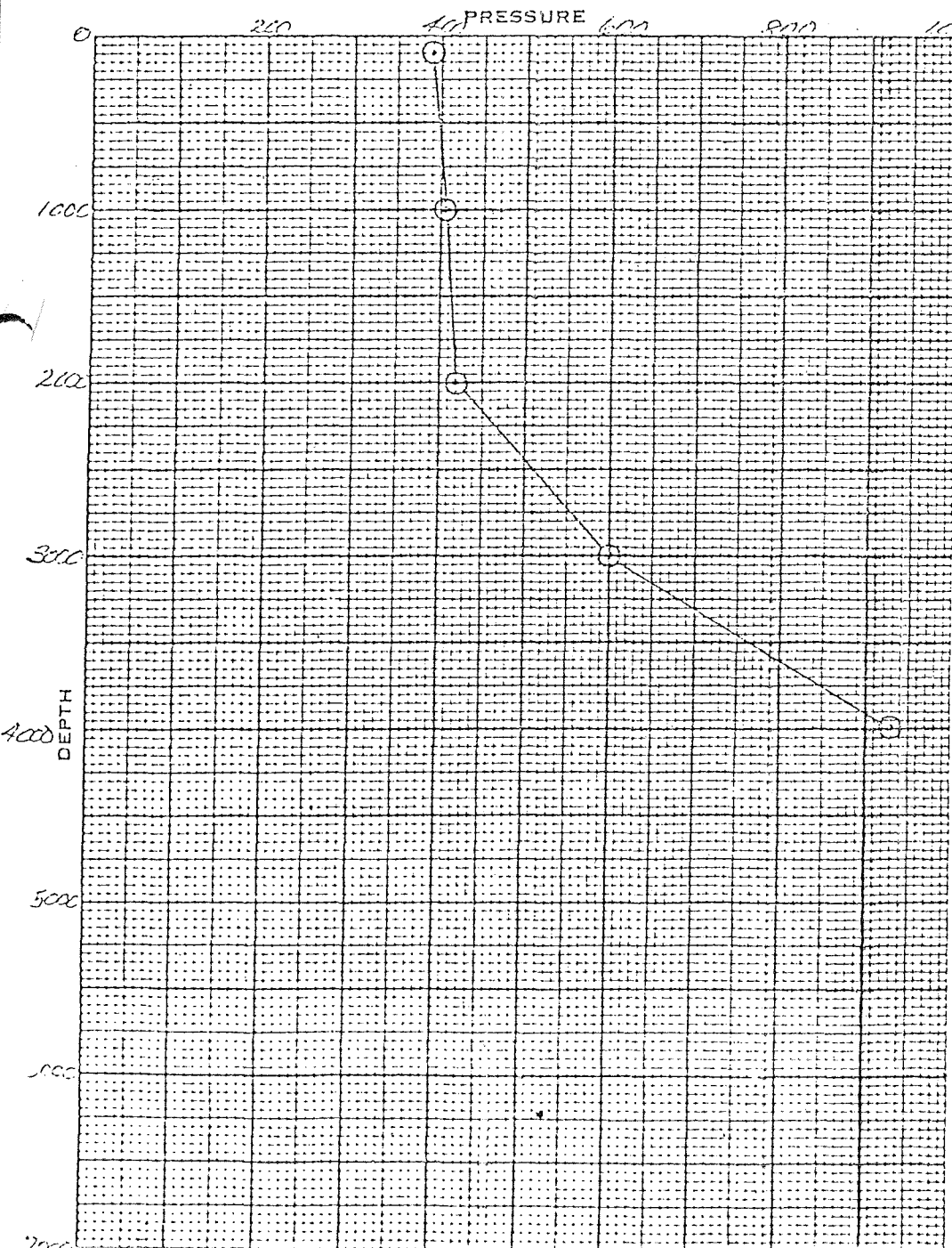
B4-S62-PT

OWNER \_\_\_\_\_ FIELD Valle Grande WELL NAME BACA #4  
 CASING \_\_\_\_\_ ELEV 9318' DATE 6/22/76  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT GL + 7'  
 \_\_\_\_\_ DEPTH 4000'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT \_\_\_\_\_ PSIG  
 \_\_\_\_\_ SERIAL NO 9235

PURPOSE \_\_\_\_\_ MAX TEMP 506 °F @ 4000'

REMARKS: \_\_\_\_\_



STABILIZATION PERIOD \_\_\_\_\_

PRESSURES.	GAUGE	BOMB
CASING. PSI		

DEPTH	PRESSURE	GRADIENT
100	391	
1000	406	
2000	421	
3000	599	
4000	928	

BY: \_\_\_\_\_



76

**UNION**  
**GEO THERMAL DIVISION**  
**SUBSURFACE TEMPERATURE SURVEY**

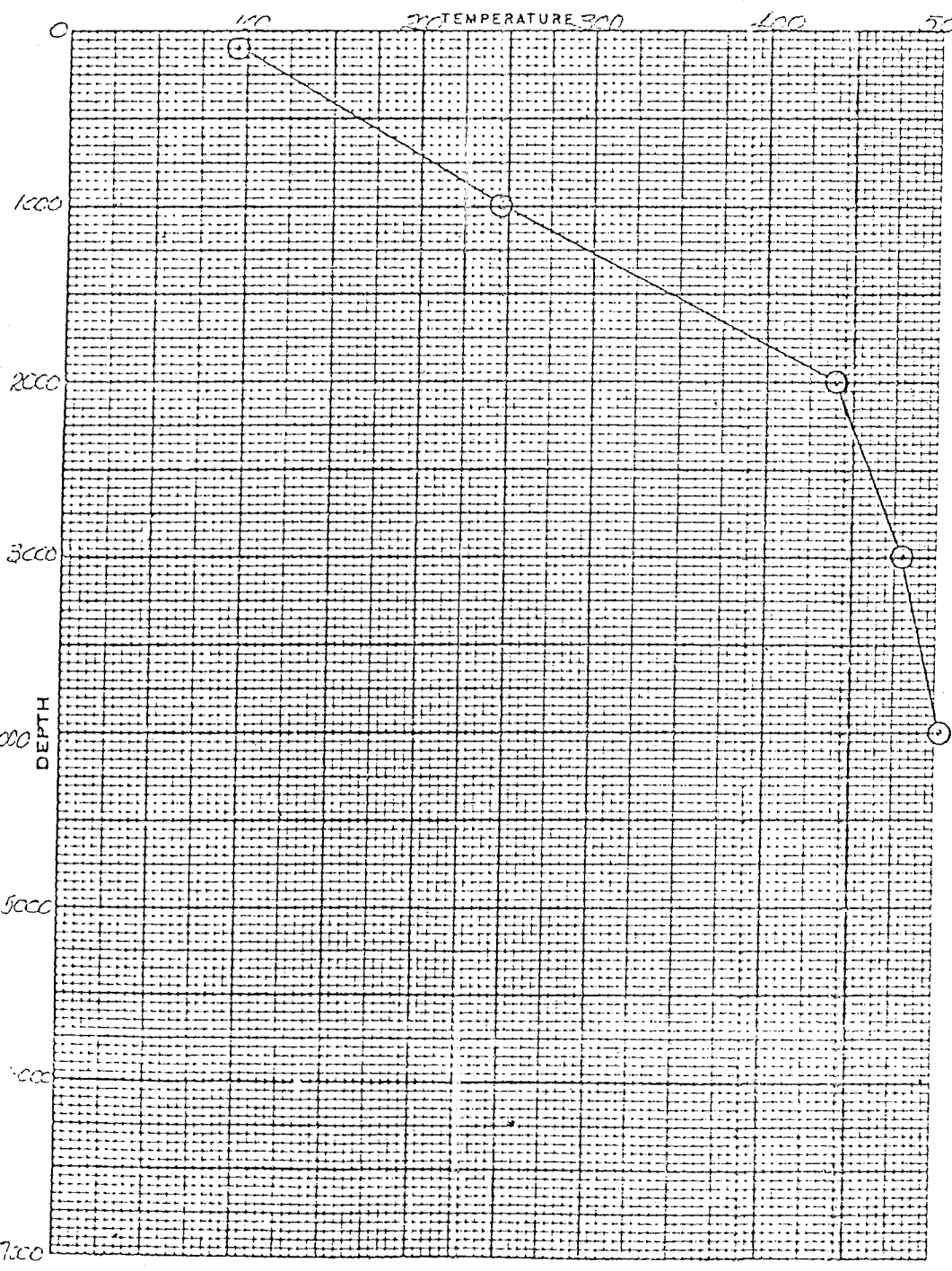
B-4-S&2-PT

OWNER \_\_\_\_\_ FIELD Valle Grande WELL NAME BPCP #4  
 CASING \_\_\_\_\_ ELEV 9318' DATE 6/22/76  
 LINER DESCRIPTION \_\_\_\_\_ ZERO POINT GL +7'  
 \_\_\_\_\_ DEPTH 4000'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT \_\_\_\_\_ FAHR  
 \_\_\_\_\_ SERIAL NO 10052

PURPOSE \_\_\_\_\_ MAX TEMP 506 °F @ 4000'  
 REMARKS: \_\_\_\_\_

STABILIZATION PERIOD \_\_\_\_\_



PRESSURES	GAUGE	BOW3	
CASING PSI			
DEPTH	TEMP.	DEPTH	TEMP
100	95		
1000	244		
2000	441		
3000	480		
4000	506		

BY: \_\_\_\_\_

76

UNION  
GEO THERMAL DIVISION

DEL PYLE  
JUN 3 1978

SUBSURFACE SURVEY  
Field Work Sheet

BH-SC1-P/T

OWNER UNION OIL CO. OFF FIELD VALLE GRANDE WELL NAME BH-11  
 CASING 1 3/4" O.D. 11.1' 9 3/4" I.D. 9.5' ELEV. 8315' DATE: 5/24/78  
 LINER DESCRIPTION: 7" @ 3031' - T.D. ZERO POINT CLT 7'  
 DEPTH 1160'

TUBING DETAIL:

PURPOSE

REMARKS:

T-111119510-7195 12/17 15  
 ELEMENT T-111119510 SERIAL NO. 11052 CLOCK 12/17 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-1231 T-112.5 DISENGAGE STYLUS P-1305-T-1205  
 WELL HEAD 371  
 PICKUP @ 1160 TIME ON BOTTOM 1157-1227 MAX. F 566  
 WELL STATUS SHUT IN  
 SHUT IN: ON PRODUCTION:  
 RATE

7310

TEMP

TIME	DEPTH	DEFL.	P-T	GRAD.	TD	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1117	116	117.275		-1.11		1117	116	117.275	9.3								
1124	166	177.211		-1.66		1124	166	177.211	215								
1132	200	179.161		-1.66		1132	200	179.161	112								
1151	300	181.535		-1.66		1151	300	181.535	150								
1227	1160	1111.923		0		1227	1160	1111.923	566								

COMMENTS:

BY: Del Pyle

76

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GEO THERMAL DIVISION

SUBSURFACE PRESSURE SURVEY

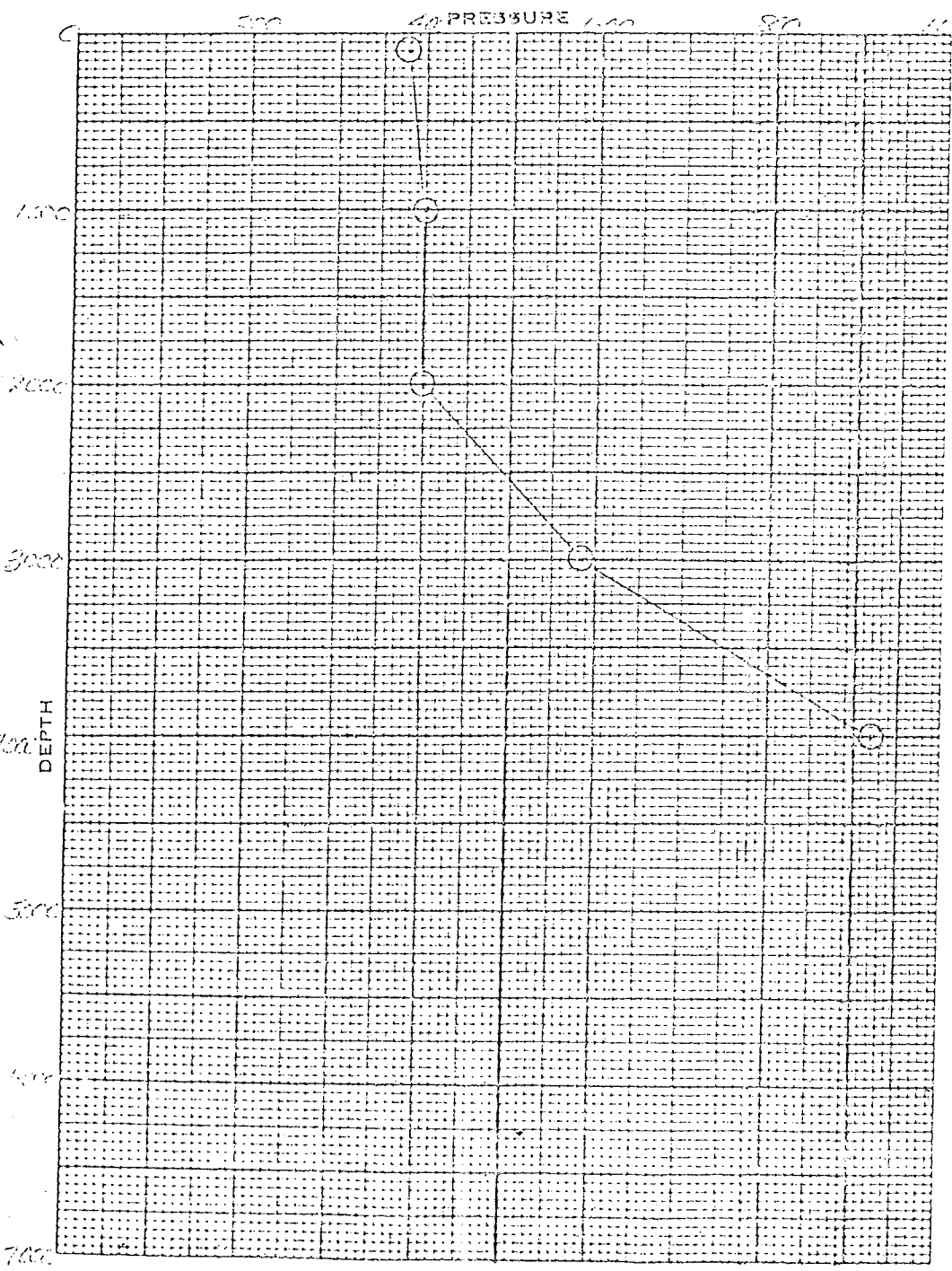
B4-S-1-PT

OWNER \_\_\_\_\_ FIELD Little Sierrita WELL NAME PRC1 #1  
 CASING \_\_\_\_\_ ELEV 9912' DATE 5/25/26  
 LINER DESCRIPTION \_\_\_\_\_ ZERO POINT 64.27'  
 \_\_\_\_\_ DEPTH 4000

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT \_\_\_\_\_  
 \_\_\_\_\_ SERIAL NO 7198

PURPOSE \_\_\_\_\_ MAX TEMP 50.6 °F @ 40.0'  
 REMARKS: \_\_\_\_\_

STABILIZATION PERIOD \_\_\_\_\_



PRESSURE	GAUGE	BOMB
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
100	377	
1000	401	
2000	401	
3000	500	
4000	423	

BY: \_\_\_\_\_



76

UNION

GEOHERMAL DIVISION DEU PYLE

SUBSURFACE SURVEY  
Field Work Sheet

MAY 21 1976

B4560 P/T

OWNER LINION OIL COMPANY FIELD VALLE GRANDE WELL NAME BICA #4  
 CASING 1 5/8 AT 1441 9 3/8 3152 ELEV. 9318 DATE: 5/17/76  
 LINER DESCRIPTION: 7" AT 3031 ZERO POINT CL + 7  
 DEPTH 6340 OR 6531

TUBING DETAIL:

PURPOSE

REMARKS:

Element - 0-9000 Psi SN-7198 clock 12 hr 15 Turn  
ELEMENT 90°-646° E SERIAL NO. 10052 CLOCK 12 hr 15 TURN STABILIZATION PERIOD  
ENGAGE STYLUS P-0934 ; T-0937 DISENGAGE STYLUS P-1212 ; T-1212  
WELL HEAD - 374 Psi  
PICKUP @ 4000 TIME ON BOTTOM 1105 - 1140 MAX. F 506.0° F  
WELL STATUS Shut in  
 SHUT IN: \_\_\_\_\_ ON PRODUCTION: \_\_\_\_\_  
 RATE \_\_\_\_\_

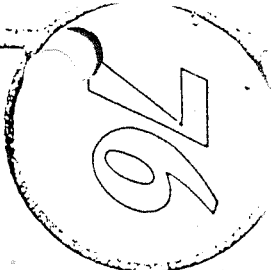
Pressure

Temp

TIME	DEPTH	DEFL.	P - T	GRAD.	Temp	TIME	DEPTH	DEFL.	P - T	GRAD.	ID	TIME	DEPTH	DEFL.	P - T	GRAD.	ID
7-10	100	.167	378.2		-0.11	1027	100	.033	90.4								
9-10	1000	.177	466.8		-0.06	1039	1000	.509	354.7								
11-10	2000	.177	400.8		-0.04	1051	2000	1.207	411.9								
3-11	3000	.261	585.1		-0.04	1103	3000	1.349	480.2								
5-11	4000	.420	923		-0-	1140	4000	1.446	506.0								

COMMENTS:

BY: C.D. 23 1/4 JB



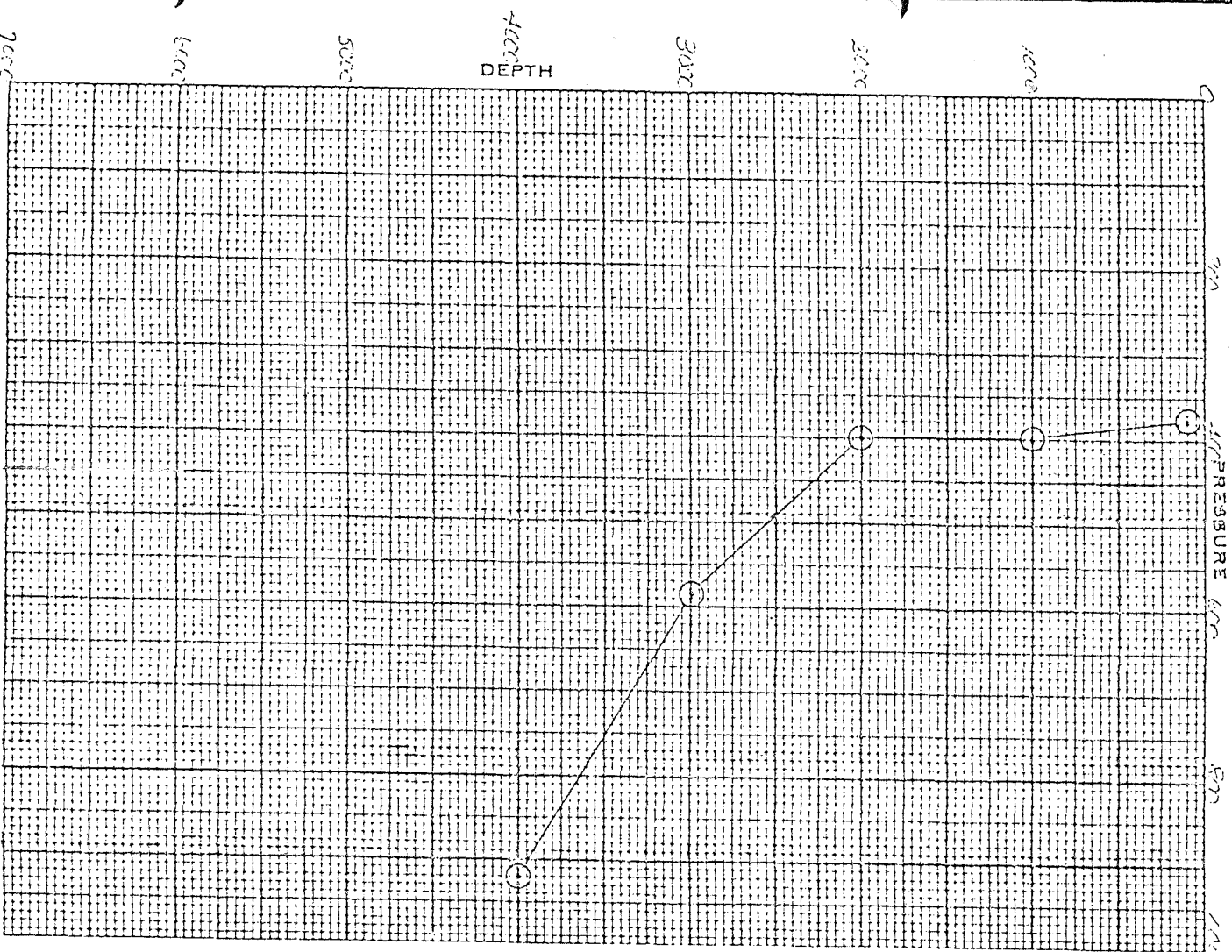
U.S. GEOLOGICAL SURVEY  
 GEOTHERMAL DIVISION  
 SUBSURFACE PRESSURE SURVEY

B4-560-PT

OWNER \_\_\_\_\_ FIELD 1516 GEORGE WELLS BOPR #1  
 CASING \_\_\_\_\_ ELEV 9318' DATE 5/17/78  
 LINER DESCRIPTION \_\_\_\_\_ ZERO POINT 64.47'  
 DEPTH \_\_\_\_\_ DEPTH \_\_\_\_\_

HOLE DESCRIPTION: \_\_\_\_\_  
 INSTRUMENT 0-4000 PS  
 SERIAL NO 7198  
 MAX TEMP 506 °F @ 1000

PURPOSE \_\_\_\_\_  
 REMARKS \_\_\_\_\_  
 STABILIZATION PERIOD \_\_\_\_\_



PRESSURE	GAUGE	BOND
1000	375.5	
2000	400.8	
3000	385.1	
4000	423	

DEPTH	PRESSURE	GRADIENT
100	375.5	
2000	400.8	
3000	385.1	
4000	423	

BY: \_\_\_\_\_



76

UNION

GEO THERMAL DIVISION DEL PYLE

SUBSURFACE SURVEY

MAY 23 1976

Field Work Sheet

B4-S-59-P11

OWNER UNION OIL CO. CHIEF FIELD VALLE GRANDE WELL NAME B-4  
 CASING 1 3/4" @ 144' 9 3/4" @ 3152' ELEV. 9318 DATE: 5/11/76  
 LINER DESCRIPTION: 7" @ 303' ZERO POINT 61.47'

TUBING DETAIL:  
 \_\_\_\_\_  
 \_\_\_\_\_

PURPOSE:  
 \_\_\_\_\_

REMARKS:  
P-O-4000 SU 7198

ELEMENT T-80-646 SERIAL NO. 10052 CLOCK \_\_\_\_\_ TURN \_\_\_\_\_ STABILIZATION PERIOD \_\_\_\_\_

ENGAGE STYLUS P-1100 T 1105 DISENGAGE STYLUS P-1422-T1422

WELL HEAD 374

PICKUP @ 4000 TIME ON BOTTOM 1246-1331 MAX. # \_\_\_\_\_

WELL STATUS SHUT IN

SHUT IN: \_\_\_\_\_ ON PRODUCTION: \_\_\_\_\_

RATE \_\_\_\_\_

PSIG TBM P

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	R-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1200	168	580			-011	1208	160	1039	92.7								
1210	176	598			-016	1220	1500	532	245.6								
1232	171	465			-004	1232	2000	1.21	447								
1244	264	591			-3	1244	3000	1.571	480.8								
1331	418	919			-	1331	4000	1.447	506.2								

COMMENTS:

BY: CP + CD



76

UNION

GEO THERMAL DIVISION

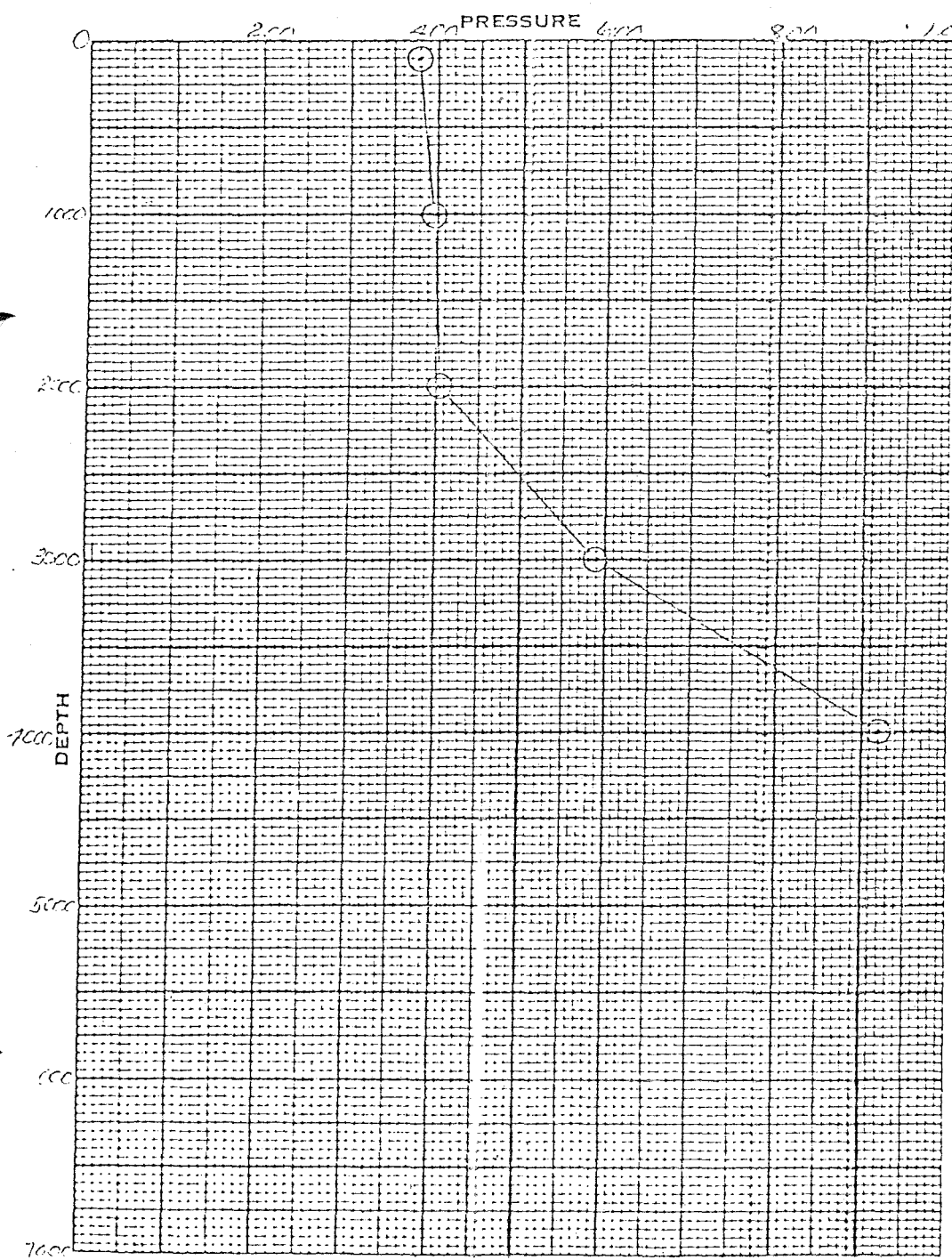
SUBSURFACE PRESSURE SURVEY

BA-557-PT

OWNER \_\_\_\_\_ FIELD 1 1/2 Mile Granite WELL NAME 3001-4  
 CASING \_\_\_\_\_ ELEV 0310' DATE \_\_\_\_\_  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT 1.2 - 7'  
 \_\_\_\_\_ DEPTH \_\_\_\_\_

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT \_\_\_\_\_ PSIG  
 \_\_\_\_\_ SERIAL NO \_\_\_\_\_

PURPOSE \_\_\_\_\_ MAX TEMP 515.2°F @ 4000'  
 REMARKS: \_\_\_\_\_



STABILIZATION PERIOD \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

PRESSURES.	GAUGE	BOMB
CASING. PSI		

DEPTH	PRESSURE	GRADIENT
100	350	
1000	399	
2000	405	
3000	405	
4000	419	

BY: \_\_\_\_\_

# 76

UNII 2911

## GEO THERMAL DIVISION

### SUBSURFACE TEMPERATURE SURVEY

34-534-12-

OWNER \_\_\_\_\_

FIELD W. W. Grew WELL NAME DH-1, 2A

CASING \_\_\_\_\_

ELEV 9212' DATE 5/1/76

LINER DESCRIPTION \_\_\_\_\_

ZERO POINT SL 1'

DEPTH \_\_\_\_\_

HOLE DESCRIPTION: \_\_\_\_\_

INSTRUMENT \_\_\_\_\_

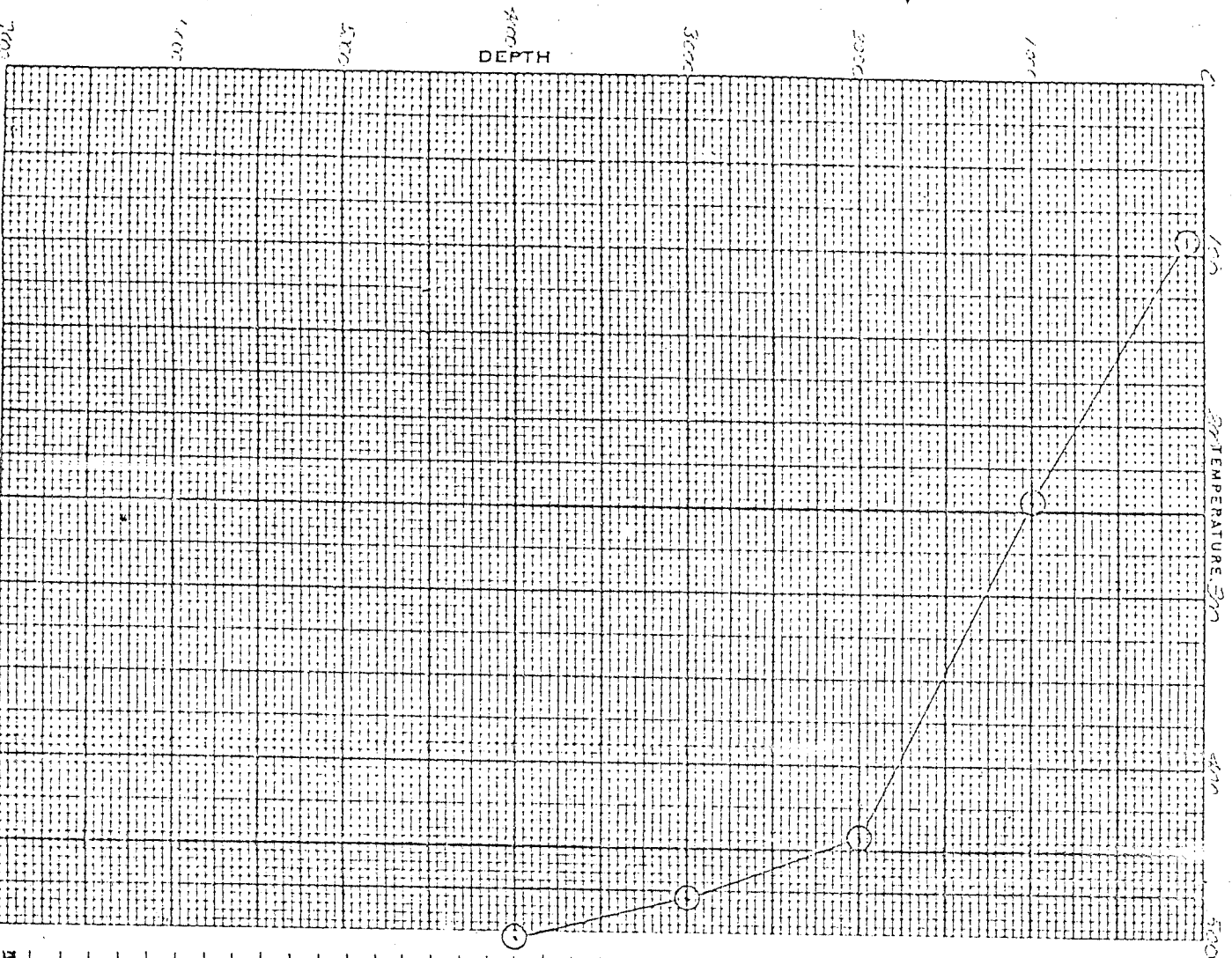
SERIAL NO \_\_\_\_\_

PURPOSE \_\_\_\_\_

MAX TEMP 506.2°F @ 4000'

REMARKS \_\_\_\_\_

STABILIZATION PERIOD \_\_\_\_\_



PRESSURE	GAUGE	BOYS
CASING PSI		

DEPTH	TEMP.	DEPTH	TEMP
100	522.4		
1000	456		
2000	443		
3000	430.2		
4000	426.2		

100	522.4
1000	456
2000	443
3000	430.2
4000	426.2

BY: \_\_\_\_\_

76

CENTRAL OIL FIELD

COLUMBIAN SURVEY  
Field Work Sheet

DEU FILE

117 2 118  
24 357 1/17

WELL NO. 117 2 118  
 SURFACE AT 144' 7 1/2" AT 3112' ELEV. 916  
 WELLED DEPTH: 7" AT 3001'

COMP. Instrument

BAROMETER  
 I. MODEL 5-1000 PSI SN 7194 CLOCK 12:44 15 THRU  
 ELEMENT 26-146 1/2 SERIAL NO. 10052 CLOCK 12:44 15 THRU  
 GRADE STYLE P 1333 T 1330 DISCHARGE STYLE P 1333 T 1330  
 WELL HEAD  
 GROUP 117-2 TIME ON BOTTOM 1512-1540 MARCH 1957  
 WELL STATUS 2007 IN  
 POSITION ON PRODUCTION:  
 RATE

PRESSURE TIME ON BOTTOM

TIME	DEPTH	DEPL.	P-T	GRADE	TIME	DEPTH	DEPL.	P-T	GRADE	TIME	DEPTH	DEPL.	P-T	GRADE
1512	144	301	-101	1412	150	107	924							
1515	144	301	-106	1424	100	107	924							
1518	144	301	-107	1436	100	107	924							
1521	144	301	-103	1448	100	107	924							
1524	144	301	-103	1460	100	107	924							
1527	144	301	-	1472	100	107	924							
1530	144	301	-	1484	100	107	924							
1533	144	301	-	1496	100	107	924							

COMMENTS:

BY:

76

# GEO THERMAL DIVISION

## SUBSURFACE PRESSURE SURVEY

34-555 PT

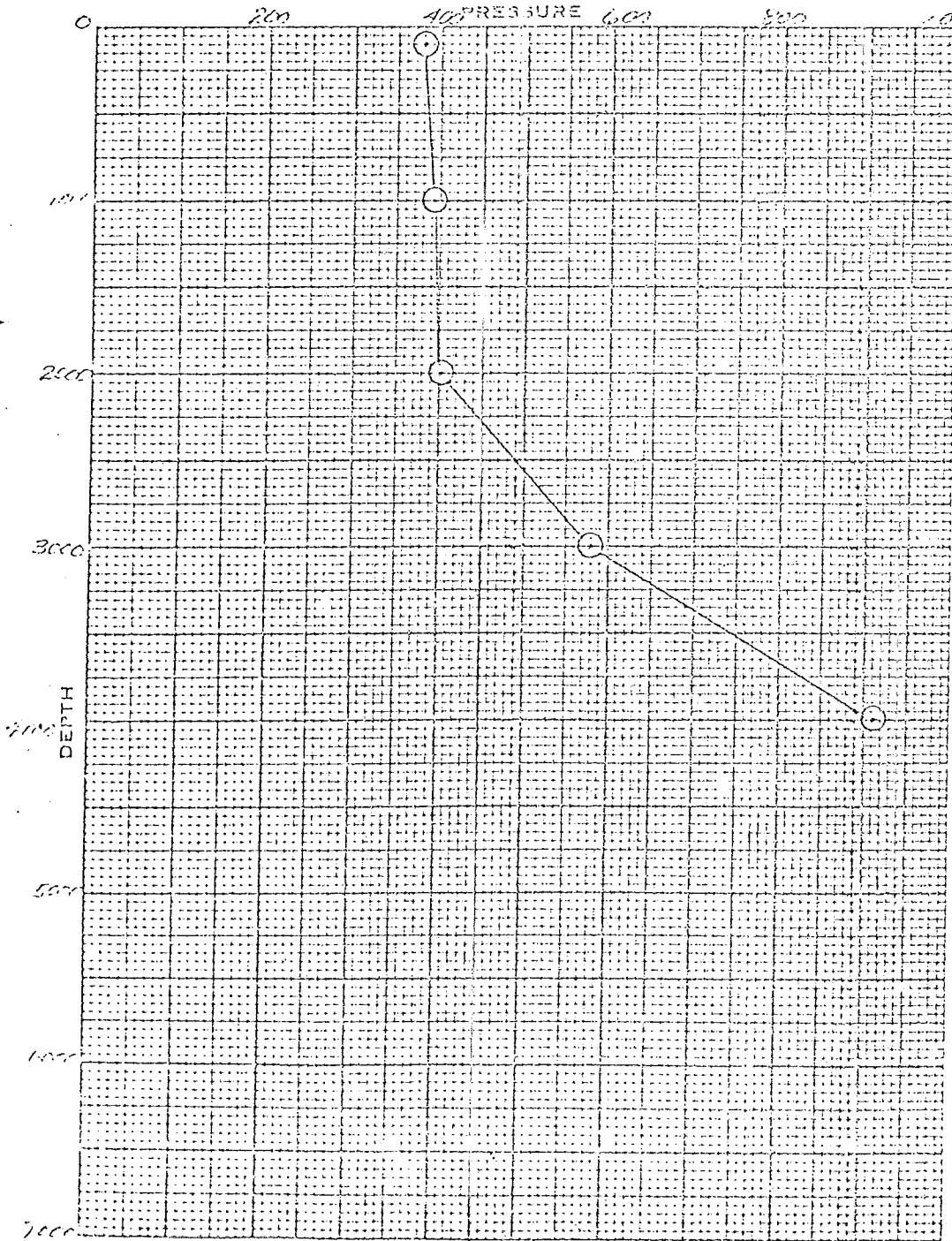
OWNER \_\_\_\_\_ FIELD Valle Grande WELL NAME BACA #4  
 CASING \_\_\_\_\_ ELEV 9318' DATE 4/12/76  
 LINAR DESCRIPTION: \_\_\_\_\_ ZERO POINT GL +7'  
 \_\_\_\_\_ DEPTH 6351'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT \_\_\_\_\_ PS  
 \_\_\_\_\_ SERIAL NO 7198

PURPOSE \_\_\_\_\_ MAX TEMP 508 °F @ 4000

REMARKS: \_\_\_\_\_

STABILIZATION PERIOD \_\_\_\_\_



PRESSURE	GAUGE	BOHB
CASING PSI		

DEPTH	PRESSURE	GRADIENT
100	381	
1000	394	
2000	403	
3000	581	
4000	913	

BY: \_\_\_\_\_

76

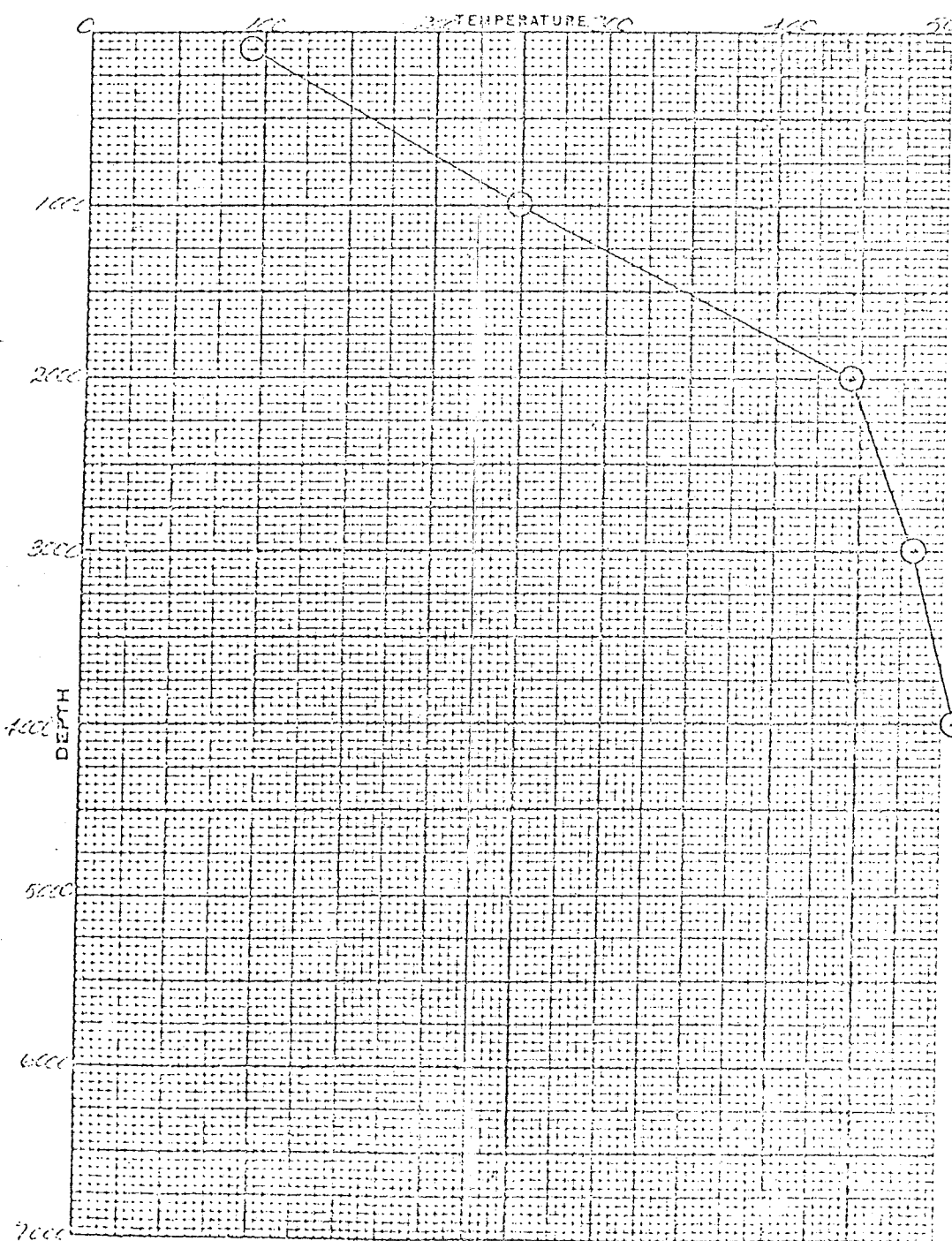
# GEO THERMAL DIVISION

## SUBSURFACE TEMPERATURE SURVEY

B1-555-PT

OWNER \_\_\_\_\_ FIELD Ulla Grande WELL NAME B100 #4  
 CASING \_\_\_\_\_ ELEV 4312' DATE 3/12/76  
 LINER DESCRIPTION \_\_\_\_\_ ZERO POINT 62 +7'  
 \_\_\_\_\_ DEPTH 6331'  
 HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT \_\_\_\_\_ FA  
 \_\_\_\_\_ SERIAL NO 20052  
 PURPOSE \_\_\_\_\_ MAX TEMP 508 @ 4000'  
 REMARKS \_\_\_\_\_

STABILIZATION PERIOD \_\_\_\_\_



PRESSURES	GUAGE	RODS
CASING PSI		

DEPTH	TEMP.	DEPTH	TEMP.
100	92.7		
1000	248		
2000	444		
3000	483		
4000	508.2		

BY: \_\_\_\_\_

76

UNION

DEL PYLE

GEO THERMAL DIVISION

MAY 13 1976

SUBSURFACE SURVEY

Field Work Sheet

BH-558-P/T

OWNER UNION OIL CO. CALIF FIELD VALLE GRANDE WELL NAME B-1  
 CASING 13 7/8" @ 1441'; 9 5/8" @ 3182' ELEV. 9318' DATE: 5/3/76  
 LINER DESCRIPTION: 7" @ 3031' ZERO POINT GLT 7'  
 DEPTH

TUBING DETAIL:

PURPOSE

REMARKS:

P-0-1100 PSIG 7195

ELEMENT T-80-6416°E SERIAL NO. 10052 CLOCK TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-0932 T 0925 DISENGAGE STYLUS P-1206 T 1205  
 WELL HEAD 375  
 PICKUP @ 4100' TIME ON BOTTOM 1110-1215 MAX. °F 505  
 WELL STATUS SHUT IN  
 SHUT IN: ON PRODUCTION:  
 RATE

PSIG

TEMP

TIME	DEPTH	DEFL.	P-T	GRAD.	TEMP	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
	100	.119	390		-0.011	1032	100	.028	89							
	1044	.176	399		-0.066	1044	1000	.534	246							
	1056	.176	399		-0.064	1056	2000	1.209	442							
	1108	.260	583		-1.003	1108	3000	1.350	481							
	1110	.418	919		-	1110	4000	1.444	505							
	1215	.418	919		-	1215	4000	1.444	505							

COMMENTS:

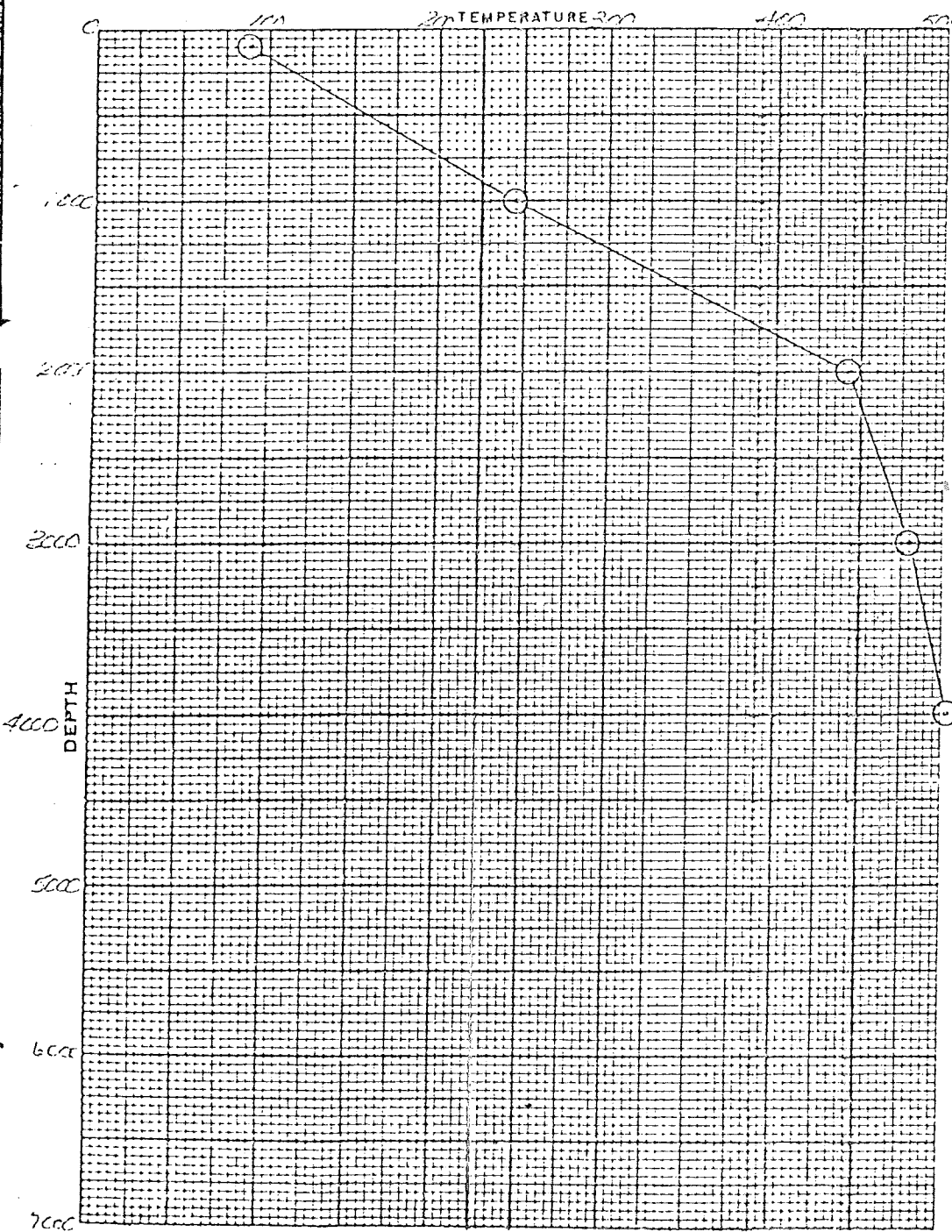
BY: [Signature]

76

GEOTHERMAL DIVISION  
SUBSURFACE TEMPERATURE SURVEY

B4-558-PT

OWNER \_\_\_\_\_ FIELD White Geode WELL NAME BPCA #4  
 CASING \_\_\_\_\_ ELEV 2518' DATE 5/3/76  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT GL + 7'  
 \_\_\_\_\_ DEPTH \_\_\_\_\_  
 HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 80° - 646° FAN: \_\_\_\_\_  
 \_\_\_\_\_ SERIAL NO 10052  
 PURPOSE \_\_\_\_\_ MAX TEMP 50.5 °F @ 4000'  
 REMARKS: \_\_\_\_\_



STABILIZATION PERIOD


PRESSURES	GAUGE	BOYS
CASING PSI		

DEPTH	TEMP.	DEPTH	TEMP.
100	89		
1000	246		
2000	442		
3000	481		
4000	505		

BY: \_\_\_\_\_

76

GEOTHERMAL DIVISION  
SUBSURFACE PRESSURE SURVEY

84-558-PT

OWNER \_\_\_\_\_ FIELD Little Spade WELL NAME LR09 #4

CASING \_\_\_\_\_ DATE 5/3/76

LINER DISCRPTION: \_\_\_\_\_ ELEV 4318' ZERO POINT GL+7'

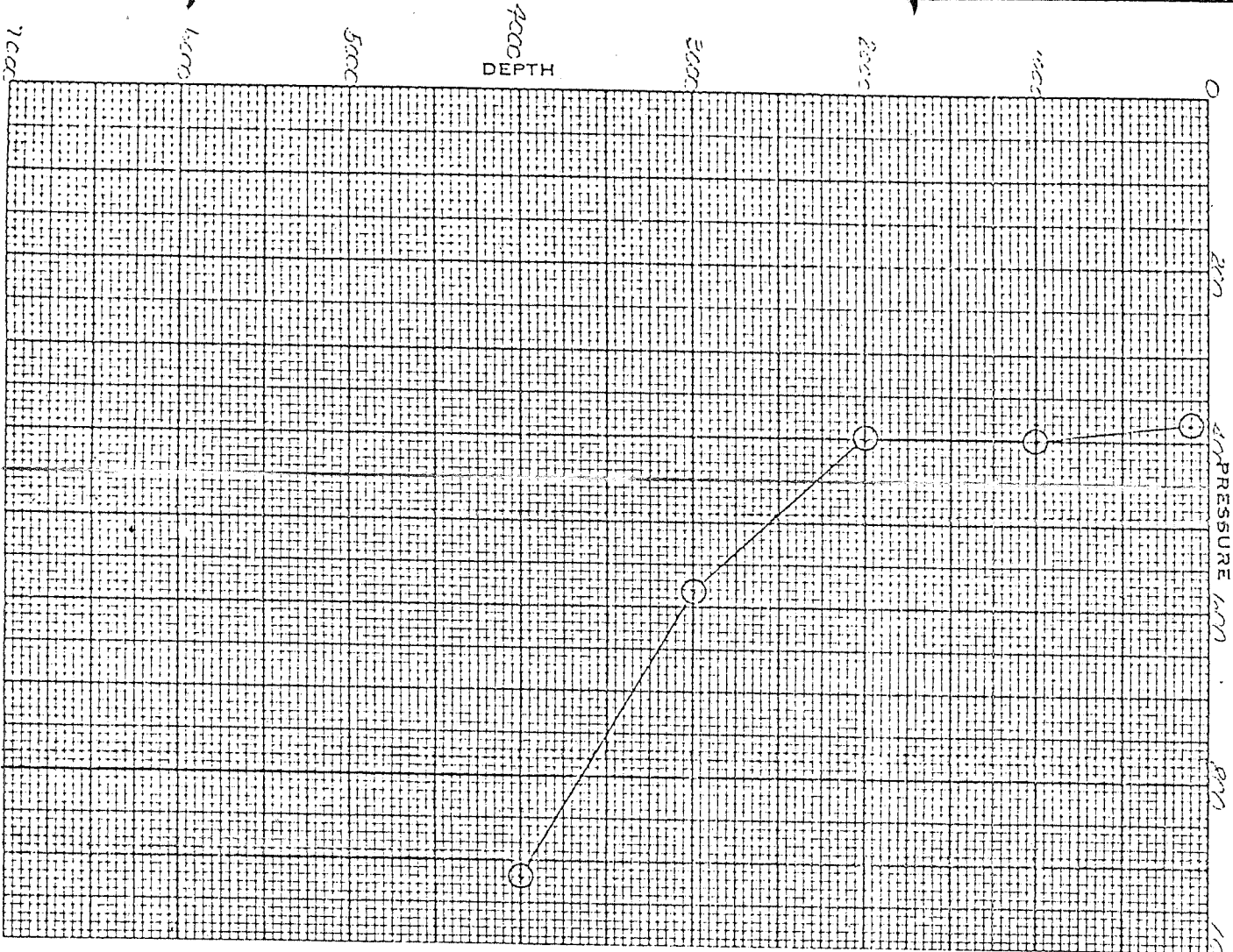
DEPTH \_\_\_\_\_

HOLE DESCRIPTION: \_\_\_\_\_

INSTRUMENT 0-4000 PSIC  
SERIAL NO 7193

MAX TEMP 50.5 °F @ 4000'

PURPOSE \_\_\_\_\_  
REMARKS: \_\_\_\_\_  
STABILIZATION PERIOD \_\_\_\_\_



PRESSURES	GAUGE	BOMB
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
100	380	
1000	399	
2000	399	
3000	583	
4000	919	

BY: \_\_\_\_\_



# PRUETT WIRELINE SERVICE

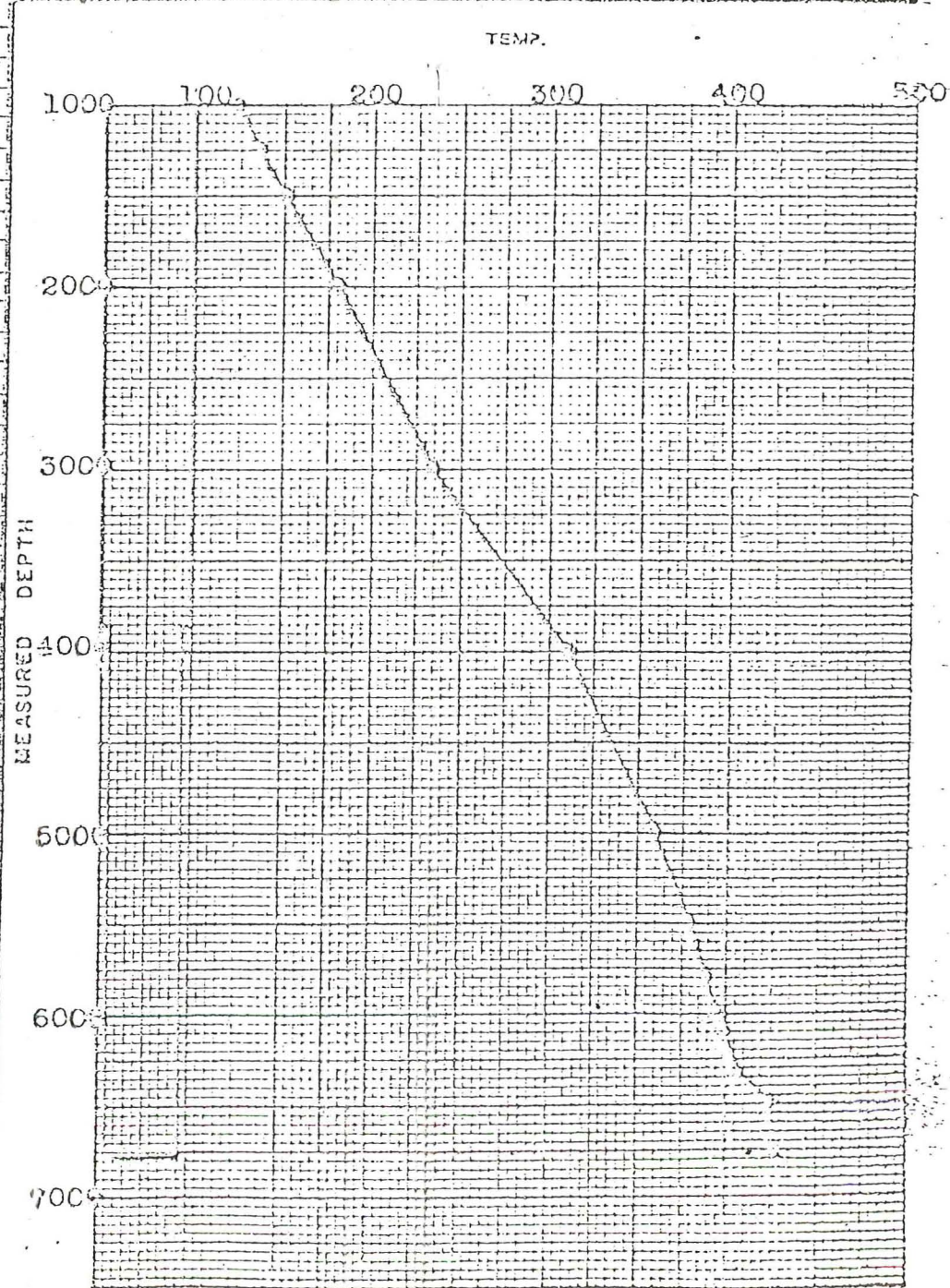
2200 De Ette Ave., Bakersfield, Ca. 93309

(805) 832-2230

## SUB-SURFACE TEMPERATURE SURVEY

Arco Oil Co.  
 Brawley, California  
 WELL NAME: Arco LABEL: Arco  
 DATE: 5/3 3 4000 ELEV.: 4/6/76  
 WELL IDENTIFICATION: 3288-6759 SURVEY POINT: 16  
 TOTAL DEPTH: 6759  
 SURVEY MADE IN THE:  TUBING  ANNULES   
 INTAKE DEPTH: \_\_\_\_\_  
 ANNULUS TEMPERATURE SURVEY  
 TIME ON BOTTOM: 3:25 pm MAX. PT: 425.5  
 TIME OFF BOTTOM: 3:35 pm  
 WELL STATUS: Open Hole  
 PRODUCTION: 1,000 M ON PRODUCTION

DEPTH	TEMP.	GRAVITY
100	82.4	
200	123.8	
300	136.4	
400	151.0	
500	179.5	
600	233.5	
700	309.9	
800	358.6	
900	373.1	
1000	387.3	
1100	395.2	
1200	398.3	
1300	399.9	
1400	403.0	
1500	422.3	
1600	425.5	



76

UNION

DEL PYLE

GEOHERMAL DIVISION MAY 7 1976

SUBSURFACE SURVEY  
Field Work Sheet

B#4 5-57 P/T

OWNER Chicoil Oil Co of Calif. FIELD Valle Grande WELL NAME Point 4  
 CASING 1 3/4" x 14 1/2' @ 9 3/8" @ 5132' ELEV. 9318' DATE: 4/27/76  
 LINER DESCRIPTION: 7" @ 3031' ZERO POINT GL + 7'  
 DEPTH 6351'

TUBING DETAIL:

PURPOSE

REMARKS:

Element - 80F-696°F SM-10652 Clock 12 hr 15 Turn  
 ELEMENT - C-4000 Big SERIAL NO. 7198 CLOCK 12hr 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-0650 ; T-0655 DISENGAGE STYLUS P-0938 ; T-0939  
 WELL HEAD 375 Big  
 PICKUP @ 4000' TIME ON BOTTOM 0830-0900 MAX. # 504.9°F  
 WELL STATUS Shut-in  
 SHUT IN: \_\_\_\_\_ ON PRODUCTION: \_\_\_\_\_  
 PATE \_\_\_\_\_

Pressure

Temp

TIME	DEPTH	DEFL.	P-T	GRAD.	Code	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
0745	100	16.6	576		-0.11	0750	100	16.2	583.6								
0750	1000	175	580.0		-0.06	0800	1000	153.3	585.9								
0805	2000	150	577.5		-0.03	0815	2000	120.8	590.2								
0820	3000	125	589.4		-0.03	0827	3000	134.9	580.2								
0830	4000	118	919.1		-0-	0836	4000	144.2	504.9								
0840	4000	118	919.1			0840	4000	144.2	504.9								
0850	4000	118	919.1			0850	4000	144.2	504.9								
0900	4000	118	919.1			0900	4000	144.2	504.9								

COMMENTS:

BY: CP, C.D.

76

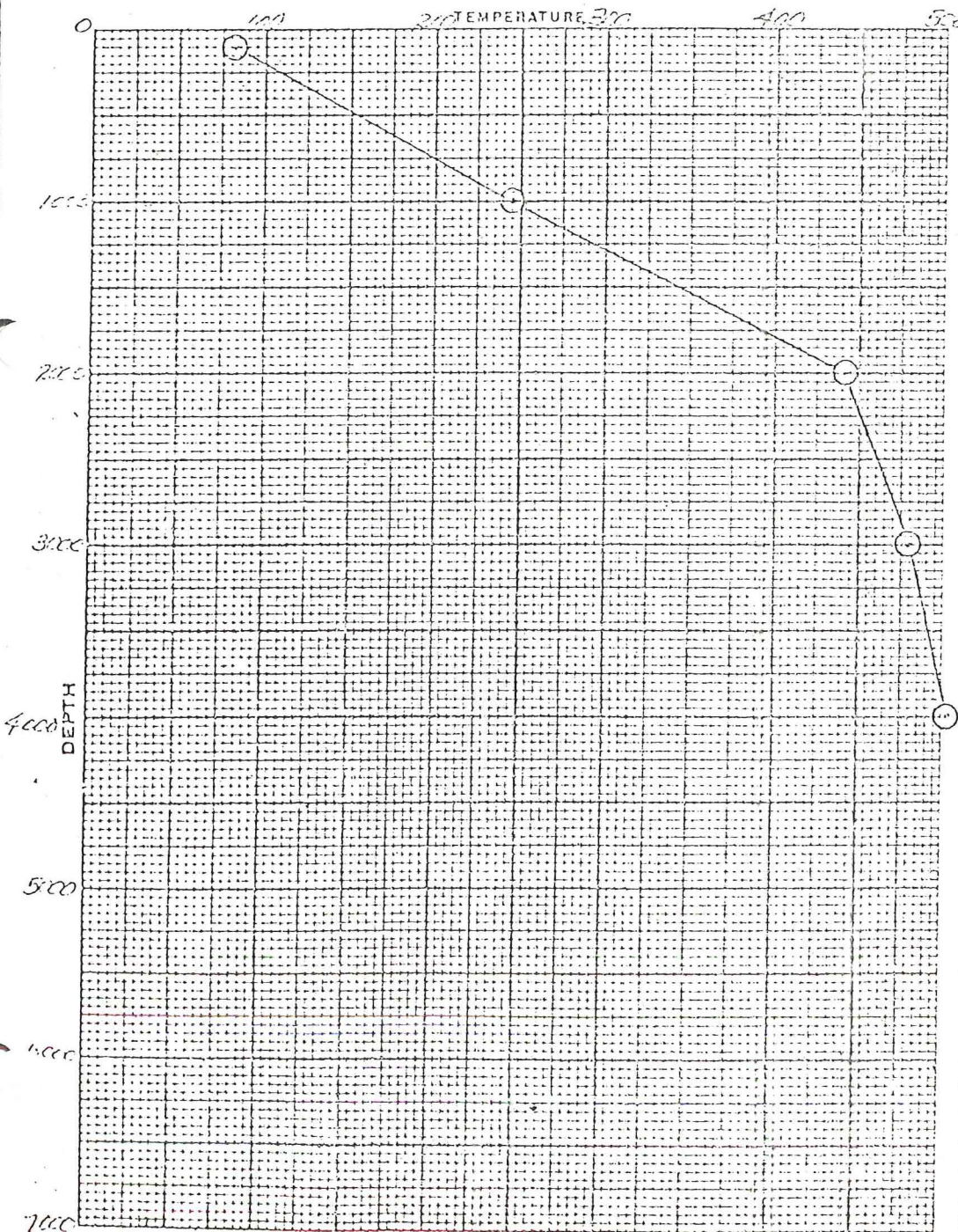
UNITED STATES  
GEOLOGICAL DIVISION  
SUBSURFACE TEMPERATURE SURVEY

B4-557-PT

OWNER \_\_\_\_\_ FIELD Valle Grande WELL NAME BACA #2  
 CASING \_\_\_\_\_ ELEV 9318' DATE 4/27/76  
 LINER DESCRIPTION \_\_\_\_\_ ZERO POINT SL + 7'  
 \_\_\_\_\_ DEPTH 6331'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 80°-146° FAH  
 \_\_\_\_\_ SERIAL NO 10052

PURPOSE \_\_\_\_\_ MAX TEMP 504.9° F @ 4000'  
 REMARKS \_\_\_\_\_



STABILIZATION PERIOD \_\_\_\_\_

PRESSURE	GAUGE	BORES
CASING PSI		

DEPTH	TEMP.	DEPTH	TEMP.
100	83.6		
1000	245.9		
2000	442.2		
3000	480.2		
4000	504.9		

BY:

76

# UNION GEO THERMAL DIVISION

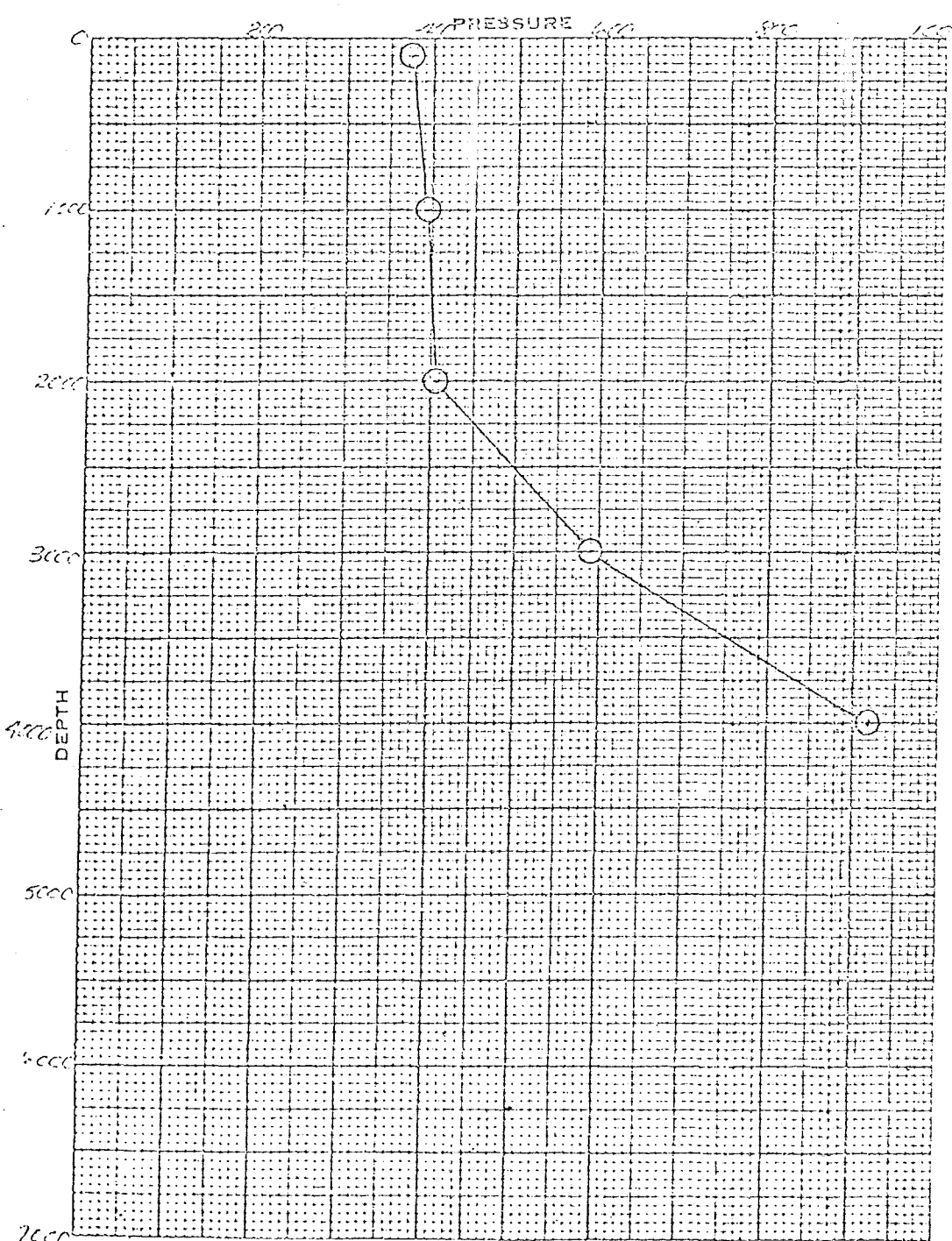
## SUBSURFACE PRESSURE SURVEY

B4-55-PT

OWNER \_\_\_\_\_ FIELD 1211/1 GRADE WELL NAME SP-2 #4  
 CASING \_\_\_\_\_ ELEV 9315' DATE 4/27/76  
 LINER DESCRIPTION \_\_\_\_\_ ZERO POINT GL +2'  
 \_\_\_\_\_ DEPTH 6331'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT C-4100  
 \_\_\_\_\_ SERIAL NO 7198

PURPOSE \_\_\_\_\_ MAX TEMP 504.9 °F @ 4000'  
 REMARKS \_\_\_\_\_



STABILIZATION PERIOD \_\_\_\_\_

PRESSURES	GAUGE	BOND
CASING PSI		

DEPTH	PRESSURE	GRADIENT
100	376	
1000	386.2	
2000	402.5	
3000	489.4	
4000	917.1	

BY: \_\_\_\_\_

76

UNION

DEE PYLE

NOV 7 1976

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B#4 3-56 PH

OWNER Union Oil Co of Calif FIELD Valle Grande

WELL NAME B#4

CASING 1.375" @ 141' @ 4.5" @ 3182' ELEV. 9318

DATE: 9/20/76

LINER DESCRIPTION: 7" @ 3031'

ZERO POINT GL + 7'

DEPTH 6331'

TUBING DETAIL:

PURPOSE

REMARKS:

T- SCF-246E SN 10052 12 hr 75 Turn

ELEMENT C-4000 Prg SERIAL NO. 7198 CLOCK 12 hr 15 TURN STABILIZATION PERIOD

ENGAGE STYLUS T-1414 P-1411 DIS-ENGAGE STYLUS T-1705 P-1705

WELL HEAD 375' Prg

PICKUP @ 4000' TIME ON BOTTOM 1548-1618 MAX. °F 309.9°F

WELL STATUS Shut-in

SHUT IN:

ON PRODUCTION:

RATE

Press					Temp											
TIME	DEPTH	DEFL.	P-T	GRAD.	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1510	100	.169	382.7		- .011	1510	100	.032	90.1							
1522	1100	.177	400.8		- .006	1522	1000	.531	215.3							
1534	2000	.181	409.8		- .003	1534	2000	1.205	441.3							
1546	3000	.262	587.2		- .003	1546	3000	1.343	478.0							
1618	4000	.718	919.1		- 0 -	1618	4000	1.442	504.9							

COMMENTS:

BY: MD PR

# GEO THERMAL DIVISION

## SUBSURFACE PRESSURE SURVEY

B4-554-PT

76

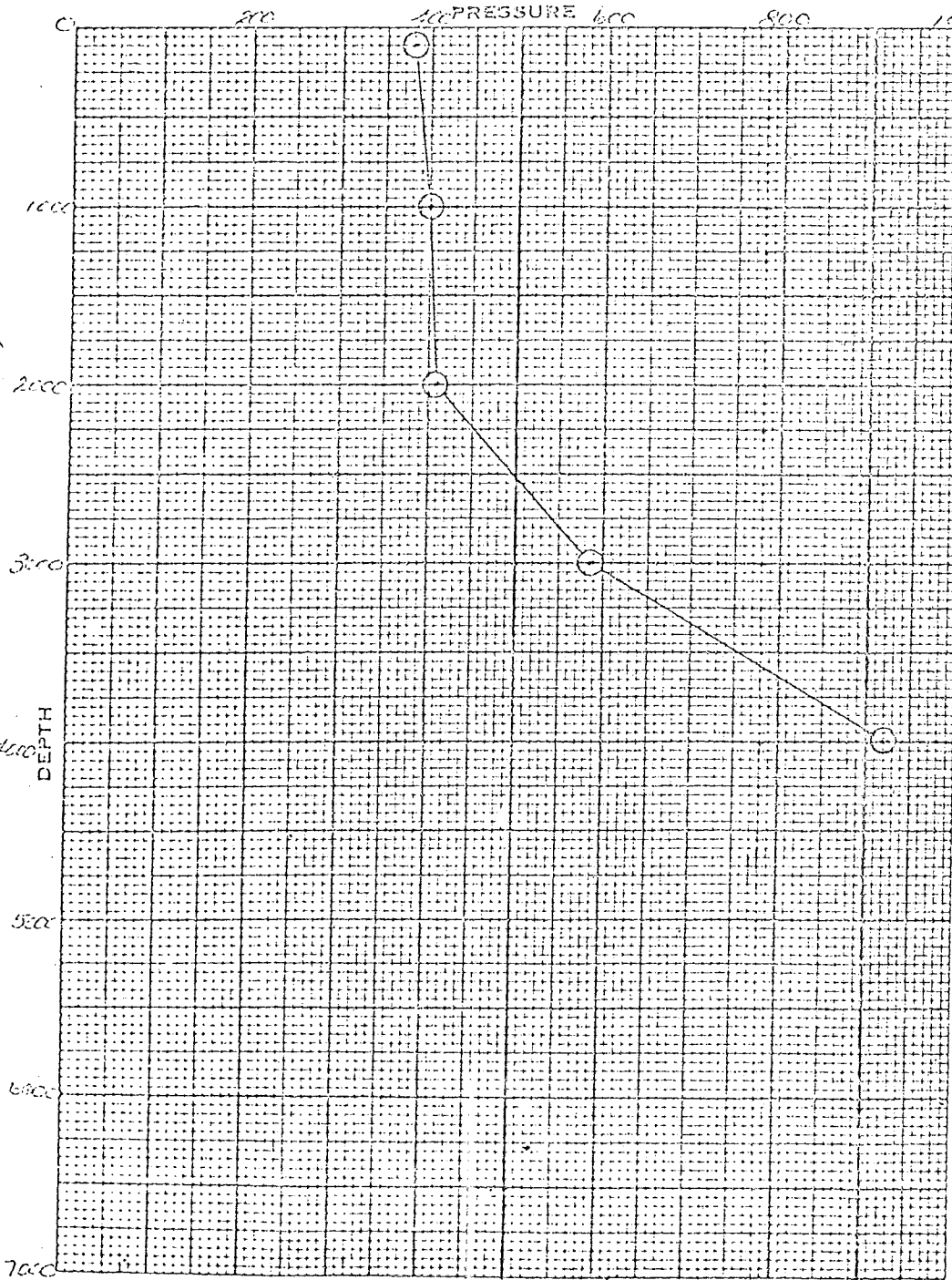
OWNER \_\_\_\_\_ FIELD \_\_\_\_\_ WELL NAME BACP #7  
 CASING \_\_\_\_\_ ELEV \_\_\_\_\_ DATE 4/22/76  
 LINER DESCRIPTION \_\_\_\_\_ ZERO POINT 621.7'  
 DEPTH \_\_\_\_\_ 6331'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT \_\_\_\_\_ PSI  
 SERIAL NO 7198

PURPOSE \_\_\_\_\_ MAX TEMP 50.5 F @ 4000

REMARKS: \_\_\_\_\_

STABILIZATION PERIOD \_\_\_\_\_



PRESSURES	GAUGE	BOHA
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
1000	382.7	
1600	400.5	
2000	409.8	
3000	587.2	
4000	990.1	

SY: \_\_\_\_\_

76

# GEO THERMAL DIVISION

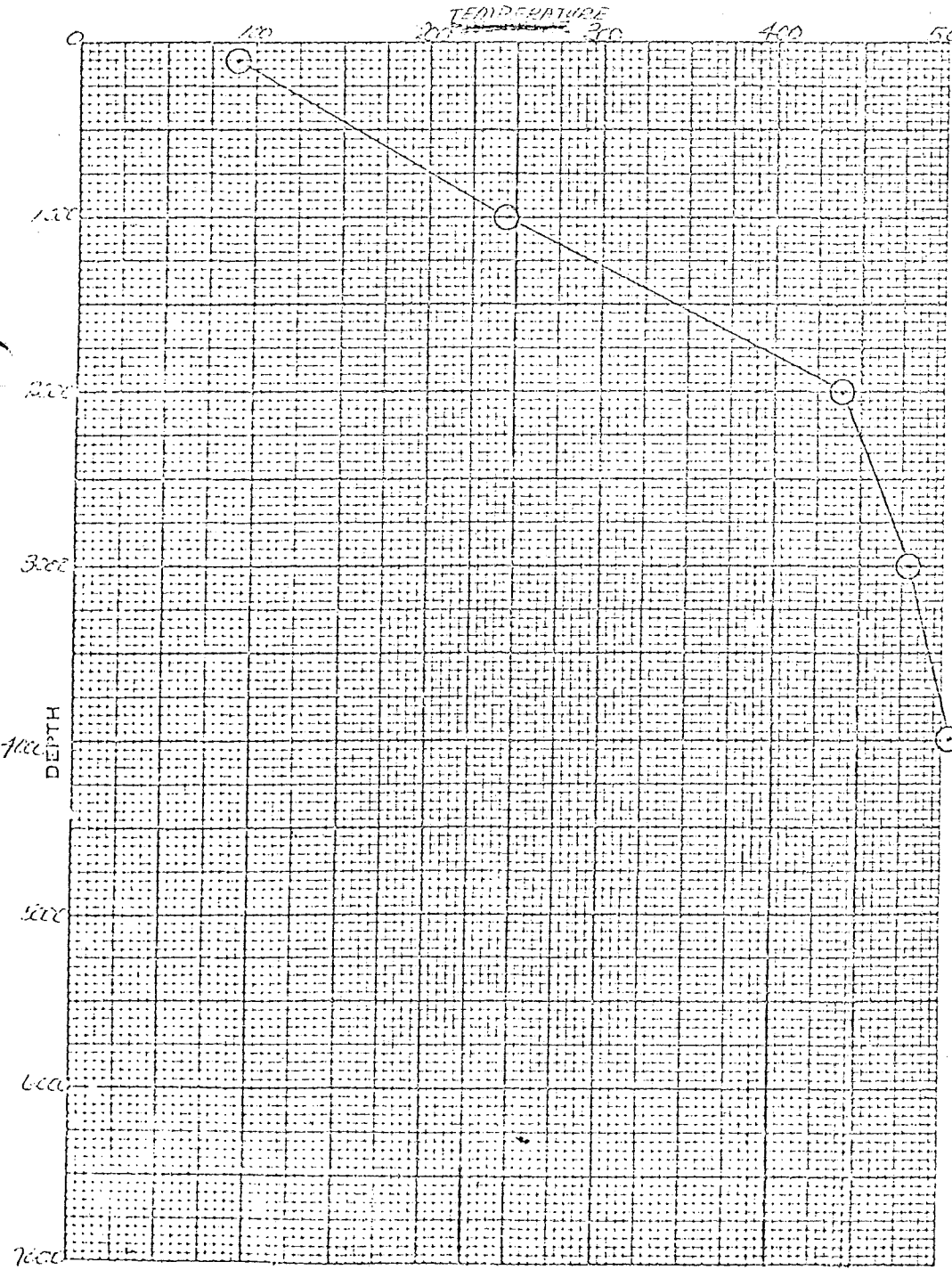
## SUBSURFACE PRESSURE SURVEY

B4-553-PT

OWNER \_\_\_\_\_ FIELD \_\_\_\_\_ WELL NAME BACA #1  
 CASING \_\_\_\_\_ ELEV \_\_\_\_\_ DATE 4/22/76  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT GL 1.1'  
 \_\_\_\_\_ DEPTH 633.1'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT \_\_\_\_\_ PSI  
 \_\_\_\_\_ SERIAL NO 10052

PURPOSE \_\_\_\_\_ MAX TEMP 505.1 @ 4000  
 REMARKS: \_\_\_\_\_



STABILIZATION PERIOD \_\_\_\_\_

PRESSURE	GAUGE	BOMB
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
100	90.1	
1000	245.3	
2000	441.3	
3000	478.4	
4000	505.9	

BY: \_\_\_\_\_

76

UNION

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

DEU P/ET

157 5117  
B#H-S54-P/T

OWNER UNION OIL CO. OF CALIF. FIELD VALLE GRANDE WELL NAME BACH #11  
 CASING 13 3/8" @ 1441'; 9 5/8" @ 3182' ELEV. 9318' DATE: 3/19/76  
 LINER DESCRIPTION: 7" @ 3031'; TO-6331' ZERO POINT CL+7'  
 DEPTH 6331'

TUBING DETAIL:

PURPOSE

REMARKS:

ELEMENT - P - O-H000 PSIG. 7195 12889-L 15  
 ELEMENT - T - 80°F-646°F SERIAL NO. 10052 CLOCK 1337H-L 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-1330 T-1331 DISENGAGE STYLUS P-1630 T-1637  
 WELL HEAD 375  
 PICKUP @ 6331 TIME ON BOTTOM 1515-1545 MAX. 'F 584  
 WELL STATUS SHUT IN.  
 SHUT IN: 11/13/73 ON PRODUCTION:  
 RATE

PSIG					TEMP. (°C)												
TIME	DEPTH	DEFL.	P-T	GRAD.	TEMP.	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
14	100	169	333		7011	1400	100	1017	855	29.9							
1412	1000	181	410		7006	1412	1000	1510	748	120.1							
1424	2000	183	414		7003	1424	2000	1304	441	227.2							
1437	3000	264	592		7002	1437	3000	1350	430	249.1							
1449	4000	419	921		-	1449	4000	1484	1516	268.9							
1501	5000	565	1229		-	1501	5000	1655	560	293.4							
1513	6000	711	1835		7001	1513	6000	1707	578	303.5							
1515	6331	763	1644		7001	1515	6331	1743	584								
1530	6331	757	1631		7001	1530	6331	1743	584	306.4							
1545	6331	759	1635		7001	1545	6331	1743	584								

COMMENTS:

RY:

100 C D



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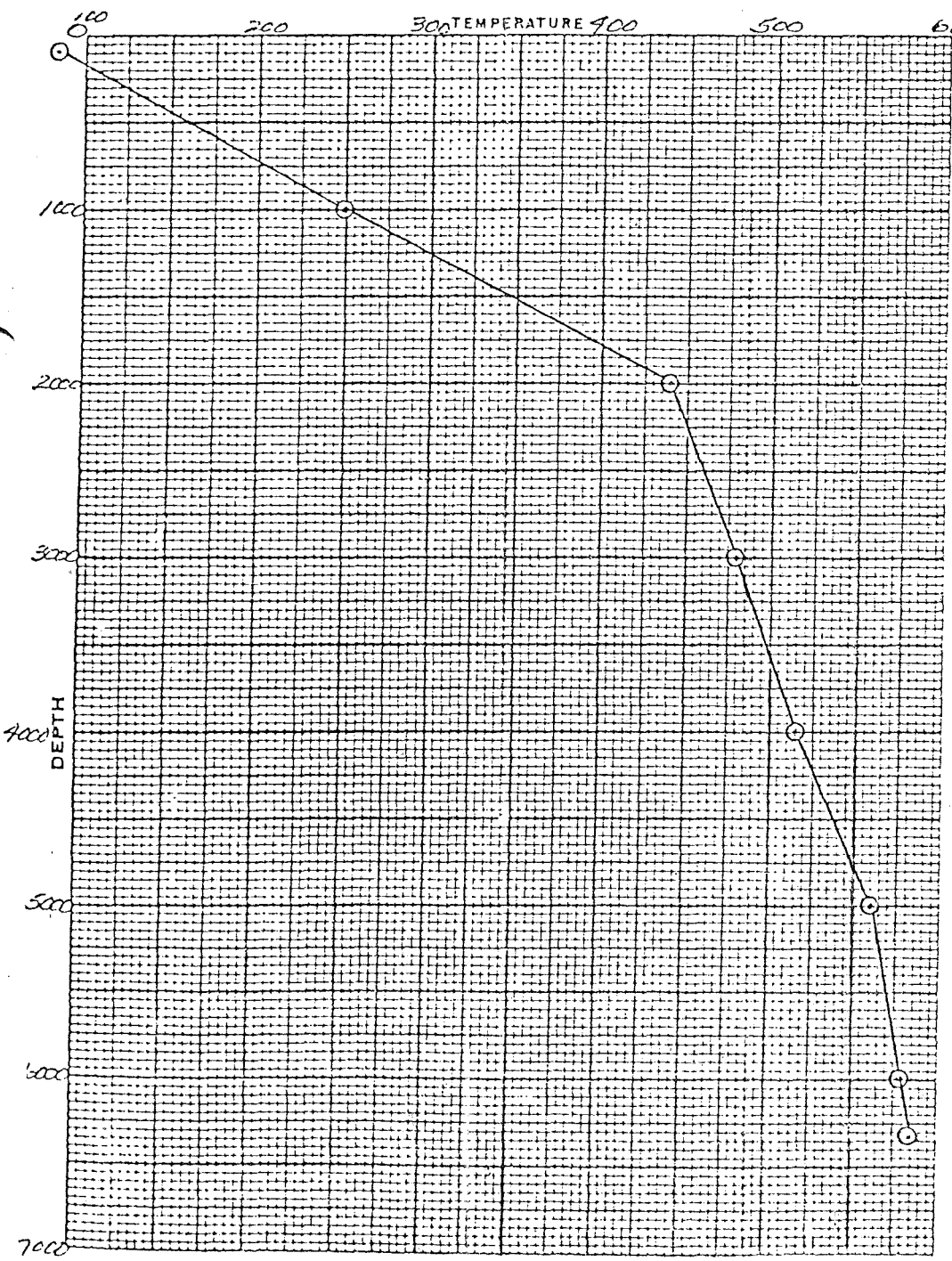
UNION 76

GEOTHERMAL DIVISION  
SUBSURFACE TEMPERATURE SURVEY

B4-554-PT

OWNER \_\_\_\_\_ FIELD \_\_\_\_\_ WELL NAME BACA #4  
 CASING \_\_\_\_\_ ELEV \_\_\_\_\_ DATE 3/19/76  
 LINER DESCRIPTION \_\_\_\_\_ ZERO POINT GL + 7'  
 \_\_\_\_\_ DEPTH 6331'  
 HOLE DESCRIPTION: \_\_\_\_\_  
 \_\_\_\_\_ INSTRUMENT \_\_\_\_\_ FAN  
 \_\_\_\_\_ SERIAL NO 10052  
 PURPOSE \_\_\_\_\_ MAX TEMP 584 °F @ 6331'  
 REMARKS: \_\_\_\_\_

STABILIZATION PERIOD \_\_\_\_\_



PRESSURES	GAUGE	BOMB	
CASING PSI			
DEPTH	TEMP.	DEPTH	TEMP.
100	85		
1000	248		
2000	441		
3000	480		
4000	516		
5000	560		
6000	578		
6331	584		

BY: \_\_\_\_\_

76

UNION

GEOTHERMAL DIVISION

SUBSURFACE PRESSURE SURVEY

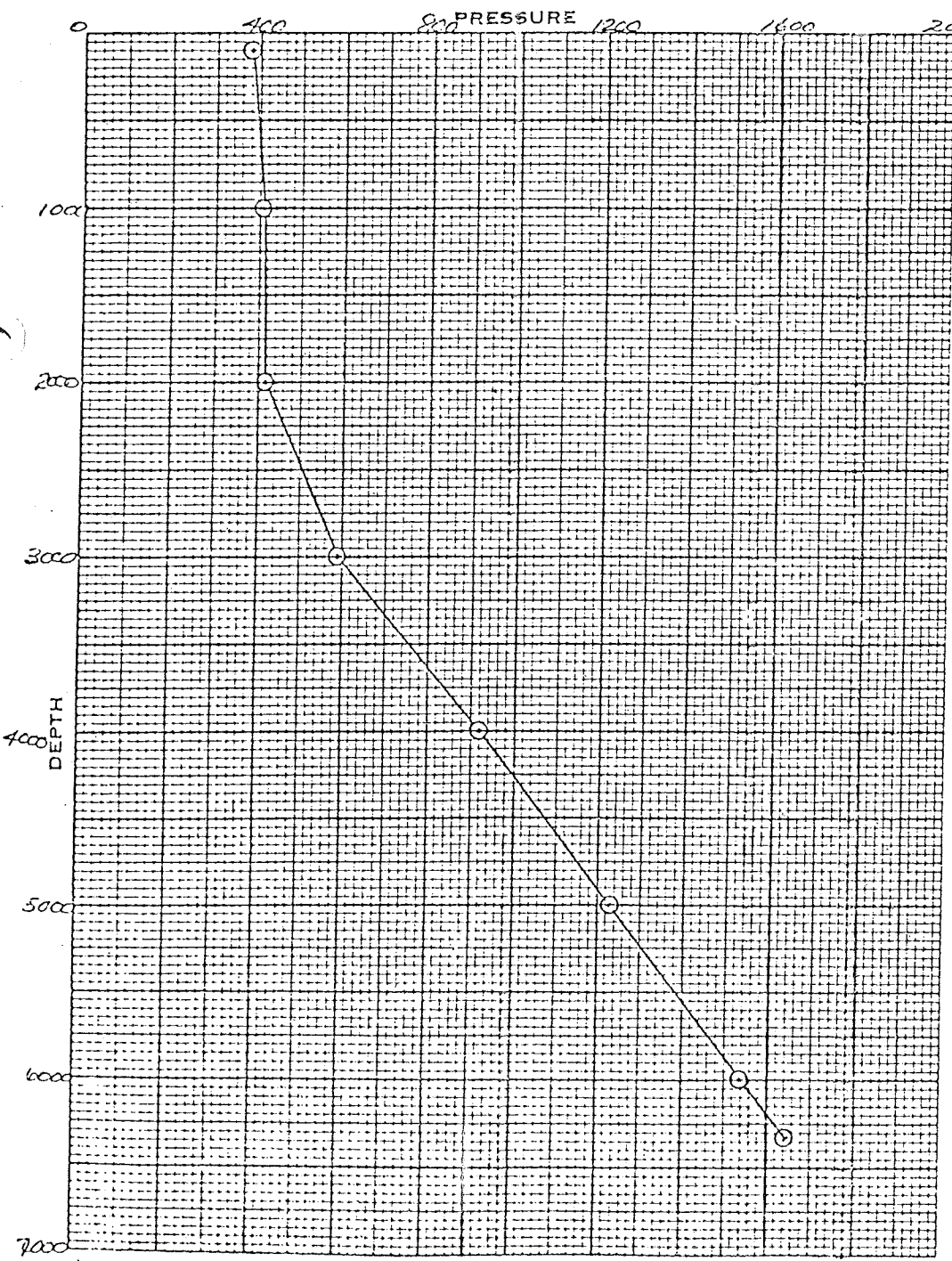
B4-554-DT

OWNER \_\_\_\_\_ FIELD \_\_\_\_\_ WELL NAME BACA #4  
 CASING \_\_\_\_\_ ELEV \_\_\_\_\_ DATE 3/19/76  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT GL + 7'  
 \_\_\_\_\_ DEPTH 6331'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT \_\_\_\_\_ PSI  
 \_\_\_\_\_ SERIAL NO 7198

PURPOSE \_\_\_\_\_ MAX TEMP 584 °F @ 6331'

REMARKS: \_\_\_\_\_



STABILIZATION PERIOD \_\_\_\_\_

PRESSURE	GAUGE	BOMB
CASING PSI		

DEPTH	PRESSURE	GRADIENT
100	383	
1000	410	
2000	419	
3000	592	
4000	921	
5000	1229	
6000	1535	
6331	1644	

BY: \_\_\_\_\_

76

UNION

GEOHERMAL DIVISION DEE PYLE

SUBSURFACE SURVEY  
Field Work Sheet

MAR 24 1976

BA 553 PIT

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #4  
 CASING 13 3/4" AT 1441; 9" AT 3182 ELEV. 9318 DATE: 3-12-76  
 LINER DESCRIPTION: 7" AT 5031 ZERO POINT  
 DEPTH

TUBING DETAIL:

PURPOSE:

REMARKS:

ELEMENT - 0-400 PSI SN 7192 CLOCK - 12hr 15 TURN

ELEMENT 80°-646° SERIAL NO. 10052 CLOCK 12hr 15 TURN STABILIZATION PERIOD

ENGAGE STYLUS P-1009 T-1010 DISENGAGE STYLUS P-1333 T-1333

WELL HEAD 375

PICKUP @ 6331 TIME ON BOTTOM 1158-1238 MAX. DF 581.0

WELL STATUS SHUT IN

SHUT IN: 11/13/73 PRODUCTION:

RATE

PRESSURE

TEMPERATURE

PRESSURE					TEMPERATURE													
TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	
	100	0.715	385		7.012	1116	100	0.17	85.0									
11:05	6000	5.745	1543		7.001	1125	6000	1.725	577.0									
11:40	6000	0.713	1539		7.001	1140	6000	1.725	577.0									
11:50	6000	0.711	1535		7.001	1155	6000	1.725	577.0									
11:53	6331	0.762	1642		7.001	1158	6331	1.739	581.0									
12:13	4331	0.756	1629		7.001	1213	4331	1.739	581.0									
12:33	6331	0.753	1633		7.001	1233	6331	1.739	581.0									

COMMENTS: NEW TEMPERATURE ELEMENT (SERIAL # 10052; RANGE 80°-646°)

BY: Jim ...

76

UNION

GEO THERMAL DIVISION DEL PYLE

SUBSURFACE SURVEY  
Field Work Sheet

MAR 17 1976

B4 557 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #4  
 CASING 1 5/8" AT 1441' 9 5/8" AT 3182' EL. 9318' DATE: 5/6/76  
 LINER DESCRIPTION: 7" AT 3051' ZERO POINT 6217'  
 DEPTH 6331'

TUBING DETAIL:

PURPOSE INTERFERENCE TEST

REMARKS:

ELEMENT 0-4000 PSI SN 7193 CLOCK-12 hr 15 TURN

ELEMENT 82° - 686° SERIAL NO. 10055 CLOCK 12 hr 15 TURN STABILIZATION PERIOD

ENGAGE STYLUS P-1104; T 1400 DISENGAGE STYLUS E-1058 T-1408

WELL HEAD 380 PSIG 0-600 T/C

PICKUP @ 6331 TIME ON BOTTOM 1242 - 1312 MAX. F 590.4

WELL STATUS SHUT IN

SHUT IN: 11/13/73 ON PRODUCTION:

RATE

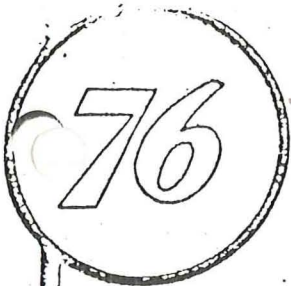
PRESSURE

TEMPERATURE

PRESSURE					TEMPERATURE												
TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1201	100	.170	385.0		7.011	1201	100	.061	101.4								
1210	6000	.708	1528.3		0	1210	6000	1.616	586.3								
1225	6000	.710	1632.5		0	1225	6000	1.616	586.3								
1240	6000	.712	1536.7		0	1240	6000	1.616	586.5								
1242	6331	.756	1428.9		0	1242	6331	1.631	590.4								
1257	6331	.754	1624.7		0	1257	6331	1.631	590.4								
1312	6331	.758	1653.1		0	1312	6331	1.631	590.4								

COMMENTS:

BY: CPLD-3



DEL PYLE

MAR 10 1976



# GEOHERMAL DIVISION

## SUBSURFACE SURVEY

### Field Work Sheet

BH-551-P/P

OWNER UNION OIL CO. OF CALIF. FIELD VALLE GRANDE

WELL NAME BACA#4

CASING 13 1/8" @ 1441'; 9 5/8" @ 3182' ELEV. 9318'

DATE: 2/26/76

LINER DESCRIPTION: 7" @ 3051'

ZERO POINT GL+7'

DEPTH 6331'

#### TUBING DETAIL:

#### PURPOSE

#### REMARKS:

R-0-#000 7510 7198 12889-L 15

ELEMENT Pa-0-2850 SERIAL NO. 9239 CLOCK 1337H-L TURN STABILIZATION PERIOD

ENGAGE STYLUS Pt-0948, Pa-0953 DISENGAGE STYLUS Pt-1348, Pa-1348

WELL HEAD 380

PICKUP @ 6331 TIME ON BOTTOM 1222-1252 MAX. 'F

WELL STATUS SHUT IN.

SHUT IN: 11/13/73. ON PRODUCTION:

#### RATE

R-7198

B-9235

TEMP f/s 49

DEPTH	DEFL.	P-#	GRAD.	HR CORR	TIME	DEPTH	DEFL.	P-#	GRAD.	HR CORR	TIME	DEPTH	DEFL.	P(T)	GRAD.	ID
1101	100	0172	390	-0.011	1101	100	0248	394	-0.012					93		
1114	1000	0187	405	0.002	1114	1000	0253	402	-0.007					753		
1126	2000	0185	419	0.003	1126	2000	0263	416	-					451		
1138	3000	0249	609	0.002	1138	3000	0387	622	+0.001					527		
1151	4000	0420	923	0.009	1151	4000	0597	915	+0.001					522		
1207	5000	0563	1204	+0.01	1207	5000	0806	1223	+0.001					512		
1220	6000	0708	1528	0.009	1220	6000	1016	1531	+0.001					550		
1222	6331	0759	1635	0.009	1222	6331	1087	1636	+0.001					590		
1237	6331	0755	1627	0.009	1237	6331	1089	1639	+0.001					590		
1252	6331	0758	1633	0.009	1252	6331	1084	1634	+0.001					590		

COMMENTS:

76

UNION 76

# GEOHERMAL DIVISION

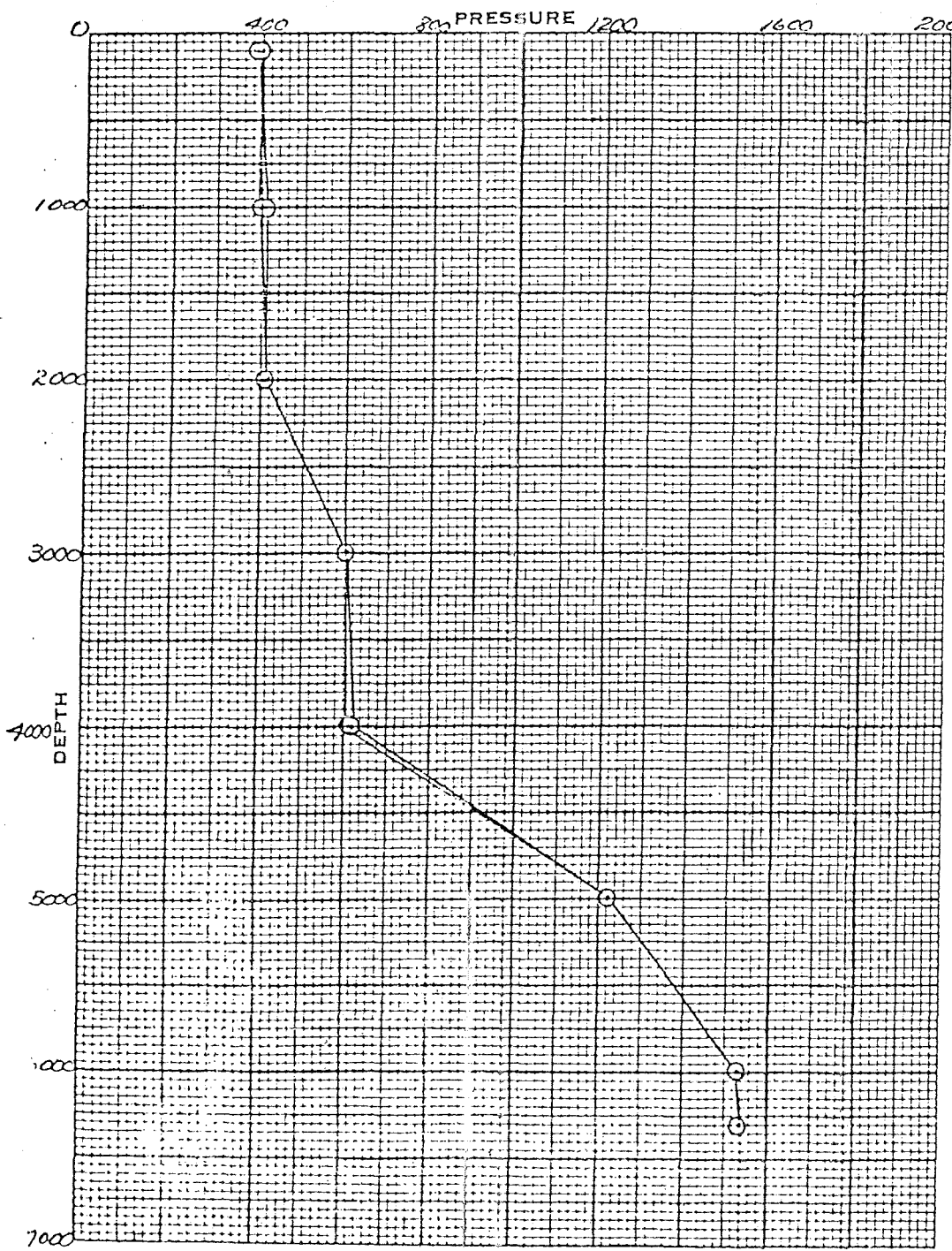
## SUBSURFACE PRESSURE SURVEY

B4-S51-PP

OWNER Union Oil Co. FIELD Valle Grande WELL NAME BACA #4  
 CASING \_\_\_\_\_ ELEV 9318' DATE 2/26/76  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT GL +7'  
 \_\_\_\_\_ DEPTH 6.331'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT \_\_\_\_\_ PSIC  
 \_\_\_\_\_ SERIAL NO 7198 & 9235

PURPOSE Pressure gauge check MAX TEMP \_\_\_\_\_ °F @ \_\_\_\_\_  
 REMARKS: \_\_\_\_\_



STABILIZATION PERIOD \_\_\_\_\_

PRESSURES	GAUGE	BONS
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
	#7198	#9235
100	390	394
1000	410	402
2000	412	416
3000	602	602
4000	923	915
5000	1224	1223
6000	1528	1531
6331	1635	1636
6331	1627	1639
6331	1633	1634

BY: \_\_\_\_\_

76

UNION

DEE PYLE

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B#4-550-P/T

OWNER UNION OIL CO. OF CALIF FIELD VALLE GRANDE

WELL NAME BACA #4

CASING 13 1/2" @ 1441'; 9 5/8" @ 3152' ELEV. 9315'

DATE: 2/13/76

LINER DESCRIPTION: 7" @ 3031'

ZERO POINT 647'

DEPTH 6331

TUBING DETAIL:

PURPOSE

REMARKS:

ELEMENT: 0-4000 PSIG. 7185 CLOCK 13374-L 15

ELEMENT - 80°F-686°F SERIAL NO. 70055 CLOCK 12089-L 15 TURN STABILIZATION PERIOD

ENGAGE STYLUS P-1245 T 1241 DISENGAGE STYLUS P-1019 T 1524

WELL HEAD 379'

PICKUP @ 6331' TIME ON BOTTOM 1402, 1432 MAX. °F 590

WELL STATUS SHUT IN

SHUT IN: 11/13/73

ON PRODUCTION:

RATE

PSIG.

TEMP.

TIME	DEPTH	DEFL.	P-T	GRAD.	CORR.	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
13	00	.172	3895		7.011	1334	100	.065	103								
1330	600	.710	1533		-	1330	6000	1.615	586								
1345	6000	.715	1543		-	1345	6000	1.615	586								
1400	6000	.712	1537		-	1400	6000	1.615	586								
1402	6331	.755	1627		-	1402	6331	1.630	590								
1417	6331	.760	1637		-	1417	6331	1.630	590								
1432	6331	.757	1631		-	1432	6331	1.630	590								

COMMENTS:

BY: J.L.L.

76

UNION

GEOHERMAL DIVISION

SUBSURFACE SURVEY  
Field Work Sheet

DEPT FILE

NOV 5 1976

B4-549-PT

OWNER UNION OIL OF CAL FIELD VALLE Grande WELL NAME BACH # 4  
 CASING 1 3/8" @ 1441' 9/8" @ 3182' ELEV. 9318' DATE: 2-3-76  
 LINER DESCRIPTION: 7" @ 3031' ZERO POINT DEPTH 6331'

TUBING DETAIL:

PURPOSE Interference Test

REMARKS:

ELEMENT 87°F - 686°F SN 10055 12 hr 15T  
 ELEMENT 0-4000 85°F SERIAL NO. 7198 CLOCK 12 hr 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P 1008 T 1050 DISENGAGE STYLUS P1552 T1553  
 WELL HEAD 382  
 PICKUP @ 6331 TIME ON BOTTOM 1306 - 1406 MAX. °F 589.6  
 WELL STATUS Shut in  
 SHUT IN: ~~2-3-76~~ 11-13-73 ON PRODUCTION:  
 RATE

Pressure

Temperature

TIME	DEPTH	DEFL.	P-T	GRAD.	C.°F	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
114	100	.172	389.5		-0.11	1146	100	.051	48.2								
11	1000	.184	416.5		0	1152	1000	.522	253.0								
1205	2000	.185	418.8		0	1205	2000	1.152	451.4								
1218	3000	.270	604.3		0	1218	3000	1.281	484.9								
1237	4000	.418	919.1		0	1237	4000	1.389	521.8								
1250	5000	.562	1222.2		0	1250	5000	1.553	568.6								
1304	6000	.711	1534.6		0	1304	6000	1.613	585.6								
1306	6331	.709	1530.4		0	1306	6331	1.628	589.6								
1336	6331	.757	1631.0		0	1336	6331	1.628	589.6								
1406	6331	.755	1626.5		0	1406	6331	1.628	589.6								

COMMENTS:

BY:

*[Signature]*



76

UNION 76

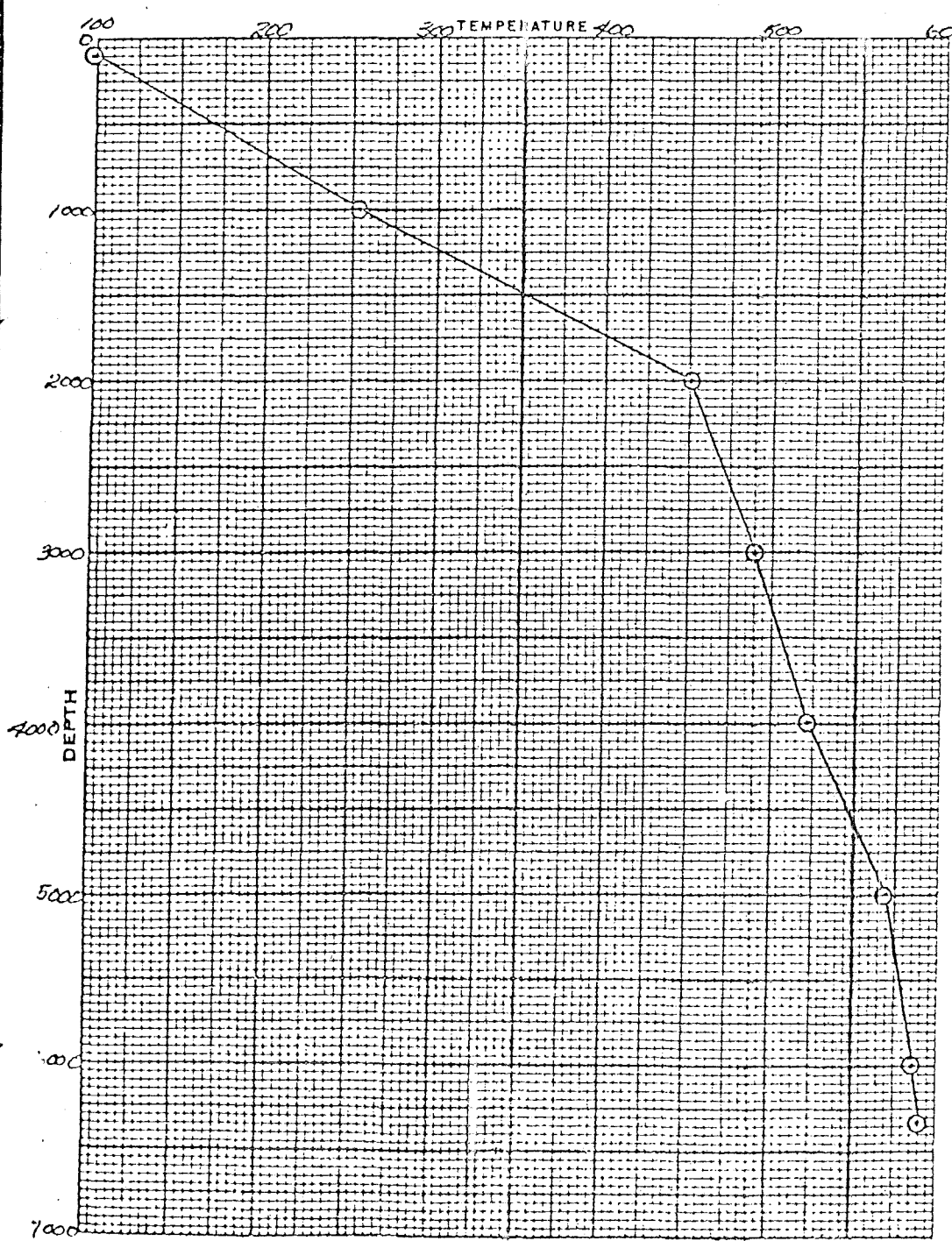
GEO THERMAL DIVISION  
SUBSURFACE TEMPERATURE SURVEY

B4-S49-PT

OWNER \_\_\_\_\_ FIELD \_\_\_\_\_ WELL NAME SACA #4  
 CASING \_\_\_\_\_ ELEV \_\_\_\_\_ DATE 2/3/76  
 LINEAR DESCRIPTION: \_\_\_\_\_ ZERO POINT \_\_\_\_\_  
 \_\_\_\_\_ DEPTH 6331'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT \_\_\_\_\_ FAH  
 \_\_\_\_\_ SERIAL NO \_\_\_\_\_

PURPOSE \_\_\_\_\_ MAX TEMP 589.6 °F @ 6331'  
 REMARKS: \_\_\_\_\_



STABILIZATION PERIOD \_\_\_\_\_

PRESSURE	GAUGE	BOMB
CASING PSI		

DEPTH	TEMP.	DEPTH	TEMP.
100	98.2		
1000	253.0		
2000	451.4		
3000	489.9		
4000	521.8		
5000	568.6		
6000	585.6		
6331	589.6		

BY: \_\_\_\_\_

76

1976

# GEOHERMAL DIVISION

## SUBSURFACE PRESSURE SURVEY

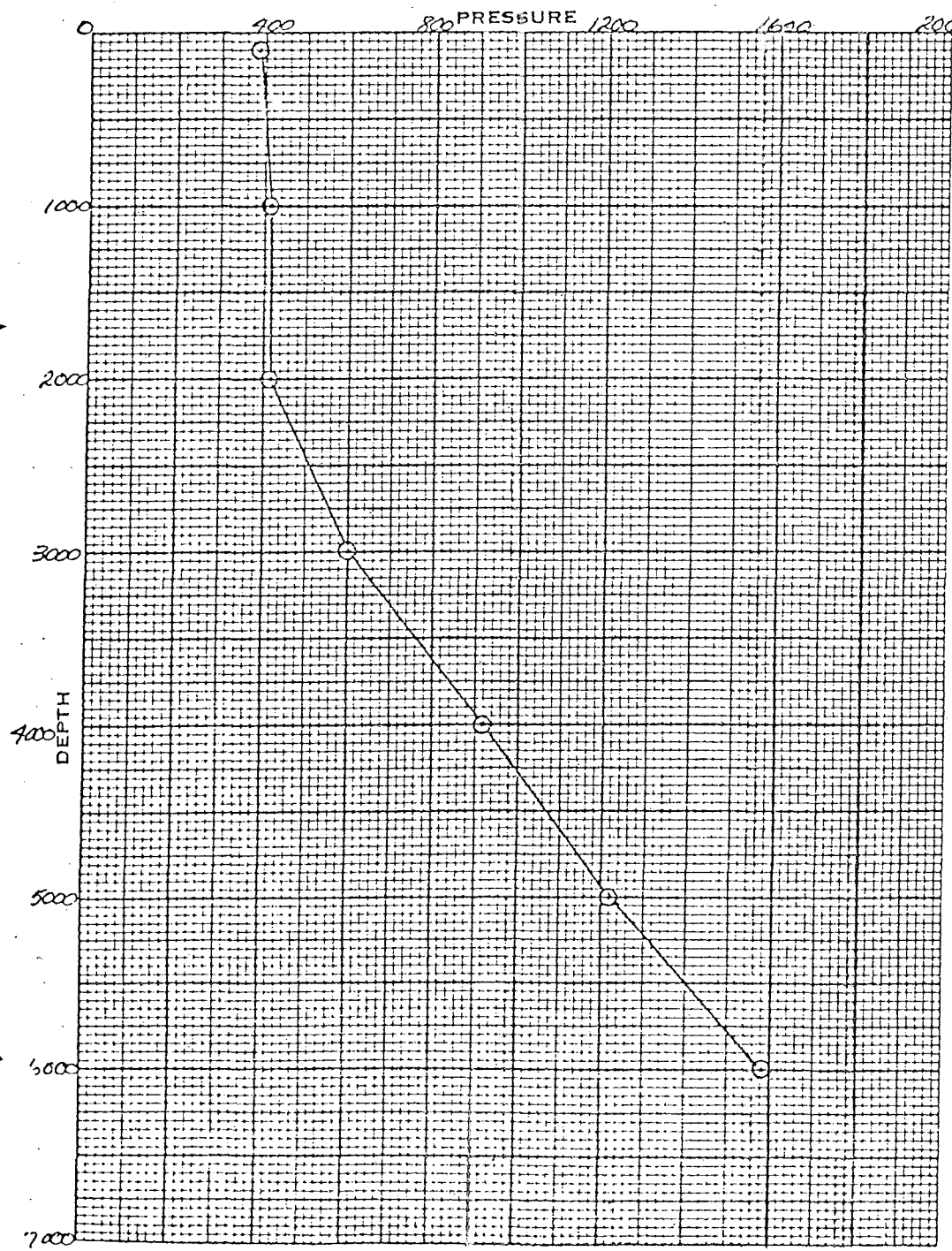
BA-S49-PT

OWNER \_\_\_\_\_ FIELD \_\_\_\_\_ WELL NAME BACH #4  
 CASING \_\_\_\_\_ ELEV \_\_\_\_\_ DATE 2/3/76  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT \_\_\_\_\_  
 \_\_\_\_\_ DEPTH 6331'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT \_\_\_\_\_ PSIC  
 \_\_\_\_\_ SERIAL NO \_\_\_\_\_

PURPOSE \_\_\_\_\_ MAX TEMP 589.6 °F @ 6331'

REMARKS: \_\_\_\_\_



STABILIZATION PERIOD \_\_\_\_\_

PRESSURES	GAUGE	BOMB
CASING PSI		

DEPTH	PRESSURE	GRADIENT
100	389.5	
1000	416.5	
2000	418.8	
3000	604.3	
4000	919.1	
5000	1222.2	
6000	1584.6	
6331	1530.4	
6331	1631.0	
6331	1626.8	

BY: \_\_\_\_\_

76

UNION

DEL PYLE  
JAN 20 1976

GEO THERMAL DIVISION

SUBSURFACE SURVEY  
Field Work Sheet

B744-SAL-717

OWNER UNION OIL CO. OF CALIF. FIELD VALLE GRANDE WELL NAME BAGA 714  
CASING 1.3 3/8" @ 1441', 9 5/8" @ 3183' ELEV. 9318' DATE: 12/22/75  
LINER DESCRIPTION: 7" @ 3031' - T.D. ZERO POINT 6LT 7'  
DEPTH 6331'

TUBING DETAIL:

PURPOSE

REMARKS:

0-4000 PSIG - 7198 12117-12889 L15  
ELEMENT 82 OF 686 SERIAL NO. 10655 CLOCK 133756 15 TURN STABILIZATION PERIOD  
ENGAGE STYLUS P-1245 T-1630 DISENGAGE STYLUS P-1250 T-1630  
WELL HEAD 391- ANNULUS 351  
PICKUP @ 6331' TIME ON BOTTOM 1450-1550 MAX. F 588.5  
WELL STATUS SHUT IN.  
SHUT IN: 11/13/73 ON PRODUCTION:  
RATE

PSIG

TEMP

TIME	DEPTH	DEFL.	P-T	GRAD.	COR.	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1333	100	.172	390	-	-011	1333	100	.145	96								
1344	1000	.183	414	.027	-005	1344	1000	.576	251								
1356	2060	.139	428	.014	-003	1356	2000	1.156	153								
1408	3000	.272	409	.181	-002	1408	3000	1.285	191								
1421	4000	.418	719	.310	-	1421	4000	1.390	522								
1433	5000	.560	1218	.299	-	1433	5000	1.551	568								
1447	6000	.718	1528	.310	-	1447	6000	1.610	585								
1450	6331	.757	1631	.311	-	1450	6331	1.624	588.5								
1520	6331	.755	1627	-	-	1520	6331	1.624	588.5								
1550	6331	.753	1621	-	-	1550	6331	1.624	588.5								

COMMENTS:

BY: SM

UNION

76

# GEOHERMAL DIVISION

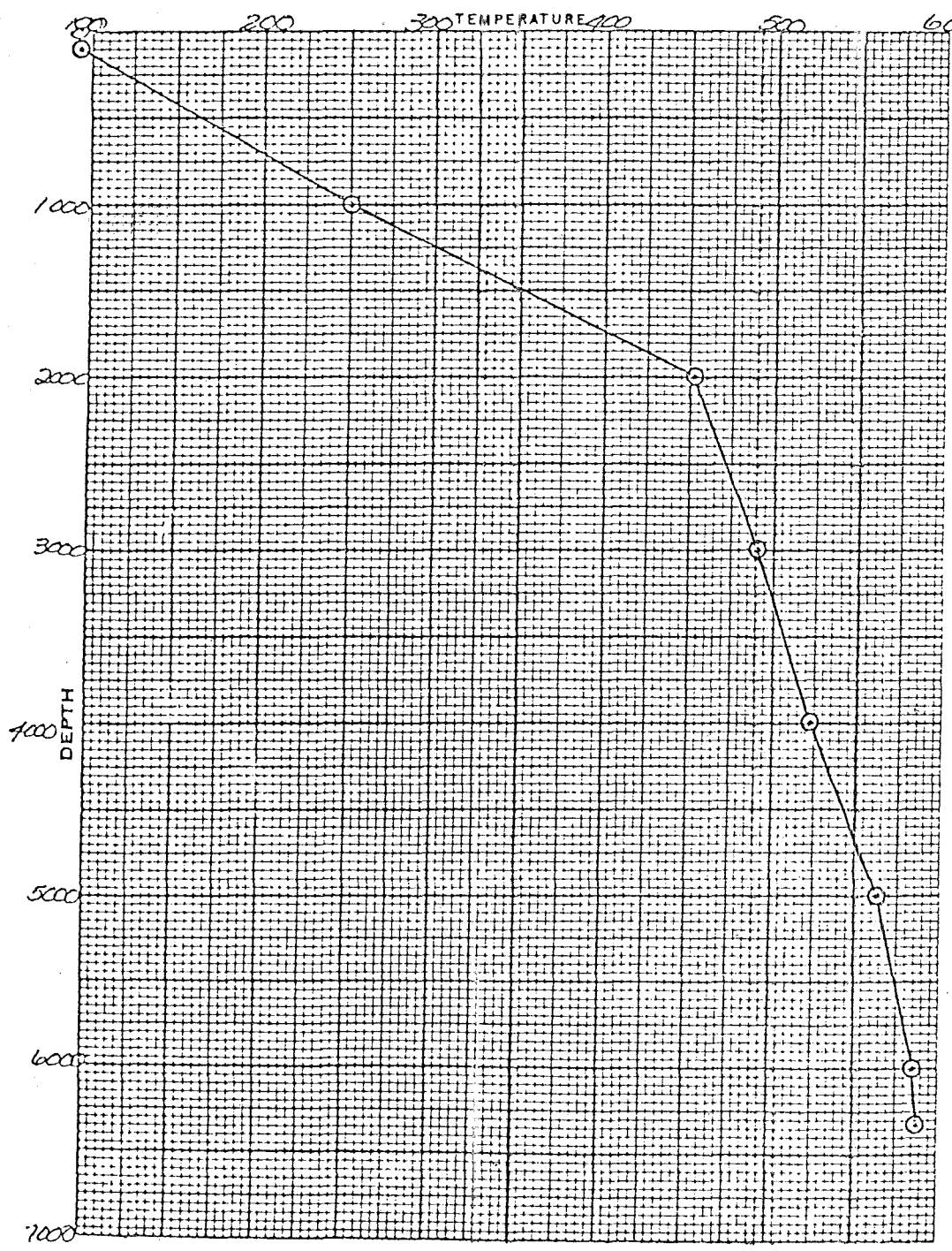
## SUBSURFACE TEMPERATURE SURVEY

84-546-PT

OWNER Union Oil FIELD Valle Grande WELL NAME BACA #4  
 CASING \_\_\_\_\_ ELEV 9318' DATE 12/20/75  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT G.L. + 7'  
 \_\_\_\_\_ DEPTH 6331'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 82°-686° FAH:  
 \_\_\_\_\_ SERIAL NO 10055

PURPOSE \_\_\_\_\_ MAX TEMP 588.5°F @ 6331'  
 REMARKS: \_\_\_\_\_



STABILIZATION PERIOD \_\_\_\_\_

PRESSURES	GAUGE	BOYS
CASING PSI		

DEPTH	TEMP.	DEPTH	TEMP.
100	96		
1000	251		
2000	453		
3000	491		
4000	522		
5000	568		
6000	585		
6331	588.5		

BY: \_\_\_\_\_

# GEO THERMAL DIVISION

## SUBSURFACE PRESSURE SURVEY

B4-546-PT

# 76

OWNER Union Oil Co. FIELD Valle Grande WELL NAME BACA #4

CASING \_\_\_\_\_ ELEV \_\_\_\_\_ DATE \_\_\_\_\_

LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT \_\_\_\_\_  
DEPTH \_\_\_\_\_

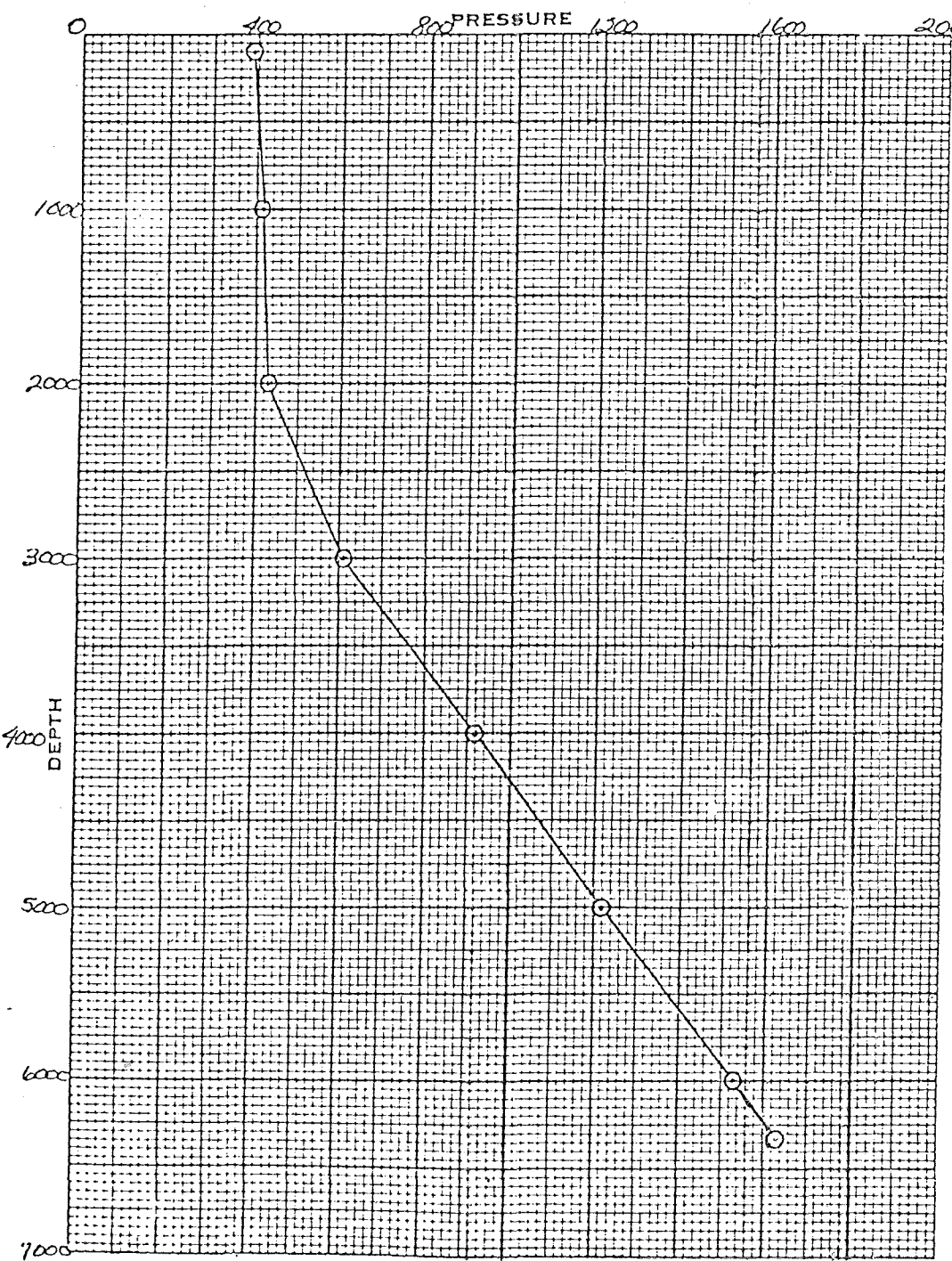
HOLE DESCRIPTION: \_\_\_\_\_

INSTRUMENT 0 - 4000 PSI

SERIAL NO 7198

PURPOSE \_\_\_\_\_ MAX TEMP 588.5°F @ 6331'

REMARKS: \_\_\_\_\_



STABILIZATION PERIOD \_\_\_\_\_

PRESSURES.	GAUGE	BOMB
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
100	390	
1000	414	
2000	428	
3000	609	
4000	919	
5000	1218	
6000	1528	
6331	1631	
6331	1627	
6331	1621	

BY: \_\_\_\_\_

76

UNION

GEOHERMAL DIVISION JAN 20 1976

DEL PYLE

SUBSURFACE SURVEY  
Field Work Sheet

BA-547-PT

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WEL. NAME BACA #4  
 CASING 15 3/8" AT 1491; 9 5/8" AT 3182' ELEV. 9318' DAT: 1/6/76  
 LINER DESCRIPTION: 7" 3031' - TD ZERO POIN 66 + 7  
 DEPTH 6331'

TUBING DETAIL:

PURPOSE INTERFERENCE TEST

REMARKS:  
 ELEMENT- 0-4000 PSIG SN 7198 CLOCK- 12 hr 15 TURN  
 ELEMENT 82-686°F SERIAL NO. 10055 CLOCK 12 hr 15 TURN STABILIZA ON PERIOD  
 ENGAGE STYLUS P-1007 T 1003 DISENGAGE STYLUS P 1425 T 1426  
 WELL HEAD 389 PSIG 0-900 PSIG  
 PICKUP @ 6331 TIME ON BOTTOM 1208-1318 MAX. °F 588.5  
 WELL STATUS  
 SHUT IN: 11/13/73 ON PRODUCTION:  
 RATE

PRESSURE

TEMPERATURE

PRESSURE					TEMPERATURE												
TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1057	100	.175	396.2		-0.011	1057	100	.043	96.6								
1107	6000	.713	1533.8			1107	6000	1.611	585.0								
1137	6000	.708	1528.3			1137	6000	1.611	585.0								
1207	6000	.710	1532.5			1207	6000	1.611	585.0								
1208	6331	.761	1639.1			1208	6331	1.624	588.5								
1238	6331	.757	1631.0			1238	6331	1.624	588.5								
1318	6331	.759	1635.2			1318	6331	1.624	588.5								

COMMENTS:

BY: JIM L. B. OR CD

76

UNION

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B-7 543

OWNER: UNION OIL COMPANY FIELD VALLE GRANDE WELL: THE SHIP #4  
 CASING: 13 3/8" AT 1001; 9 5/8" 3152. ELEV. 9315' DATE: 11/20/73  
 LINER DESCRIPTION: 7" AT 3031' ZERO POINT: 6.77  
 DEPTH: 6.71

TUBING DETAIL:

PURPOSE: INTERFERENCIE TEST

REMARKS:

EQUIPMENT - 0-2000 PSI SN 7198 CLOCK - 12 hr 15T  
 ELEMENT 32" - 6.46'f SERIAL NO. 10055 CLOCK 12 hr 15T TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-1001 T-1004 DISENGAGE STYLUS P-1406 T-1406  
 WELL HEAD 395 PSIG 0-400 T/L  
 PICKUP @ 6.331 TIME ON BOTTOM 1207-1327 MAX. °F 588.7  
 WELL STATUS  
 SHUT IN: 11/15/73 ON PRODUCTION:  
 RATE

PRESSURE

TEMPERATURE

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1054	170	1.77	574.0		-0.11	1054	170	1.645	96.2								
1106	6000	.713	1525.3		0	1106	6000	1.611	535.0								
1156	6000	.711	1524.6		0	1156	6000	1.611	535.0								
1206	6000	.710	1522.5		0	1206	6000	1.611	535.0								
1207	6331	.760	1657.3		0	1207	6331	1.625	588.7								
1237	6331	.755	1653.1		0	1237	6331	1.625	588.7								
1327	6331	.757	1651.0		0	1327	6331	1.625	588.7								

COMMENTS: CALIBRATION CHECK WITH DWI AT 70°F

DWI def = .925  
 cor = +.011  
 COR def = .956 COR PSI = 2006.3

BY: JB CD

76



DEL' PYLE

GEOHERMAL DIVISION

JAN 6 1975

SUBSURFACE SURVEY

Field Work Sheet

B4-545 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #4  
 CASING 1 3/8" AT 1441' 9 5/8" AT 5182 ELEV. 9318' DATE: 12/17/75  
 LINER DESCRIPTION: 7" 3031 - TD ZERO POINT 6477'  
 DEPTH 6331'

TUBING DETAIL:

PURPOSE INTER FERENCE SURVEY

REMARKS:

ELEMENT - 0-4000 PSI SN 7198 CLOCK - 12 hr 15 TURN  
 ELEMENT 82°-686°F SERIAL NO. 10055 CLOCK 12 hr 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-1002 T 1007 DISENGAGE STYLUS P-1454 T 1454  
 WELL HEAD 393 PSIG ANN - 582 PSIG  
 PICKUP @ 6331 TIME ON BOTTOM 1258-1358 MAX. T 588.5  
 WELL STATUS 11/13/73 WELL SHUT IN  
 SHUT IN: ON PRODUCTION:  
 RATE

PRESSURE

TEMPERATURE

PRESSURE					TEMPERATURE													
TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	IL	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	
114	100	.173	341.7		7.001	1144	100	96.2										
115	6000	.713	1558.8		0	1156	6000	584.4										
1226	6000	.710	1532.5		0	1226	6000	584.4										
1256	6000	.712	1536.7		0	1256	6000	584.4										
1258	6331	.760	1657.3		0	1258	6331	588.5										
1328	6331	.757	1631.0		0	1328	6331	588.5										
1358	6331	.759	1635.2		0	1358	6331	588.5										

COMMENTS:

BY: JB CP CD



76



DEC PYLE

DEC 29 1975

GEOHERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

BAA-S44-P/T

OWNER UNION OIL CO. OF CALIF FIELD VALLE GRANDE WELL NAME BAA #44  
 CASING 1 3/8" @ 11'11"; 9/8" @ 3182' ELEV. 9318'  
 LINER DESCRIPTION: 7" @ 3031' TO 6331' DATE: 12-13-75  
 ZERO POINT 64+7' DEPTH 6331'

TUBING DETAIL:

PURPOSE

REMARKS:

ELEMENT - P-O-HOOD 7198 12HR-14091-4 15  
 ELEMENT - T-820E-6860E SERIAL NO. 14055 CLOCK 12HR 72889-4 RETURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-1131 T-1134 DISENGAGE STYLUS P-1435 T-1435  
 WELL HEAD 396 PSIG ANNULUS - 386 PSIG -  
 PICKUP @ 6331' TIME ON BOTTOM 1243-1313 HRS MAX. 'F 588.5°F  
 WELL STATUS SHUT IN  
 SHUT IN: 11/13/73 ON PRODUCTION:  
 RATE

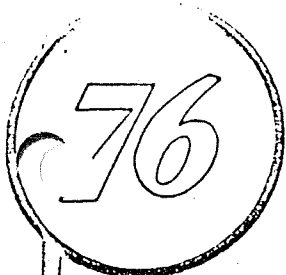
PRESSURE

TEMPERATURE

TIME	PRESSURE					TEMPERATURE					
	DEPTH	DEFL.	P-T	GRAD.	CO/SR	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
5-1	100	176	398		-011	1155	100	176	398		
1215	600	706	1594		-	1212	600	710	588.5		
1225	660	708	1538		-	1227	600	710	588.5		
1235	660	711	1535		-	1242	660	710	588.5		
1243	6331	755	1627		-	1243	6331	755	588.5		
1253	6331	757	1635		-	1258	6331	755	588.5		
1313	6331	757	1631		-	1313	6331	755	588.5		

COMMENTS:

BY:



DEL PYLE  
JAN 6 1976

# GEO THERMAL DIVISION

## SUBSURFACE SURVEY Field Work Sheet

B4 542 PIT

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #4  
 CASING 13 3/8 AT 1441'; 9 5/8 3182' ELEV. 9318' DATE: 11/25/75  
 LINER DESCRIPTION: 7" AT 3031' ZERO POINT GL + 7'  
 DEPTH 6331

TUBING DETAIL:

PURPOSE

REMARKS:

ELEMENT - 0-4000 PSI SN 7198 CLOCK-12hr 15TURN  
 ELEMENT 82°-686°F SERIAL NO. 10055 CLOCK 12 hr 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-0954; T 0950 DISENGAGE STYLUS P-1340; T 1340  
 WELL HEAD 402 PSIG ANNULUS 392 PSIG 6-401716  
 PICKUP @ 6331 TIME ON BOTTOM 1150-1250 MAX. # 587.9  
 WELL STATUS  
 SHUT IN: 11/13/73 ON PRODUCTION:  
 RATE

PRESSURE

TEMPERATURE

TIME	PRESSURE					TEMPERATURE				
	DEPTH	DEFL.	P-T	GRAD.	ID	DEPTH	DEFL.	P-T	GRAD.	ID
100	1178	103.0			7011	100	100	1059	100.7	
1048	6000	1710	1532.5		0	6000	6000	1.611	584.9	
1118	6000	1713	1538.8		0	6000	6000	1.611	584.9	
1148	6000	1710	1532.5		0	6000	6000	1.611	584.9	
1150	6331	1756	1628.5		0	6331	6331	1.622	587.9	
1220	6331	1759	1635.2		0	6331	6331	1.622	587.9	
1250	6331	1756	1628.5		0	6331	6331	1.622	587.9	

COMMENTS:

BY: JB RB CD

76

UNION

GEO THERMAL DIVISION

DEL PYLE

DEC 15 1975

SUBSURFACE SURVEY

Field Work Sheet

BAF-513-P/T

OWNER UNION OIL CO. OF CALIF FIELD VALLE GRANDE WELL NAME DANA #4  
 CASING 13 3/8" 1441' 9 5/8" 2318' ELEV. 9318' DATE: 12-1-75  
 LINER DESCRIPTION: 7" @ 3031' ZERO POINT 6L+7'  
 DEPTH 6331'

TUBING DETAIL:

PURPOSE INTERFERENCE TEST

REMARKS:

ELEMENT - P-0-11007516 7198 CLOCK-1212-12891-L 15  
 ELEMENT - T-82°F-686°F SERIAL NO. 10055 CLOCK 1242 14091-L TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-1003 T-1002 DISENGAGE STYLUS P-1425 T-1426  
 WELL HEAD 410 PSI  
 PICKUP 6331' TIME ON BOTTOM 1239-1339 MAX. °F 588.5  
 WELL STATUS SHUT IN.  
 SHUT IN: 11/13/73. ON PRODUCTION:  
 RATE

PRESSURE

TEMPERATURE

TIME	DEPTH	DEFL.	P-T	GRAD.	COEF	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
11	100	.180	408		-0.11	1125	100	.061	102								
1127	1600	.182	412		-0.05	1127	1600	.521	253								
1133	2600	.186	491		-0.03	1133	2600	1.159	454								
1150	3000	.273	611		-0.02	1150	3000	1.286	491								
1202	4000	.416	915		-	1202	4000	1.392	523								
1214	5000	.561	1220		-	1214	5000	1.551	568								
1227	6000	.707	1526		-	1227	6000	1.610	585								
1239	6331	.755	1627		-	1239	6331	1.627	588.5								
1309	6331	.760	1637		-	1309	6331	1.627	588.5								
1339	6331	.755	1627		-	1339	6331	1.627	588.5								

COMMENTS:

BY: J.M. R.B.

716

# GEO THERMAL DIVISION

## SUBSURFACE PRESSURE SURVEY

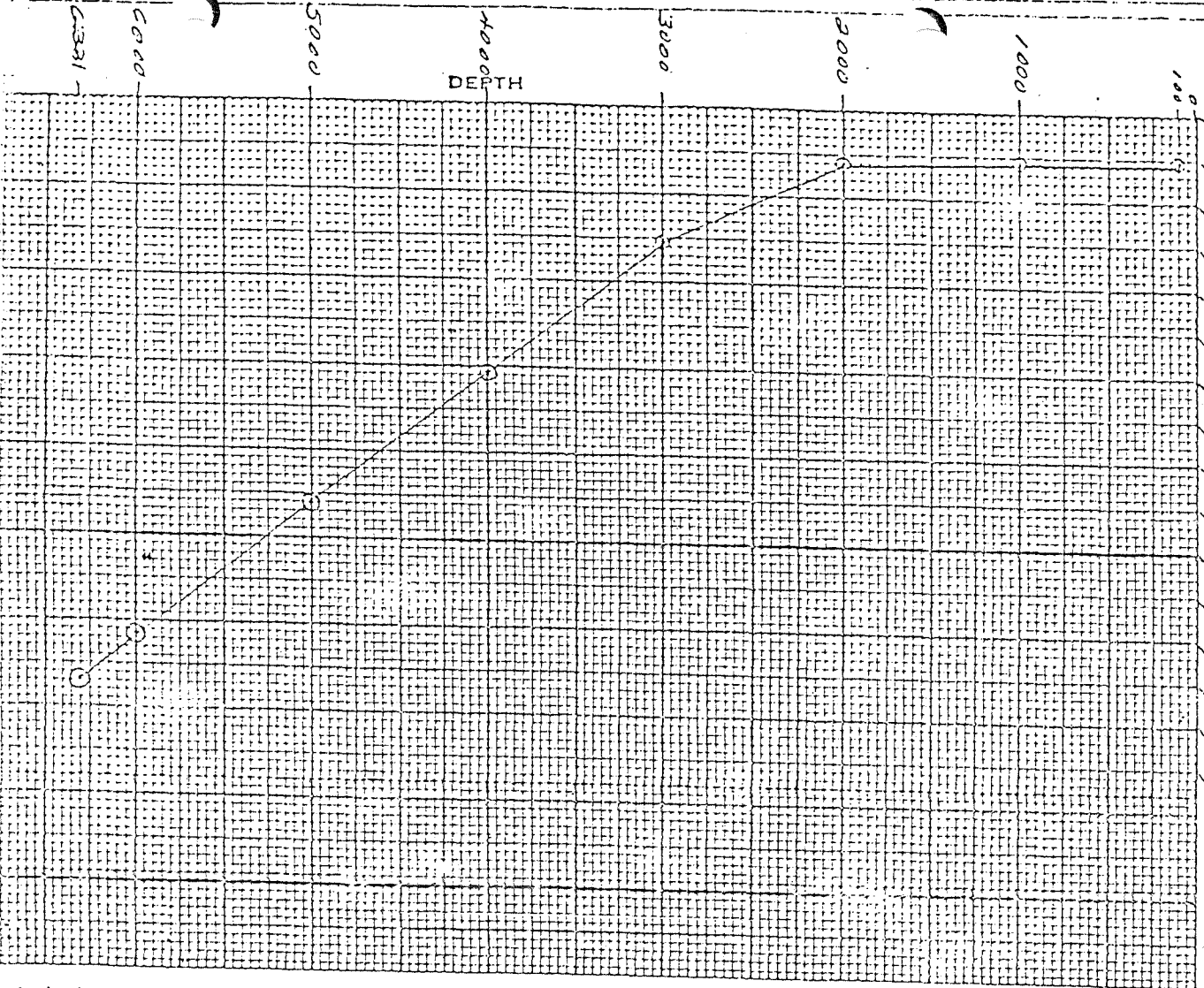
BH-SW3-P/T

OWNER UNION OIL CO OF CALIF WELL NAME WAGE GRANDE  
CASING 13 3/8" O.D. 11', 9 1/2" @ 5152' ELEV. 9318 DATE: 12-1-75  
LINER DESCRIPTION: 7" @ 3231' ZERO POINT GL + 7'  
DEPTH 6331'

HOLE DESCRIPTION: \_\_\_\_\_  
INSTRUMENT 0-4000 PSIC  
SERIAL NO. 7198

PURPOSE: \_\_\_\_\_  
MAX TEMP 588.5 °F @ 6331

REMARKS: \_\_\_\_\_  
STABILIZATION PERIOD \_\_\_\_\_



REGULATED CASING, PSI	GAUGE	BOMB

DEPTH	PRESSURE	GRADIENT
100	498	
1000	472	
2000	431	
3000	611	
4000	915	
5000	1320	
6000	1576	
6331	1517	

6331' MAXIMUM PSIC

# GEO THERMAL DIVISION

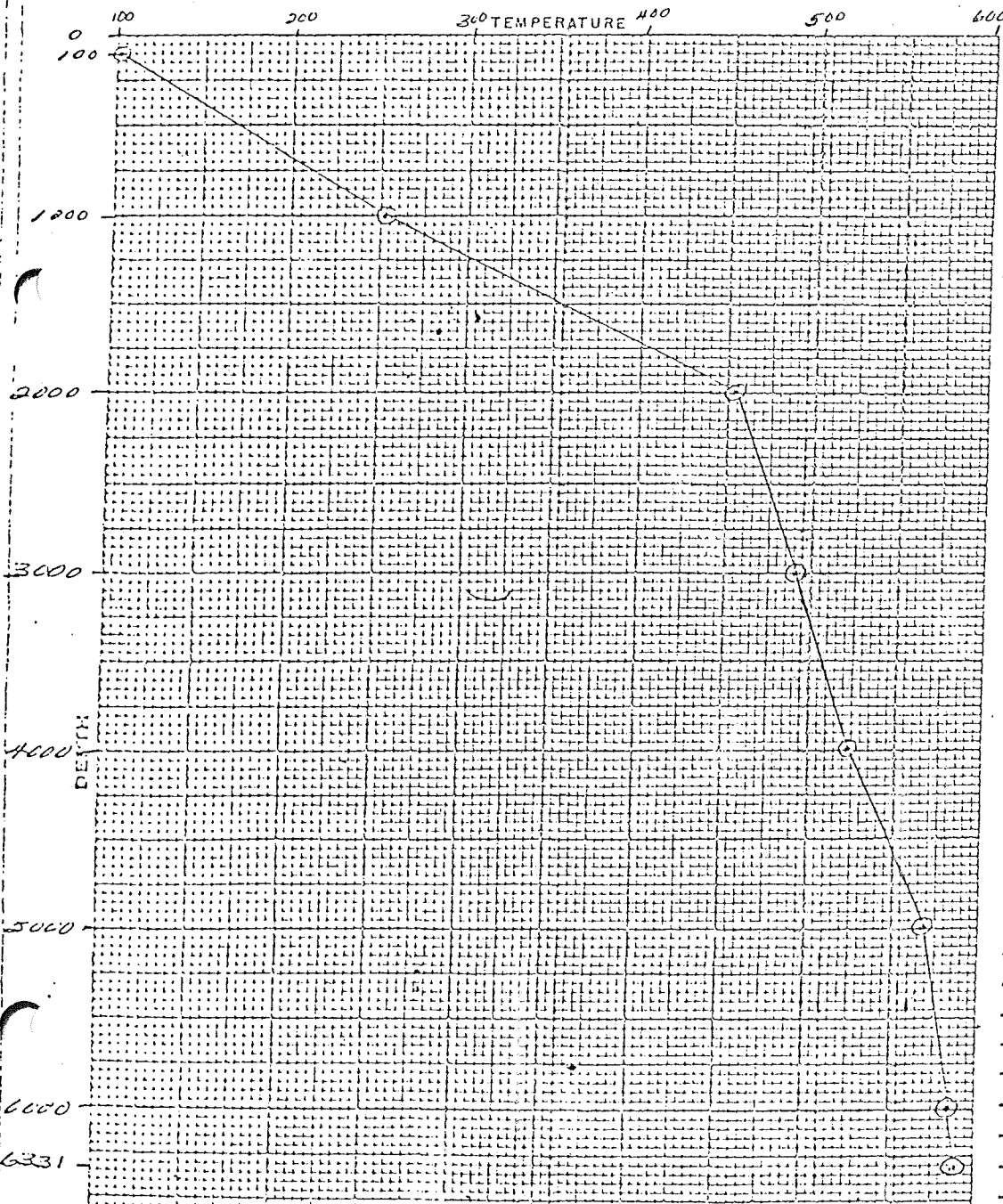
## SUBSURFACE TEMPERATURE SURVEY

516

BH-543-PIT

OWNER UNION OIL CO. OF CALIF. FIELD VALLE GRANDE WELL NAME BACO-H  
 CASING 1 3/8" @ 141', 9 5/8" @ 315.2' ELEV. 9315' DATE: 12-4-75  
 LINER DESCRIPTION: 7" @ 3031' ZERO POINT 647.7'  
 DEPTH 6331'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 89F-686° FAB.  
 SERIAL NO 10055  
 PURPOSE \_\_\_\_\_ MAX TEMP. 588.5 °F @ 6331'  
 REMARKS: \_\_\_\_\_



STABILIZATION PERIOD

DEPTH	TEMP.	DEPTH	TEMP.
100	102		
1000	253		
2000	454		
3000	491		
4000	523		
5000	568		
6000	585		
6331'	588.5		

6331' MAXIMUM TEMPERATURE

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UNION

DEL PYLE  
DEC 8 1975

GEO THERMAL DIVISION

SUBSURFACE SURVEY  
Field Work Sheet

B4 542 PIT

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #4  
 CASING 13 3/8 AT 1441' 9 5/8 AT 3182' ELEV. 9318' DATE: 11/25/75  
 LINER DESCRIPTION: 7" AT 3021' ZERO POINT CL + 7'  
 DEPTH 6331'

TUBING DETAIL:

PURPOSE

REMARKS:

ELEMENT - 0-4002 PSI SN 7198 CLOCK - 12hr 15 TURN  
 ELEMENT 82°-680°F SERIAL NO. 10055 CLOCK 12 hr 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-0954 DIS-ENGAGE STYLUS P-1240 T 1340  
 WELL HEAD 402 PSIG ANNULUS 392 PSIG 6-402 TIG  
 PICKUP @ 6331' TIME ON BOTTOM 1150-1250 MAX. T 587.9

WELL STATUS

SHUT IN: 11/13/73 ON PRODUCTION:

RATE

PRESSURE

TEMPERATURE

PRESSURE					TEMPERATURE						
TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
6	146	1.78	103.0		7011	140	140	1.059	108.7		
1048	6000	1.710	1532.5		0	6000	6000	1.611	584.9		
1118	6000	1.713	1538.8		0	6000	6000	1.611	584.9		
1148	6000	1.710	1532.5		0	6000	6000	1.611	584.9		
1150	6331	1.756	1628.9		0	6331	6331	1.622	587.9		
1220	6331	1.759	1635.2		0	6331	6331	1.622	587.9		
1250	6331	1.756	1628.9		0	6331	6331	1.622	587.9		

COMMENTS:

76

UNION

DEW PYLE

GEO THERMAL DIVISION

DEC 5 1975

SUBSURFACE SURVEY  
Field Work Sheet

B4 541 PIT

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACH #4  
 CASING 1 3/8" AT 1441' 9 5/8" AT 3182' ELEV. 9318' DATE: 11/13/75  
 LINER DESCRIPTION: 7" AT 3031' - TD ZERO POINT GLT 7'  
 DEPTH 6331'

TUBING DETAIL:

PURPOSE INTERFERENCE TEST

REMARKS:

ELEMENT - 0-4000 PSI SN 7198 CLOCK 12 HR 15 TURN  
ELEMENT 82°-686° SERIAL NO. 10055 CLOCK 12 HR 15 TURN STABILIZATION PERIOD  
ENGAGE STYLUS P-1406 T-1001 DISENGAGE STYLUS P-1406 T-1406  
WELL HEAD 400 PSIG  
PICKUP @ 6331' TIME ON BOTTOM 12:10 - 13:10 MAX. IF 587.7  
 WELL STATUS \_\_\_\_\_  
 SHUT IN: 11/13/75 ON PRODUCTION: \_\_\_\_\_  
 RATE \_\_\_\_\_

PRESSURE

TEMPERATURE

TIM	DEPTH	DEFL	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
	110	.177	400.8			1051	110	.061	101.4								
1105	6000	.710	1532.5	*	0	1105	6000	1.206	583.6								
1135	6000	.713	1533.8	*	0	1135	6000	1.606	583.6								
1205	6000	.710	1532.5	*	0	1205	6000	1.606	583.6								
1210	6331	.756	1628.9	*	0	1210	6331	1.621	587.7								
1240	6331	.759	1635.2	*	0	1240	6331	1.621	587.7								
1310	6331	.756	1628.9	*	0	1310	6331	1.621	587.7								

COMMENTS TD + 6000' cycle between highs + lows approx. 12 min.

RY: 11 00

76

UNION

JOHN DEB. IMBERTZ

NOV 18 1975

GEOHERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B#A-540-P/T

OWNER UNION OIL CO. OF CALIF. FIELD VALLE GRANDE WELL NAME BACATH  
 CASING 13 3/8" @ 1441', 9 5/8" @ 3180' ELEV. 9318' DATE: 11/8/75  
 LINER DESCRIPTION: 7" @ 3031' - T.D. ZERO POINT 66+7'  
 DEPTH 633'

TUBING DETAIL:

PURPOSE

REMARKS:

P-O-4000 PSIG. 7198 12/12 12589-2 15  
 ELEMENT T-82°F-686° SERIAL NO. 10055 CLOCK 12/12-1409/12 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-1020, T-1406 DISENGAGE STYLUS P-1022, T-1406.  
 WELL HEAD 406, ANNULUS-397.  
 PICKUP @ 6331' TIME ON BOTTOM 1218-1318 MAX. °F 586°F  
 WELL STATUS SHUT IN.  
 SHUT IN: 11/13/73. ON PRODUCTION:  
 RATE

PSIG.

TEMP

TIME	DEPTH	DEFL.	P-T	GRAD.	CD	RR	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
	100	.190	430		-	.001	1055	100	.061	101								
1107	1000	.193	437		-	.005	1107	1000	.530	256								
1130	2000	.197	446		-	.003	1130	2000	1.159	454								
1133	3000	.281	628		-	.002	1133	3000	1.280	490								
1147	4000	.423	930		-		1147	4000	1.392	523								
1201	5000	.570	1239		-		1201	5000	1.546	567								
1213	6000	.714	1541		-		1213	6000	1.605	583								
1218	6331	.762	1642		-		1218	6331	1.616	586								
1248	6331	.760	1637		-		1248	6331	1.616	586								
1318	6331	.762	1642		-		1318	6331	1.616	586								

COMMENTS:



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UNION

# GEO THERMAL DIVISION

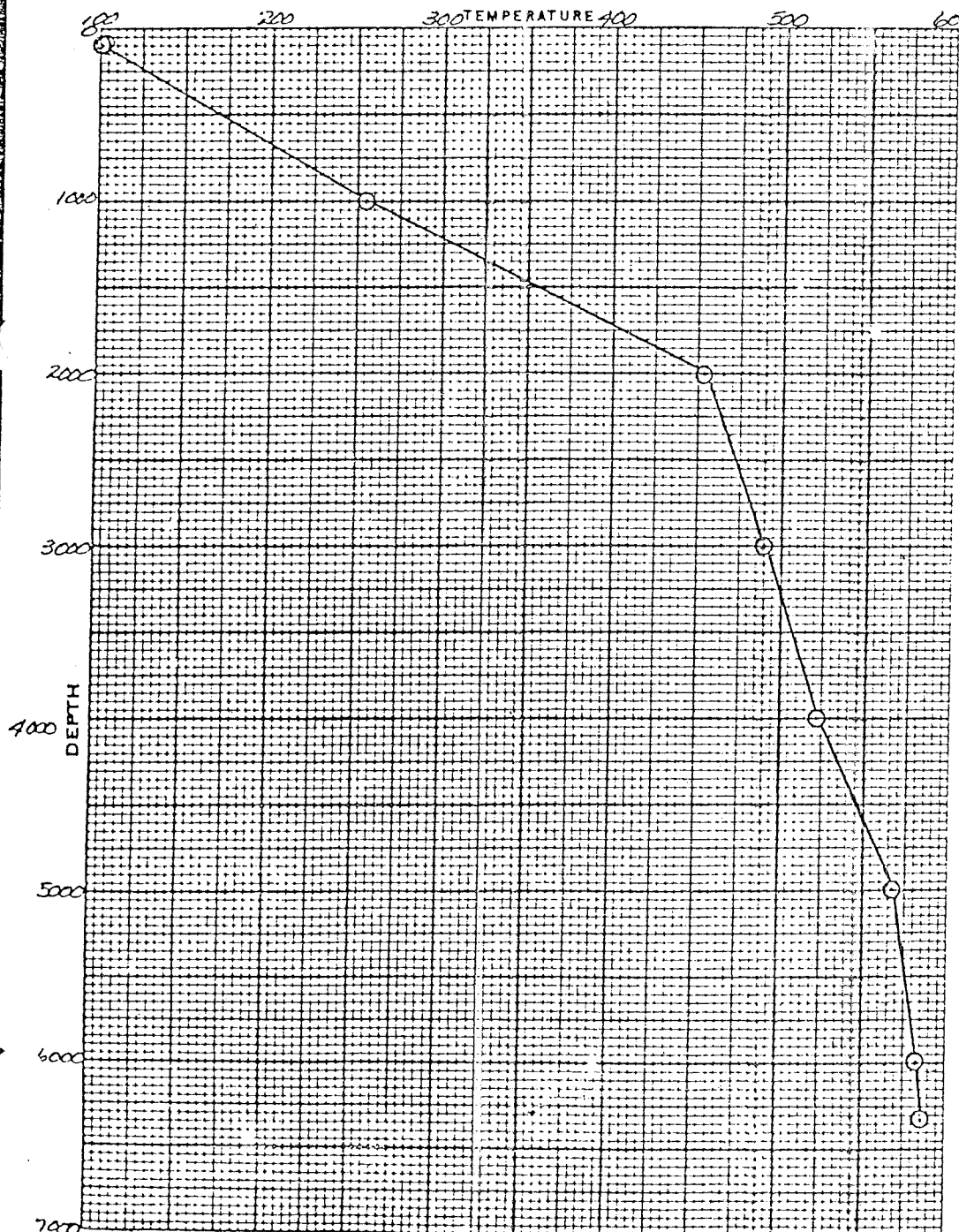
## SUBSURFACE TEMPERATURE SURVEY

OWNER Union Oil Company FIELD Valle Grande WELL NAME Baca #4  
 CASING \_\_\_\_\_ ELEV \_\_\_\_\_ DATE 11/8/75  
 LINER DESCRIPTION \_\_\_\_\_ ZERO POINT G.L. +7'  
 \_\_\_\_\_ DEPTH 6331'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 82 - 686 FAH  
 \_\_\_\_\_ SERIAL NO 10055

PURPOSE \_\_\_\_\_ MAX TEMP 586 °F @ 6331'  
 REMARKS: \_\_\_\_\_

STABILIZATION PERIOD



PRESSURES	Gauge	BOMB	
CASING PSI			
DEPTH	TEMP.	DEPTH	TEMP.
100	101		
1000	256		
2000	454		
3000	490		
4000	523		
5000	567		
6000	583		
6331	586		

BY: \_\_\_\_\_

# 76

## UNION OIL GEO THERMAL DIVISION

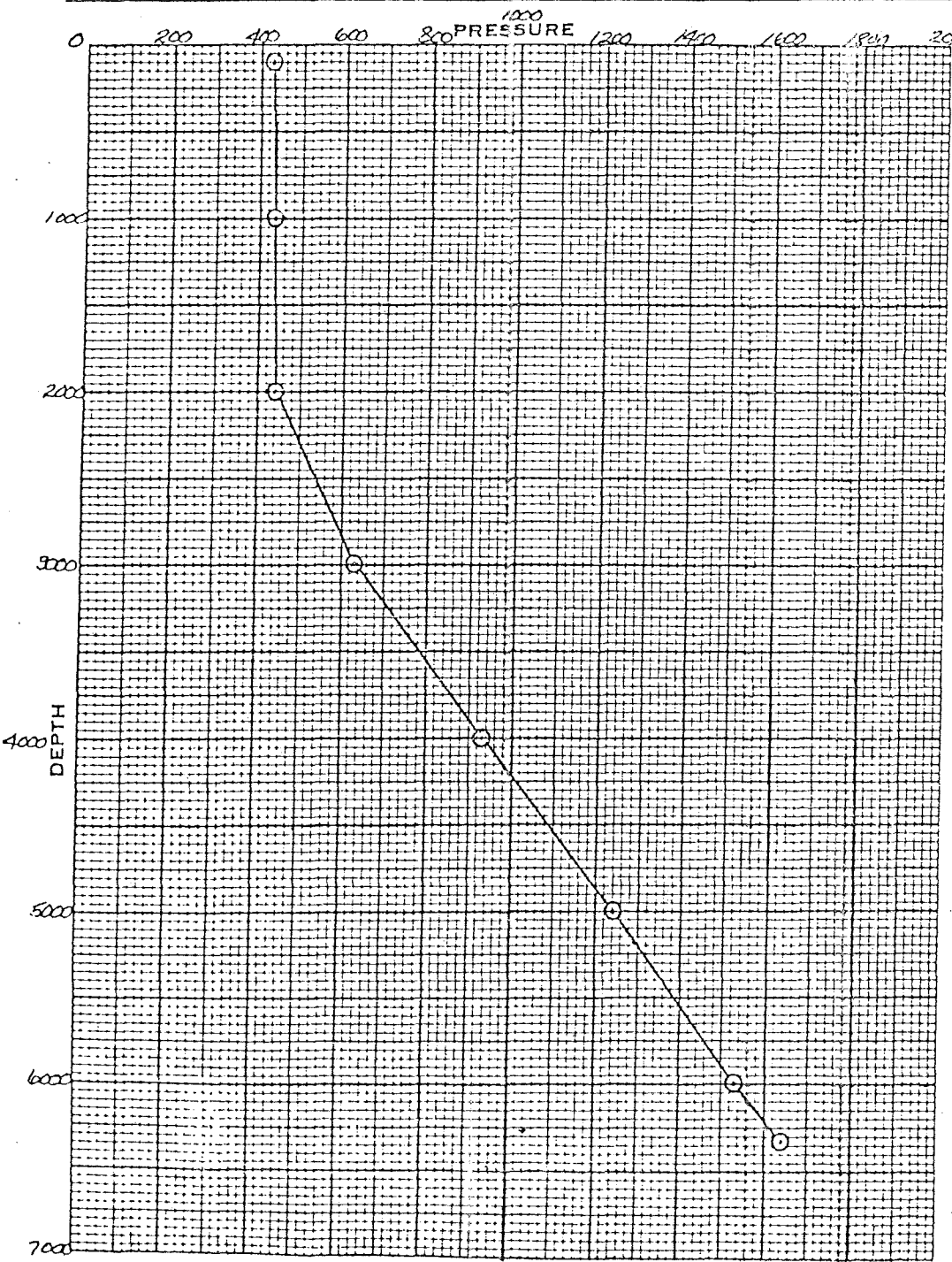
### SUBSURFACE PRESSURE SURVEY

OWNER Union Oil Company FIELD Valle Grande WELL NAME Baca #4  
 CASING \_\_\_\_\_ ELEV \_\_\_\_\_ DATE 11/8/75  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT G.L. +7'  
 \_\_\_\_\_ DEPTH 6331'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 0 - 4000 PSI  
 \_\_\_\_\_ SERIAL NO 7198

PURPOSE \_\_\_\_\_ MAX TEMP 586 °F @ 6331'

REMARKS: \_\_\_\_\_



STABILIZATION PERIOD \_\_\_\_\_

PRESSURES	GAUGE	BOMB
CASING. PSI		

DEPTH	PRESSURE	GRADIENT
100	430	
1000	437	
2000	446	
3000	628	
4000	930	
5000	1239	
6000	1541	
6331	1642	

BY: \_\_\_\_\_



# UNION

## GEO THERMAL DIVISION

### SUBSURFACE SURVEY

#### Field Work Sheet

B#4-539-P17

OWNER UNION OIL CO. OF CALIF FIELD VALLE GRANDE WELL NAME BCCA#4  
 CASING 13 3/8" @ 1441'; 9 5/8" @ 3182' ELEV. 9318' DATE: 11/3/75  
 LINER DESCRIPTION: 7" @ 3031' - T.D. ZERO POINT GL+7'  
 DEPTH 6331'

TUBING DETAIL:

PURPOSE

REMARKS:

ELEMENT - 0-4000 PSIG - 7199 12hr - 12889-L 15  
 ELEMENT - 32° - 686°F SERIAL NO. 10055 CLOCK 12hr 14091-L TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-0905 T-0908 DISENGAGE STYLUS P-1620 T-1620  
 WELL HEAD 405 PSIG -  
 PICKUP @ 6331 TIME ON BOTTOM 110-1210 hrs MAX. °F 589  
 WELL STATUS SHUT IN.  
 SHUT IN: 11/3/73 ON PRODUCTION:

PRESSURE

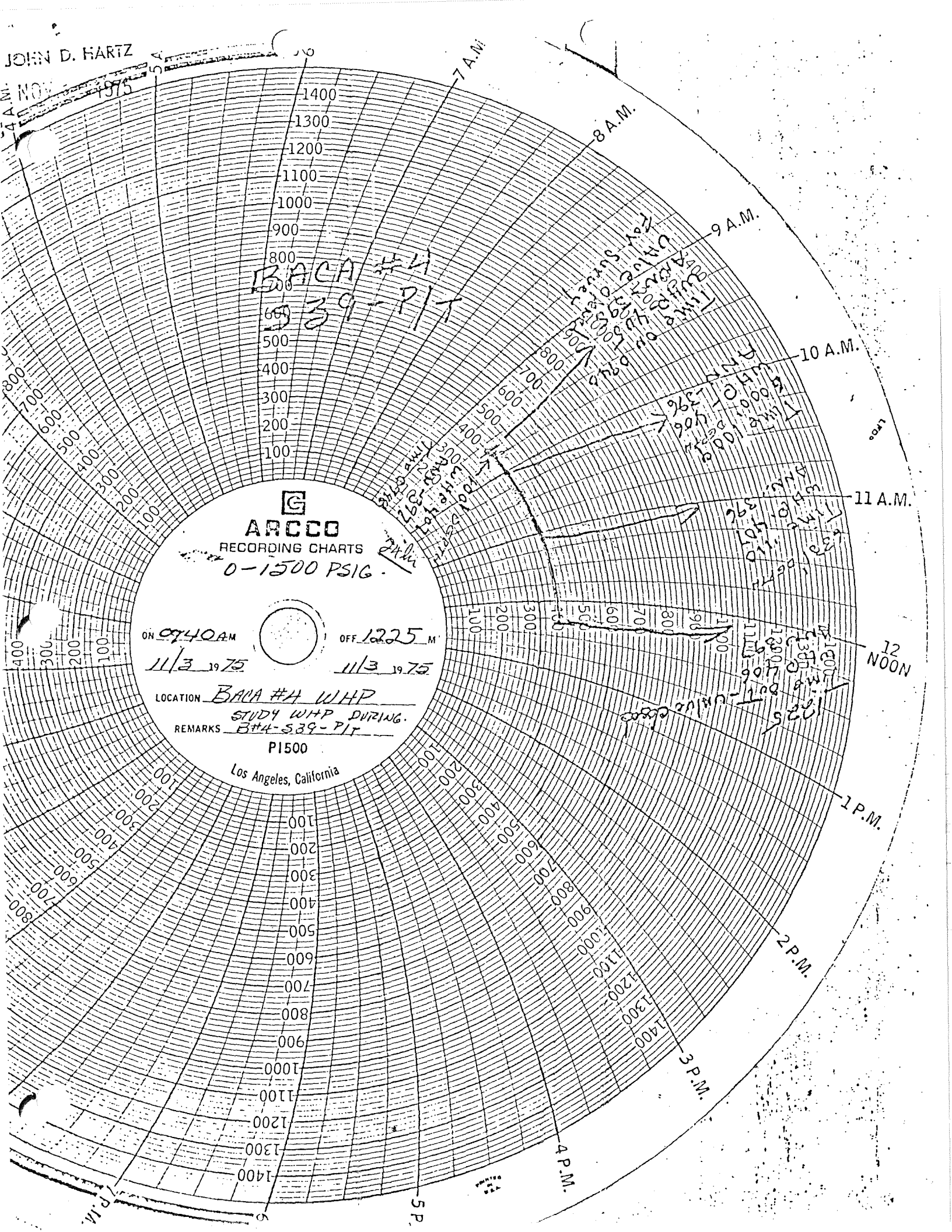
TEMPERATURE

TIME	PRESSURE					TEMPERATURE					TIME	TEMPERATURE				
	DEPTH	DEFL.	P. #	GRAD.	CORR.	DEPTH	DEFL.	P. #	GRAD.	ID		DEPTH	DEFL.	P. #	GRAD.	ID
08	100	.180	408	-	-.011	0957	100	1.065	103							
1009	6000	.707	1526		-	1009	6000	1.610	585							
1039	6000	.712	1537		-	1039	6000	1.610	585							
1109	6000	.710	1533		-	1109	6000	1.610	585							
1110	6331	.758	1633		-	1110	6331	1.625	589							
1140	6331	.760	1637	*	-	1140	6331	1.625	589							
1210	6331	.759	1635		-	1210	6331	1.625	589							
* MAXIMUM PRESS DURING HOUR ON BOTTOM.																

COMMENTS: TIME WHP ANNULIS DEPTH  
 0947 — 405 — 395 — 100  
 1009 — 406 — 396 — 6000  
 1110 — 407 — 397 — 6331  
 BY: \_\_\_\_\_

JOHN D. HARTZ

4 NOV 1975



BACA #4  
339-PIT

Time  
Pressure  
Temperature  
Flow  
Surge  
Vibration  
etc.

**ARCCO**  
RECORDING CHARTS  
0-1500 PSIG

ON 0740 AM OFF 1225 M  
11/3 1975 11/3 1975

LOCATION BACA #4 WHP  
REMARKS STUDY WHP DURING  
B#4-539-PIT  
PI500  
Los Angeles, California

Time  
Pressure  
Temperature  
Flow  
Surge  
Vibration  
etc.

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UNION

DEL PYLE

NOV 7 1975

GEOHERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B4-538 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #4  
 CASING 13 3/4 AT 1441; 9 5/8 AT 3192 ELEV. 9318' DATE: 10/28/75  
 LINER DESCRIPTION 7" AT 3031 - TD ZERO POINT G.L. + 7'  
 DEPTH 6331

TUBING DETAIL:

PURPOSE

REMARKS:

ELEMENT - 0-9000 PSI SN 7198 CLOCK - 12 M 15 TURN  
 ELEMENT 830-6860 SERIAL NO. 10055 CLOCK 12 M 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-0924 T-0928 DISENGAGE STYLUS P-1421 T-1421  
 WELL HEAD 455 PSIG AT 1030 HRS  
 PICKUP @ 6331 TIME ON BOTTOM 1122-1222 MAX. IF 589.6  
 WELL STATUS  
 SHUT IN 11/13/73 ON PRODUCTION:  
 RATE

PRESSURE					PRESSURE					TEMPERATURE							
TIME	DEPTH	DEFL.	P-F	GRAD.	ID	TIME	DEPTH	DEFL.	P-F	GRAD.	ID	TIME	DEPTH	DEFL.	B-T	GRAD.	ID
1	100	.206	466		T.012	1202	6331	.762	1642			1010	100	.065	102.0		
1000	6000	.703	1518			1204	6331	.760	1637			1020	6000	1.614	585.8		
22	6000	.705	1522			1212	6331	.766	1650			1050	6000	1.614	585.8		
24	6000	.707	1526			1215	6331	.760	1637			1120	6000	1.614	585.8		
26	6000	.712	1537			1223	6331	.765	1648			1122	6331	1.623	589.6		
28	6000	.716	1545			1231	6000	.710	1553			1152	6331	1.622	589.6		
30	6000	.710	1533			1242	5000	.570	1239			1223	6331	1.628	589.6		
40	6000	.710	1533			1256	4000	.425	934		*	1231	6000	1.616	586.0		SUSPECT
42	6000	.717	1547			1300	3000	.278	621		-002	1242	5000	1.556	569.5		OF SLIGHTLY
44	6000	.711	1535			1304	3000	.283	632		-002	1256	4000	1.405	526.4		HIGH due
54	6000	.710	1533			1307	3000	.280	626		-002	1307	3000	1.300	495.1		TO SLOW
56	6000	.716	1545			1317	2000	.212	480		-003	1317	2000	1.205	467.5		COOLING
58	6000	.715	1543			1328	1000	.205	464		-006	1328	1000		NO READING		EFFECT
110	4000	.711	1535			1336	100	.193	437		-012	1336	100				
10	6000	.710	1533														
12	6000	.717	1547														
14	6000	.712	1537														
1120	6000	.710	1533			1231	6000	442	PSI								
1122	6331	.766	1650			1245	5000	441	PSI								
20	6331	.762	1642			1256	4000	440	PSI								
33	6331	.760	1637			1307	3000	440	PSI								
35	6331	.765	1648			1317	2000	440	PSI								
37	6331	.762	1642			1328	1000	439	PSI								
46	6331	.760	1637			1336	100	439	PSI								
48	6331	.766	1650														
5	331	.763	1644														
5	331	.768	1657														
200	6351	.766	1650														

WELL HEAD PRESSURE DURING GRADIENT

TIME	DEPTH	WHP
1231	6000	442 PSI
1245	5000	441 PSI
1256	4000	440 PSI
1307	3000	440 PSI
1317	2000	440 PSI
1328	1000	439 PSI
1336	100	439 PSI

COMMENTS: CALIBRATION CHECK WITH DWI AT 2000 PSI AT 75°F

\*\* GRADIENT SURVEY RUN COMING OUT OF THE HOLE

DEF = .920  
 COR = +.010  
 COR DEF = .930 COR PSI = 1994

JDH u/l/b BY: JMA/B

76

UNION

O.K.  
DELPYLE

GEO THERMAL DIVISION NOV 7 1975

SUBSURFACE SURVEY

Field Work Sheet

BRA#H-537-P/T

OWNER UNION OIL CO. OF CALIF FIELD VALLE GRANDE WELL NAME BRA#H  
 CASING 1 3/8" @ 1441'; 9 5/8" @ 3182' ELEV. 9318' DATE: 10/20/75  
 LINER DESCRIPTION: 7" @ 3231' ZERO POINT 6L+5'  
 DEPTH 5959'

TUBING DETAIL:

PURPOSE

REMARKS:

P- 0-4800 PSIG 7198 12HR-13375-L 15  
 ELEMENT T-82F-6860 SERIAL NO. 10055 CLOCK 12HR-14091-L TURN'S STABILIZATION PERIOD  
 ENGAGE STYLUS P-1517 T-1519 DISENGAGE STYLUS P-1758 T-1753  
 WELL HEAD 384 PSIG -  
 PICKUP @ 6330' TIME ON BOTTOM 1700-1730 MAX. F 588  
 WELL STATUS STATIC  
 SHUT IN: 11/13/73 ON PRODUCTION:  
 RATE

PRESSURE

TEMPERATURE

TIME	DEPTH	DEFL.	P-T	GRAD.	GRAD.	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
15	100	.173	359	-	+1.009	1548	100	.063	102	-							
1600	1000	.174	391	-	+1.007	1600	1000	.520	342								
1611	2000	.170	382	-	+1.002	1611	2000	1.152	457								
1623	3000	.250	571		+1.002	1623	3000	1.280	490								
1634	4000	.352	582		+1.002	1634	4000	1.375	518								
1646	5000	.511	1135		+1.001	1646	5000	1.548	567								
1658	6000	.641	1459		+1.001	1658	6000	1.602	583								
1730	6330	.623	1587		+1.001	1730	6330	1.623	588								

COMMENTS:

BOMB # 13012 IS NOT STABLE AND PRESSURES ARE NOT CORRECT. JDH 11/3/75

BY:



UNION

# GEO THERMAL DIVISION

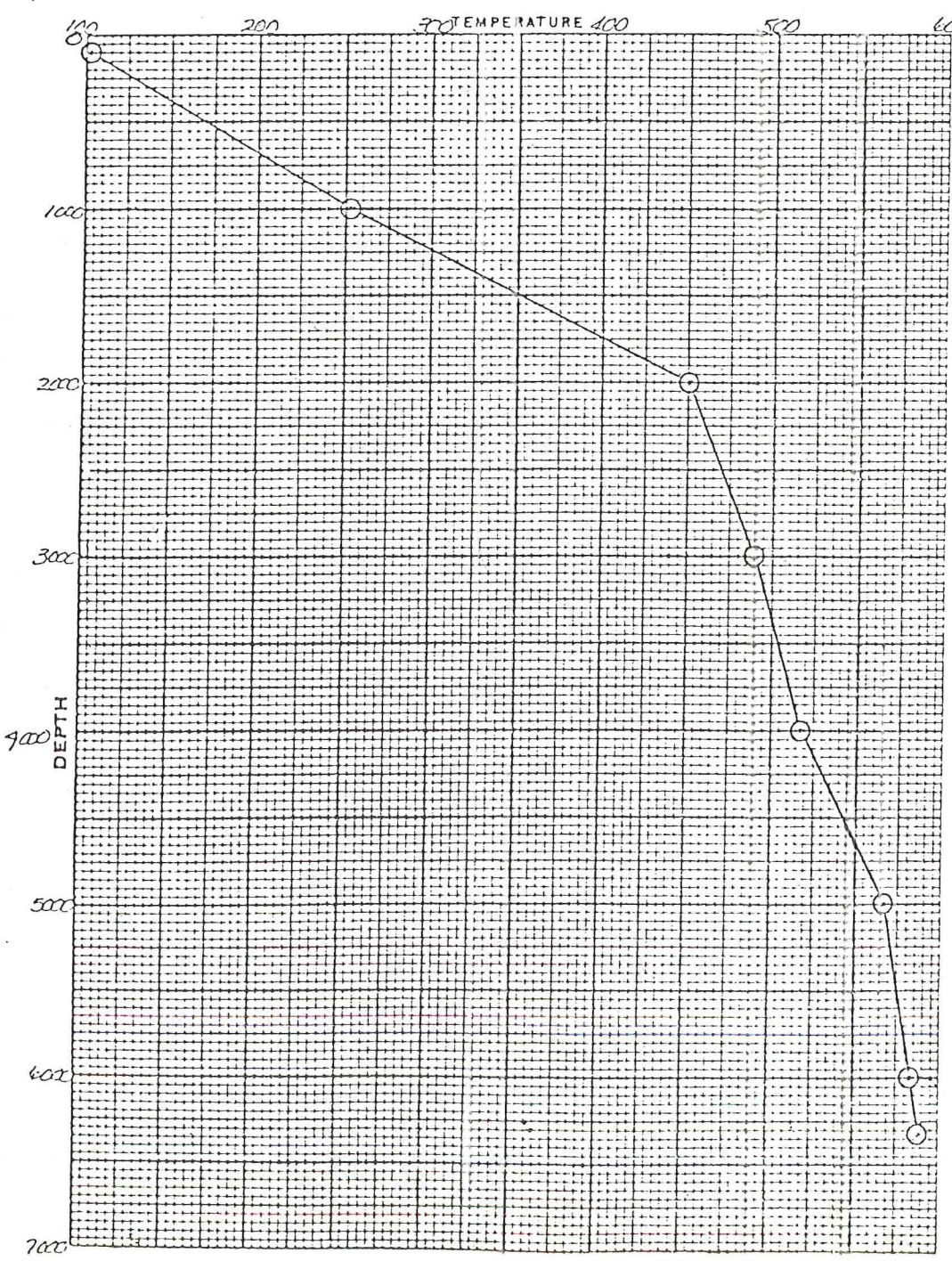
## SUBSURFACE TEMPERATURE SURVEY B4-S37-PT

OWNER Union Oil Company FIELD Valle Grande WELL NAME Baca #4  
 CASING \_\_\_\_\_ ELEV \_\_\_\_\_ DATE 10/20/75  
 LINER DESCRIPTION \_\_\_\_\_ ZERO POINT G.L. +5'  
 \_\_\_\_\_ DEPTH 5959'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT \_\_\_\_\_ FAHP \_\_\_\_\_  
 \_\_\_\_\_ SERIAL NO 10055

PURPOSE \_\_\_\_\_ MAX TEMP \_\_\_\_\_ °F @ \_\_\_\_\_  
 REMARKS: \_\_\_\_\_

STABILIZATION PERIOD \_\_\_\_\_  
 \_\_\_\_\_



PRESSURES	GAUGE	BOMB
CASING PSI		

DEPTH	TEMP.	DEPTH	TEMP.
100	102		
1000	252		
2000	451		
3000	490		
4000	518		
5000	567		
6000	583		
6330	588		

BY: \_\_\_\_\_

76

WINDY

GEOHERMAL DIVISION

SUBSURFACE PRESSURE SURVEY

B4-S37-PT

OWNER Union Oil Company FIELD Valle Grande WELL NAME Baca #4

CASING \_\_\_\_\_ ELEV \_\_\_\_\_ DATE 10/20/75

LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT G.L. +5'

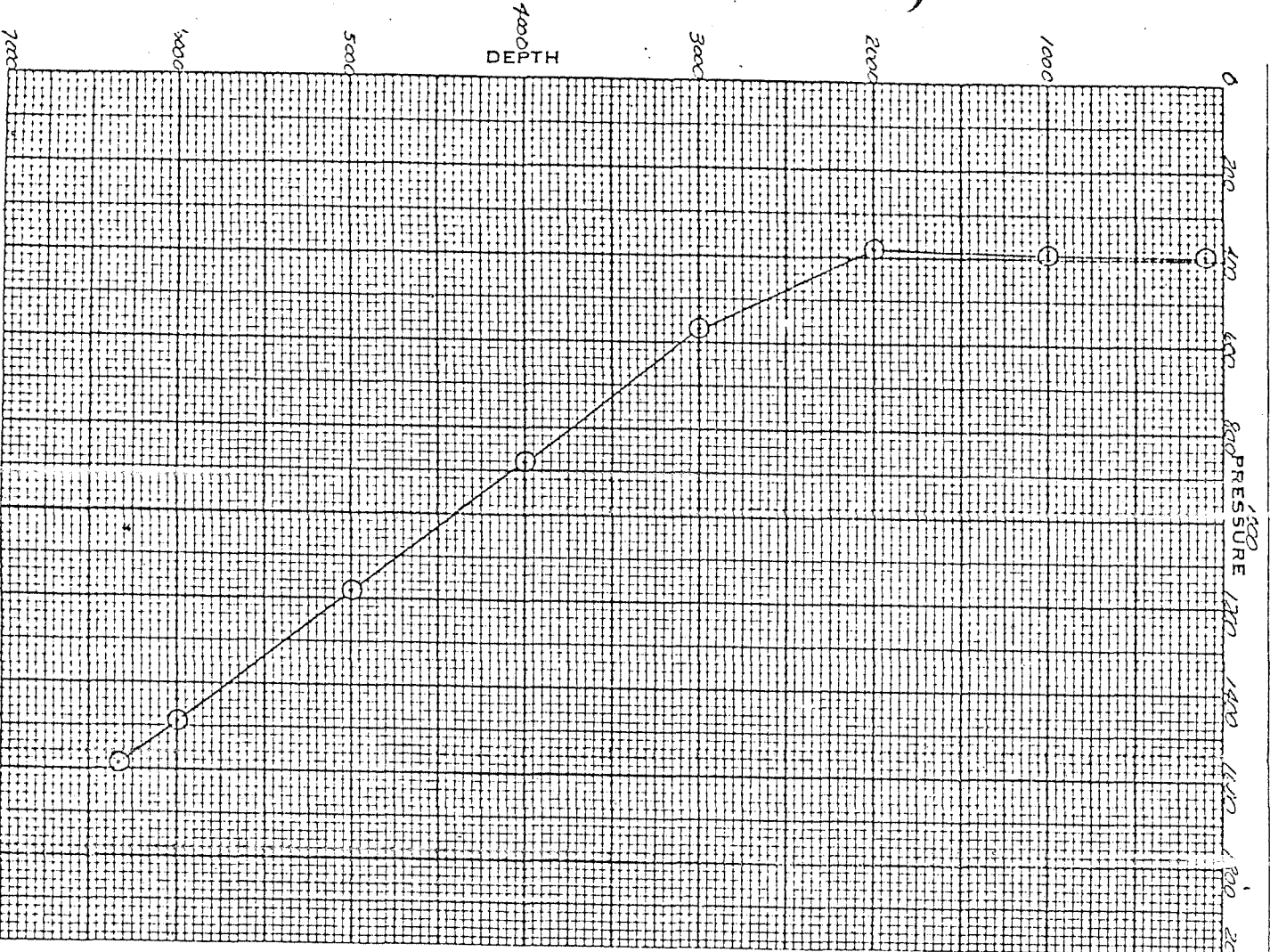
DEPTH 5959'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 0 - 4800 PSI

SERIAL NO 7198

PURPOSE \_\_\_\_\_ MAX TEMP 588 °F @ 6330

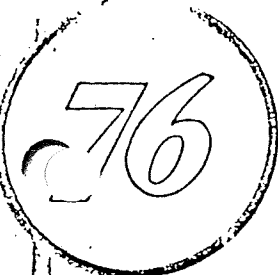
REMARKS: \_\_\_\_\_ STABILIZATION PERIOD \_\_\_\_\_



PRESSURES, CASING, PSI	GAUGE	BOMB
DEPTH	PRESSURE	GRADIENT
100	389	
1000	391	
2000	382	
3000	571	
4000	882	
5000	1185	
6000	1489	
6330	1587	

BY: \_\_\_\_\_





UNION

DEL PYLE

GEOHERMAL DIVISION

NOV 7 1975

SUBSURFACE SURVEY

Field Work Sheet

B4 536 P/P

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #4  
 CASING 13 3/8" AT 1441; 9518' AT 3182' ELEV. 9318' DATE: 10/20/75  
 LINER DESCRIPTION: 7" AT 3031 - TD ZERO POINT CL +5'  
 DEPTH 6331

TUBING DETAIL:

PURPOSE

REMARKS:

ELEMENT P-0 - 9400 PSI SN 7198 CLOCK 12 TO 15 TURN  
 ELEMENT P-2 - 2950 PSI SERIAL NO. 10254 CLOCK 12 TO 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P<sub>1</sub> 1027; P<sub>2</sub> 1031 DISENGAGE STYLUS P<sub>1</sub> 1421 P<sub>2</sub> 1422  
 WELL HEAD 385 PSIG 0-6007/6; ANNULUS - 376 PSIG 0-6007/6  
 PICKUP @ 6331 TIME ON BOTTOM 1310-1345 MAX. P  
 WELL STATUS  
 SHUT IN: 11/13/73 ON PRODUCTION:  
 RATE

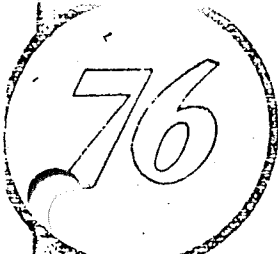
P<sub>1</sub> - # 7198

P<sub>2</sub> - # 9235

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1143	1100	.171	387.0		-1.001	1130	1100	.250	393.0		-1.008						
1143	1600	.184	417.0		-1.006	1143	1100	.258	405.0		-1.006						
1155	2000	.187	423.0		-1.003	1155	2000	.263	412.0		-1.003						
1207	3000	.271	606.0		-1.002	1207	3000	.390	599.0		0						
1220	4000	.420	925.0		0	1220	4000	.605	915.0		+1.002						
1232	5000	.567	1233.0		0	1232	5000	.815	1220.0		+1.002						
1305	6000	.717	1547.0		0	1305	6000	1.029	1531.0		+1.002						
1345	6331	.764	1646.0		0	1345	6331	1.097	1631.0		+1.001						

COMMENTS: PRESSURES WERE COLLECTED USING TEMPERATURES FROM B4 537 P/P

BY: [Signature]



# UNION GEOHERMAL DIVISION

## SUBSURFACE PRESSURE SURVEY

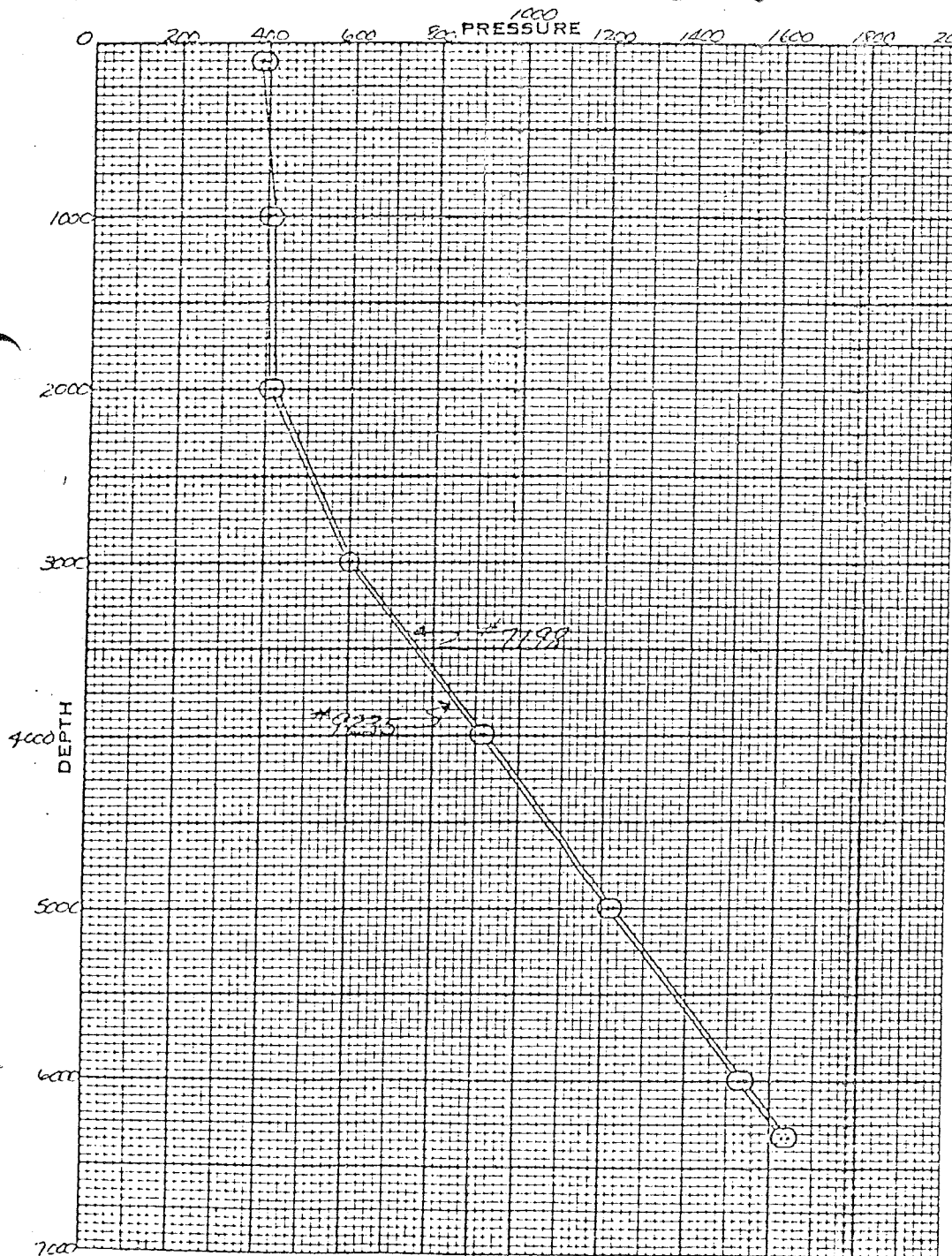
B4-S36-PP

OWNER Union Oil Company FIELD Valle Grande WELL NAME Baca #4  
 CASING \_\_\_\_\_ ELEV \_\_\_\_\_ DATE 10/20/75  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT G.L. +5'  
 \_\_\_\_\_ DEPTH 6331'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT \_\_\_\_\_ PSI  
 \_\_\_\_\_ SERIAL NO #7198 and #9235

PURPOSE \_\_\_\_\_ MAX TEMP \_\_\_\_\_ PF @ \_\_\_\_\_

REMARKS Pressures were corrected using temp. from B4-S37-PT survey.



STABILIZATION PERIOD \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

PRESSURES	GAUGE	BOWS
CASING, PSI		

DEPTH	PRESSURE	CORRECTION
#7198		
100	387.0	-.000
1000	417.0	-.000
2000	423.0	-.000
3000	606.0	-.002
4000	923.0	0
5000	1233.0	0
6000	1547.0	0
6331	1646.0	0

#9235		
100	393.0	-.000
1000	405.0	-.000
2000	412.0	-.000
3000	599.0	0
4000	915.0	+0.002
5000	1220.0	+0.002
6000	1531.0	+0.002
6331	1631.0	+0.001

BY: J.M. and J.B.

76

UNION

GEO THERMAL DIVISION

DEL PYLE  
NOV 7 1975

SUBSURFACE SURVEY  
Field Work Sheet

B4 535 P/P

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #4  
 CASING 13 3/8" AT 1441'; 9 5/8" AT 5183' ELEV. 9318' DATE: 10/13/75  
 LINER DESCRIPTION: 7" AT 3031 ZERO POINT 6245'  
 DEPTH 6332'

TUBING DETAIL:

PURPOSE INTERFERENCE TEST CONFIRMATION SURVEY

REMARKS:  
 P. ELEMENT - 0-4250 PSIG SN 7198 CLOCK - 12 hr 15 TURN  
 P. ELEMENT 0-2950 PSIG SERIAL NO. 92: 5 CLOCK 1 hr 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P<sub>1</sub> P<sub>2</sub> DISENGAGE STYLUS P<sub>1</sub> P<sub>2</sub>  
 WELL HEAD 582 PSIG  
 PICKUP @ 6332 TIME ON BOT OM 1845-1855 MAX. °F  
 WELL STATUS  
 SHUT IN: 11/13/73 ON PRODUCTION:  
 RATE

P<sub>1</sub> # 7198

P<sub>2</sub> # 9235

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
174	100	.182	409.9		0	174	100	.1731	423.7	0							
1757	1000	.187	421.2		0	1757	1000	.1749	437.7	0							
1809	2000	.185	416.7		0	1809	2000	.1757	433.0	0							
1820	3000	.274	610.1		0	1820	3000	.400	617.6	0							
1832	4000	.428	923.0		+0.01	1832	4000	.607	925.6	+0.01							
1844	5000	.573	1254.2		+0.01	1844	5000	.820	1240.4	+0.01							
1855	6000	.730	1572.0		+0.01	1855	6000	1.026	1544.4	+0.01							
	6332	.779	1625.8		+0.01		6332	1855	1.092	1642.0	+0.01						

COMMENTS:

BY: J.B. SM. R.B.

76

Union

GEOTHERMAL DIVISION

SUBSURFACE PRESSURE SURVEY 84-535-PP

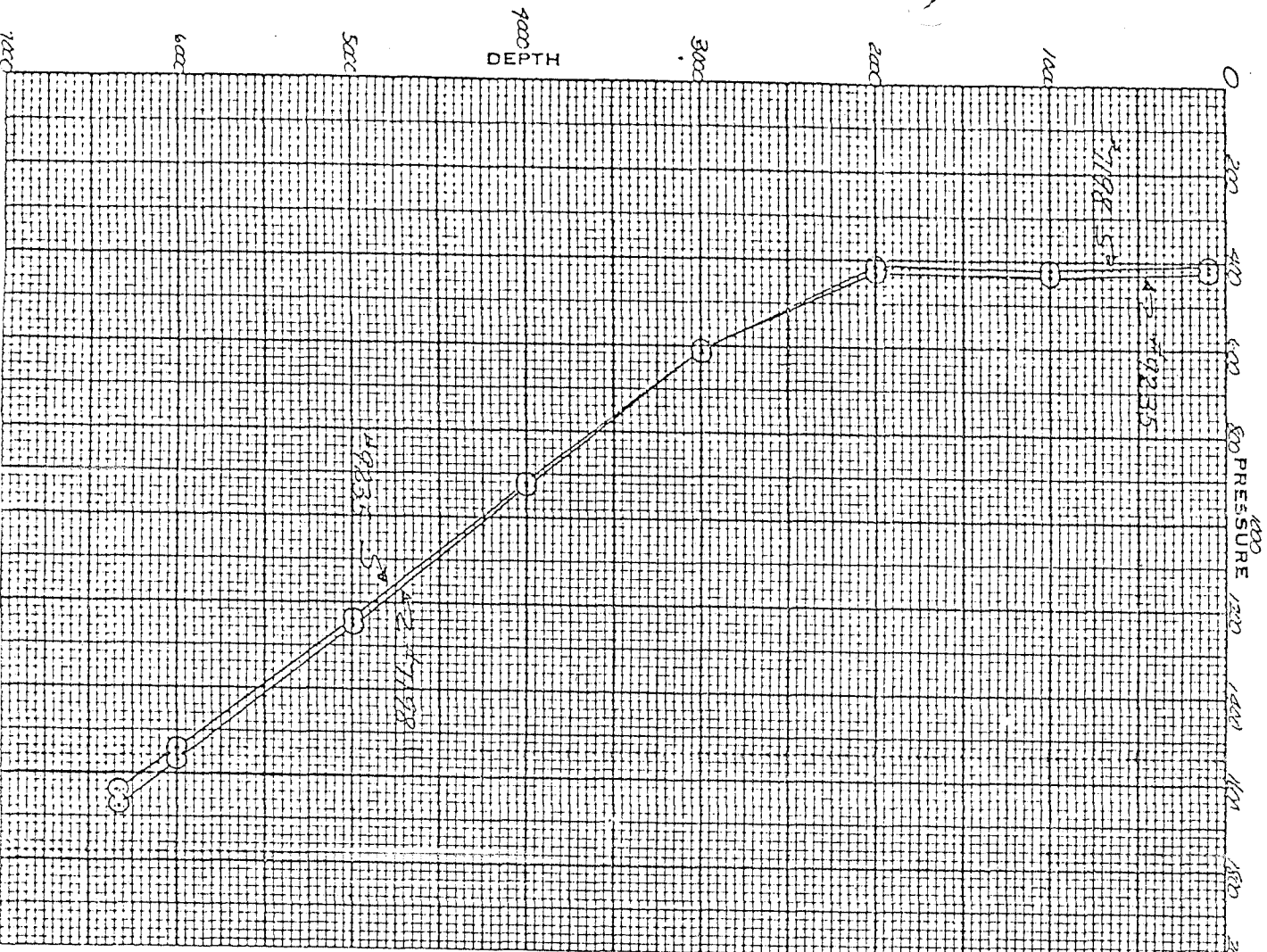
OWNER Union Oil Company FIELD NAME Baca #4  
 CASING 13-3/8" @ 1441'; 9-5/8" @ 5182' R/EV 9318'  
 LINDER DESCRIPTION: 7" at 3031' DATE 10/13/75  
 ZERO POINT G.L. +51  
 DEPTH 6332'

HOLE DESCRIPTION:

INSTRUMENT #9235 and #719  
 SERIAL NO  
 MAX TEMP \_\_\_\_\_ °F @ \_\_\_\_\_

PURPOSE Interference test confirmation survey

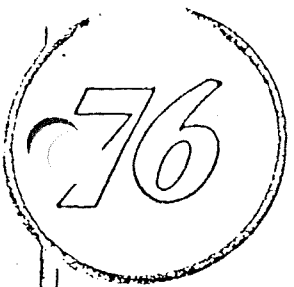
STABILIZATION PERIOD



DEPTH	PRESSURE	GAUGE	BORE
100	409.9		0
1000	421.2		0
2000	416.7		0
3000	610.1		0
4000	928.0		+0.00
5000	1254.2		+0.00
6000	1572.0		+0.00
6332	1675.8		+0.00

DEPTH	PRESSURE	GAUGE	BORE
100	423.7		0
1000	437.7		0
2000	433.0		0
3000	617.6		0
4000	925.6		+0.00
5000	1240.4		+0.00
6000	1544.4		+0.00
6332	1642.0		+0.00

BY: J. B. J. M. P. R.



UNION

DEL PYLE

OCT 22 1975

GEOHERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

BA 535 P/P

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #4  
 CASING 1 3/8" AT 1441'; 9/8" AT 5183' ELEV. 9318' DATE: 10/13/75  
 LINER DESCRIPTION: 7" AT 3031 ZERO POINT 6445'  
 DEPTH 6332'

TUBING DETAIL:

PURPOSE INTERFERENCE TEST CONFIRMATION SURVEY

REMARKS:

REGULATED - 0-4250 PSIG SN 7198 CLOCK - 12 HR 15 TURN

ELEMENT 0-2950 PSIG SERIAL NO. 9235 CLOCK 12 HR 15 TURN STABILIZATION PERIOD

ENGAGE STYLUS P<sub>1</sub> P<sub>2</sub> DISENGAGE STYLUS P<sub>1</sub> P<sub>2</sub>

WELL HEAD 592 PSIG

PICKUP @ 6332 TIME ON BOTTOM 1845-1855 MAX. PF

WELL STATUS

SHUT IN: 11/13/73 ON PRODUCTION:

RATE

P<sub>1</sub> # 7198

P<sub>2</sub> # 9235

T	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
	1731	100	.182	409.9	0		1731	.272	423.7	0							
	1744	1000	.187	421.2	0		1744	.281	437.7	0							
	1757	2000	.185	416.7	0		1757	.278	433.0	0							
	1809	3100	.274	610.1	0		1809	.400	617.6	0							
	1820	4100	.424	928.0	+1.001		1820	.607	925.6	+1.001							
	1832	5000	.573	1254.2	+1.001		1832	.820	1240.4	+1.001							
	1844	6000	.730	1572.0	+1.001		1844	1.026	1544.4	+1.001							
	1856	6332	.779	1675.8	+1.001		1855	1.092	1642.0	+1.001							

COMMENTS:

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UNION

DEL PYLE

OCT 22 1975

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

BHH-534-P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #4  
 CASING 13 3/4" AT 1441' 9 5/8" AT 3183' ELEV. 9318' DATE: 10/13/75  
 LINER DESCRIPTION: 6" AT 3031' ZERO POINT CL+5'  
 DEPTH 6332'

TUBING DETAIL:

PURPOSE INTER FERENCE TEST

REMARKS:

ELEMENT 0-4250 PSIG SN 7198 CLOCK 12 hr 15 T  
 ELEMENT 82-680°F SERIAL NO. 10055 CLOCK 12 hr 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-0806 T 0816 DISENGAGE STYLUS P 1310 T 1300  
 WELL HEAD 582.6 PSIG 0-600 T/C  
 PICKUP @ 6332' TIME ON BOTTOM 1020-1220 MAX. P 589.6  
 WELL STATUS  
 SHUT IN: 11/13/73 ON PRODUCTION:  
 RATE

PRESSURE

TEMPERATURE

PRESSURE						TEMPERATURE										
DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
0915	6000	.727	1565.7	4.001	0915	6000	1.591	579.4								
0945	6000	.727	1565.7	4.001	0945	6000	1.615	586.1								
1015	6000	.727	1565.7	4.001	1015	6000	1.615	586.1								
1020	6332	.776	1669.5	4.001	1020	6332	1.628	589.6								
1050	6332	.776	1669.5	4.001	1050	6332	1.628	589.6								
1120	6332	.776	1669.5	4.001	1120	6332	1.628	589.6								
1150	6332	.776	1669.5	4.001	1150	6332	1.628	589.6								
1220	6332	.776	1669.5	4.001	1220	6332	1.628	589.6								

COMMENTS: TD = 6332'

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UNION

DEL PYLE

OCT 22 1975

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B4 559 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACH #4  
 CASING 1 3/8" AT 1441' 4 1/8" AT 3152' ELEV. 9318' DATE: 10/6/75  
 LINER DESCRIPTION: 7" AT 3031 ZERO POINT GL+5  
 DEPTH 6345

TUBING DETAIL:  
 \_\_\_\_\_  
 \_\_\_\_\_

PURPOSE  
 REMARKS:

0-4550 PSI SN 7198 Clock 12 hr 15 Turn

ELEMENT 87° - 6.56° SERIAL NO. 10055 CLOCK 12 hr 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P0931 T 0929 DISENGAGE STYLUS P1305 T 1305  
 WELL HEAD 382 PSIG 0-400 T/G  
 PICKUP @ 6320 TIME ON BOTTOM 1036 - 1236 MAX. IF 587.4  
 WELL STATUS SHUT IN 11/13/73  
 SHUT IN: ON PRODUCTION:  
 RATE

PRESSURE

TEMPERATURE

PRESSURE					TEMPERATURE													
TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	
1036	6320	.748	1610.2		1.001	1036	6320	1.620	587.4									
1106	6320	.748	1610.2		1.001	1106	6320	1.620	587.4									
1136	6320	.748	1610.2		1.001	1136	6320	1.620	587.4									
1206	6320	.748	1610.2		1.001	1206	6320	1.620	587.4									
1236	6320	.748	1610.2		1.001	1236	6320	1.620	587.4									

COMMENTS: NOTE: NEW ID 6320'

BY:

76

UNION

GEOHERMAL DIVISION

DEL PYLE

SUBSURFACE SURVEY

Field Work Sheet

SEP 22 1975

B-4 S-32 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #4  
 CASING 13 7/8" AT 1441' ELEV. 9318' DATE: 9/15/75  
 LINER DESCRIPTION: 9 5/8" AT 3182' ZERO POINT C L +5  
 7" AT 3031' - 6376' DEPTH 6345'

TUBING DETAIL:

PURPOSE

REMARKS:

ELEMENT- 0-4250 PSIG SN 7198 CLOCK 12hr 15 +  
 ELEMENT 82°-686° SERIAL NO. 10055 CLOCK 12hr 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-1029T-1031 DISENGAGE STYLUS P1501T-1507  
 WELL HEAD 382 PSIG 0-4007/G  
 PICKUP @ 6345' TIME ON BOTTOM 1257-1357 MAX. 587.7  
 WELL STATUS SHUT  
 SHUT IN: 1222 hrs 11/13/73 ON PRODUCTION:  
 RATE

PRESSURE

TEMPERATURE

PRESSURE					TEMPERATURE						
TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1140	100	.176	396.4		0	1140	100	.068	103.7		
	1000	.179	403.2		0	1152	1000	.522	253.0		
1204	2000	.177	598.6		0	1204	2000	1.145	449.2		
1216	3000	.265	591.1		0	1216	3000	1.280	487.6		
1228	4000	.414	906.8		+ .001	1228	4000	1.377	518.2		
1241	5000	.562	1218.5		+ .001	1241	5000	1.547	566.9		
1256	6000	.708	1525.4		+ .001	1256	6000	1.607	583.9		
1257	6345	.756	1627.1		+ .001	1257	6345	1.619	587.1		
1327	6345	.758	1631.4		+ .001	1327	6345	1.621	587.7		
1357	6345	.758	1631.4		+ .001	1357	6345	1.621	587.7		

COMMENTS:

BY: SM JB



# GEO THERMAL DIVISION

## SUBSURFACE PRESSURE SURVEY

B#4-532-P

76

OWNER UNION OIL CO. OF CALIF FIELD VALLE GRANDE WELL NAME BACA#4  
 CASING 13 3/8" @ 1441'; 9 5/8" @ 3187' ELEV. 9318' DATE: 9/15/75  
 LINER DESCRIPTION: 7" SLOTTED LINER- 3031'-6376' ZERO POINT 6175'  
SLOT INTERVALS- 3036' - 6375' DEPTH 6345'

HOLE DESCRIPTION: \_\_\_\_\_

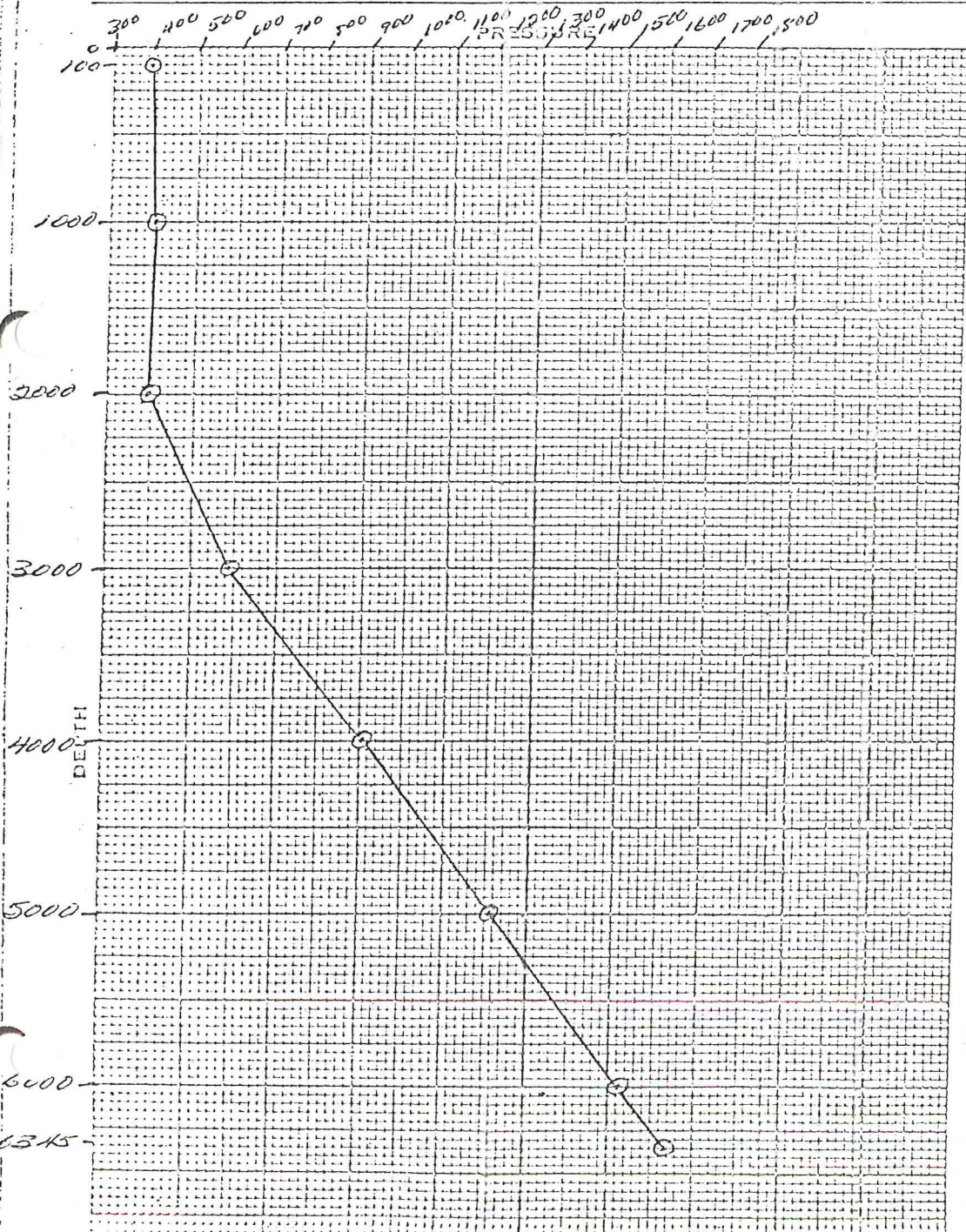
INSTRUMENT 0-4250 PSI  
 SERIAL NO 7198

PURPOSE \_\_\_\_\_

MAX TEMP 587.7 °F @ 6345'

REMARKS: \_\_\_\_\_

STABILIZATION PERIOD \_\_\_\_\_



PRESSURES.	GAUGE	SCHE
CASING, PSI	<u>382</u>	<u>396 @ 100</u>

DEPTH	PRESSURE	GRADIENT
<u>100</u>	<u>396.4</u>	
<u>1000</u>	<u>403.2</u>	
<u>2000</u>	<u>398.6</u>	
<u>3000</u>	<u>591.1</u>	
<u>4000</u>	<u>906.8</u>	
<u>5000</u>	<u>1218.5</u>	
<u>6000</u>	<u>1525.4</u>	
<u>6345</u>	<u>1631.4</u>	

J.M. / J.P.

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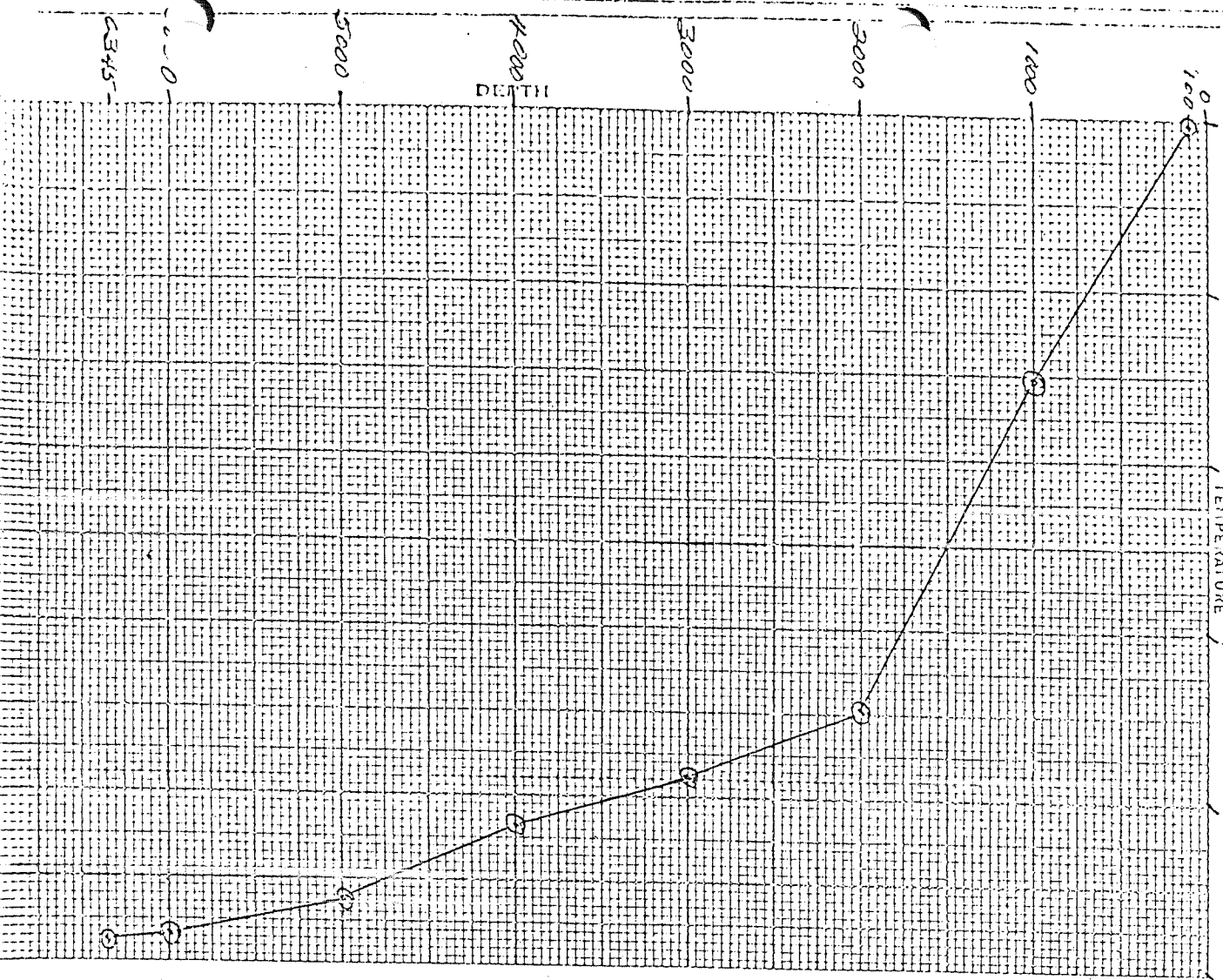
# GEOTHERMAL DIVISION

## SUBSURFACE TEMPERATURE SURVEY

BRD-44-532-7

OWNER UNION OIL CO. OF CALIF. FIELD WALLE GRADE WELL NAME BROOK #4  
 CASING 1 3/8" O.D. 1 1/4", 2 5/8" O.D. 3 1/2" ELEV. 9318' DATE: 9/15/75  
 LINER DESCRIPTION: 2" SLOTTED LINER- 3034'- 6375' ZERO POINT 6175'  
SLOT INTERVALS- 3036- 6375' DEPTH 6345'  
 HOLE DESCRIPTION: \_\_\_\_\_  
 INSTRUMENT 8207-686 ° F/M  
 SERIAL NO 10055  
 MAX TEMP. 587.7 ° F @ 6345'

PURPOSE \_\_\_\_\_  
 REMARKS: \_\_\_\_\_  
 6000 STABILIZATION PERIOD \_\_\_\_\_



DEPTH	TEMP.	DEPTH	TEMP.
100	103.7		
1000	253		
2000	419.2		
3000	459.6		
4200	518.2		
5000	567		
6000	584		
6345	587.7		

PRESSURES	GAUGE	NOTES
CASING, PSI	382	396 O.M.

BY: J.M. J.B.

76

JH.

UNION

DEL PYLE ✓

GEO THERMAL DIVISION

SEP 22 1975

SUBSURFACE SURVEY

Field Work Sheet

BACA#A-531-P/H

OWNER UNION OIL CO. OF CALIF FIELD VALLE GRANDE WELL NAME BACA#A  
 CASING 1 3/8" @ 1441' ELEV. 9318' DATE: 9/10/75  
 LINER DESCRIPTION: 9 5/8" @ 3132 ZERO POINT GL+5'  
 7" - 3031' - 6376' SLOTS- 3 5/8" - 6375' DEPTH 6345'

TUBING DETAIL:

PURPOSE INITIAL SURVEY FOR DRAWDOWN TEST.

REMARKS:

P-C-4250 PSIG 7198 12/11/3.375-L 15  
 ELEMENT 820F-686F SERIAL NO. 10055 CLOCK 12hr 14091-L TURN 15 STABILIZATION PERIOD  
 ENGAGE STYLUS P-0652, T-0654 DISENGAGE STYLUS P-1104, T-1100  
 WELL HEAD (379.) ANNULUS-368  
 PICKUP @ 6345 TIME ON BOTTOM 0730-1030 MAX. F 587  
 WELL STATUS STATIC.  
 SHUT IN: 1222 hrs on 11/13/73. ON PRODUCTION:  
 RATE

PRESSURE

TEMPERATURE

PRESSURE						TEMPERATURE											
TIME	DEPTH	DEFL.	P-T	GRAD.	CORR.	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
0730	6345	.758	16.34	-	7.001	0730	6345	1.620	587								
0800	"	.758	16.34	-	7.001	0800	"	1.620	587								
0830	"	.758	16.34	-	7.001	0830	"	1.620	587								
0900	"	.758	16.34	-	7.001	0900	"	1.620	587								
0930	"	.758	16.34	-	7.001	0930	"	1.620	587								
1000	"	.758	16.34	-	7.001	1000	"	1.620	587								
1030	"	.758	16.34	-	7.001	1030	"	1.620	587								

COMMENTS:

BY: J.M. C.D.

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UNION

GEO THERMAL DIVISION

SUBSURFACE SURVEY  
Field Work Sheet

BACA #4-530-P/T

OWNER UNION OIL CO. OF CALIF FIELD VALLE GRANDE WELL NAME BACA #4  
 CASING 13 3/8" @ 1441'; 9 5/8" @ 3182' ELEV. 9318' DATE: 5/6/75  
 LINER DESCRIPTION: 7" - 3031' - 6376' SLOTS - 3036' - 6375' ZERO POINT GLT 5'  
 DEPTH 6345'

TUBING DETAIL:

PURPOSE

REMARKS:

P-O-4250 PSIG 7198 12hr-13375-L 15  
 ELEMENT T-329F-686F SERIAL NO. 10055 CLOCK 12hr-13375-L 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-1040 T-1045 DISENGAGE STYLUS P-1320 T-1320  
 WELL HEAD 370 PSIG - 0-400 T/G  
 PICKUP @ 6345' TIME ON BOTTOM 1232-1247 MAX. F 586.1  
 WELL STATUS STATIC ON PRODUCTION:  
 RATE

PRESSURE

TEMPERATURE

TIME	DEPTH	DEFL.	P - 9	GRAD.	# CORR	TIME	DEPTH	DEFL.	P - T	GRAD.	/D	TIME	DEPTH	DEFL.	P - T	GRAD.	/D
03	0	.165	371.6	-	-	-	0	0	0								
	100	.169	380.6	-	-	-	100	.084	92.7								
1027	200	.170	383	-	-	-	200	.143	128								
1035	300	.171	385	-	-	-	300	.258	166								
1043	400	.171	385	-	-	-	400	.363	201								
1051	500	.171	385	-	-	-	500	.440	226								
1059	600	.172	387.4	-	-	-	600	.507	248								
1107	700	.172	387.4	-	-	-	700	.527	255								
1115	800	.172	387.4	-	-	-	800	.535	257								
1123	900	.172	387.4	-	-	-	900	.537	258								
1131	1000	.173	389.6	-	-	-	1000	.542	259								
1139	1100	.173	389.6	-	-	-	1100	.580	272								
1147	1200	.173	389.6	-	-	-	1200	.613	282								
1155	1300	.173	389.6	-	-	-	1300	.628	287								
1203	1400	.175	394.1	-	-	-	1400	.638	290								
1211	1500	.176	396.4	-	-	-	1500	.646	293								
1223	2000	.172	387.4	-	-	-	2000	1.124	443								
1247	6345	.763	1642	-	7.002	-	6345	1.615	586								

COMMENTS:

BY: J.B. O.M.

76

# GEOTHERMAL DIVISION

## SUBSURFACE PRESSURE SURVEY

B-4 5-30 P/T

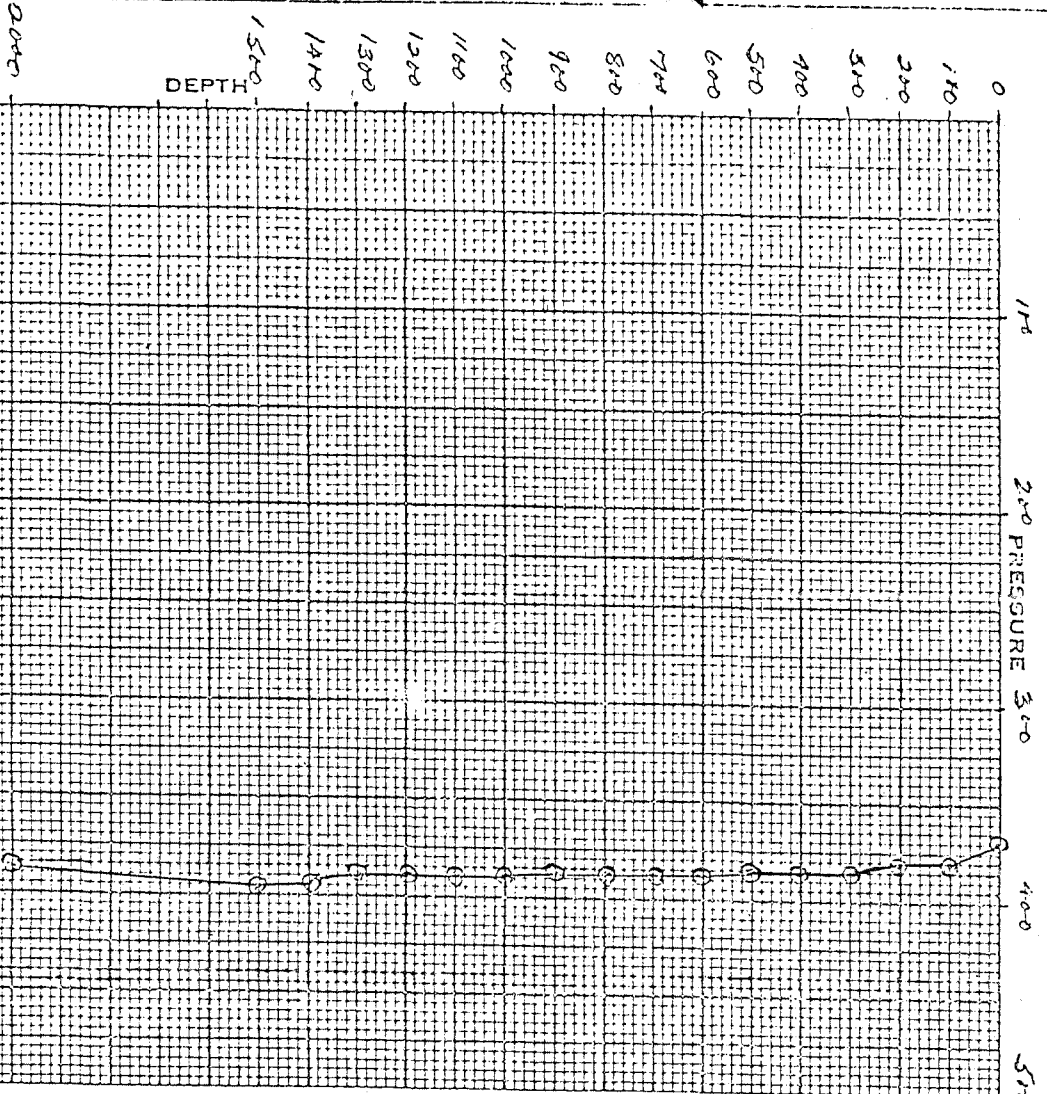
OWNER MINN OIL COMPANY FIELD VALLE GRANDE WELL NAME BOCA #4  
 CASING 13 3/8" AT 1441' 9 5/8" AT 3182 ELEV. 9318' DATE 5/6/75  
 LINER DESCRIPTION: 2" 5051 - 6375' ZERO POINT 102.15  
 DEPTH 6345'

HOLE DESCRIPTION:

INSTRUMENT 0-4250 PSI  
 SERIAL NO 7198

PURPOSE \_\_\_\_\_ MAX TEMP 588.1 °F @ 6345'

REMARKS: \_\_\_\_\_



PRESSURED.	GAUGE	BOMB
CASING PSI	370	371.6

DEPTH	PRESSURE	GRADIENT
0	371.6	
100	380.6	
200	382.9	
300	385.1	
400	385.1	
500	385.1	
600	387.4	
700	387.4	
800	387.4	
900	387.4	
1000	389.6	
1100	389.6	
1200	389.6	
1300	389.6	
1400	394.1	
1500	396.4	
2000	387.4	
6345	1641.9	

DATE \_\_\_\_\_

BY JENNY

# 276

## GEOTHERMAL DIVISION SUBSURFACE TEMPERATURE SURVEY

B#4-530-171E

OWNER UNION OIL CO. OF CALIF. FIELD WALLE GROUNDE WELL NAME BACD #2  
 CASING 1 3/8" @ 1441', 9 5/8" @ 3158' ELEV. 9318' DATE: 5/6/75  
 LINER DESCRIPTION: 7 1/2" - 3031' - 6372' ZERO POINT 6745'  
51075 - 3036' - 6375' DEPTH: 6345'

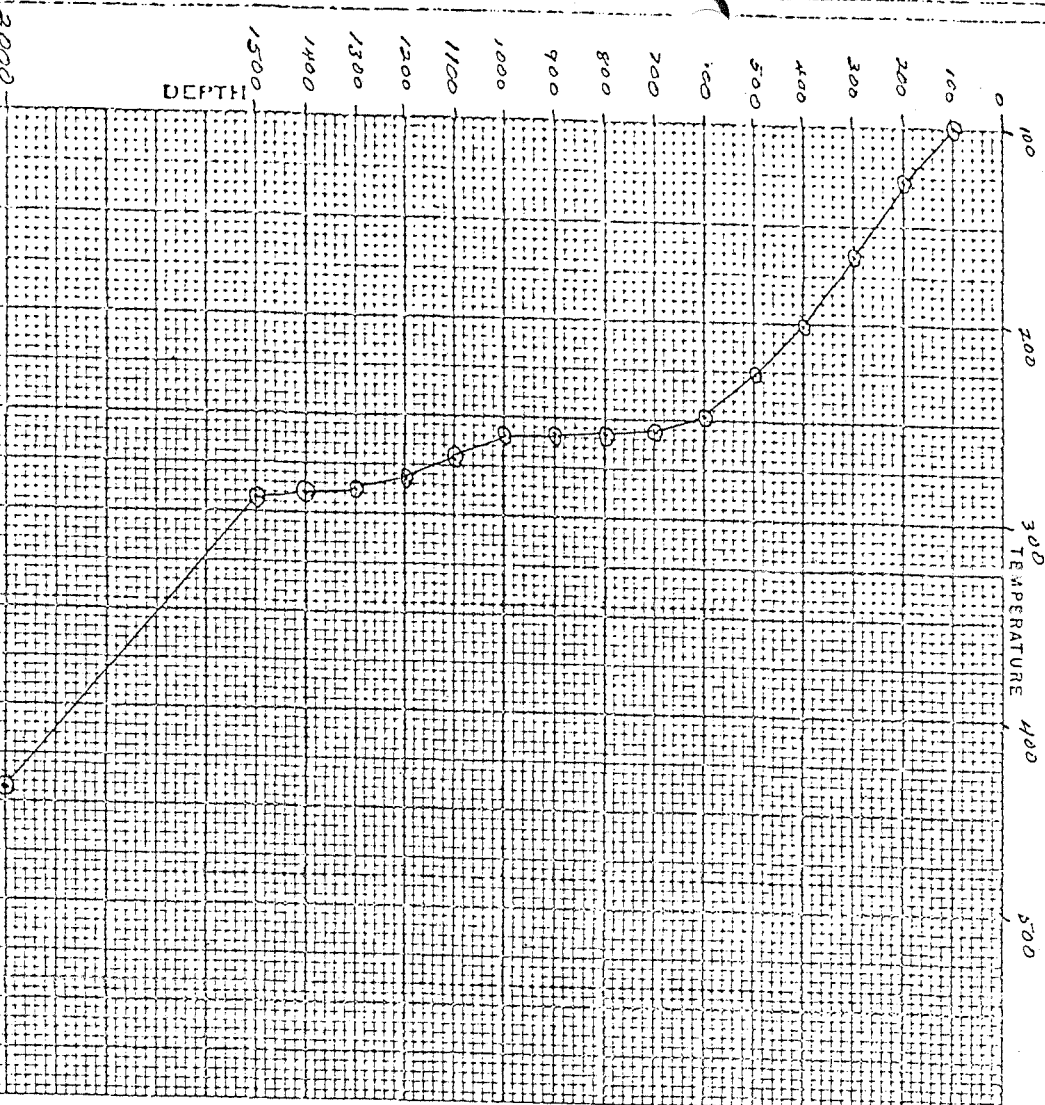
HOLE DESCRIPTION:

INSTRUMENT 820F - 4860F FM  
 SERIAL NO 10055

MAX TEMP 586.1 °F @ 6345'

PURPOSE \_\_\_\_\_  
 REMARKS: \_\_\_\_\_

600 STABILIZATION PERIOD \_\_\_\_\_



PRESSURED.	GAUGE	DOWN
CASING, PSI	370	371.6

DEPTH	TEMP.	DEPTH	TEM
0	0		
100	92.7		
200	128		
300	166		
400	201		
500	226		
600	248		
700	255		
800	257		
900	258		
1000	259		
1100	272		
1200	282		
1300	287		
1400	290		
1500	293		
2000	443		
6345	586		

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File Book 1

UNION

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B-4-S-29 PIT

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACH #4  
 CASING 1 3/8" AT 141'; 9/8" AT 318' ELEV. 9318' DATE: 3/5/75  
 LINER DESCRIPTION: 7"-3031'-6376'; SLOTS 3036'-6375' ZERO POINT CL + 5'  
 DEPTH 6345'

TUBING DETAIL:

PURPOSE

REMARKS:

0-4250 PSIG SAN 7198 CLOCK 13375-L 15T  
 ELEMENT 80°-646° SERIAL NO. 10052 CLOCK 13790-L 15TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-1144 T-1141 DISENGAGE STYLUS P-1654 T-1658  
 WELL HEAD 346 PSIG; ANNULUS - 336 PSIG  
 PICKUP @ 6345' TIME ON BOT. ON 1330-1530 MAX. °F 577.5  
 WELL STATUS SHUT IN  
 SHUT IN: ON PRODUCTION:  
 RATE:

PRESSURE

TEMPERATURE

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	R-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
5-27	1000	.166	373.9	0	0	1316-26	1000	.552	251.6	0	-						
7-17	2000	.169	369.4	0	0	1329-39	2000	1.188	436.6	.185	-						
7-22	5000	.259	578.4	.209	7.001	1242-53	3000	1.355	481.8	.045	-						
7-24	4000	.416	911.0	.333	7.002	1254-06	1400	1.450	507.0	.025	-						
7-17	5000	.563	1220.6	.310	"	1307-17	5000	1.652	559.0	.052	-						
7-29	6000	.710	1529.7	.309	"	1314-29	6000	1.710	573.5	.014	-						
1330	6345	.760	1635.1	.306	"	1330	6345	1.723	576.7	.009	-						
45	"	.761	1637.7	-	"	45	"	1.726	577.5	-	-						
1450	"	.761	1637.7	-	"	1400	"	1.726	577.5	-	-						
15	"	.761	1637.7	-	"	15	"	1.726	577.5	-	-						
30	"	.761	1637.7	-	"	30	"	1.726	577.5	-	-						
45	"	.761	1637.7	-	"	45	"	1.726	577.5	-	-						
1500	"	.761	1637.7	-	"	1500	"	1.726	577.5	-	-						
15	"	.761	1637.7	-	"	15	"	1.726	577.5	-	-						
30	"	.761	1637.7	-	"	30	"	1.726	577.5	-	-						

COMMENTS:

BY: JLB

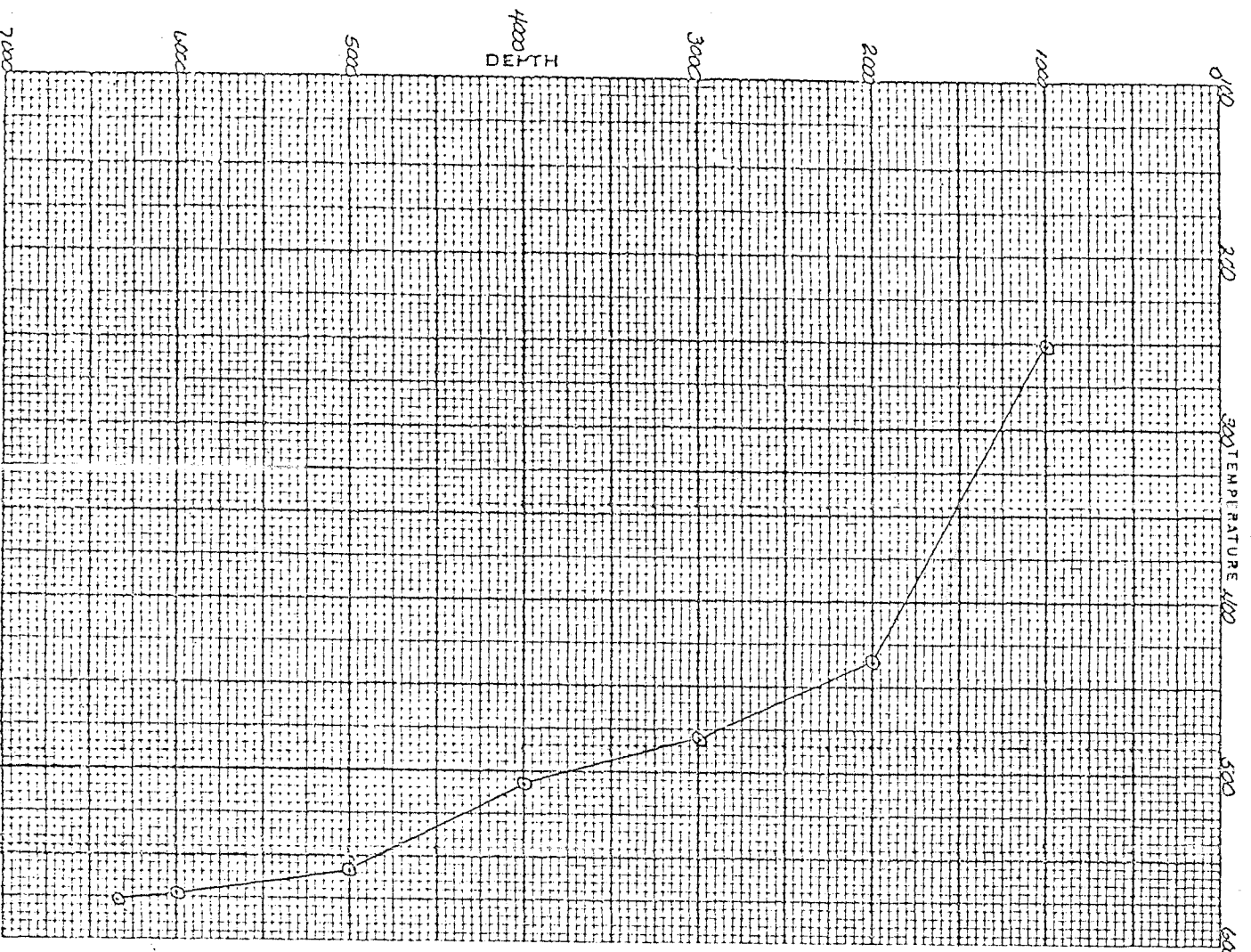
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WILLOW  
 GEOTHERMAL DIVISION  
 SUBSURFACE TEMPERATURE SURVEY

OWNER Union Oil Co. of California  
 VALLE GRANDE WELL NAME BAGA #4  
 CASING 13-3/8" @ 1441'; 9-5/8" @ 3182' elev 9318 DATE 3/5/75  
 LINER DISCIPLIN 7" - 3031' - 6376'; SLOTS 3036' - 6375' ZERO POINT G.L. +5'  
 DEPTH 6345'

HOLE DESCRIPTION:  
 INSTRUMENT 80° - 646° FM  
 SERIAL NO 10052

PURPOSE  
 MAX TEMP 577.5°F @ 6345'  
 REMARKS  
 STABILIZATION PERIOD



DEPTH	TEMP.	DEPTH	TEMP.
1000	251.6		
2000	436.6		
3000	481.8		
4000	507.0		
5000	559.0		
6000	573.5		
6345	576.7		
6345	577.5		

PRESSURES	GAUGE	FORM
CASING PSI		



# 76

## GEO THERMAL DIVISION

### SUBSURFACE PRESSURE SURVEY

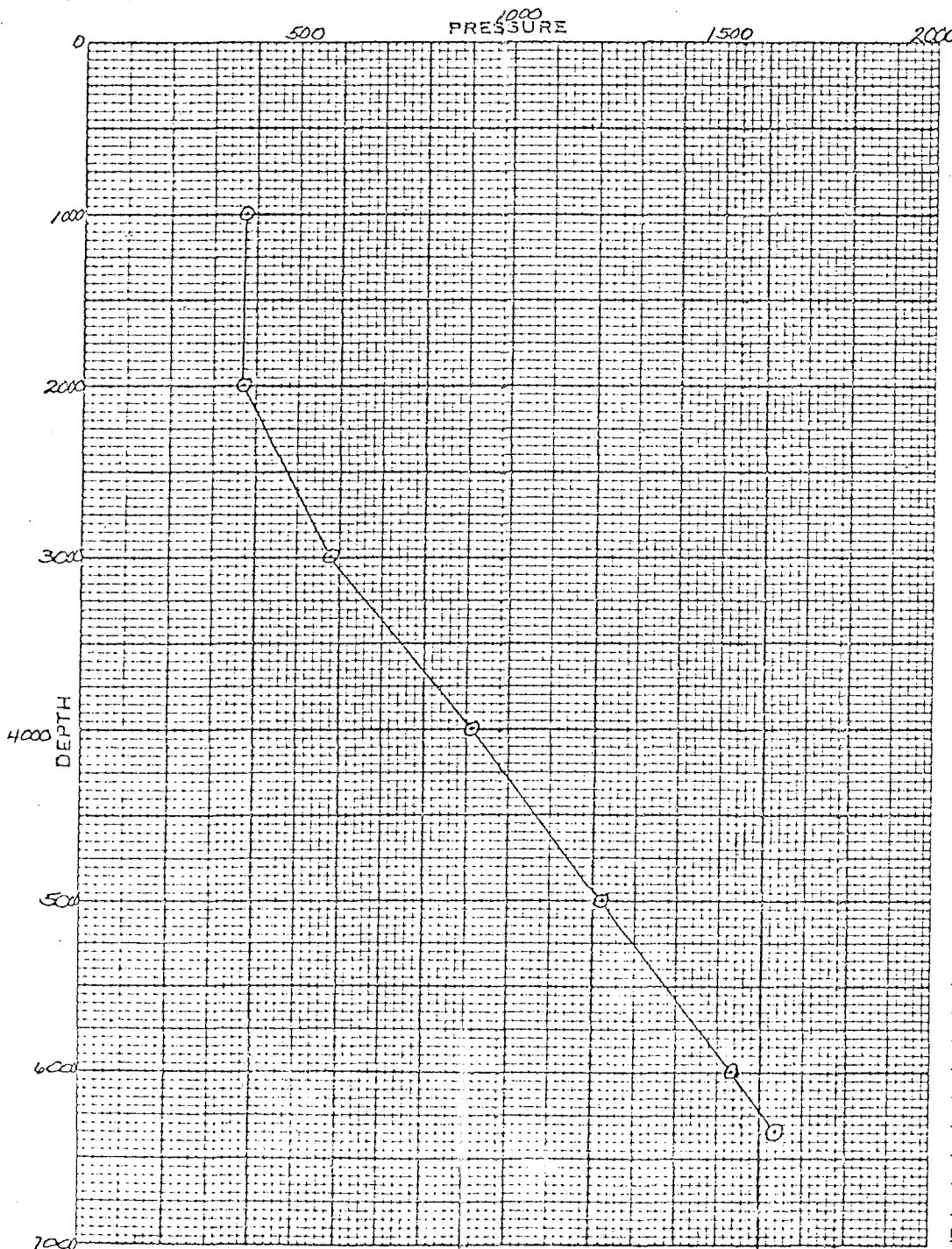
OWNER Union Oil Co. of California FIELD Valle Grande WELL NAME BACA #4  
CASING \_\_\_\_\_ ELEV \_\_\_\_\_ DATE 3/5/75  
LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT G.L. +5'  
DEPTH 6345'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 0 - 4250 PS  
SERIAL NO 7198

PURPOSE \_\_\_\_\_ MAX TEMP 577.5 °F @ 6345'

REMARKS: \_\_\_\_\_

STABILIZATION PERIOD \_\_\_\_\_



PRESSURES	GAUGE	BOMB
CASING PSI		

DEPTH	PRESSURE	GRADIENT
1000	373.9	
2000	369.4	
3000	578.4	
4000	911.0	
5000	1220.6	
6000	1529.7	
6345	1635.6	
6345	1637.7	

BY: JB

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UNION

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

3ACA#4-S-28-PIT

OWNER UNION OIL CO. OF CALIF. FIELD VALLE GRANDE WELL NAME 3ACA#4  
 CASING 13 3/8" @ 1441' 2 7/8" @ 3182' ELEV. 9315' DATE: 2/13/75  
 LINER DESCRIPTION: 7" HUNG- 3031'-6376' SCOTS- 3036'-6375' ZERO POINT 6345'  
 DEPTH 6345'

TUBING DETAIL:

PURPOSE

REMARKS:

2-0-4250 PSIG - 7198 12hr. 133734 15  
 ELEMENT 88°F - 69°F SERIAL NO. 10053 CLOCK 12hr. 13790L 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-1341hrs T-1339hrs DISENGAGE STYLUS P-1722hrs T-1723hrs  
 WELL HEAD 357 PSIG - 0-400Lb T/G  
 PICKUP @ 6345' (TIME ON BOTTOM) 6345' = MAX. °F 590.8  
 WELL STATUS SHUT IN. (1630hrs - 1700)  
 SHUT IN: ON PRODUCTION:  
 RATE

PRESSURE

TEMPERATURE

TIME	DEPTH	DEFL.	P - T	GRAD.	ID	TIME	DEPTH	DEFL.	P - T	GRAD.	ID	TIME	DEPTH	DEFL.	P - T	GRAD.	ID
04-1457	100	.160	360.4	0	0	"	100	.043	109.7	0	-						
07-1459	1000	.160	360.4	0	0	"	1000	.536	269.5	.178	-						
01-1711	2000	.160	360.4	0	0	"	2000	1.112	448.5	.179	-						
03-1533	3000	.259	578.4	.218	0	"	3000	1.269	473.7	.045	-						
04-1546	3500	.336	741.5	.326	+001	"	3500	1.319	507.3	.027	-						
05-1555	4000	.412	902.5	.322	+002	"	4000	1.359	519.3	.024	-						
07-1607	4500	.488	1063.0	.321	+003	"	4500	1.499	558.7	.078	-						
08-1618	5000	.564	1222.7	.319	+004	"	5000	1.549	572.7	.028	-						
09-1618	5500	.637	1376.1	.306	+005	"	5500	1.589	583.9	.022	-						
19-1629	6000	.712	1533.9	.316	+006	"	6000	1.599	586.7	.006	-						
30-1700	6345	.763	1641.9	.313	+006	"	6345	1.614	590.8	.01	-						

COMMENTS:

WHP- 357 PSIG }  
 ANNULIS- 344 PSIG } 0-400Lb T/G

BY:

-S.M. - S.B.-

# GEO THERMAL DIVISION

## SUBSURFACE PRESSURE SURVEY

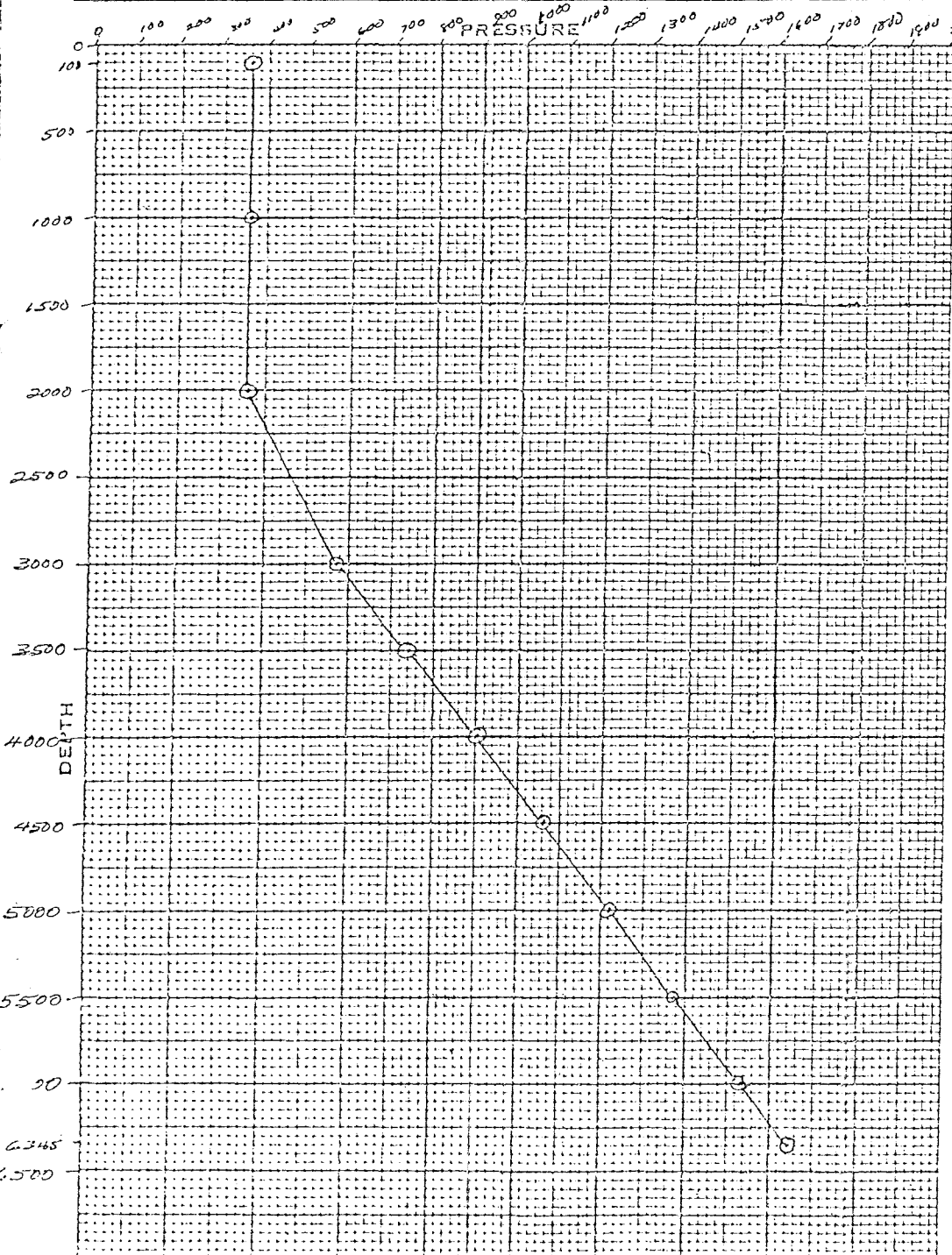
B#4-528-P/T

OWNER UNION OIL CO. OF CALIF. FIELD VALLE GRANDE WELL NAME BACA#4  
 CASING 13 1/8" @ 1441'; 9 5/8" @ 1882' ELEV. 9318 DATE: 2/12/75  
 LINER DESCRIPTION: 7" HUNG- 3031'-6376' ZERO POINT GLT#5'  
SLOTS- 3086'- T.D. DEPTH 6345'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 0-4250 PSI  
 SERIAL NO 7198

PURPOSE \_\_\_\_\_ MAX TEMP 590.8 °F @ 6345'

REMARKS:



STABILIZATION PERIOD		
PRESSURED	GAUGE	BONG
CASING, PSI	357	360 @ 100'

DEPTH	PRESSURE	GRADIENT
100	360.4	0
1000	360.4	0
2000	360.4	0
3000	578.4	.218
3500	741.5	.326
4000	902.5	.322
4500	1063.0	.321
5000	1222.7	.319
5500	1376.1	.306
6000	1533.9	.316
6345	1641.9	.313

BY: M. J. B.

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# GEOHERMAL DIVISION

## SUBSURFACE TEMPERATURE SURVEY

BARO#4-S-28-P17

OWNER UNION OIL CO. OF CALIF.  
CASINO 13<sup>3</sup>/<sub>8</sub>" @ 144' 9<sup>5</sup>/<sub>8</sub>" - Q3182  
LINE DESCRIPTION: 7" HOLE - 3081' - 6376'  
51075 - 3086' - T.D.

FIELD WELL GRANDE  
ELEV. 9318

WELL NAME BARO #4  
DATE: 2/12/75

ZERO POINT 6175'  
DEPTH 6245'

HOLE DESCRIPTION:

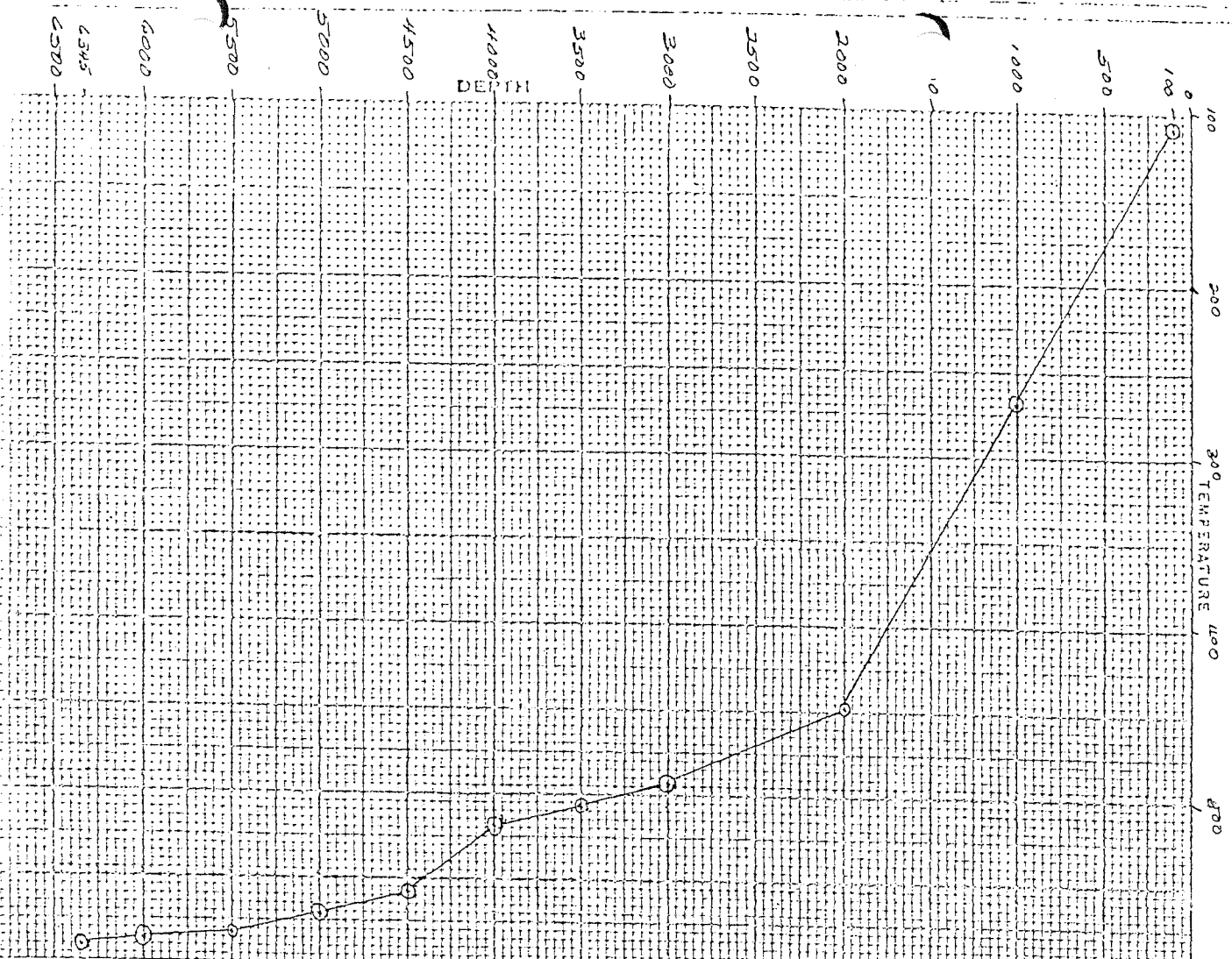
INSTRUMENT 88<sup>1</sup>/<sub>2</sub> - 698° FAHRA  
SERIAL NO 10055

MAX TEMP. 590.8 °F @ 6345

PURPOSE:

REMARKS:

600 STABILIZATION PERIOD



PRESSURE	GAUGE	COND
CASING, PSI	357	250 @ 100'

DEPTH	TEMP.	DEPTH	TEMP.
100	109.7		
1000	269.5		
2000	448.5		
3000	498.7		
3500	507.3		
4000	519.3		
4500	558.7		
5000	572.7		
5500	583.9		
6000	586.7		
6345	590.8		

S.M.

76

UNION

GEOTHERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B-4-S-27 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #4  
 CASING 1 3/8" AT 1441'; 9 5/8" AT 3182' ELEV. 9318' DATE: 1-10-75  
 LINER DESCRIPTION: 7" HUNG 3031' - 6376' ZERO POINT CLTS  
SLOTS: 3036' - 6375' DEPTH 6345'

TUBING DETAIL:  
 \_\_\_\_\_  
 \_\_\_\_\_

PURPOSE \_\_\_\_\_

REMARKS:  
 ELEMENT 0-4250 PSIC SERIAL NO. 7197 CLOCK-12889 12hr 15 TURN  
 ELEMENT 850-698° SERIAL NO. 10055 CLOCK-12890 12hr 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-1112-T-1116 DISENGAGE STYLUS P-1719-T-1721  
 WELL HEAD-346 PSIC ANNULUS-330 PSIC  
 PICKUP @ 6345' TIME ON BOTTOM 1155-1610 HRS MAX. 588.9°  
 WELL STATUS SHUT IN  
 SHUT IN: \_\_\_\_\_ ON PRODUCTION: \_\_\_\_\_  
 RATE \_\_\_\_\_

PRESSURE TEMPERATURE

PRESSURE					TEMPERATURE													
TIME	DEPTH	DEFL.	P-S	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	
5-14	6345	.761	1637.7	+0.06	-	1155-1610	6345'	1.607	588.9	-	-							
PRESSURE ELEMENT + TEMPERATURE ELEMENT READ													1637.7	PSIC	+588.9°			
FOR ENTIRE TIME AT 6345'																		

COMMENTS:

BY: J. Brown

576

UNION

B#4-5-26-P/T

GEO THERMAL DIVISION

SUBSURFACE SURVEY  
Field Work Sheet

OWNER UNION OIL CO OF CALIF FIELD VALLE GRANDE WELL NAME BAC#4  
 CASING 1 3/8" AC 1441, 9 3/8" AC 3182 ELEV. 9318 DATE: 11/11/74  
 LINER DESCRIPTION: 7" HUNG 3031'-6376 ZERO POINT GL+5  
SLOTS 3031'-6375' DEPTH 6345

TUBING DETAIL:

PURPOSE CHECK ACCURACY OF PRESS/TEMP ELEMENTS.

REMARKS:

ELEMENT - C-4500 7784N 12HR 14139 7 1/2  
 ELEMENT 85-698°F SERIAL NO. 10055 CLOCK 12HR-13904 TURN 7 1/2 STABILIZATION PERIOD  
 ENGAGE STYLUS P-1052 T-1100 DISENGAGE STYLUS P-1444 T-1445

WELL HEAD

PICKUP @ 6345' TIME ON BOTTOM 1346-1353 MAX. T 556.4

WELL STATUS STATIC

SHUT IN: ON PRODUCTION:

RATE

PRESS CORR. TEMP

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
	100	137	331.7		0	"	140	158	107.9	0							
1229	1050	140	334.9		0	"	1500	535	770.2	180							
1245	2000	145	351.1		0	"	2000	1095	443.5	173							
1253	3000	147	355.9		0	"	3000	1255	439.7	1046							
1303	3500	237	573.9		0	"	3500	1303	503.4	027							
1316	4100	300	721.4		0	"	4000	1345	515.3	024							
1325	4500	370	815.9		0	"	4500	1471	553.1	070							
1331	5000	457	1058.5		0	"	5000	1532	568.0	030							
1333	5500	498	1207.3		0	"	5500	1576	582.3	025							
1344	6000	58	2		0	"	6000	1580	581.4	002							
1345	6345	690	1675.6		0	"	6345	1593	580.4	015							

THIS ELEMENT HAS ALWAYS READ HIGHER THAN THE 80-640°F - S/N 10052

THERE ARE NO CORRECTIONS FOR THIS ELEMENT.

\* THIS SPOT WAS HARD TO DETECT ON CHART. DUE TO SCRATCHES I DID NOT TRY TO GUESS AT IT.

THE 0-4500 ELEMENT IS A RENTAL FROM KUSTER THAT I SUSPECT AS FAR AS ACCURACY IS CONCERNED. KUSTER CLAIMS THAT IT IS INACCURATE AT HIGH TEMPS AND DID NOT PROVIDE ANY CORRECTION TABLE WITH THE ELEMENT. J.M.

COMMENTS: WAD- 335  
ANNALS 325 } 0-600 7/6

BY: N.M

# 76

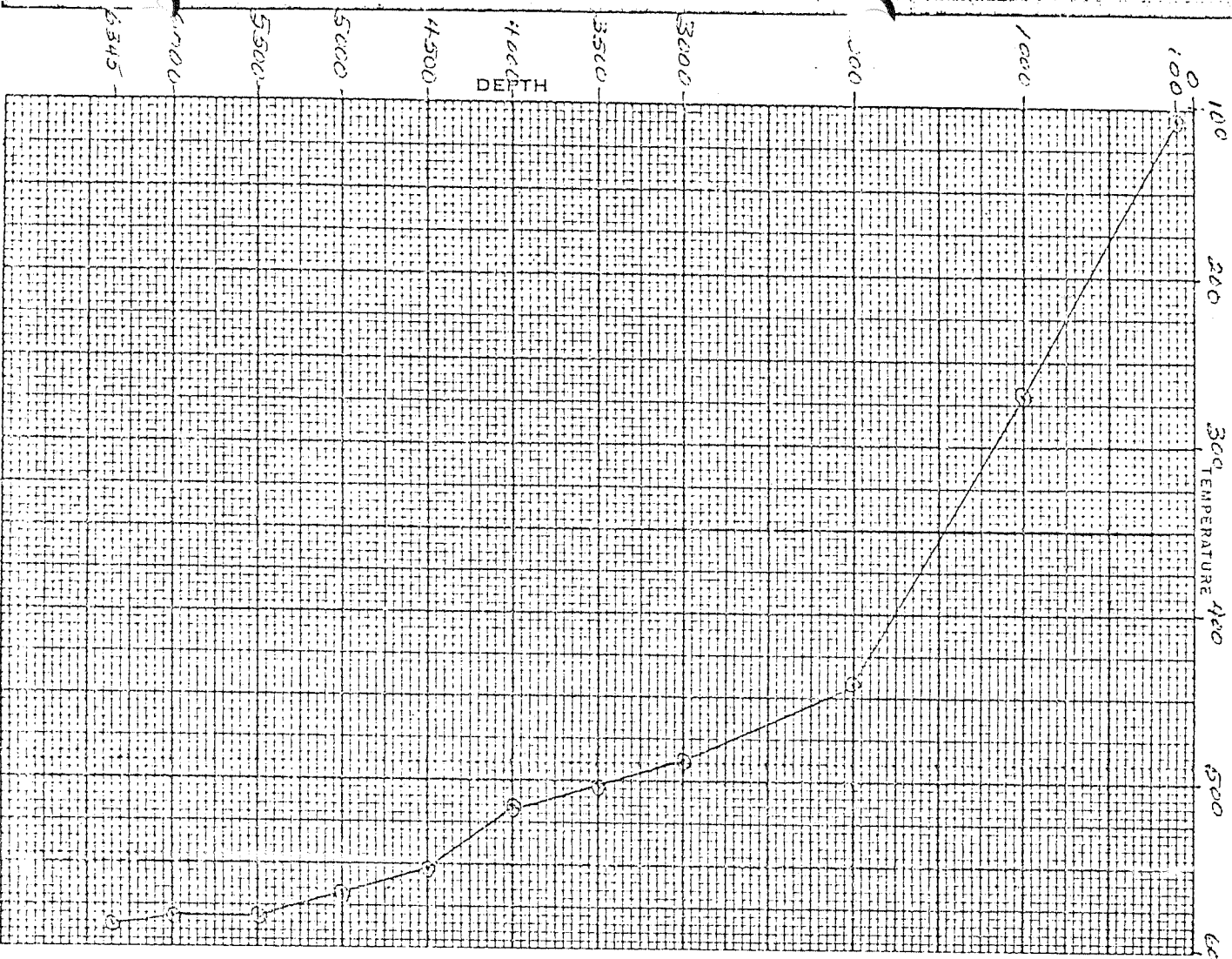
## GEO THERMAL DIVISION SUBSURFACE TEMPERATURE SURVEY

B4-5-26-7

OWNER VALLEY OIL OF OMAHA FIELD VALLEY GROUNDS WELL NAME BACH #4  
 CASING 1 3/8" AT 1441' 9 3/8" AT 3082' ELEV 9315' DATE 11/11/54  
 LINER DESCRIPTION 7" HDG 3031'-6326' ZERO POINT 6.7.5'  
31015 - 36361 - 6375 DEPTH 6345'

HOLE DESCRIPTION: \_\_\_\_\_  
 INSTRUMENT 58-695' FAH:  
 SERIAL NO 10055

PURPOSE CHECK ACCURACY OF TEMP ELEMENT MAX TEMP 58.6 °F @ 6345  
 REMARKS: \_\_\_\_\_



DEPTH	TEMP.	DEPTH	TEMP.
100	107.9		
200	270.2		
300	443.5		
400	489.7		
500	503.4		
1000	515.3		
4500	553.1		
5000	568		
5500	580.3		
6000	584.4		
6345	586.4		

BY J.M.

76

# UNION GEOHERMAL DIVISION

## SUBSURFACE PRESSURE SURVEY

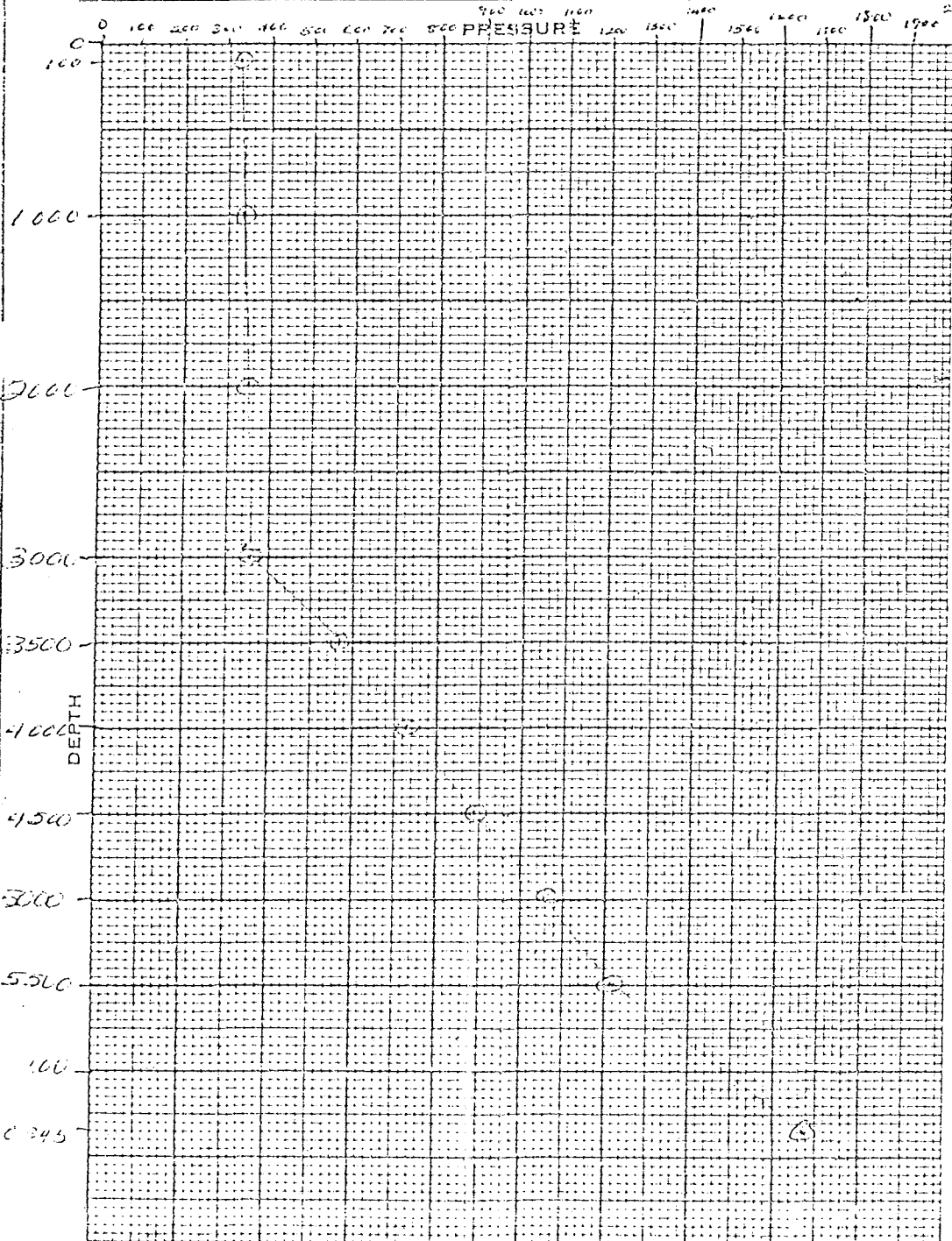
B4-5-26-P

OWNER UNION OIL OF CALIF FIELD VALLE GRANDE WELL NAME BACH #4  
 CASING 13 3/8" HC 1441'; 9 7/8" HI 3152' ELEV 8315 DATE 11/11/74  
 LINER DESCRIPTION 7" HUNG 3031'-6376' ZERO POINT CL 5'  
SLOTS - 3036' - 6375' DEPTH 6345'

MOLE DESCRIPTION:

INSTRUMENT 0-4800  
 SERIAL NO 7754N

PURPOSE CHECK ACCURACY OF PRESS ELEMENT MAX TEMP 586 °F @ 6345'  
 REMARKS:



STABILIZATION PERIOD		
	0 FT	100 FT
PRESSURE		
CASING PSI	335	331

DEPTH	PRESSURE	GRADIENT
100	331.7	0
1000	339.9	.008
2000	351.1	.012
3000	355.9	.005
3500	573.9	.436
4000	726.4	.305
4500	895.9	.339
5000	1059.5	.325
5500	1207.3	.298
6000	0	0
6345	1675.6	.554

BY:



76

UNION

GEOHERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B-4 S-25 P/T

OWNER: UNION OIL OF CALIFORNIA FIELD VALLE GRANDE

WELL NAME: BACR #4

CASING: 3 7/8" AT 441'; 4 7/8" AT 3182' ELEV. 931E'

DATE: 11-7-74

LINER DESCRIPTION: 7" HUNG 3031' - 6376'

ZERO POINT: GLT S

SLATS: 3036' - 6375'

DEPTH: 6345'

TUBING DETAIL:

PURPOSE: CHECK ACCURACY OF PRESS./TEMP GAUGES

REMARKS:

ENGAGE WT - KPG - 2950 PSI; SN - 9235 CLOCK - 12HR - #14139; 15 TURN

ELEMENT - KTB - 80 - 6467 SERIAL NO. 10052 CLOCK - 12HR - 13790; 15 TURN STABILIZATION PERIOD

ENGAGE STYLUS P-1320 hrs; T-1326 hrs DISENGAGE STYLUS P-1610 hrs; T-1625 hrs

WELL HEAD 344 PSIG

PICKUP @ 15345' TIME ON BOTTOM 1534 - 1539 hrs MAX. 573 °F

WELL STATUS STATIC

SHUT IN: ON PRODUCTION:

RATE

PRESSURE CORRECTIONS TEMPERATURE

TIME	DEPTH	DEFL.	P-T	GRAD.	#D	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1410	100	.232	361.4	.0	0	"	100	.035	91.1	.0							
1415	1000	.239	372.3	.012	0	"	1000	.545	249.5	.176							
1420	2000	.240	573.8	.002	0	"	2000	1.149	425.2	.176							
1425	3000	.385	596.7	.223	+001	"	3000	1.340	477.3	.059							
1430	3500	.494	757.4	.321	+002	"	3500	1.339	491.0	.026							
1435	4000	.606	924.1	.333	+002	"	4000	1.437	503.6	.025							
1440	4500	.715	1085.6	.323	+003	"	4500	1.585	542.1	.077							
1445	5000	.820	1240.4	.310	+004	"	5000	1.641	556.2	.028							
1450	5500	.927	1398.2	.316	+006	"	5500	1.688	568.0	.024							
1455	6000	1.034	1556.2	.316	+007	"	6000	1.692	579.0	.002							
1458	6345	1.127	1693.8	.349	+008	"	6345	1.709	573.2	.012							

COMMENTS: WHP - 344 PSIG  
ANNULUS - 334 PSIG } 0-400 T/G

BY: [Signature]

# GEOHERMAL DIVISION

## SUBSURFACE TEMPERATURE SURVEY

B-A S-25 T

OWNER UNION OIL OF CALIFORNIA FIELD VALLE GRANDE WELL NAME BACH # 4  
 CASING 1 3/8" AT 144' 1 9/8" AT 3182' ELEV 9158' DATE 11-7-74  
 LINER DESCRIPTION: 7" HUNG 3031' - 6376' ZERO POINT CL 1.5  
 DEPTH 6345'

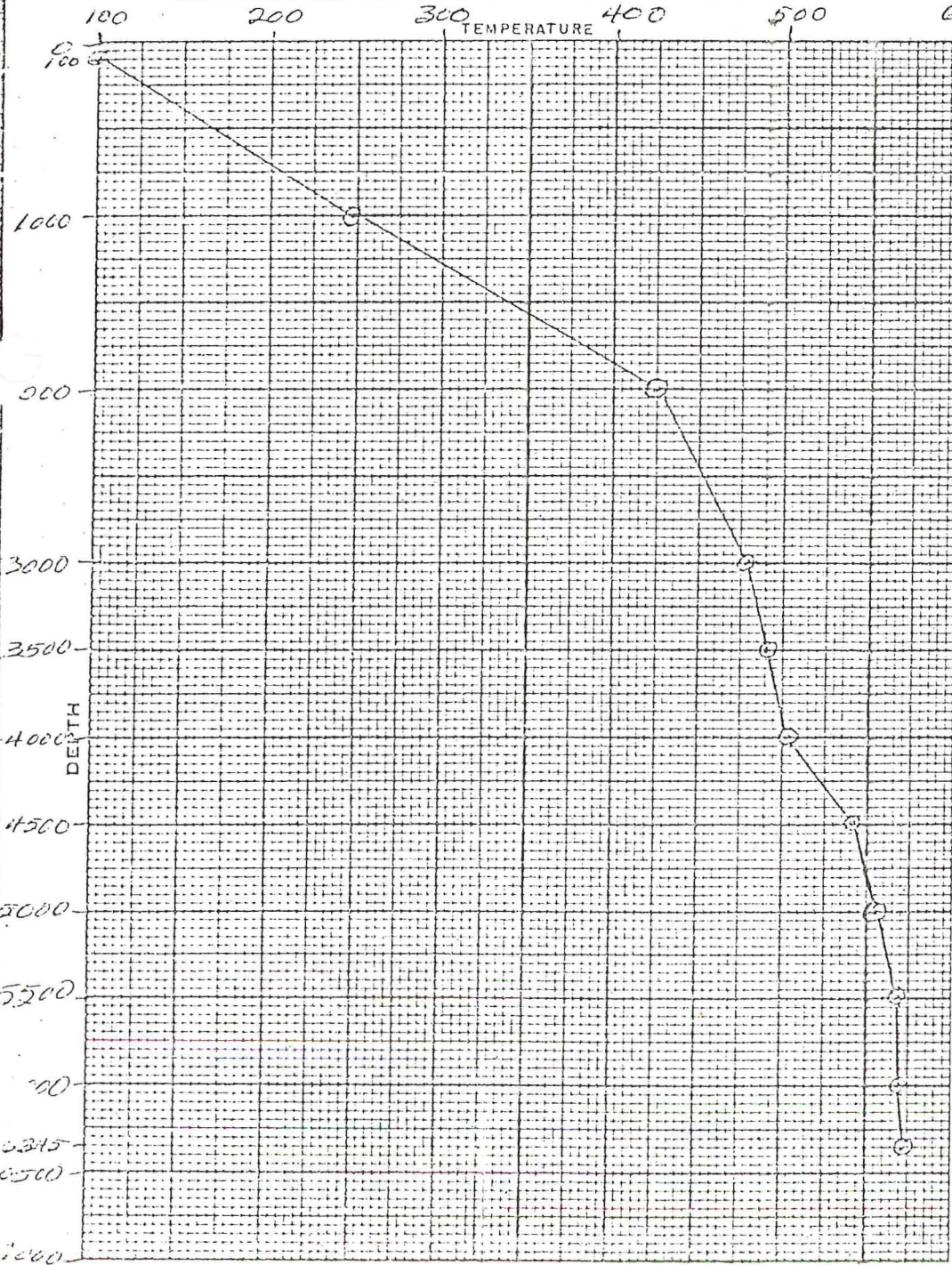
HOLE DESCRIPTION:

INSTRUMENT KTB 80°-640° FAH?  
 SERIAL NO 10052

PURPOSE \_\_\_\_\_

MAX TEMP 573 °F @ 6345'

REMARKS:



STABILIZATION PERIOD

DEPTH	TEMP.	DEPTH GRAD.	TEMP.
100	91.1	0	
1000	249.5	.176	
2000	425.2	.176	
3000	477.8	1.053	
3500	491.0	.026	
4000	503.6	1.025	
4500	542.1	.077	
5000	556.2	1.028	
5500	568.0	1.024	
6000	569.0	.002	
6345	573.2	.012	

BY: *[Signature]*

76

# UNION GEO THERMAL DIVISION

## SUBSURFACE PRESSURE SURVEY

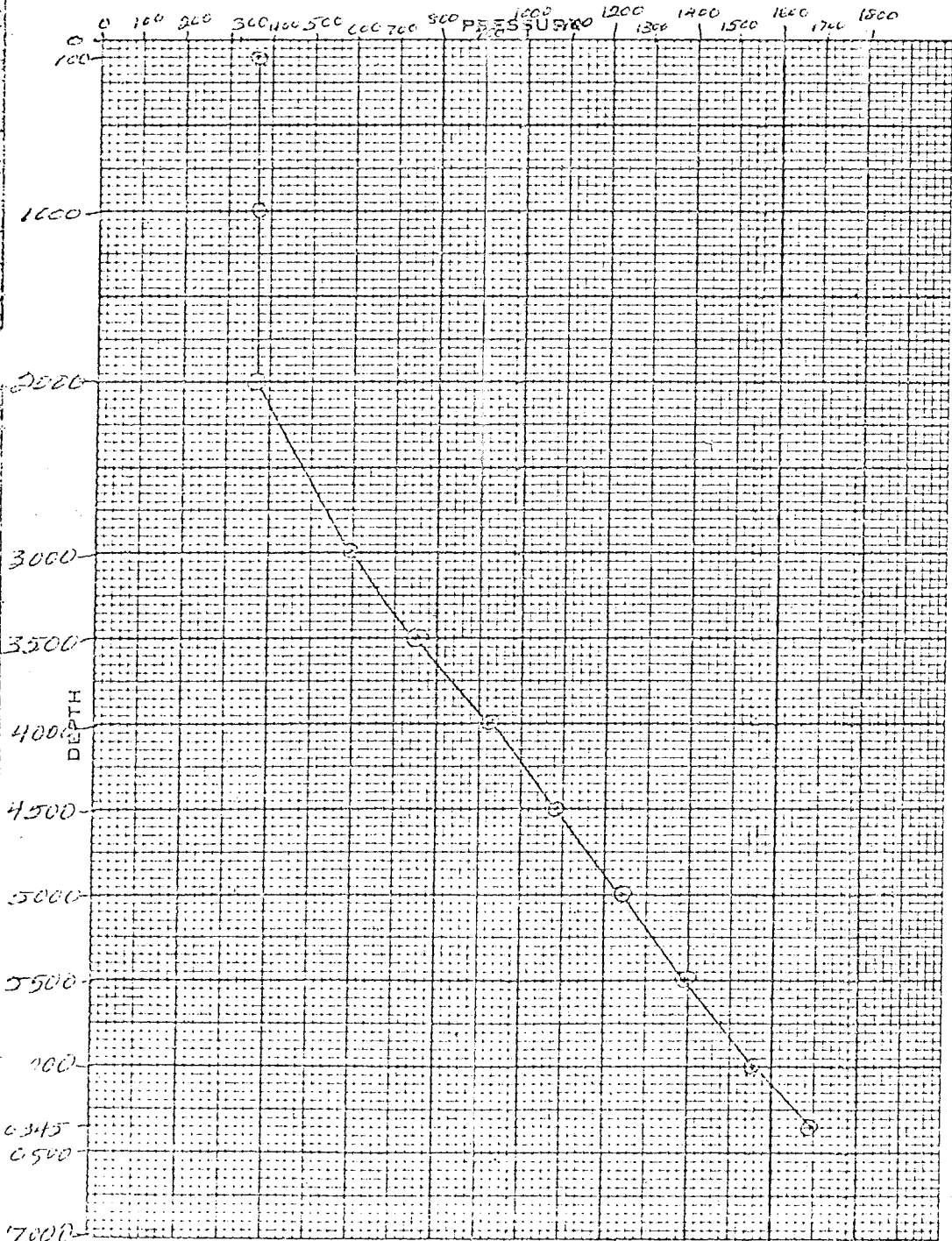
B-9 S-25 P

OWNER UNION OIL OF CALIFORNIA FIELD VALLE GRANDE WELL NAME BADA #4  
 CASING 13 7/8" AT 1441' 9 5/8" AT 3132' ELEV 4318' DATE 11-7-74  
 LINER DESCRIPTION: 7" HUNG. 3051' - 6376' ZERO POINT C.L. + 5'  
 DEPTH 6345'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT KPC - 2450 P.S.  
 SERIAL NO \_\_\_\_\_

PURPOSE \_\_\_\_\_ MAX TEMP 573 OF @ 6345'

REMARKS: \_\_\_\_\_



STABILIZATION PERIOD \_\_\_\_\_

PRESSURES	GAUGE	BORR
CASING PSI	<u>344</u>	

DEPTH	PRESSURE	GRADIAN
<u>100</u>	<u>361.4</u>	<u>0</u>
<u>1000</u>	<u>372.3</u>	<u>0.012</u>
<u>2000</u>	<u>373.8</u>	<u>0.002</u>
<u>3000</u>	<u>576.7</u>	<u>0.223</u>
<u>3500</u>	<u>757.4</u>	<u>0.321</u>
<u>4000</u>	<u>924.1</u>	<u>0.333</u>
<u>4500</u>	<u>1095.6</u>	<u>0.323</u>
<u>5000</u>	<u>1240.4</u>	<u>0.310</u>
<u>5500</u>	<u>1398.2</u>	<u>0.316</u>
<u>6000</u>	<u>1556.2</u>	<u>0.316</u>
<u>6345</u>	<u>1693.8</u>	<u>0.399</u>

BY: \_\_\_\_\_

# 76

## GEOHERMAL DIVISION

### SUBSURFACE PRESSURE SURVEY

B4-S24-P

OWNER VALLE OIL OF CALIF FIELD VALLE GRANDE WELL NAME BQA#4  
 CASING 1 3/8" AT 1441', 9 3/8" AT 3182' ELEV 9318' DATE 10/17/74  
 LINER DESCRIPTION: 7" SLOTTED AUNGA-3031'-6375' ZERO POINT GLT + 5'  
INTERVALS- 3036'-6375' DEPTH 6345'

HOLE DESCRIPTION:

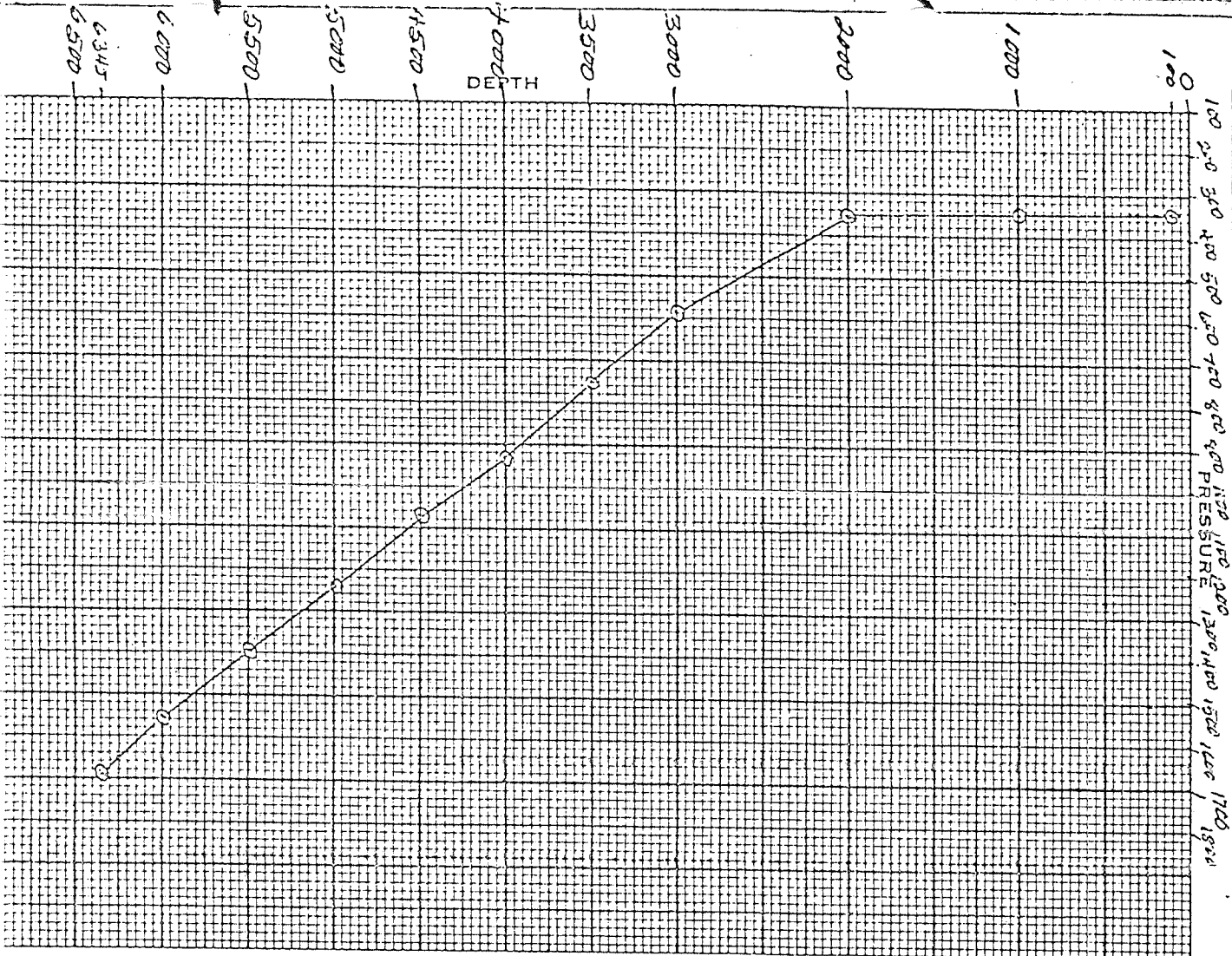
INSTRUMENT 0-2950 PSI  
 SERIAL NO 9235

MAX TEMP 573.5 OF @ 6345'

PURPOSE:

STABILIZATION PERIOD

REMARKS:



PRESSURE,	GAUGE	BOMB
CASING, PSI	330	334

DEPTH	PRESSURE	GRADIENT
100	345.8	0
1000	350.5	0
2000	358.3	.01
3000	586.3	.228
3500	752.9	.333
4000	918.2	.330
4500	1076.7	.317
5000	1240.4	.327
5500	1396.8	.313
6000	1554.7	.316
6345	1689.4	.390

7 1/11

# GEOTHERMAL DIVISION

## SUBSURFACE TEMPERATURE SURVEY

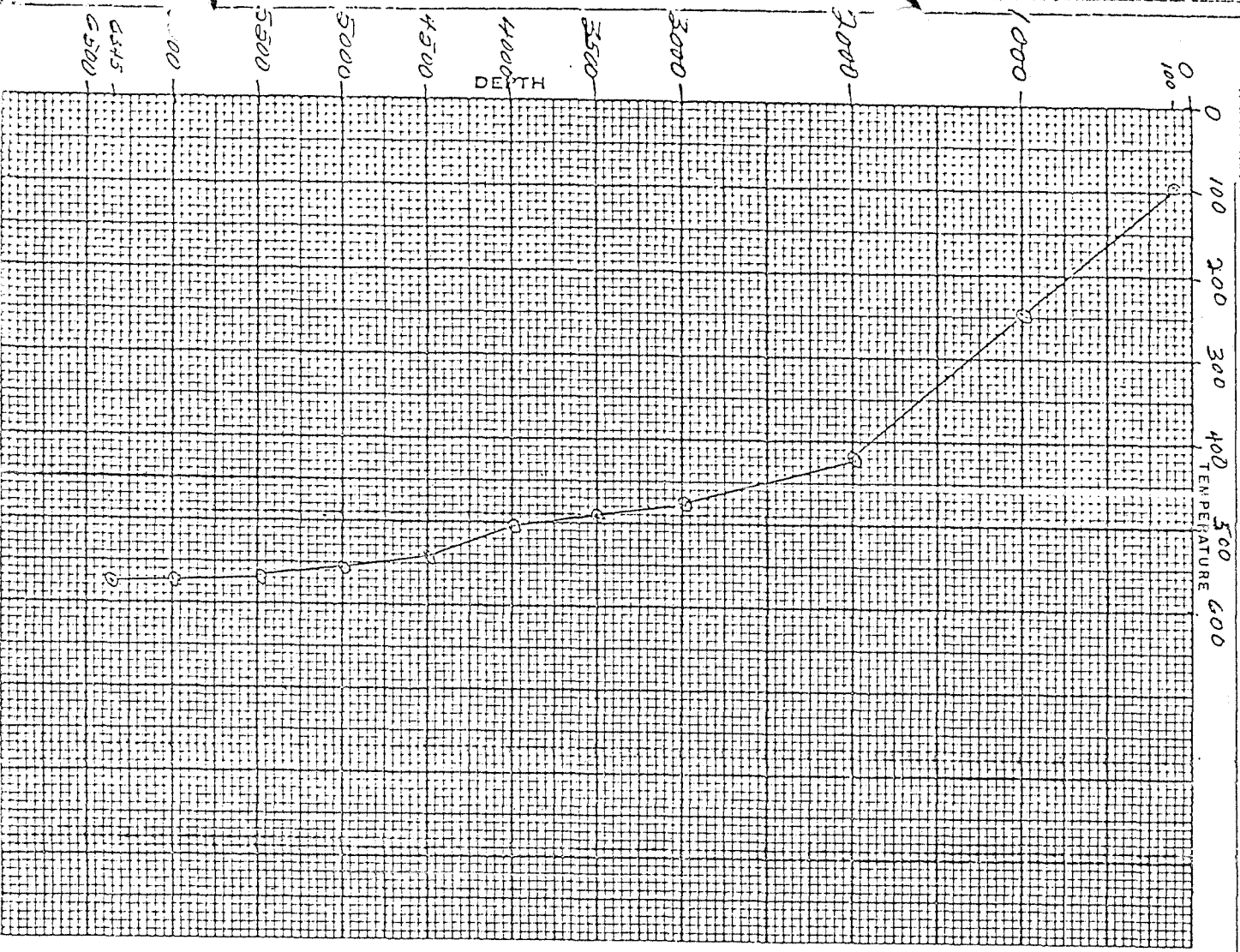
B#4-524-T

716

OWNER UNION OIL OF CALIF FIELD VALLE GRANDE WELL NAME BAGG#4  
 CASING 1 3/8" AT 1441' 9 5/8" AT 3152' ELEV. 9318' DATE: 10/17/74  
 LINER DESCRIPTION: 7" SCHEDULE 40 X 3/4" - 6376' ZERO POINT GLT-5  
INTERVALS - 3036' - 6375' DEPTH 6345'

HOLE DESCRIPTION: \_\_\_\_\_  
 INSTRUMENT 80-6460F FAH  
 SERIAL NO 10052

PURPOSE: \_\_\_\_\_ MAX TEMP 573.5 °F @ 6345  
 REMARKS: \_\_\_\_\_ STABILIZATION PERIOD \_\_\_\_\_



PRESSURE	GAUGE	ROD
CASING, PSI	<u>330</u>	<u>334</u>

DEPTH	TEMP.	DEPTH	TEM
<u>100</u>	<u>95.3</u>		
<u>1000</u>	<u>248</u>		
<u>2000</u>	<u>422.3</u>		
<u>3000</u>	<u>477.8</u>		
<u>3500</u>	<u>492.6</u>		
<u>4000</u>	<u>504.1</u>		
<u>4500</u>	<u>514.3</u>		
<u>5000</u>	<u>526.2</u>		
<u>5500</u>	<u>548.5</u>		
<u>6000</u>	<u>571.0</u>		
<u>6345</u>	<u>573.5</u>		

BY: Q.M.

# GEOTHERMAL DIVISION

## SUBSURFACE PRESSURE SURVEY

76

B114-322-111

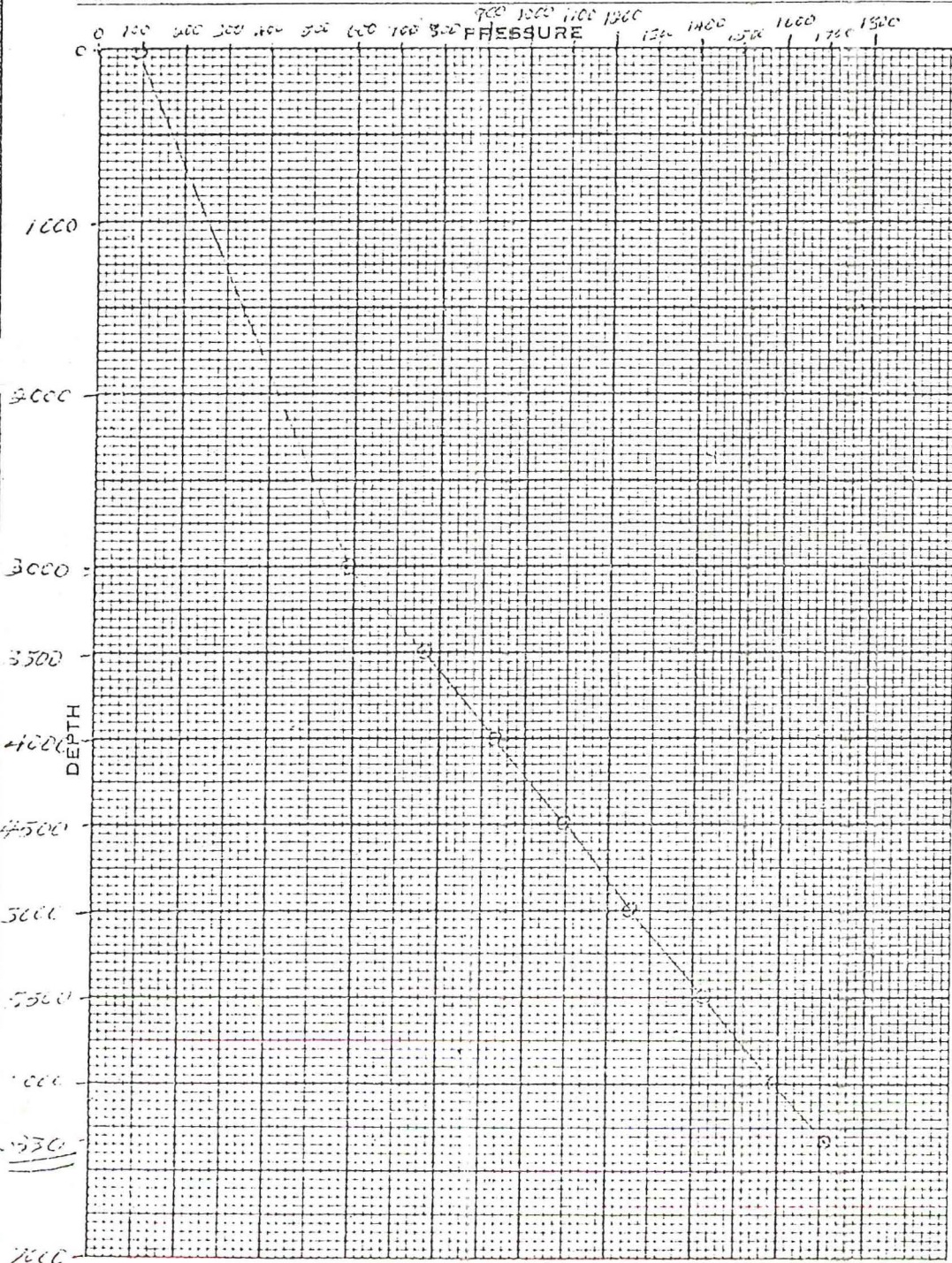
OWNER UNION OIL OF CALIF FIELD Valle Grande WELL NAME BACA #4  
 CASING 13 3/8 TO 14 1/4 8 5/8 TO 3 1/2 ELEV 9300' DATE 7/23/74  
 LINER DESCRIPTION 7" SLOTTED LINER FROM 3031-6376 ZERO POINT GLT #4  
SLOTS - 3036-6375 DEPTH 6335'

HOLE DESCRIPTION: \_\_\_\_\_

INSTRUMENT KPC-4250  
 SERIAL NO 7193

PURPOSE INTERFERENCE TEST WITH B#11 TEST #5 MAX TEMP 571.9°F @

REMARKS: \_\_\_\_\_



STABILIZATION PERIOD \_\_\_\_\_

PRESSURE	GAUGE	BONE
CASING. PSI	198	199.5

DEPTH	PRESSURE	GRADIENT
0	199.5	0
3000	584.4	0.28
3500	761.6	0.35
4000	930.4	0.33
4500	1099.6	0.33
5000	1256.4	0.31
5500	1423.7	0.33
6000	1593.2	0.33
6330	1716.8	0.35

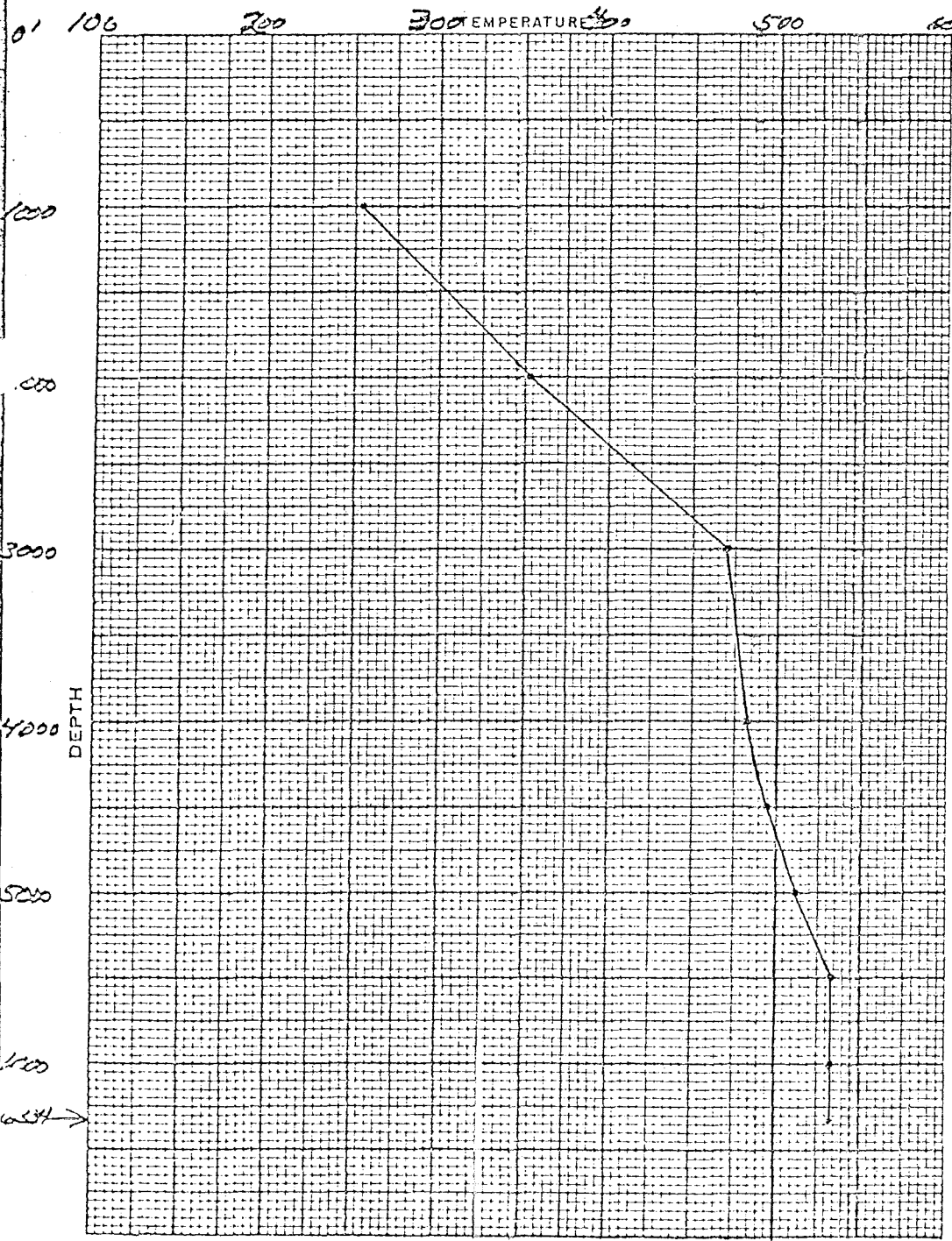
BY: J.C.M.

76

GEOTHERMAL DIVISION  
SUBSURFACE TEMPERATURE SURVEY

B4-SA-TP

OWNER Union Oil Co. of Calif. FIELD Valle Grande WELL NAME Baca #4  
 CASING \_\_\_\_\_ ELEV 9500 DATE 3/8/74  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT 1' below gl  
 \_\_\_\_\_ DEPTH 6344' - 5 - 6.33  
 HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 80° - 646° FAH  
 \_\_\_\_\_ SERIAL NO 10052  
 PURPOSE \_\_\_\_\_ MAX TEMP \_\_\_\_\_ °F @ \_\_\_\_\_  
 REMARKS: \_\_\_\_\_



STABILIZATION PERIOD \_\_\_\_\_

PRESSURES	GAUGE	BONS
CASING, PSI		

DEPTH	TEMP.	DEPTH	TEMP.
0'	100		
1000	265.2		
2000	353.7		
3000	420.0		
4000	481.8		
4500	494.5		
5000	511.2		
5500	533.0		
6000	"		
6344	"		

BY: RJ

76

UNION  
GLOTTHERMAL DIVISION

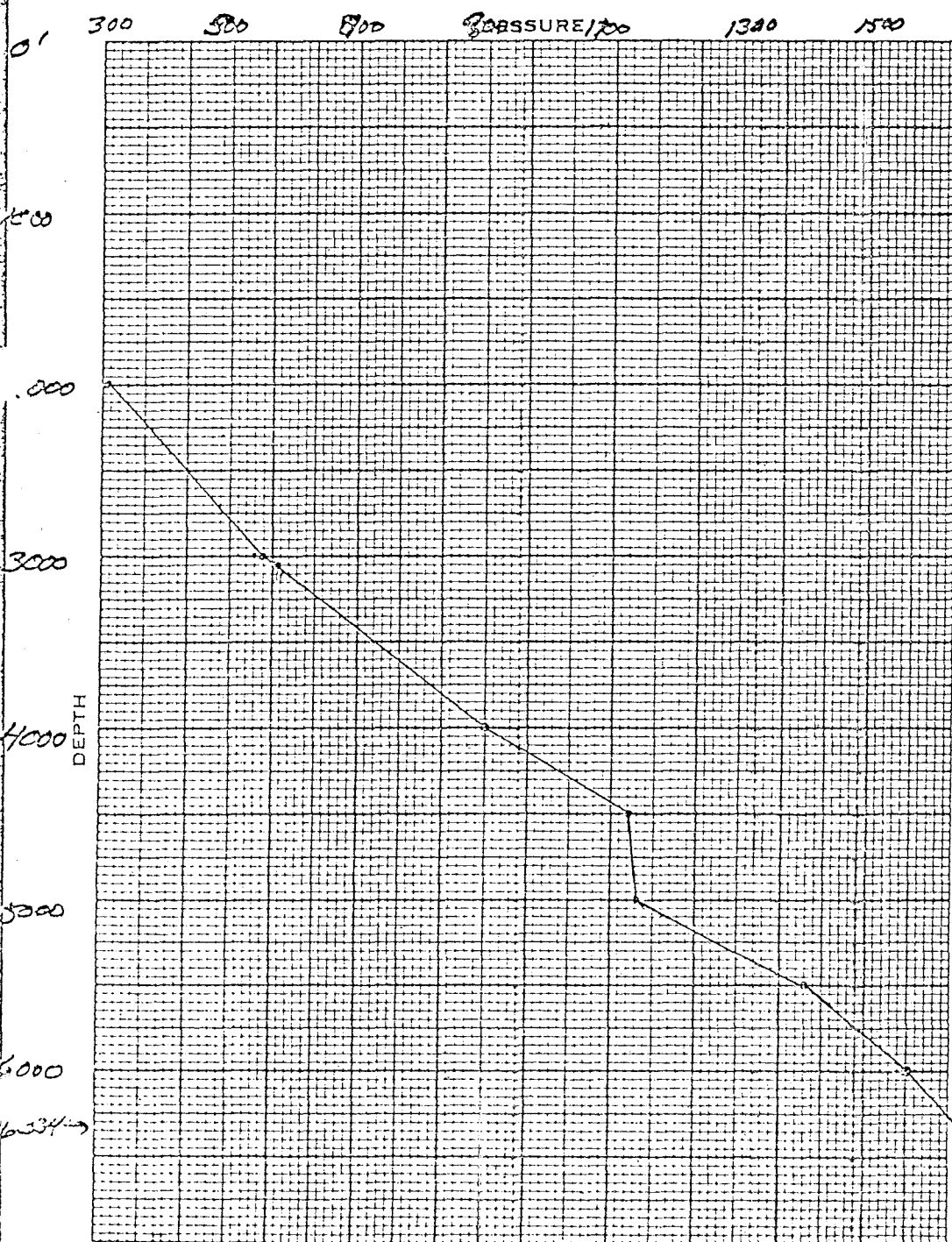
B4-SA-TP

SUBSURFACE PRESSURE SURVEY

OWNER Union Oil Co. of Calif. FIELD Valle Grande WELL NAME Raca #4  
 CASING \_\_\_\_\_ ELEV 9500 DATE 3/8/74  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT 1' below g.l.  
 DEPTH 6344 S-6334

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 4250 PS  
 SERIAL NO 7198

PURPOSE Tandem gradient survey MAX TEMP \_\_\_\_\_ °F @ \_\_\_\_\_  
 REMARKS: \_\_\_\_\_



STABILIZATION PERIOD  
 \_\_\_\_\_  
 \_\_\_\_\_

PRESSURES	GAUGE	BOMB
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
0'	0	-
1000	0	-
2000	309.21	-
3000	552.74	.24
4000	900.94	.34
4500	1124.47	.22
5000	1139.41	.01
5500	1418.90	.26
6000	1567.80	.15
6334	1675.25	.108

1 LINE = 13.55 PSIG

BY: RF



76

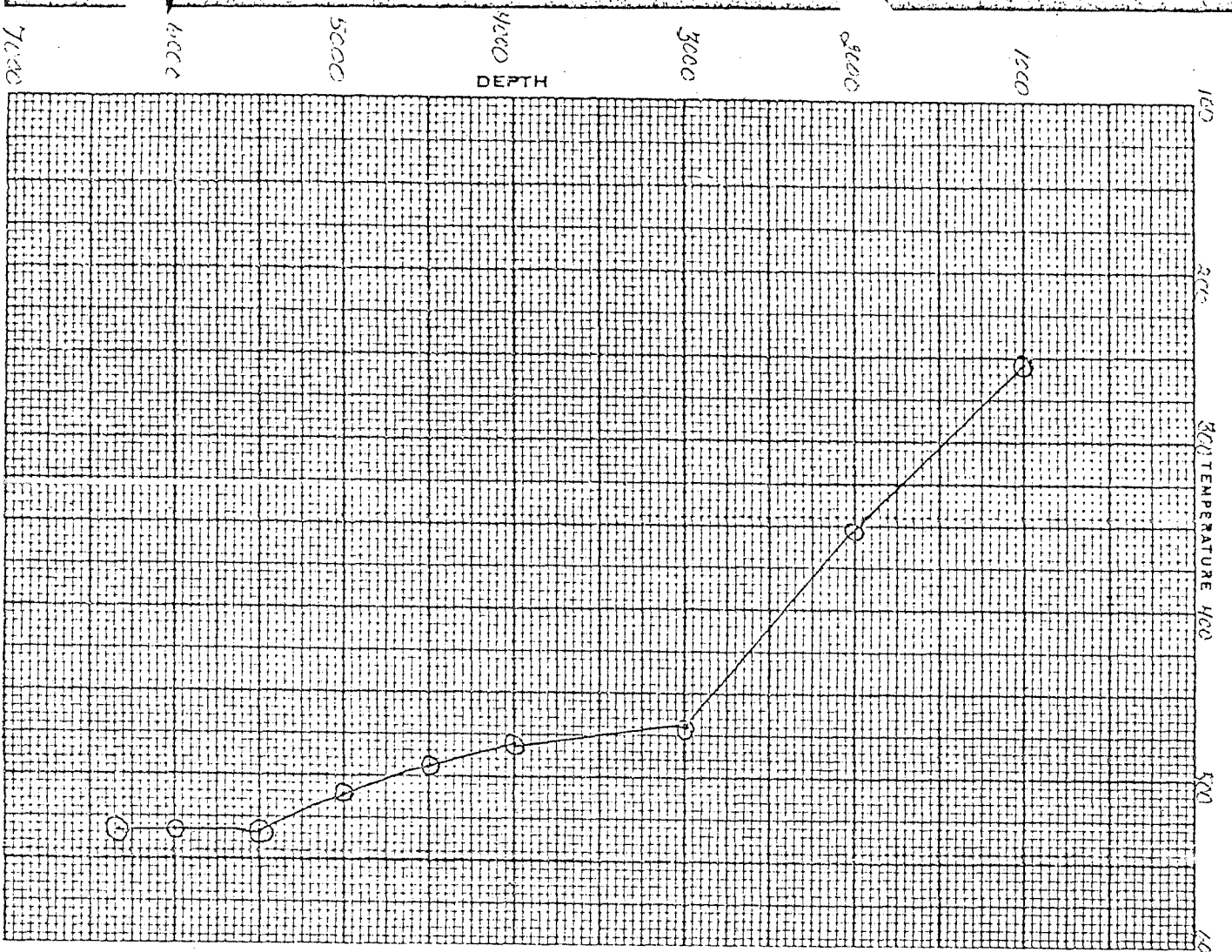
WILLOW  
 GLOTTHERMAL DIVISION  
 SUBSURFACE TEMPERATURE SURVEY

84-522 PT

OWNER Utah Oil Company of Laie FIELD Valley Grade WELL NAME Boca #4  
 CASING \_\_\_\_\_ ELEV 9318 DATE 3/8/74  
 LINER DESCRIPTION \_\_\_\_\_ ZERO POINT 41 + 1  
 \_\_\_\_\_ DEPTH 6334' Survey

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT \_\_\_\_\_ FAH  
 SERIAL NO KPDG-10052

PURPOSE Static Gradient Survey MAX TEMP 533 °F @ 6334  
 REMARKS: LHP=274



STABILIZATION PERIOD \_\_\_\_\_

DEPTH	TEMP.	DEPTH	TEM.
1000	255.9		
2000	253.7		
3000	470.0		
4000	481.8		
4500	494.5		
5000	511.8		
5500	533.0		
6000	533.0		
6334	533.0		

BY: JK.

# 76

## OTHERMAL DIVISION

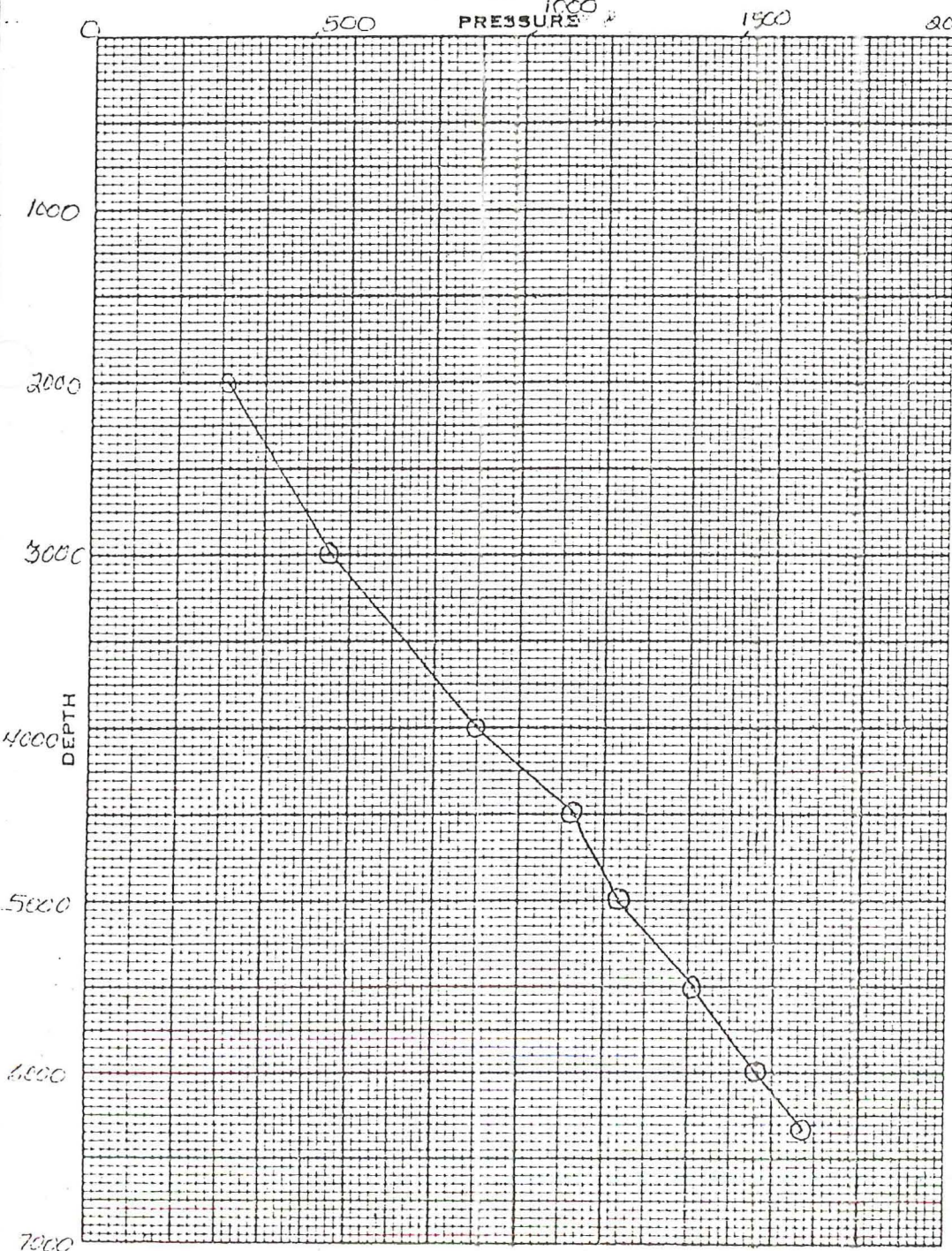
### SUBSURFACE PRESSURE SURVEY

B4-55571

OWNER Union Oil Company FIELD Valle Grande WELL NAME BACA #1  
 CASING \_\_\_\_\_ ELEV 9318' DATE 3/8/74  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT GL+1  
 \_\_\_\_\_ DEPTH 6334' Survey

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT \_\_\_\_\_ PSI  
 SERIAL NO KPG-7198

PURPOSE Static Gradient Survey MAX TEMP 53.5 °F @ 6334'  
 REMARKS: WHP = 274



STABILIZATION PERIOD \_\_\_\_\_

PRESSURE	GAUGE	BOMB
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
0	-	-
1000	-	-
2000	309.21	.309
3000	552.74	.244
4000	900.84	.348
4500	1124.47	.447
5000	1239.41	.230
5500	1408.90	.339
6000	1567.80	.318
6334	1675.85	.323

BY: JK

76

# GEO THERMAL DIVISION

## SUBSURFACE TEMPERATURE SURVEY

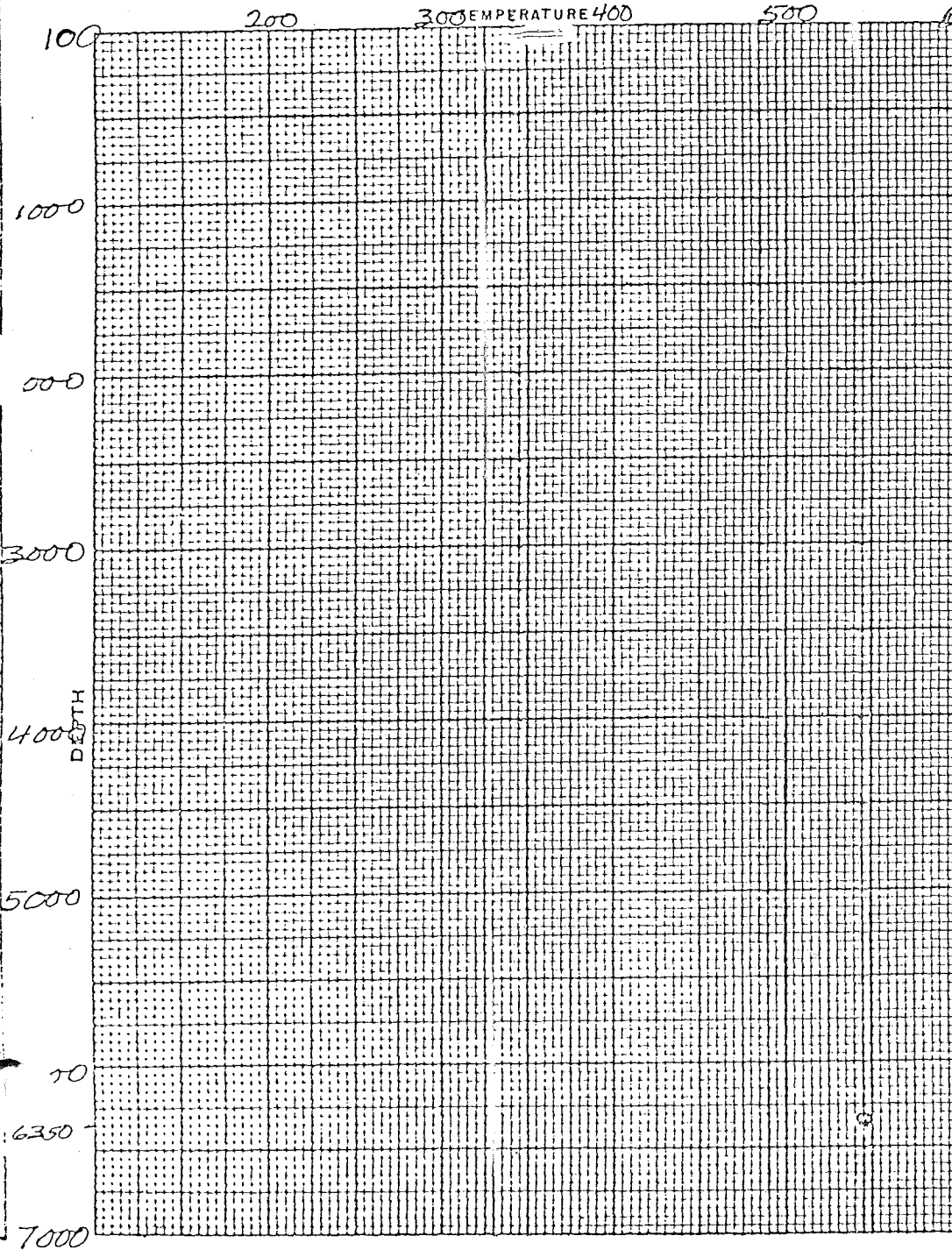
B4-521-P1+  
BH

OWNER UNION OIL OF CALIF FIELD Valle Grande WELL NAME B-4  
 CASING \_\_\_\_\_ ELEV 9300 DATE: 12/17/73  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT 14' Above ground  
 \_\_\_\_\_ DEPTH 6350'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 300°-736°F FA  
 \_\_\_\_\_ SERIAL NO KTB-10036

PURPOSE \_\_\_\_\_ MAX TEMP 545.1 °F @  
 REMARKS: \_\_\_\_\_

STABILIZATION PERIOD  
6000 FT. SINCE 11-13-73  
@ 1222 hrs - ST - 816 hrs



PRESSURES	GAUGE	BOMB
CASING, PSI		
DEPTH	TEMP.	DEPTH
0 FT	0°	
6350	545.1	

BY:

76

# GEO THERMAL DIVISION

## SUBSURFACE PRESSURE SURVEY

B4-521-DJT  
BH

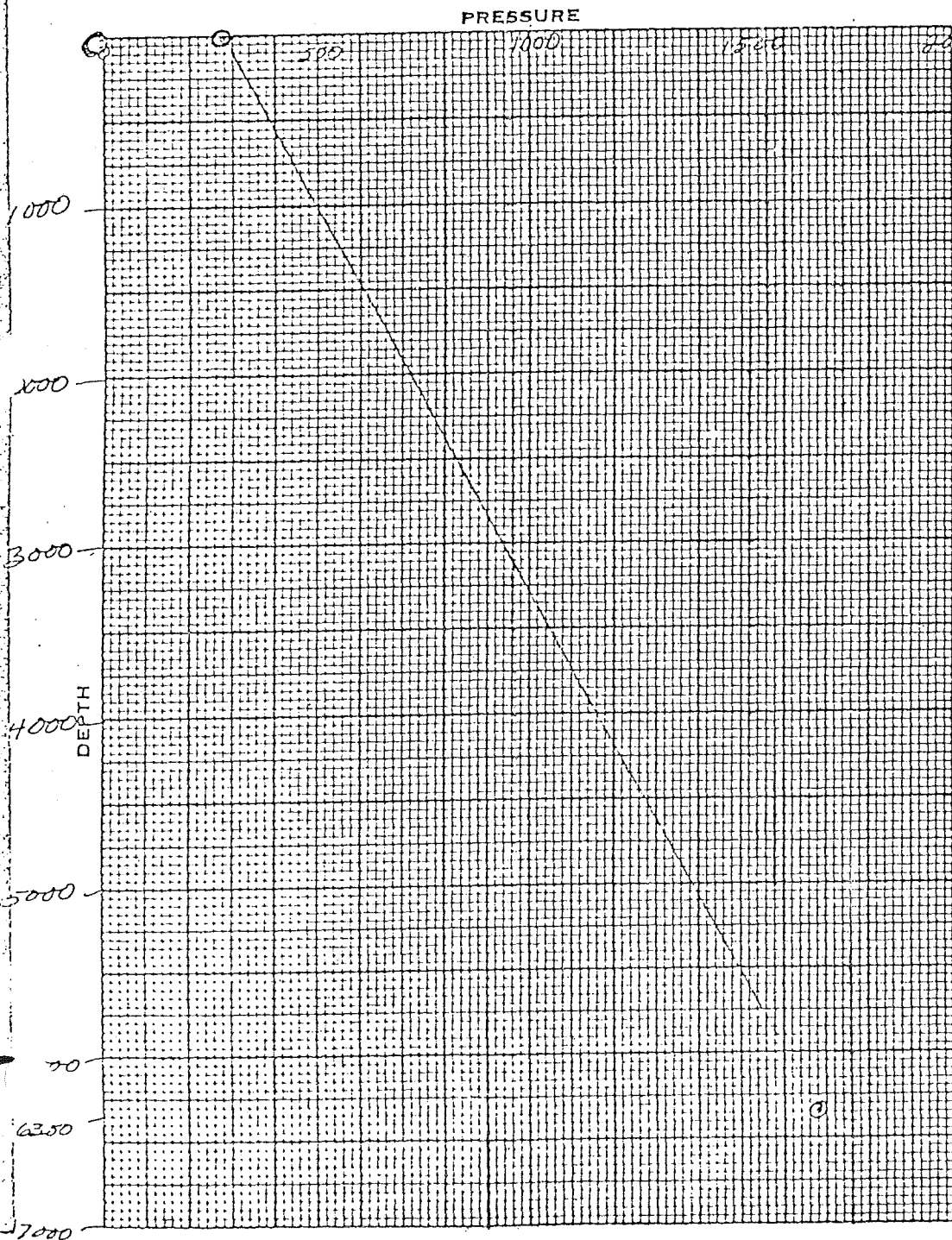
OWNER UNION OIL OF CALIF FIELD VALLE GRANDE WELL NAME B4  
 CASING \_\_\_\_\_ ELEV 9300 DATE 12/17/73  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT 1' Above ground  
 \_\_\_\_\_ DEPTH 6350

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 2400  
 \_\_\_\_\_ SERIAL NO KPC-6604N

PURPOSE \_\_\_\_\_ MAX TEMP 545.1 °F @

REMARKS: \_\_\_\_\_

STABILIZATION PERIOD  
SI. SINCE 11/13/73  
@ 1222 hrs. 316 hrs



PRESSURES	GAUGE	BOM
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
0	293.54	
6350	11686.17	

BY:

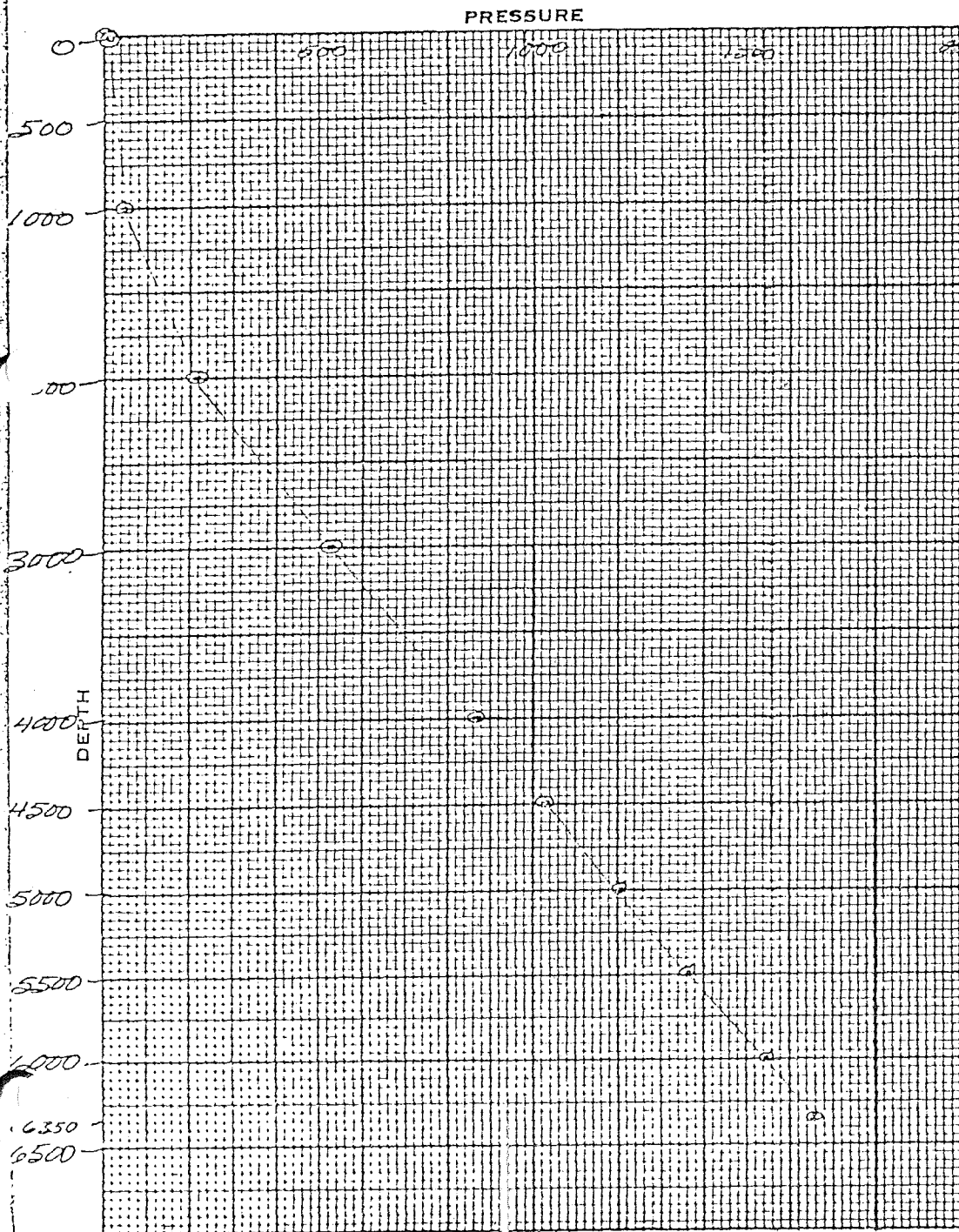
76

# GLOTTHERMAL DIVISION

## SUBSURFACE PRESSURE SURVEY

OWNER UNION OIL OF CALIF FIELD Valle Grande WELL NAME B-4  
 CASING \_\_\_\_\_ ELEV 9300' 9318 DATE 12/13/73  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT 10' Above ground  
 \_\_\_\_\_ DEPTH 6358'  
 HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 4250 PSI  
 \_\_\_\_\_ SERIAL NO KPG 7198  
 PURPOSE \_\_\_\_\_ MAX TEMP 537.3 °F @ \_\_\_\_\_  
 REMARKS: \_\_\_\_\_

STABILIZATION PERIOD 10 MIN  
SI 11-13-73  
C 1272



PRESSURES	GAUGE	BOMB
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
0	7	0
1000	24	0.017
2000	209	0.024
3000	517	0.0308
4000	865	0.0348
4500	1035	0.0340
5000	1201	0.0342
5500	1372	0.0342
6000	1544	0.0334
6350	1655	0.0317

BY: \_\_\_\_\_

WIND

# GEOHERMAL DIVISION

B4-52077

## SUBSURFACE TEMPERATURE SURVEY

76

OWNER Western Oil Co FIELD \_\_\_\_\_ WELL NAME BACA No. 9  
 CASING \_\_\_\_\_ ELEV 9318 DATE 12-3-73  
 LINER DESCRIPTION \_\_\_\_\_ ZERO POINT GL +1'  
 DEPTH 6350

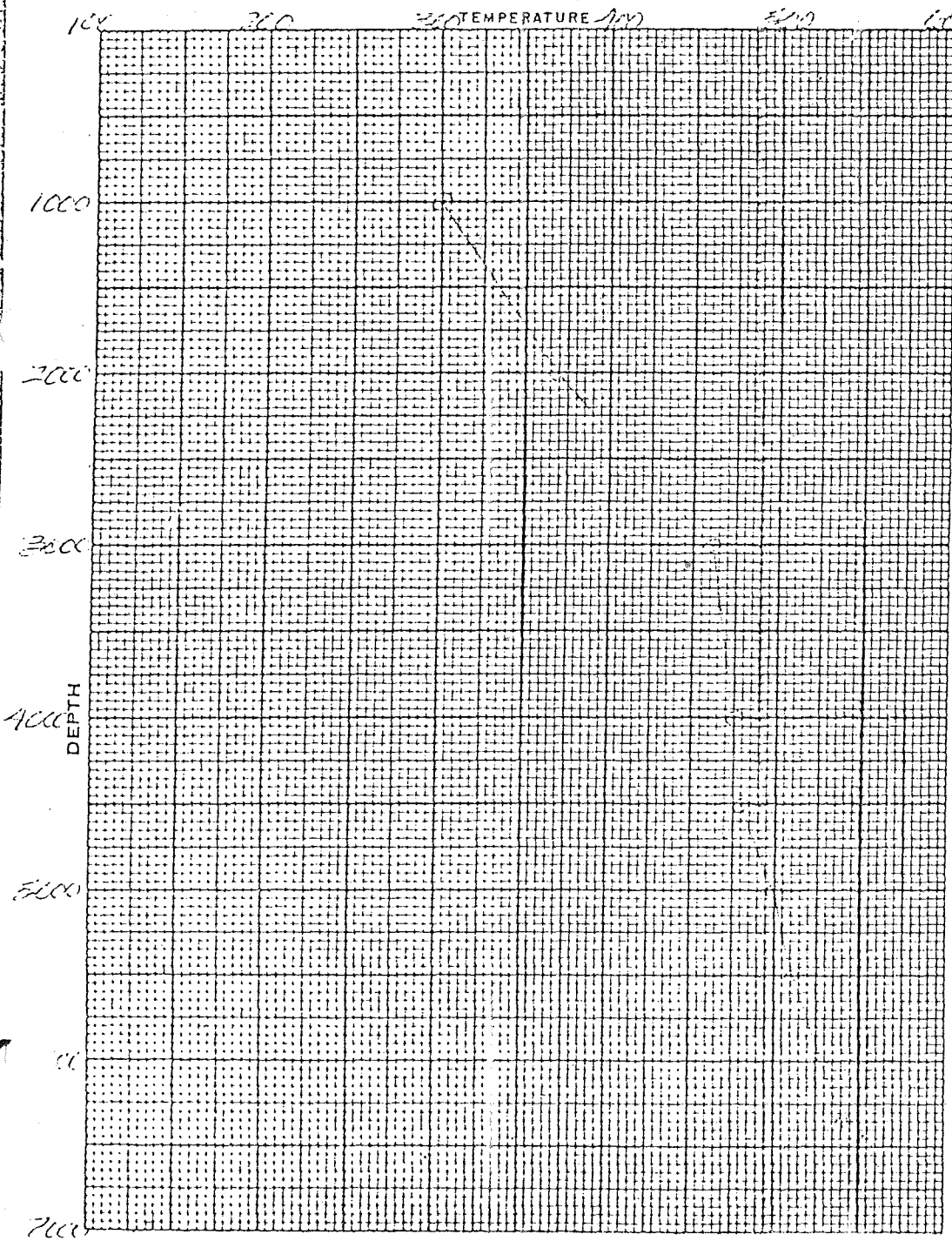
HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 300-736 FAI  
 SERIAL NO KTB-10036

PURPOSE \_\_\_\_\_ MAX TEMP 540.9 °F @ 6350  
 REMARKS: \_\_\_\_\_

STABILIZATION PERIOD  
SI 11-13-73 @  
1222

PRESSURES	GAUGE	BOMB
CASING, PSI		

DEPTH	TEMP.	DEPTH	TEM
0			
1000	320		
2000	348.5		
3000	462.5		
4000	474.7		
4500	482.2		
5000	498.5		
5500-5500	510.7		
6000	527.5		
6350	540.9		



BY: \_\_\_\_\_

UNION

B4-520-Press

76

# GEOHERMAL DIVISION

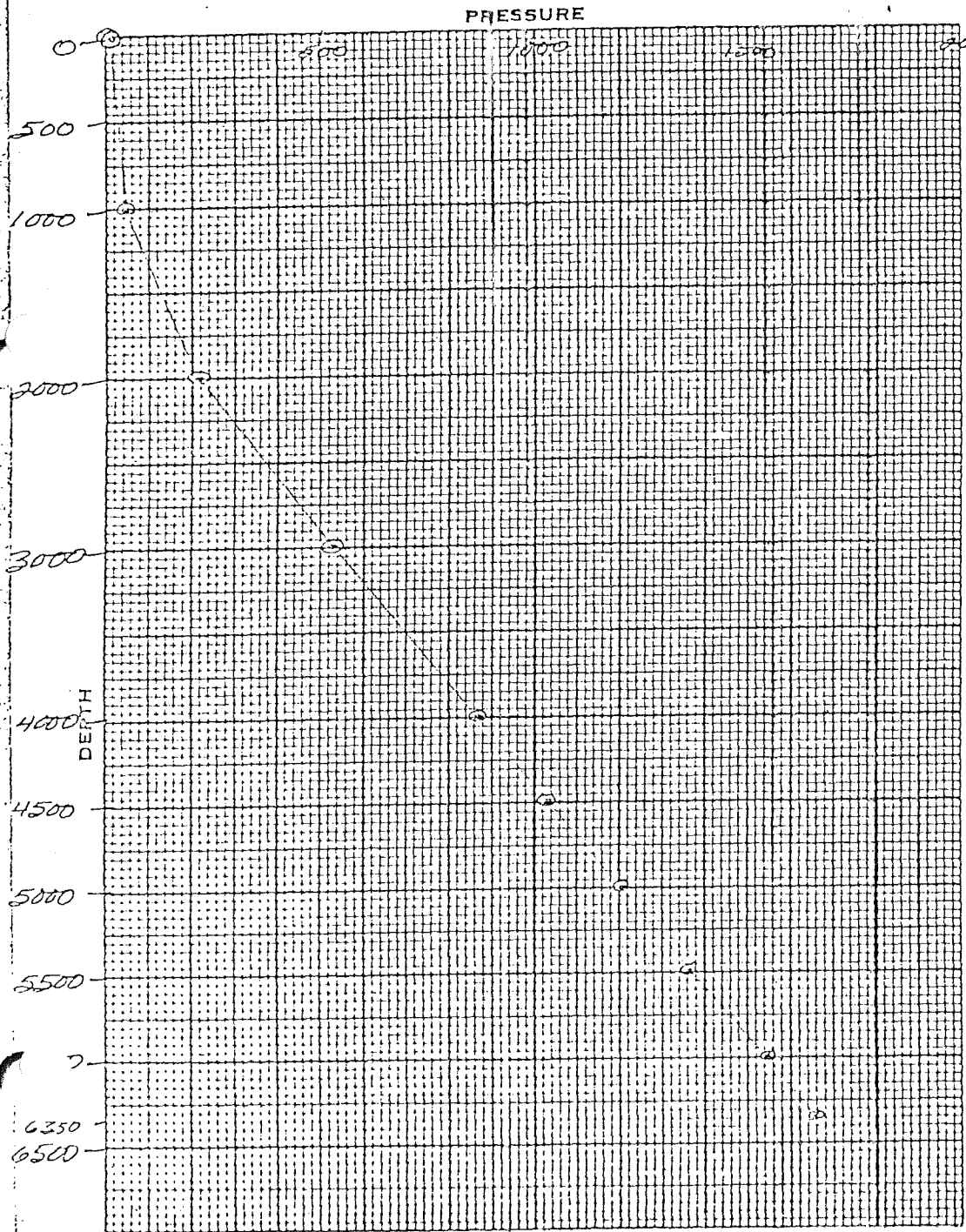
## SUBSURFACE PRESSURE SURVEY

OWNER UNION OIL OF CALIF FIELD VALLE GRANDE WELL NAME B-4  
 CASING \_\_\_\_\_ ELEV 9318 DATE 12/3/73  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT 1' Above ground  
 \_\_\_\_\_ DEPTH 6358'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 4250 PS  
 \_\_\_\_\_ SERIAL NO KPG 7198  
 \_\_\_\_\_ MAX TEMP 537.3 °F @ \_\_\_\_\_

PURPOSE \_\_\_\_\_  
 REMARKS: \_\_\_\_\_

STABILIZATION PERIOD  
SI 11-13-73  
C 1272



PRESSURE	GAUGE	BOMB
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
0	7	0
1000	24	0.017
2000	209	0.024
3000	517	0.308
4000	865	0.348
4500	1035	0.340
5000	1201	0.342
5500	1372	0.342
6000	1544	0.334
6350	1655	0.317

RYI

W 000000

# GEO THERMAL DIVISION B4 - 519 PT

## SUBSURFACE TEMPERATURE SURVEY

# 76

OWNER Union Oil Co of Calif

FIELD

9318 GA

WELL NAME Bacc No. 4

CASING

ELEV

9318 GA

DATE

11-19-73

LINER DESCRIPTION:

ZERO POINT

Sumb hole 614

DEPTH

6' Surface

HOLE DESCRIPTION:

INSTRUMENT

300-736 ° FAH

SERIAL NO

KTB-10036

PURPOSE

BHP and BHT Building following 234-2

MAX TEMP

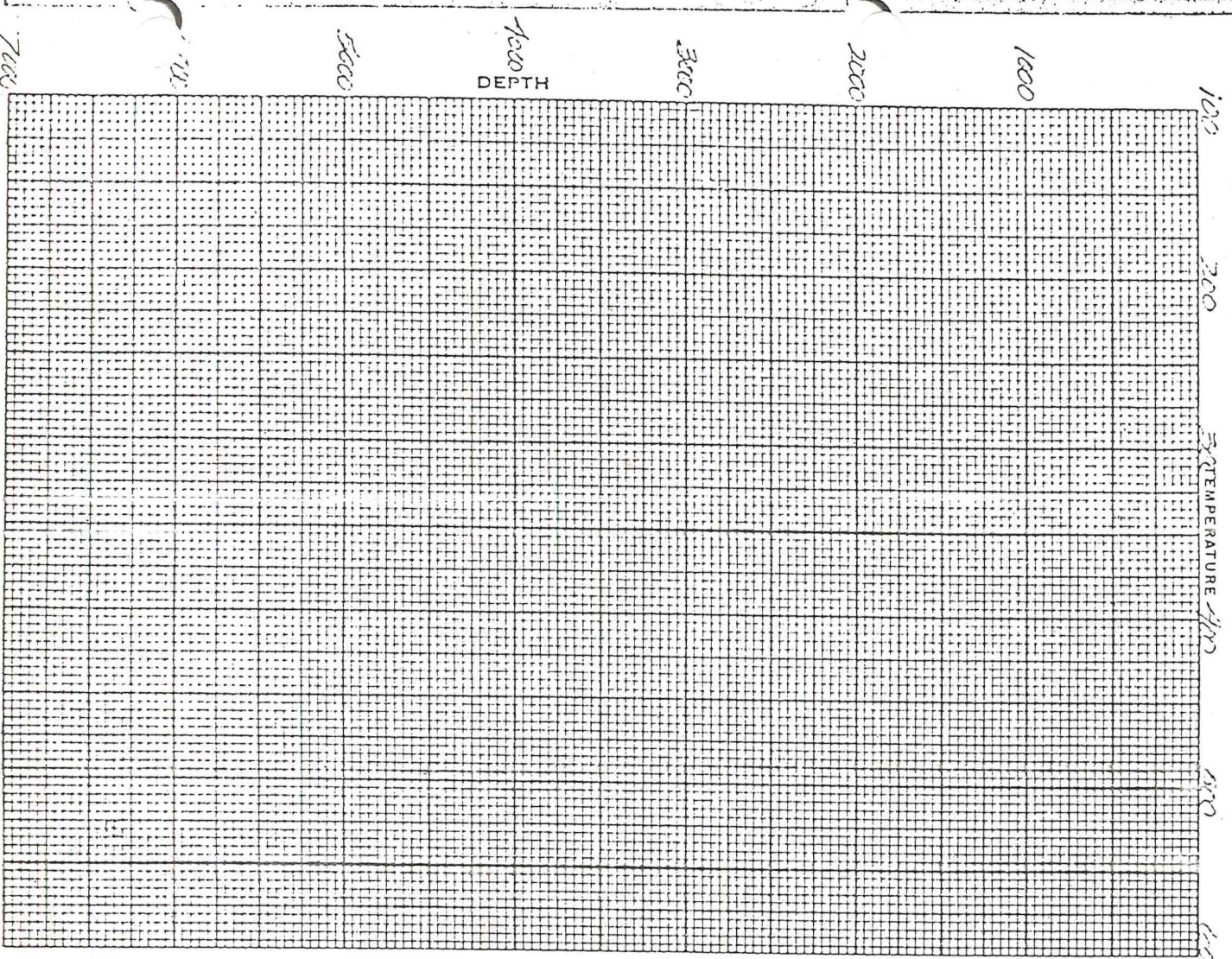
529.7 °F @ 6350

REMARKS:

STABILIZATION PERIOD

SI 1222 11-13-73

15192 has since SI



DEPTH	TEMP.	DEPTH	TEM.
6350	529.7	Q	2017.0

15192 has since SI

W. S. Palmer





UJ 000000

# GEO THERMAL DIVISION B4-518PT

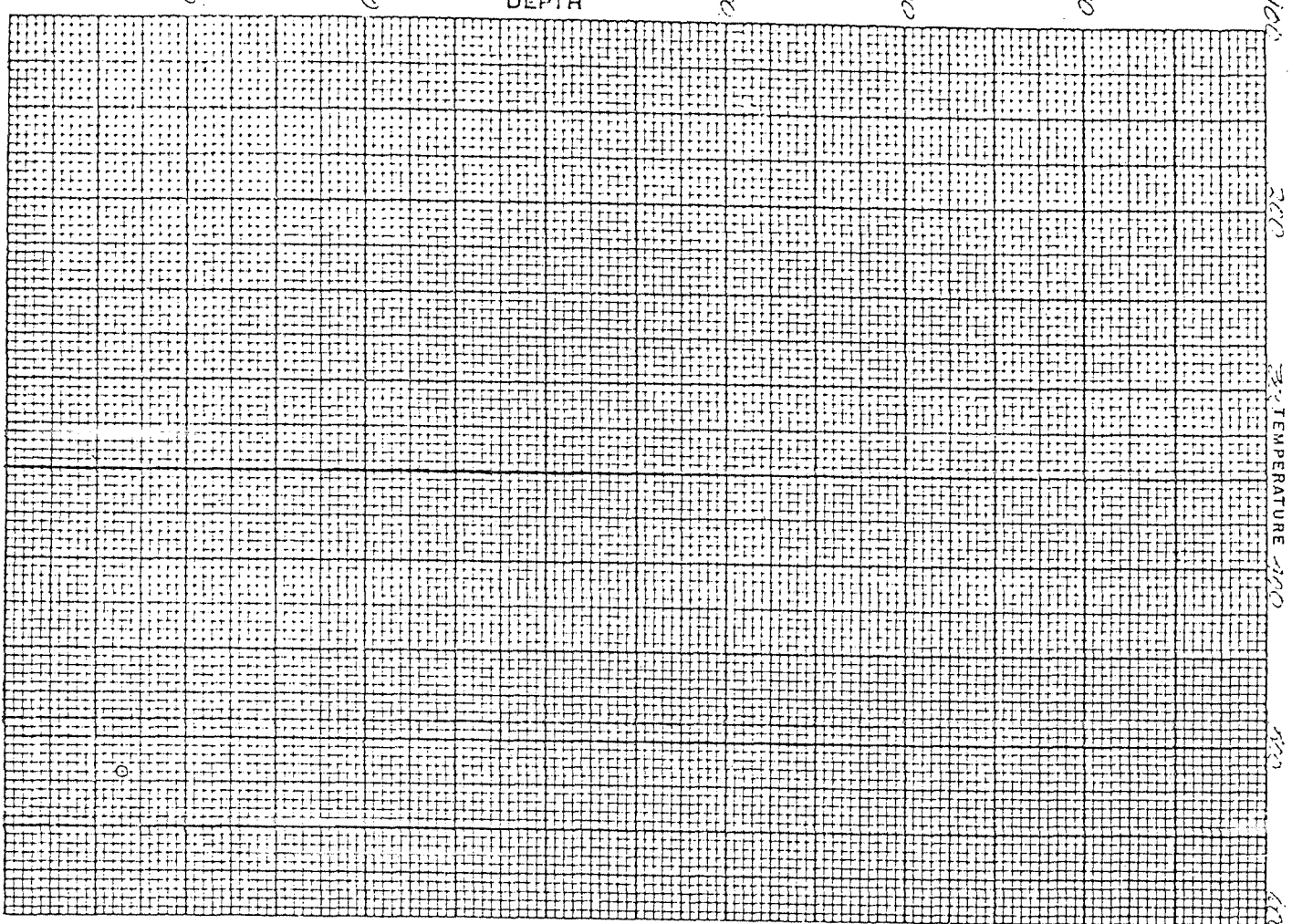
## SUBSURFACE TEMPERATURE SURVEY

76

OWNER Union Oil Co of Calif FIELD        WELL NAME BACP No. 4  
CASING        ELEV. 9318 GR DATE: 11-17-73  
LINER DESCRIPTION:        ZERO POINT Sumb. Gals: G114  
DEPTH TD 6.378 SURFACE 6.5

HOLE DESCRIPTION:         
INSTRUMENT 300-736°F FAI  
SERIAL NO K1B-10036

PURPOSE BHT and BHP Building following B4-2 MAX TEMP 520.3 °F @ 6380  
REMARKS: Temp. check stopped 21 mins. at bottom



STABILIZATION PERIOD  
SI 1222 11-13-73

PRESSURES	GAUGE	BOMB	
CASING, PSI	<u>230</u>		
DEPTH	TEMP.	DEPTH	TEM
<u>6380</u>	<u>520.3</u>	<u>@ 1751</u>	<u>TEMP</u>

BY: ZMwells

76

# GLO THERMAL DIVISION

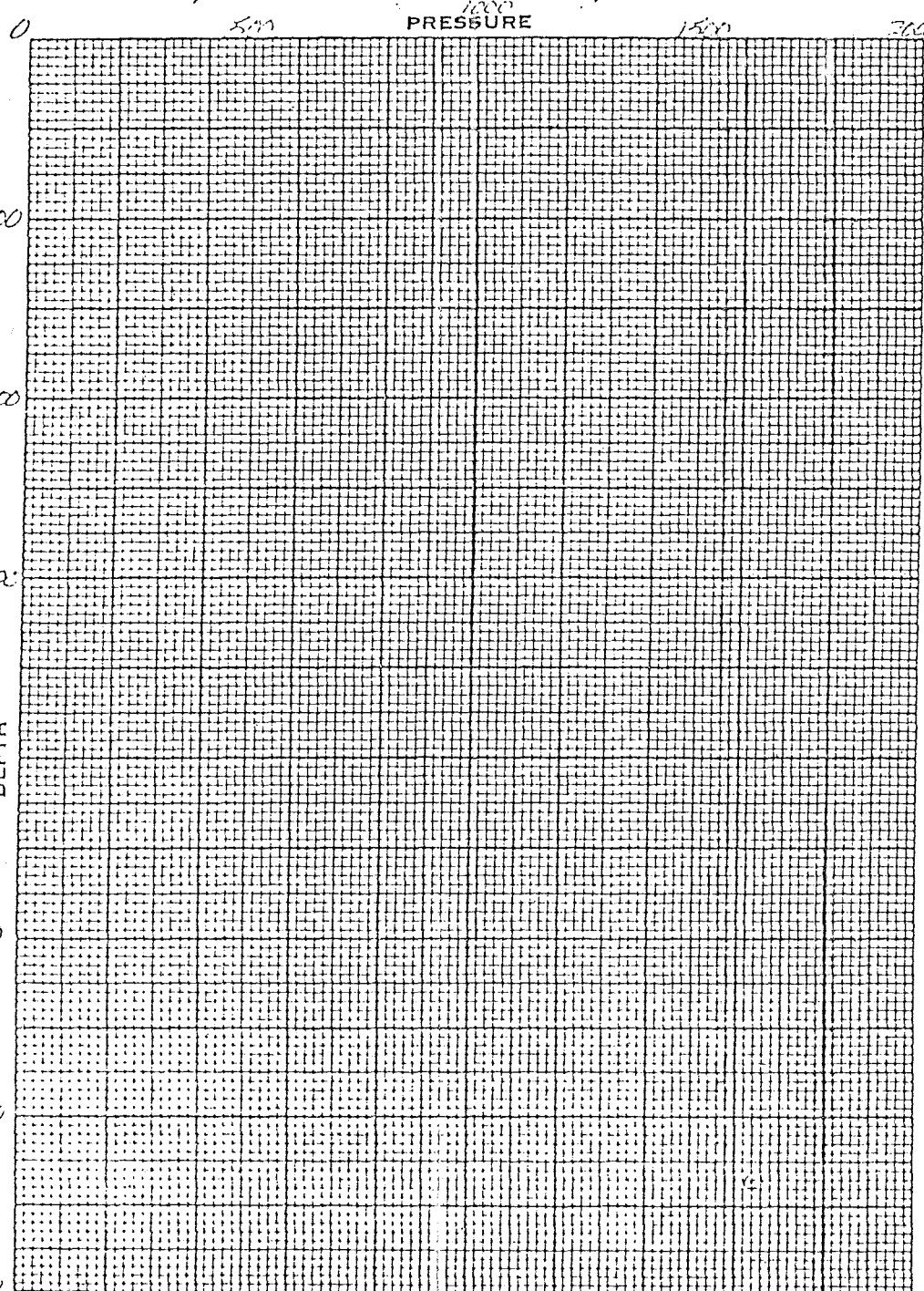
B1-318PT

## SUBSURFACE PRESSURE SURVEY

OWNER Union Oil Co of Calif FIELD \_\_\_\_\_ WELL NAME BACA No. 4  
 CASING \_\_\_\_\_ ELEV. 9318 GL DATE 11-17-73  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT Sub Case GL 14  
 \_\_\_\_\_ DEPTH TD 6378 SURV 63

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 1250 PS: \_\_\_\_\_  
 SERIAL NO 300-736 °F

PURPOSE BHT AND BHP Buildup following B-1-2 MAX TEMP 520.3 °F @ 6350  
 REMARKS: Temperature Clock stopped 21 mins on bottom



STABILIZATION PERIOD  
 SI 1222 11-13-73

PRESSURES	GAUGE	BOMB
CASING. PSI	230	

DEPTH	Time Pass, ET	
	PRESSURE	GRADIENT
3050	1211	1641
	1232	
	1241	1652
	1311	1653
	1411	1645
	1511	1646
	1611	1644
	1751	1636

BY: T. D. Bunnelle

76

GEOTHERMAL DIVISION

BA-317PT

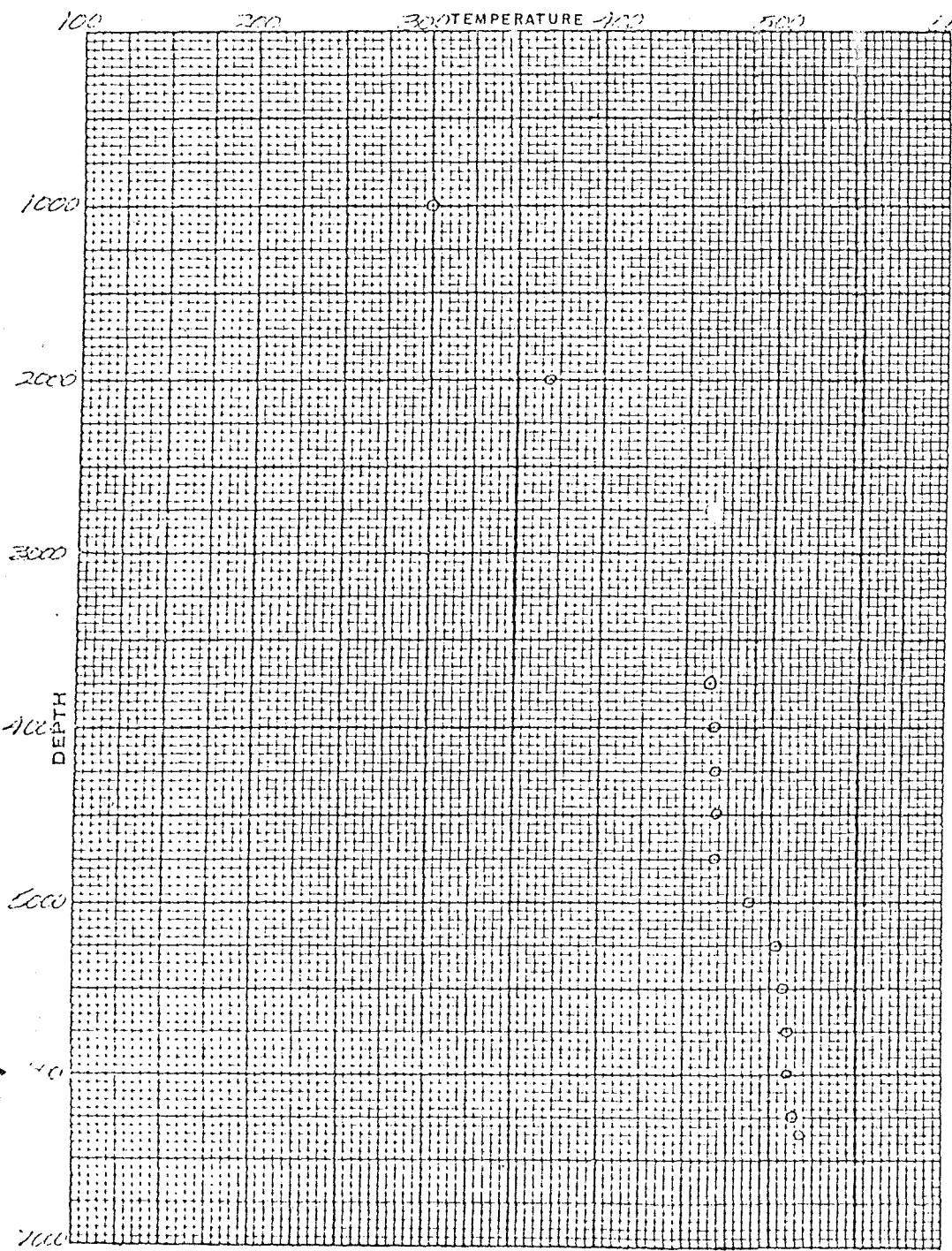
SUBSURFACE TEMPERATURE SURVEY

OWNER Union Oil Co. of Calif FIELD \_\_\_\_\_ WELL NAME Bacon No. 4  
 CASING \_\_\_\_\_ ELEV. 9318 GA DATE: 11-16-73  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT Swab Gate Glt.  
 DEPTH TD 6378' Survey G.

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 300-736 FAI  
 SERIAL NO KTB-10036

PURPOSE BHT/BHP Gradient and BU following BA-2 MAX TEMP. 518.8 °F @ 6350  
 REMARKS: BHP survey was misrun

STABILIZATION PERIOD  
5T 1222 11-13-73



PRESSURES	GAUGE	BOMB
CASING, PSI	<u>215</u>	

DEPTH	TEMP. Time	DEPTH	TEMP
<u>1000</u>	<u>1014</u>	<u>3750</u>	<u>463</u>
<u>2000</u>	<u>110.5</u>	<u>4000</u>	<u>466.3</u>
<u>3750</u>	<u>1126</u>	<u>4250</u>	<u>466</u>
<u>3750</u>	<u>1149</u>	<u>4500</u>	<u>468.9</u>
<u>4000</u>	<u>1230</u>	<u>4750</u>	<u>467.9</u>
<u>4250</u>	<u>1251</u>	<u>5250</u>	<u>483.5</u>
<u>4500</u>	<u>1312</u>	<u>5500</u>	<u>503</u>
<u>4750</u>	<u>1337</u>	<u>5750</u>	<u>509.6</u>
<u>5250</u>	<u>1415</u>	<u>6000</u>	<u>510.1</u>
<u>5500</u>	<u>1430</u>	<u>6250</u>	<u>513.1</u>
<u>5750</u>	<u>1457</u>	<u>6350</u>	<u>518.8</u>
<u>6000</u>	<u>1518</u>		<u>chart stuck</u>
<u>6250</u>	<u>1537</u>		<u>chart stuck</u>
<u>6350</u>	<u>1540</u>		<u>chart stuck</u>
	<u>1740</u>		<u>chart stuck</u>
	<u>1840</u>		<u>517.3</u>
	<u>1940</u>		<u>517.5</u>
	<u>2030</u>		<u>518.8</u>

BY: T N M... ..

76

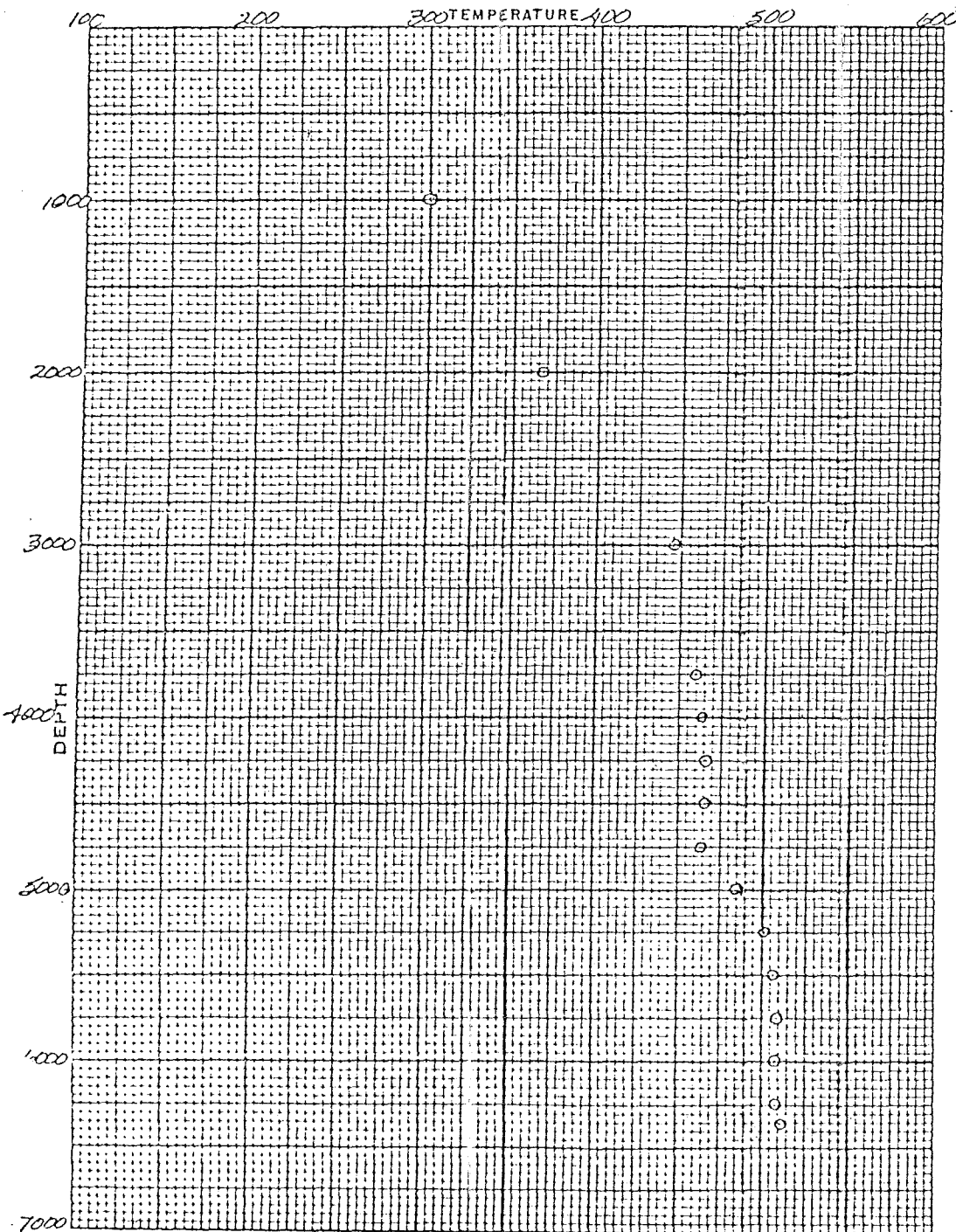
# GEO THERMAL DIVISION

BA-516PT

## SUBSURFACE TEMPERATURE SURVEY

OWNER Union Oil Co of Calif FIELD \_\_\_\_\_ WELL NAME Boca No. 1  
 CASING \_\_\_\_\_ ELEV 9318 CL DATE 11-15-73  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT Sub. Gate GA 1-1  
 \_\_\_\_\_ DEPTH 6378 Survey: 6-  
 HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 300-736 FA  
 \_\_\_\_\_ SERIAL NO KTB-10036  
 PURPOSE BIT/BHP BU AND GRADIENT following BA-2 MAX TEMP. 513.6 °F @ 6330  
 REMARKS: \_\_\_\_\_

STABILIZATION PERIOD  
SI 1223 11-13-73



PRESSURES	GAUGE	BOWS	
CASING. PSI	193		
DEPTH	TEMP.	DEPTH Time	TEMP.
1000	300	1020	
2000	347.9	1070	
3000	446	1200	
3750	460.1	1120	
4000	463.8	1170	
4250	466	1200	
4500	466.1	1310	
4750	463.9	1330	
5000	487.9	1350	
5250	500.6	1410	
5500	500.8	1430	
5750	503.1	1450	
6000	508.2	1510	
6250	508.6	1530	
6330	511.5	1531	
	512.4	1631	
	512.7	1731	
	512.9	1831	
	512.8	1931	
	513.1	2031	
	513.1	2131	
	513.6	2230	

BY: T. N. M. [Signature]

76

# GEO THERMAL DIVISION

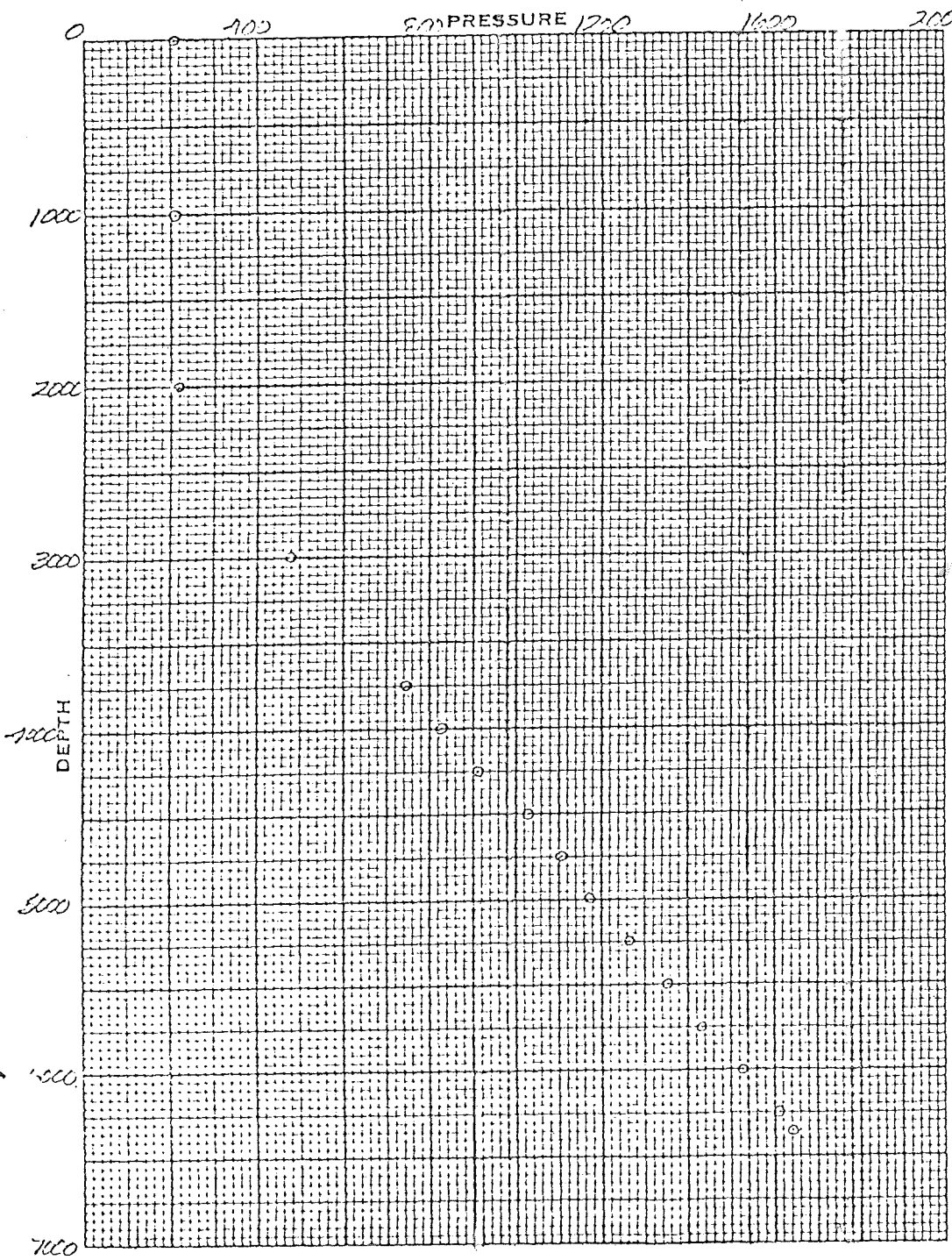
BA-316 PT

## SUBSURFACE PRESSURE SURVEY

OWNER Unocal Oil Co of Calif FIELD \_\_\_\_\_ WELL NAME BACP No. 4  
 CASING \_\_\_\_\_ ELEV 9318 GA DATE 11-15-73  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT Swab Cate GL 17  
 \_\_\_\_\_ DEPTH 6378 Survey 637  
 HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT A250  
 \_\_\_\_\_ SERIAL NO KPC 7198

PURPOSE BHT/BHP Buildup and Gradient Following BA-2 MAX TEMP 513.6 °F @ 6350  
 REMARKS: Press from 3750-5250 diff. to zero due to chort hanging up.

STABILIZATION PERIOD  
31 1222 11-13-73



PRESSURES	GAUGE	BOMB
CASING. PSI	19.3	

DEPTH	TIME	PRESSURE	GRADIENT
0	1000	208	-
1000	1020	208	-
2000	1040	213	.005
3000	1100	278	.265
3750	1120	293	.353
4000	1140	327	.33
4250	1200	391	.536
4500	1310	1030	.476
4750	1330	1102	.288
5000	1350	1176	.296
5250	1410	1263	.315
5500	1430	1359	.364
5750	1450	1437	.332
6000	1510	1526	.352
6250	1530	1610	.370
6350	1531	1640	.300
	1631	1641	
	1731	1651	
	1831	1641	
	1931	1656	
	2051	1637	
	2115	1636	
	2131		

Note:  
 Zero line waves.

BY: TN Minette

76

# GEO THERMAL DIVISION

B9-315 PT

## SUBSURFACE PRESSURE SURVEY

OWNER Union Oil Co of Calif FIELD \_\_\_\_\_ WELL NAME BAC11 No. 1  
 CASING \_\_\_\_\_ ELEV. 9318 CL DATE 11-11/11-15-73  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT Swab Cate G.H.T.  
 DEPTH 6378 Survey 6350

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT KPC 7190 PS  
 SERIAL NO 4250psi

PURPOSE BHP AND BHT Buildup following Test B9-2 MAX TEMP \_\_\_\_\_ OF @ \_\_\_\_\_

REMARKS: Temp scribe failed running in hole below 1000'

### PRESSURE

### STABILIZATION PERIOD

ST 1222 11-13-73

PRESSURES	GAUGE	BOMB
IN CASING, PSI	175	
out	173	

DEPTH	PRESSURE	GRADIENT
6300	16300	16350
Time	Press	Press
1751	1602	1615
1821	1601	1620
1851	1604	1620
1951	1604	1620
2051	1602	1618
2151	1601	1617
2251	1602	1618
2351	1601	1617
0051	1599	1615
0151	1598	1615
0251	1597	1615
0351	1601	1617
0451	1600	1616
0507	1599	1615

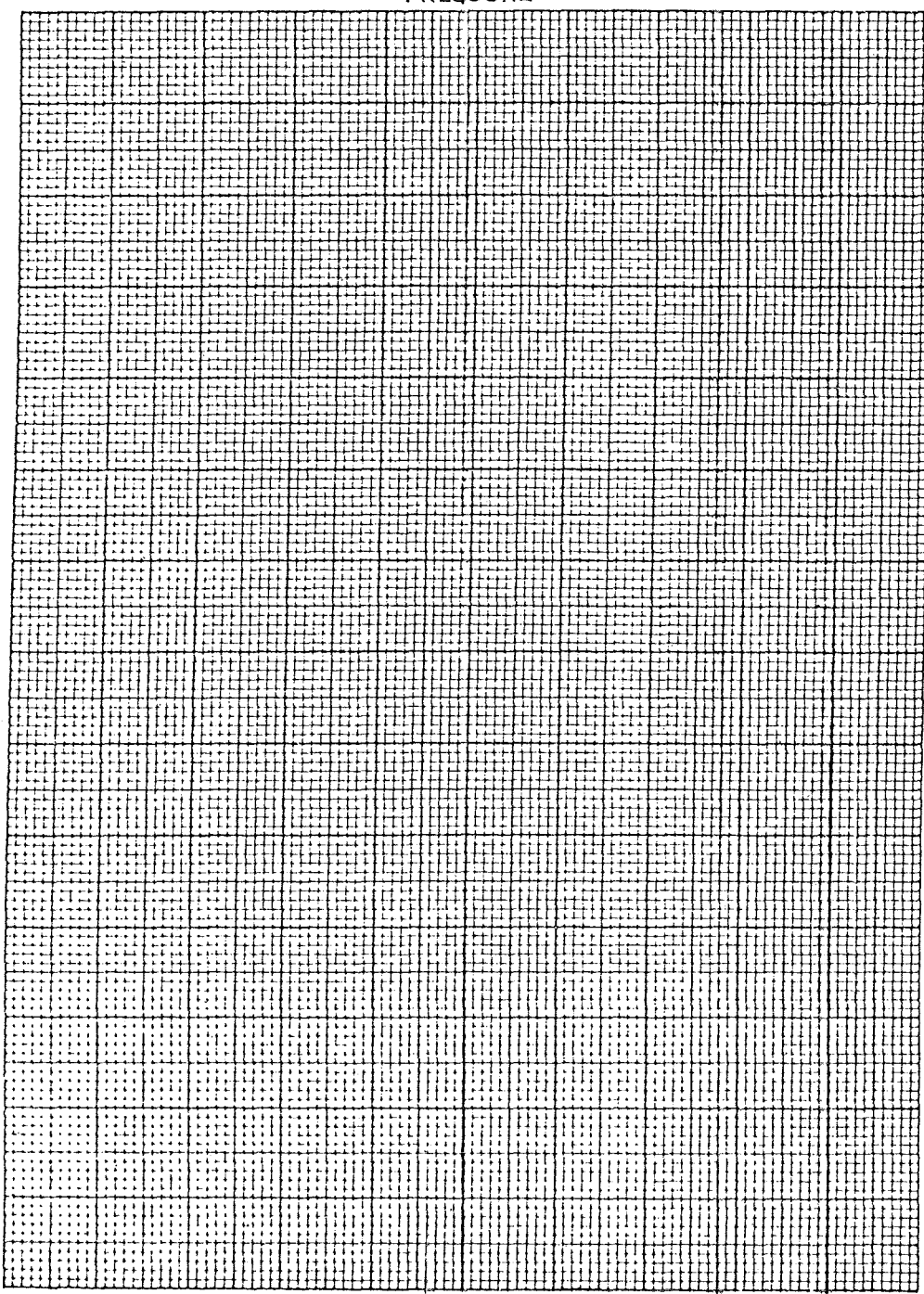
Temp at 1000'  
 174.3 hg 300°

Press at 1000'  
 1743 hg 15.2 psig

Notes: Press at 6300'  
 RDD 1/2 psi top  
 6350'

BY: T. N. Minette

DEPTH



76

# GEO THERMAL DIVISION

BA-519PT

## SUBSURFACE PRESSURE SURVEY

OWNER UNION OIL CO OF CALIF. FIELD \_\_\_\_\_ WELL NAME BACO No. 1  
 CASING \_\_\_\_\_ ELEV. 9312 GL. DATE 11-14-73  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT Swab Cate. Ght.  
 \_\_\_\_\_ DEPTH 6328 Survey 6328

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 1250  
 \_\_\_\_\_ SERIAL NO KPG 7198

PURPOSE BHT AND BHP Buildup following B-2-2 TEST MAX TEMP \_\_\_\_\_ °F @ \_\_\_\_\_  
 REMARKS: Temp. scribe failed and temp. in hole

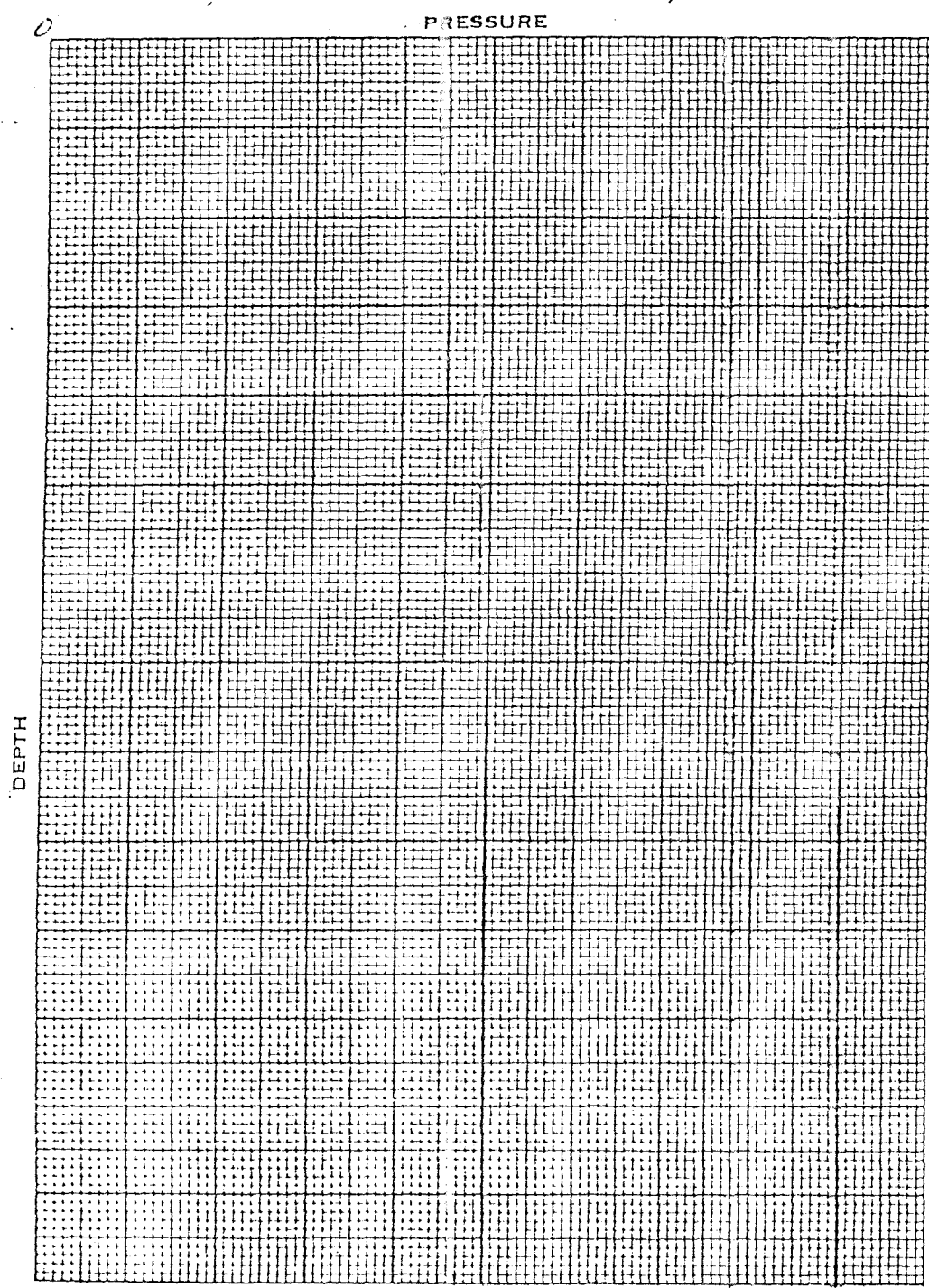
STABILIZATION PERIOD  
SI 1222 11-13-73

PRESSURE, CASING, PSI	GAUGE	BOMB

DEPTH	PRESSURE	GRADIENT
<u>36350</u>		
<u>Time</u>	<u>Press</u>	
<u>0917</u>	<u>1606</u>	
<u>0947</u>	<u>1611</u>	
<u>1017</u>	<u>1609</u>	
<u>1117</u>	<u>1605</u>	
<u>1217</u>	<u>1602</u>	
<u>1317</u>	<u>1595</u>	
<u>1410</u>	<u>1597</u>	

Temperature  
7000' 307.6

BY: T. N. M. Wolfe





76

# GEO THERMAL DIVISION B1-513 PT

## SUBSURFACE PRESSURE SURVEY

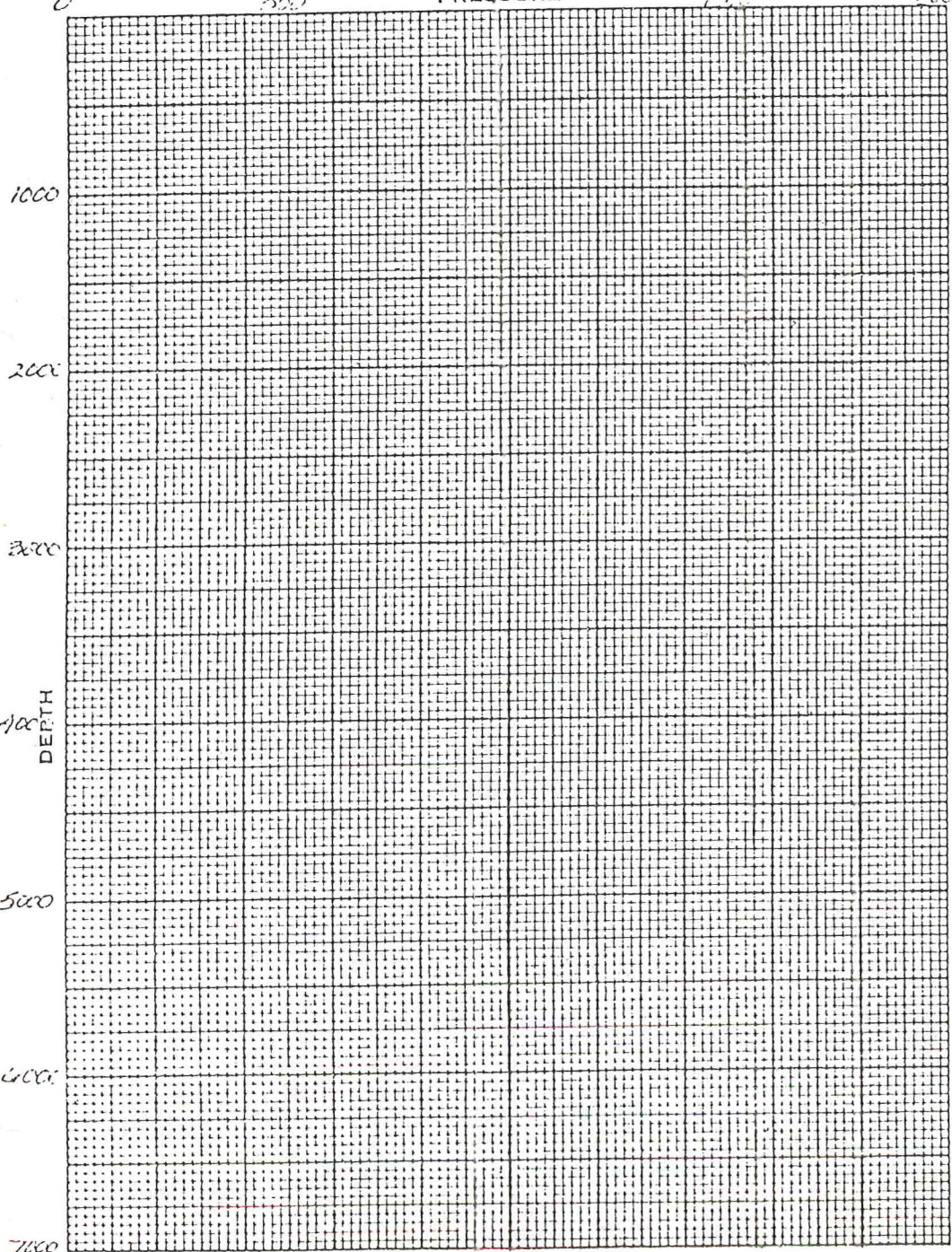
OWNER UNION OIL CO of CALIF FIELD \_\_\_\_\_ WELL NAME BACA No. 4  
 CASING \_\_\_\_\_ ELEV. 9313 GL DATE 11-13-73/11-14-73  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT Swab Gate  
 \_\_\_\_\_ DEPTH 6378 Survey: 63

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 7250 PS  
 \_\_\_\_\_ SERIAL NO KPE 7198

PURPOSE BHT AND BHP Buildup following B1-2 MAX TEMP \_\_\_\_\_ °F @ \_\_\_\_\_  
 REMARKS: Press. Clock stopped. Temp scribe failed running in.

0 500 1000 1500 2000 PRESSURE

STABILIZATION PERIOD  
SI 1222 11-13-73



PRESSURES	GAUGE	BONE
CASING. PSI		

DEPTH	PRESSURE	GRADIENT
<u>6350</u>		
<u>Time</u>	<u>Press</u>	
<u>0735</u>	<u>1600</u>	

CLOCKED appeared to  
START running immediately  
before pickup

No Temp. RECORDED.  
Miscun

BY: T.N. Minetto

WINDY

# 76

## GEOTHERMAL DIVISION

### SUBSURFACE PRESSURE SURVEY

B1-512PT

OWNER Union Oil Co of Calif. FIELD BACR No. 4  
CASING 9 3/8 DIA. ELEV. 9318 GR. DATE: 11-13-73  
LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT Surface  
DEPTH 6378 SURFACE 63

HOLE DESCRIPTION:

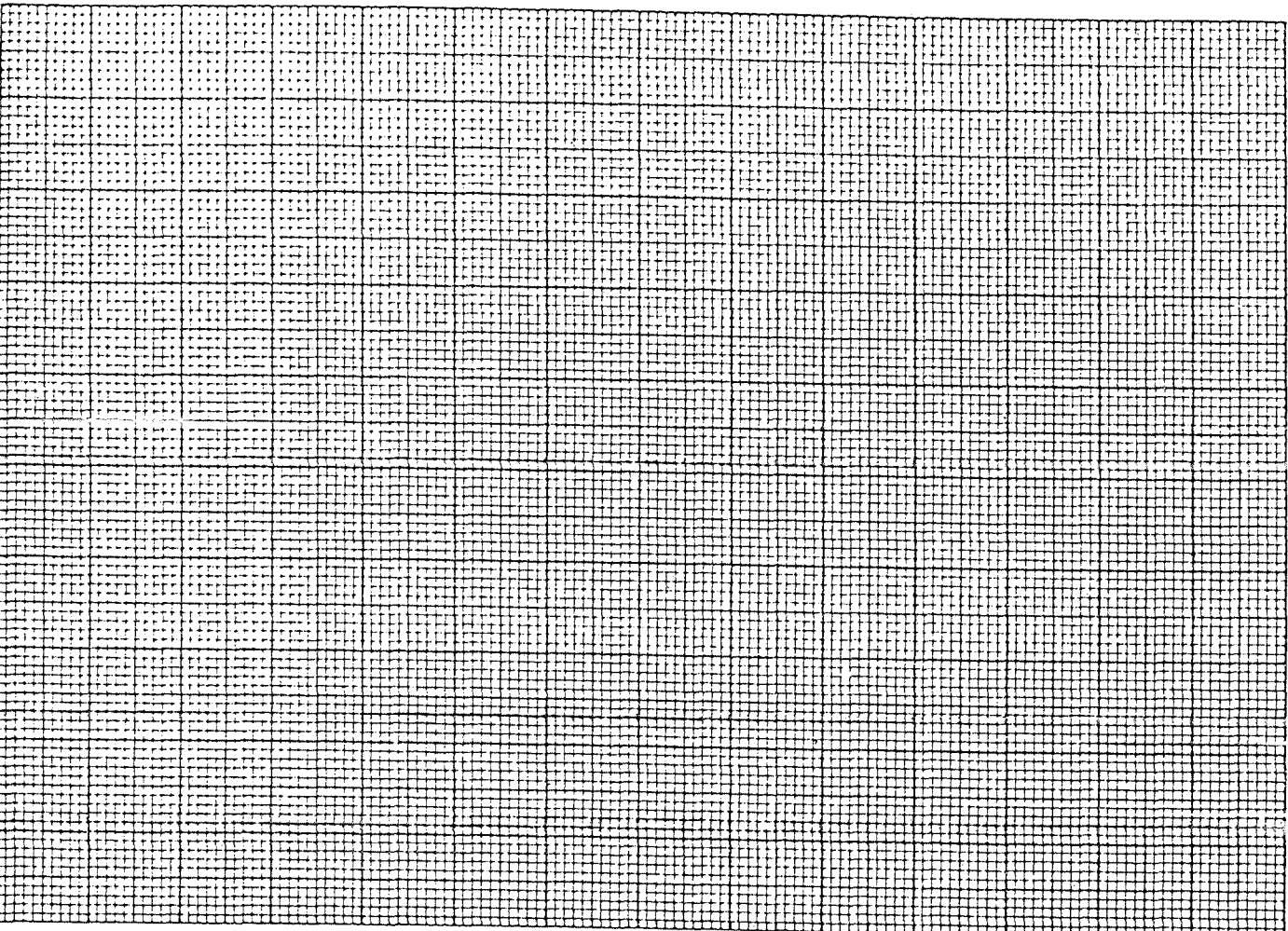
INSTRUMENT 4250 FT.  
SERIAL NO KPG 7198

PURPOSE BHT-BHP Builder Followup Test B4-2 MAX TEMP 456.2 °F @ 6350

REMARKS:

STABILIZATION PERIOD  
51 1222 11-13-73

PRESSURE



PRESSURES.	GAUGE	BOND
CASING, PSI	119	117

DEPTH	PRESSURE	GRADIENT
DEPTH		
<u>86350</u>		

Time	Pressure	Time	P.
1236	833	1336	141
1237	857	1335	145
1238	872	1337	145
1239	888	1352	147
1240	909	1407	148
1241	935	1422	149
1242	951	1437	149
1243	972	1457	151
1244	987	1537	152
1245	1011	1602	153
1246	1036		
1247	1061		
1248	1085		
1249	1110		
1250	1129		
1251	1153		
1252	1172		
1255	1220		
1300	1293		
1305	1311		
1310	1327		
1315	1403		
1320	1421		
1335	1433		

BY JEN WILHE

# GEOHERMAL DIVISION

## SUBSURFACE TEMPERATURE SURVEY

B4-512PT

# 76

OWNER Western Oil Co of Calif WELL NAME 13000 No. 1

CASING 9318 GA ELEV 9318 GA DATE 11-13-73

LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT Seab Gate

DEPTH 6378 Surface

HOLE DESCRIPTION: \_\_\_\_\_

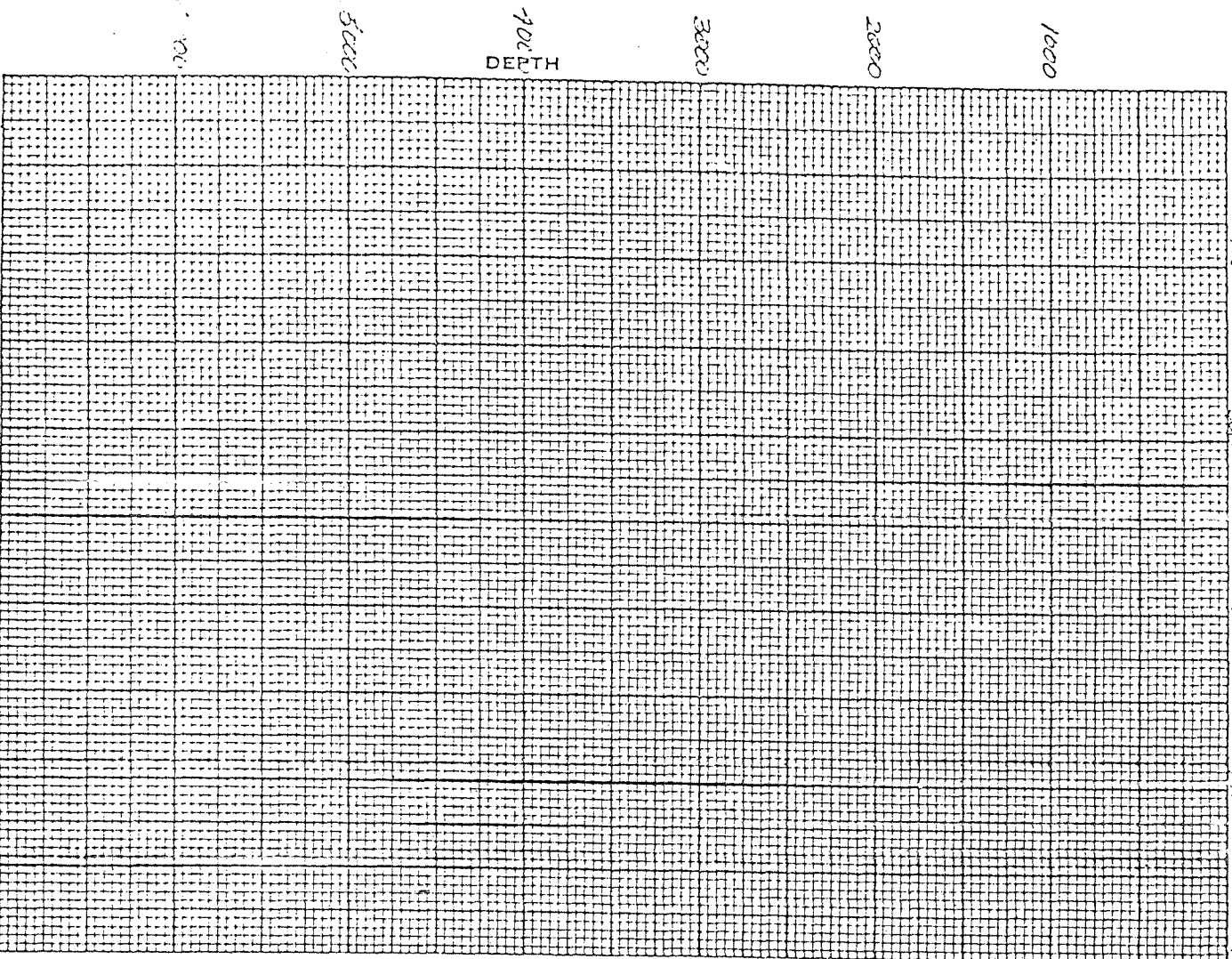
INSTRUMENT 300-736 FAI

SERIAL NO K1B-10036

PURPOSE BHT AND BHP Survey Following Test B4-2 MAX TEMP 456.2 °F @ 6350

REMARKS: Temp chart stopped. Max temp at final time. Max not recorded

STABILIZATION PERIOD 5:0 10:2 3:00 TEMPERATURE(S) 4:00 5:0



PRESSURES,	GAUGE	BOOB
CASING, PSI	119	117

DEPTH TEMP, DEPTH TEM

6350

Time Temp

1900 456.2 °F

BY: T. D. WILKINS

76

# GEO THERMAL DIVISION

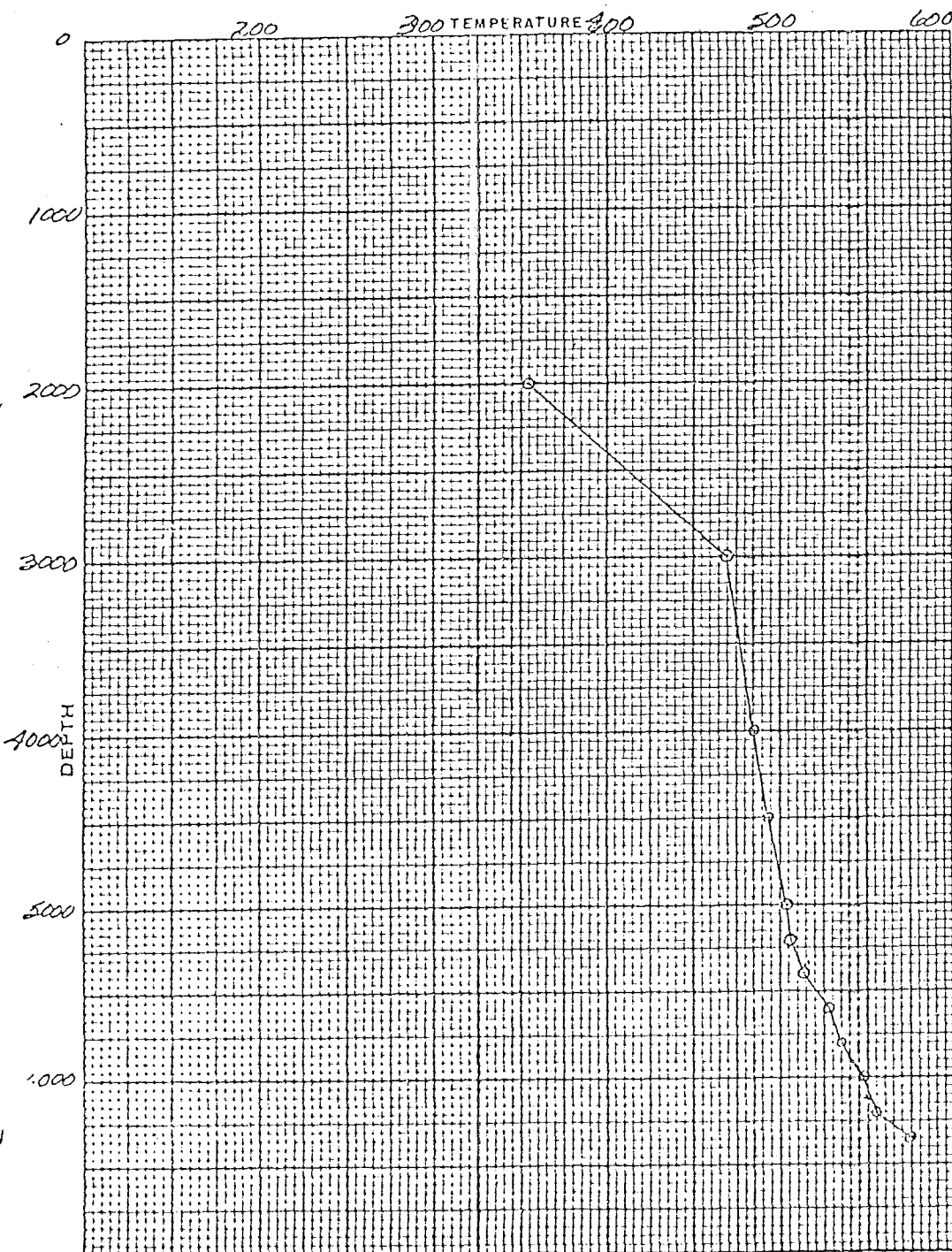
## SUBSURFACE TEMPERATURE SURVEY

FA-311T

OWNER UNION Oil Co of CALIF. FIELD \_\_\_\_\_ WELL NAME BACA No. 4  
 CABING \_\_\_\_\_ ELEV 9318 GL DATE 9-8-73  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT GL + 4'  
 \_\_\_\_\_ DEPTH 6358'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 300-736 FAI \_\_\_\_\_  
 \_\_\_\_\_ SERIAL NO KTB-10036

PURPOSE TANDUM BHP AND BHT SURVEY MAX TEMP 579.7 °F @ 6358'  
 REMARKS: \_\_\_\_\_



STABILIZATION PERIOD  
SI 1715 8-22-73  
READING AT 6358' - 1936

PRESSURES	GAUGE	BOMB
CASING. PSI	50	
DEPTH	TEMP.	DEPTH
0		
2000	353.6	
3000	409.8	
4000	485.7	
4500	493.5	
5000	503.6	
5200	506.1	.0125
5400	514.8	.0135
5600	528.2	.067
5800	535.2	.035
6000	548.6	.067
6200	555.1	.0325
6358	579.7	.129

BY: T. Minette

76

# GLO THERMAL DIVISION

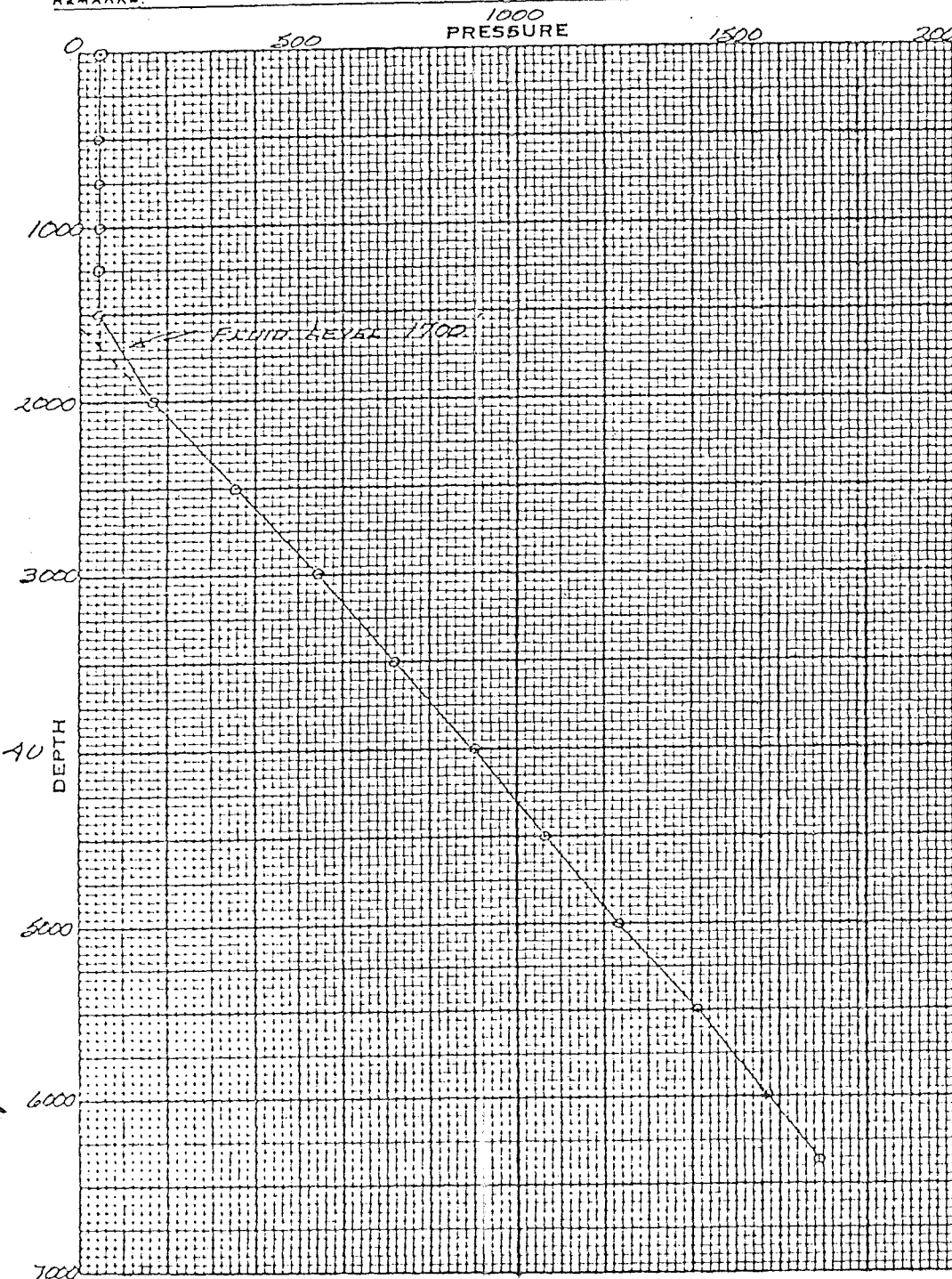
## SUBSURFACE PRESSURE SURVEY

OWNER UNION Oil Co of Calif. FIELD \_\_\_\_\_ WELL NAME BACA No. 4  
 CASING \_\_\_\_\_ ELEV 9312 GL DATE 9-7-73  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT GL + 4  
 \_\_\_\_\_ DEPTH 6358

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 2400 PS  
 \_\_\_\_\_ SERIAL NO 6607N

PURPOSE TANDUM STATIC BHT AND BHP SURVEY MAX TEMP 574.5 °F @ 6358

REMARKS: \_\_\_\_\_ STABILIZATION PERIOD  
SI 1715 8-22-73  
READING 6358 @ 1845



PRESSURES.	GAUGE	BOMB
CASING. PSI	50	49

DEPTH	PRESSURE	GRADIENT
0	49	
500	45	
<del>7500</del>	46	
1000	46	
1250	45	
1500	45	
2000	169	.248
2500	338	.378
3000	549	.372
3500	719	.350
4000	904	.370
4500	1063	.318
5000	1237	.348
5500	1412	.350
6000	1573	.332
6358	1691	.316

BY: J. MINETTA

# 76

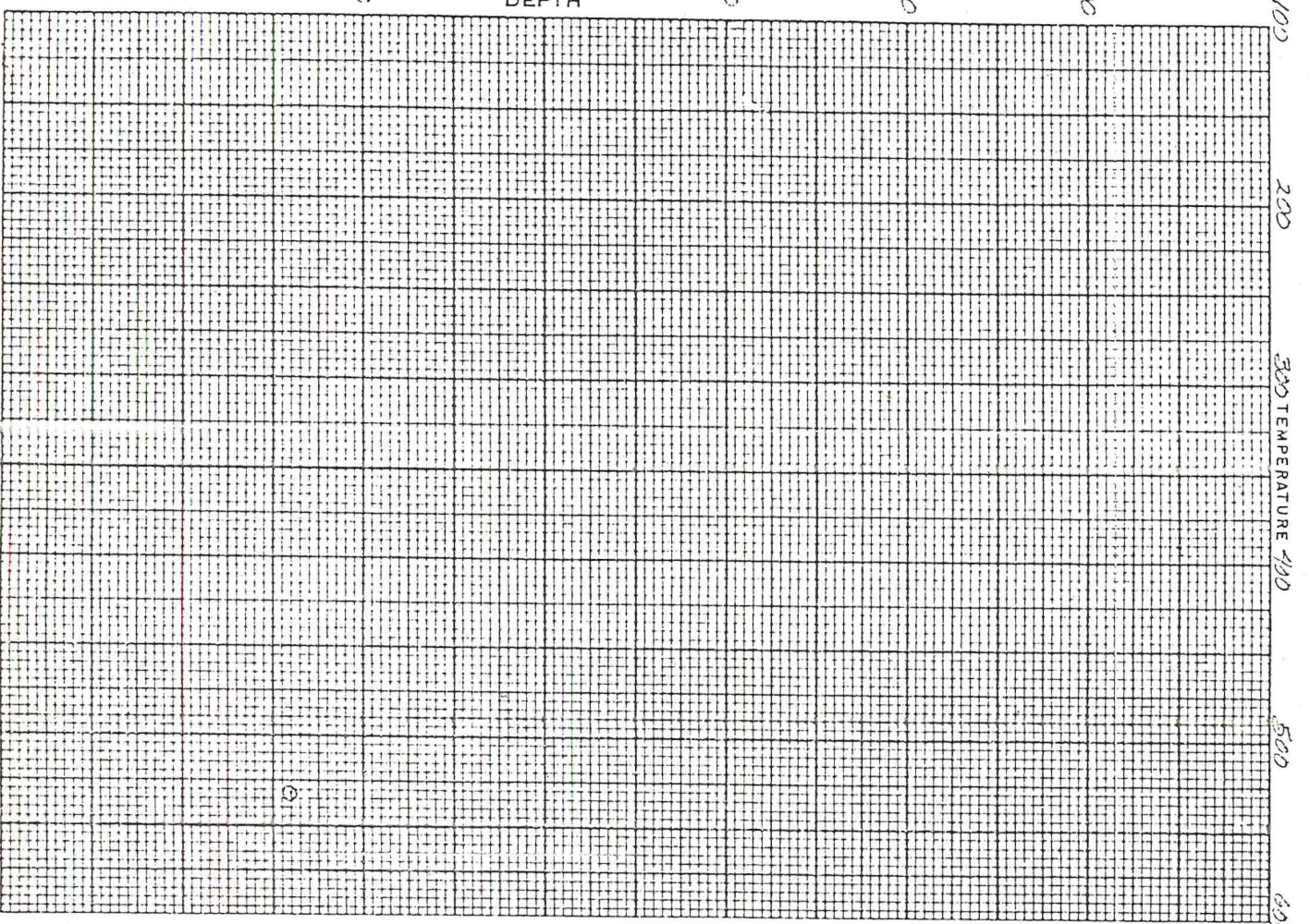
## GEO THERMAL DIVISION SUBSURFACE TEMPERATURE SURVEY

B4-5XPT  
9

OWNER Simon Oil Co of Calif FIELD WELL NAME Esca No 4  
CASING 1.5" 12m surface to 3152' ELEV 9318 CA DATE 8-9-73  
LINER DESCRIPTION 7" liner from 3031-6376 ZERO POINT Swab Gate  
DEPTH 6378

HOLE DESCRIPTION: \_\_\_\_\_  
INSTRUMENT 300 - 736 FAH  
SERIAL NO K13 - 10036

PURPOSE THINW PRESSURE TEMPERATURE STATIC MAX TEMP 531.6 °F @ 5900  
REMARKS: \_\_\_\_\_



STABILIZATION PERIOD \_\_\_\_\_

PRESSURES	GAUGE	RONB	
DEPTH	TEMP.	DEPTH	TEMP
5900	531.6		

BY: C. F. ...

# 76

## GEOTHERMAL DIVISION

### SUBSURFACE PRESSURE SURVEY

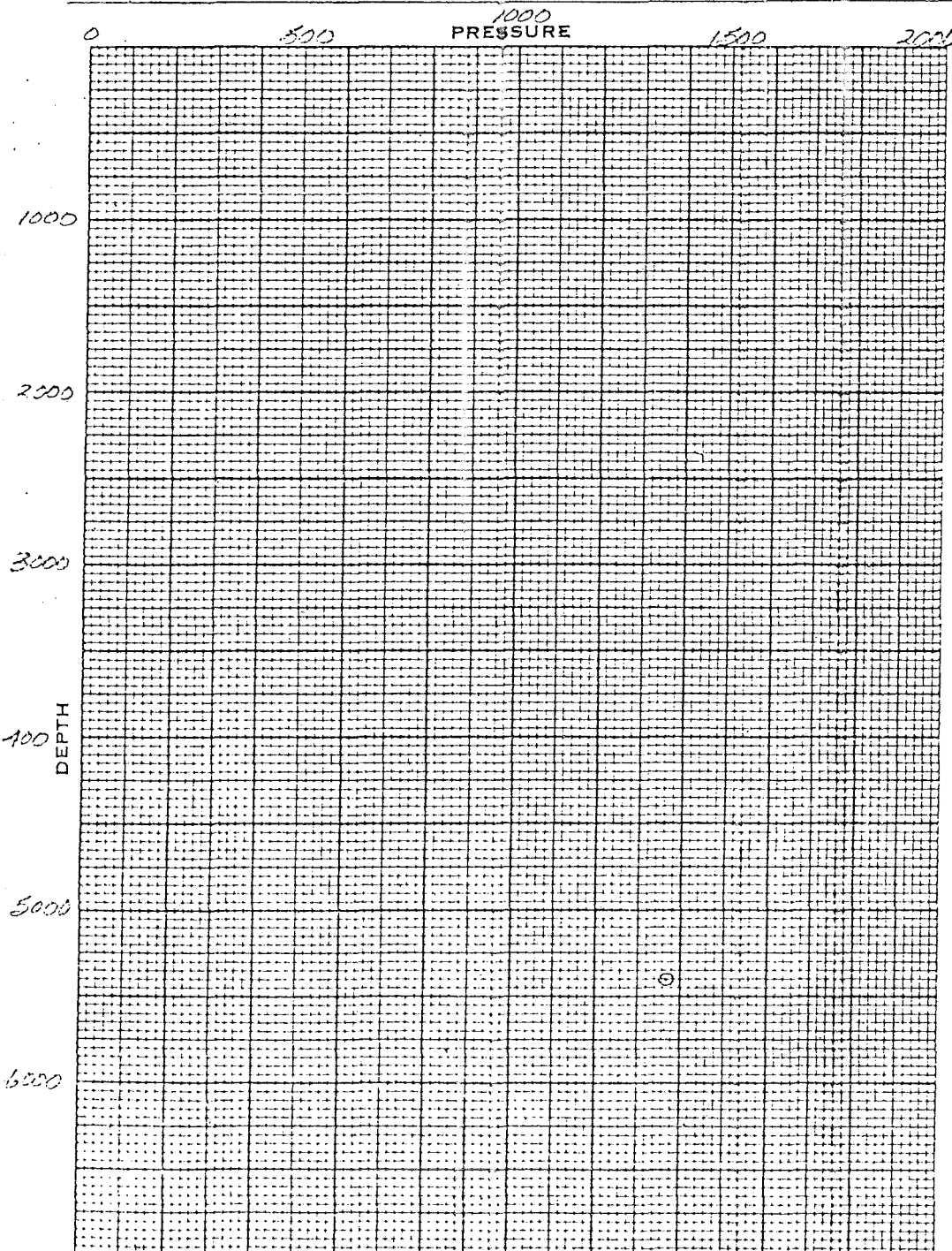
B4-51PT  
9

OWNER Union Oil Co of Calif. FIELD Valle Grande WELL NAME BACK No. 1  
CASING 9-5/8" casing to 3182' ELEV 9318.61 DATE 8-9-73  
LINER DESCRIPTION: 7" liner from 3031-6376 ZERO POINT Swab Gate  
DEPTH 6378

HOLE DESCRIPTION:

INSTRUMENT 2500  
SERIAL NO KPG 9595

PURPOSE Tandem pressure/Temperature Static MAX TEMP 531.6 °F @ 5400  
REMARKS:



STABILIZATION PERIOD

PRESSURES	GAUGE	BOMB
CASING, PSI		
DEPTH	PRESSURE	GRADIENT
5400	1370.9	

BY: C. JUNKER

# 76

## GEO THERMAL DIVISION SUBSURFACE TEMPERATURE SURVEY

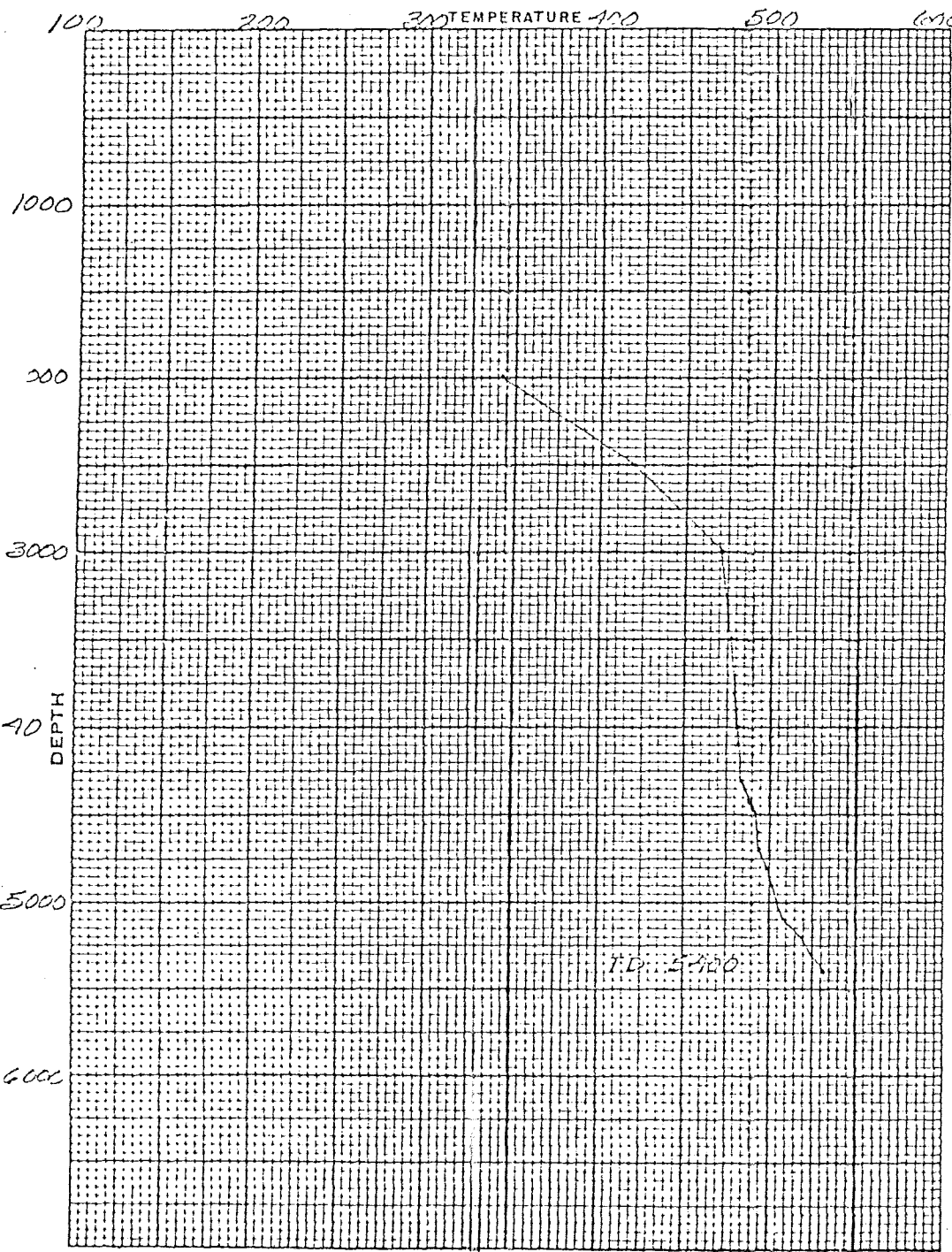
B-1-54PT

OWNER Union Oil Co of Calif. FIELD VALLE GRANDE WELL NAME BACA No. 1  
 CASING 9-5/8" surface to 3182 ELEV 4318 CL DATE 8-8-73  
 LINER DESCRIPTION: 7" from 3231' to 6376. ZERO POINT Swank Gate  
Perf.: 3819-1222, 4317-4576, 4619-1929, 1972- DEPTH 6378  
5356, 5400-5713, 5786-6036, 6079-6375

HOLE DESCRIPTION: TASCCD AT 5100' INSTRUMENT 300-736 FA  
 SERIAL NO KTB-10036

PURPOSE TANDUM Pressure / Temperature Survey MAX TEMP 531.6 °F @ 5400  
 REMARKS: CENTRALIZER needed to pass liner hanger

**STABILIZATION PERIOD**



PRESSURE	GAUGE	BOMB
CASING, PSI		

DEPTH	TEMP.	DEPTH	TEMP.
50	-		
500	-		
1000	-		
1500	-		
2000	341.8		
2500	418.2		
3000	471.2		
3500	476.7		
3800	479.6		
3900	480.3		
4000	481.1		
4100	481.6		
4200	482.2		
4300	483.5		
4400	485.9		
4500	492.0		
4600	493.9		
4700	497.1		
4800	498.3		
4900	501.9		
5000	503.5		
5100	508.1		
5200	515.0		
5300	521.0		
5400	531.3		

BY: JUNKER



# ISOTHERMAL DIVISION

## SUBSURFACE PRESSURE SURVEY

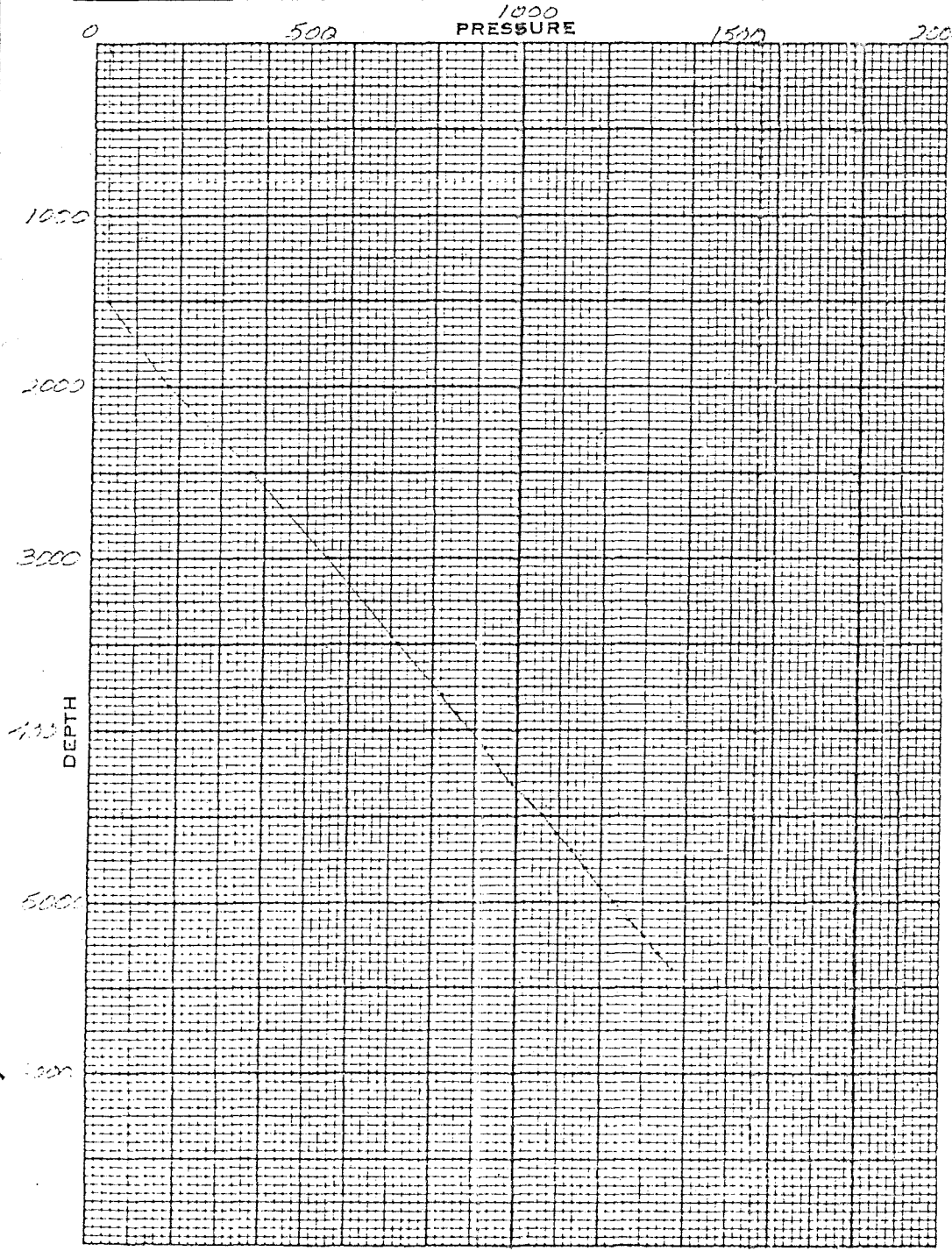
BA-54PT  
8

# 76

OWNER UNION OIL CO OF CALIF. FIELD VALLE GRANDE WELL NAME BACA No. 4  
 CASING 7-5/8" surface to 3192' ELEV 9318 GL DATE 8-8-73  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT swab Gate  
 \_\_\_\_\_ DEPTH 6375

HOLE DESCRIPTION: \_\_\_\_\_  
 \_\_\_\_\_  
 INSTRUMENT 2500 PSIC  
 SERIAL NO. KPG 9595

PURPOSE STATIC PRESSURE/TEMPERATURE SURVEY MAX TEMP 531.6 °F @ 5400  
 REMARKS: \_\_\_\_\_



STABILIZATION PERIOD

PRESSURES	GAUGE	BOMB
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
50	28.6	—
500	31.7	—
1000	32.1	—
1500	33.4	—
2000	176.1	.285
2500	327.6	.283
3000	514.2	.353
3500	717.2	.346
3900	832.0	.349
3960	856.1	.341
4000	886.9	.328
4100	924.2	.253
4200	959.3	.341
4300	991.2	.329
4400	1026.6	.354
4500	1060.8	.342
4600	1093.7	.329
4700	1129.1	.354
4800	1164.6	.355
4900	1195.7	.341
5000	1232.9	.342
5100	1267.1	.342
5200	1302.5	.354
5300	1321.7	.342
5400	1352.5	.329

BY: C. FURVOR

# 76

## GEOTHERMAL DIVISION SUBSURFACE TEMPERATURE SURVEY

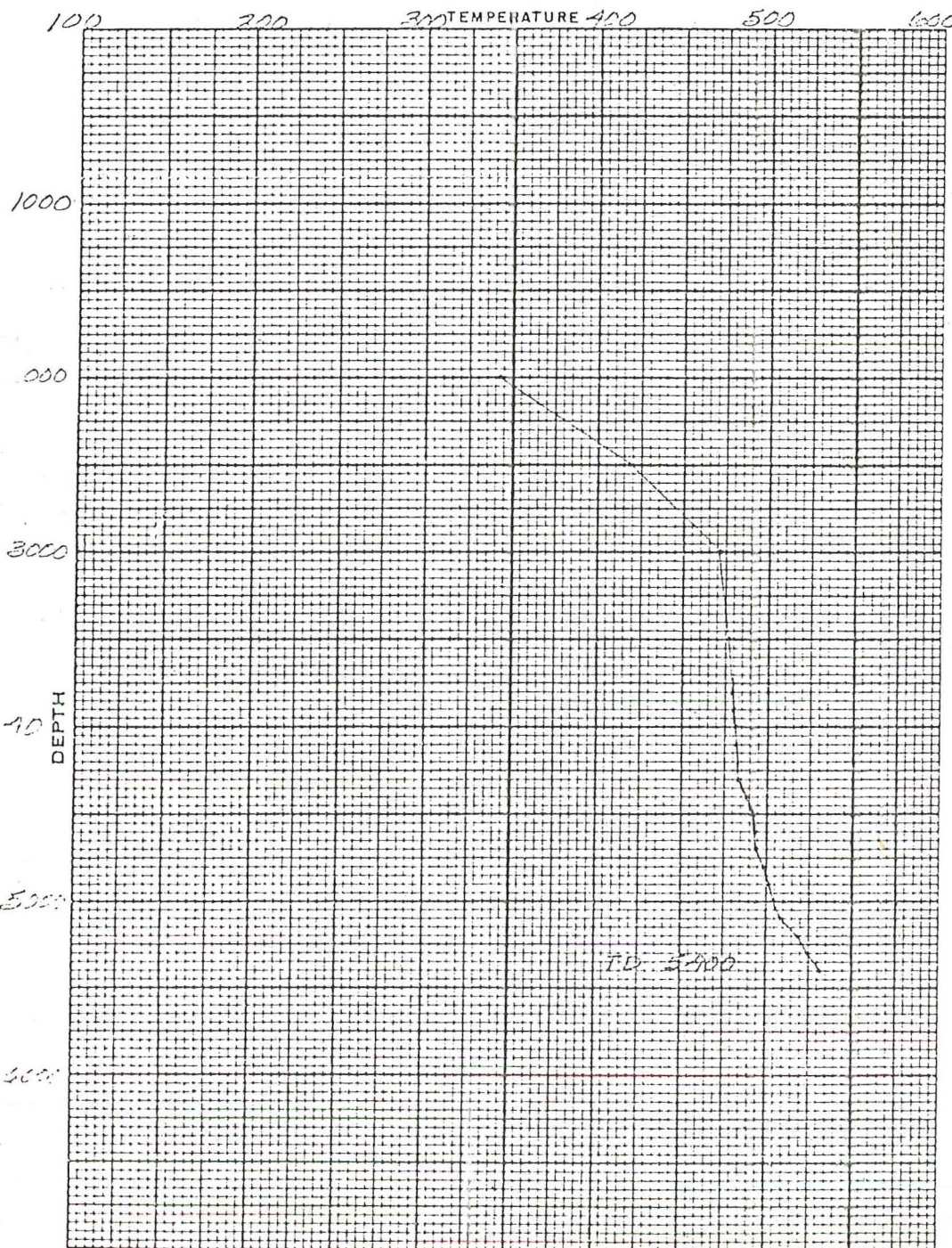
B-4-56PT  
8

OWNER Union Oil Co of Calif. FIELD Valle Grande WELL NAME BNSR No. 4  
 CASING 9-5/8" surface to 3132 ELEV. 9318 CL DATE 8-8-73  
 LINER DESCRIPTION: 7" from 2031' to 4376. ZERO POINT Swab Gate  
Pool: 3849-4232, 4317-4576, 4619-4929, 4972-5356, 5400-5743, 5786-6036, 6079-6375 DEPTH 6378

HOLE DESCRIPTION: TAPPED AT 5400' INSTRUMENT 300-736 FAHF  
 SERIAL NO KTB-10036

PURPOSE TANDUM Pressure / Temperature Survey MAX TEMP 531.6 °F @ 5400  
 REMARKS: CENTRALIZER needed to pass liner hanger

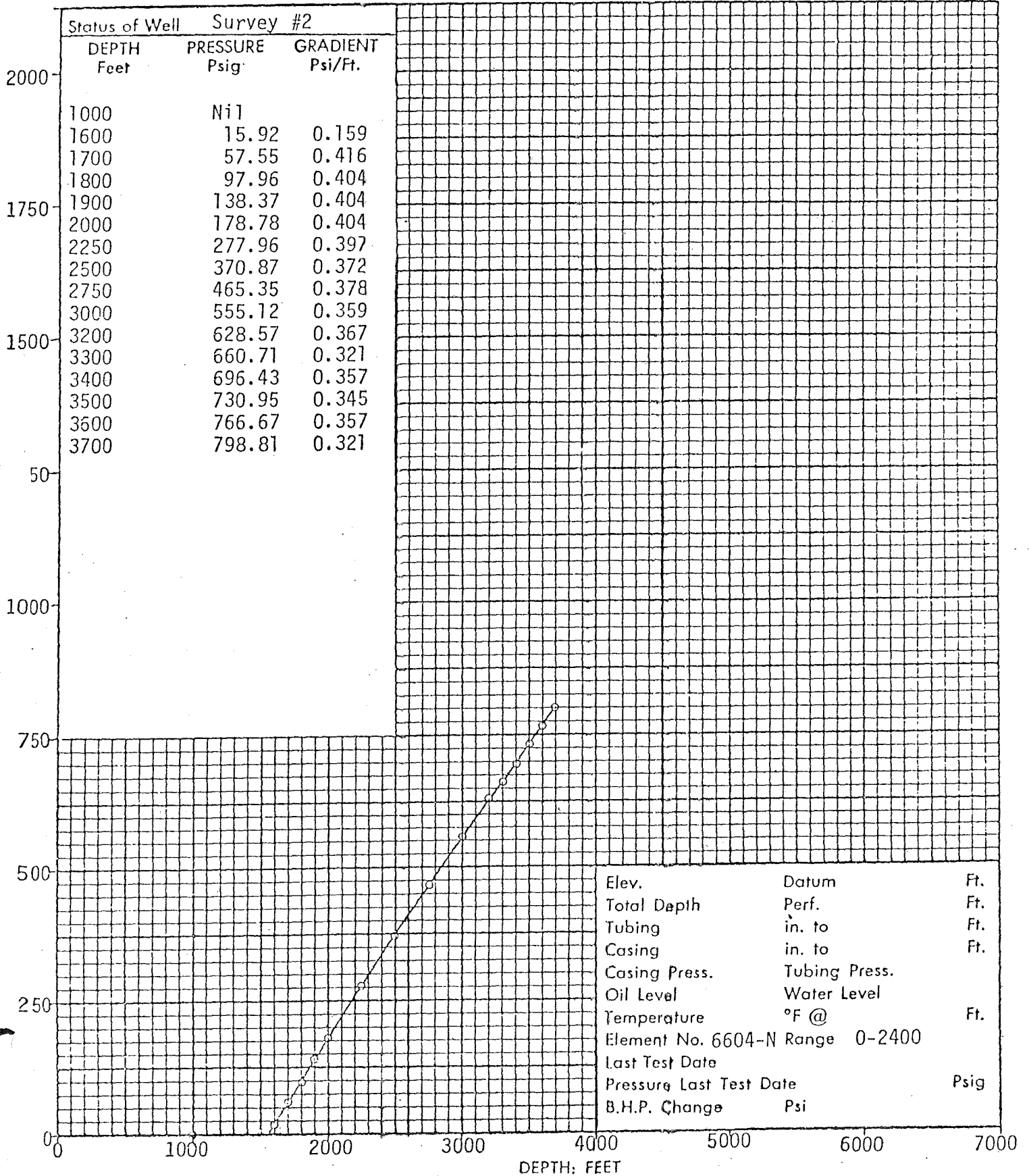
STABILIZATION PERIOD



PRESSURES.	GAUGE	DOB	
CASING. PSI			
DEPTH	TEMP.	DEPTH	TEMP.
50	-		
500	-		
1000	-		
1500	-		
2000	311.8		
2500	418.2		
3000	471.2		
3500	476.7		
3800	479.6		
3900	480.3		
4000	481.1		
4100	481.6		
4200	482.2		
4300	483.5		
4400	483.9		
4500	482.0		
4600	483.9		
4700	484.4		
4800	488.3		
4900	501.9		
5000	503.5		
5100	509.4		
5200	515.0		
5300	524.0		
5400	531.6		

BY: JUNNER

Company UNION OIL CO. OF CALIFORNIA Lease BACA Well No. 4  
 Field \_\_\_\_\_ County SANDOVAL State NEW MEXICO  
 Formation \_\_\_\_\_ Test Date MAY 28, 1973



76

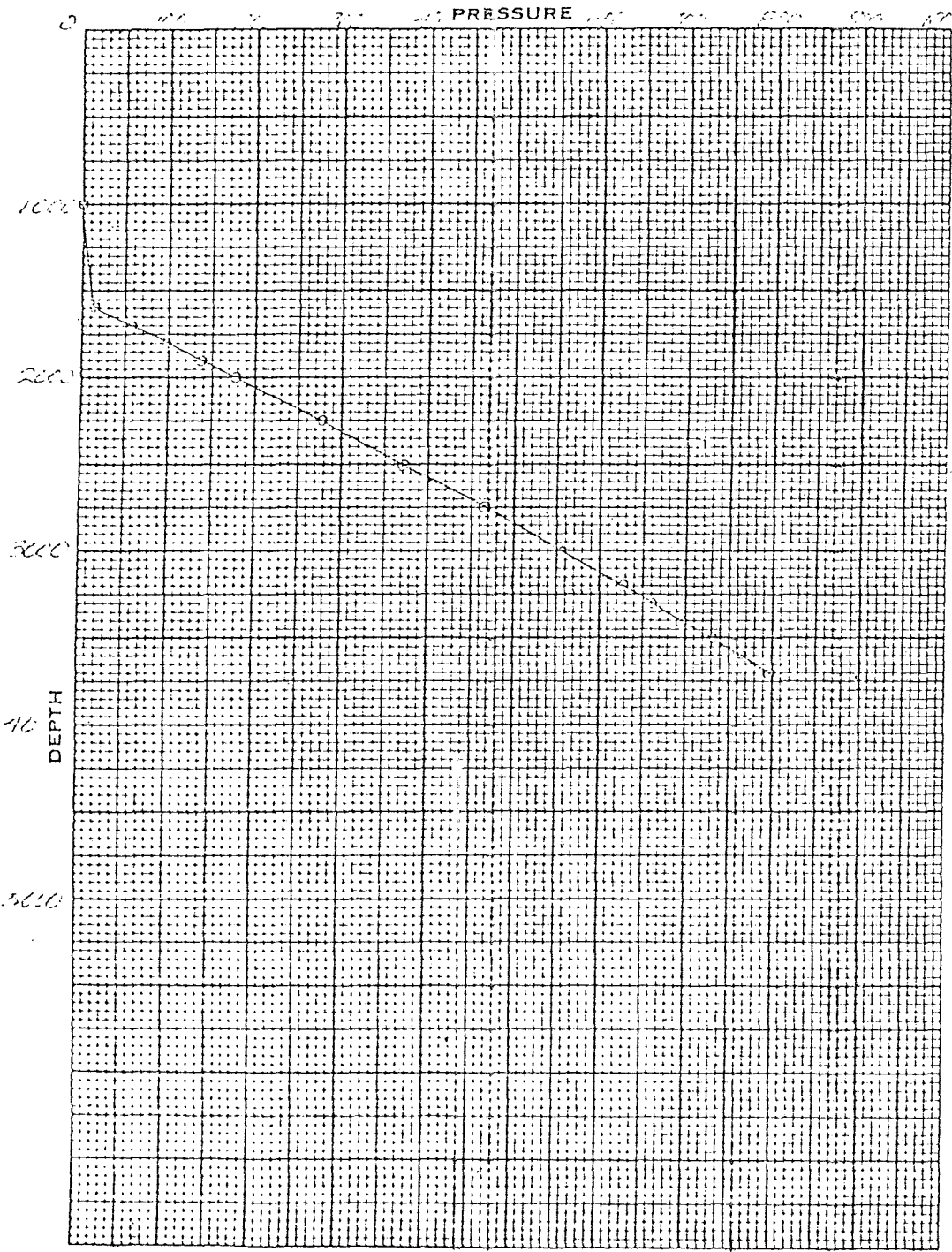
# GEOTHERMAL DIVISION

BA-37P

## SUBSURFACE PRESSURE SURVEY

OWNER Energy Services Co. of Calif. FIELD \_\_\_\_\_ WELL NAME BACA No. 4  
 CASING \_\_\_\_\_ ELEV. 9318 GL DATE MAY 28, 1973  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT \_\_\_\_\_  
 \_\_\_\_\_ DEPTH 3700  
 HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT Q-2700  
 \_\_\_\_\_ SERIAL NO. 6609N  
 PURPOSE \_\_\_\_\_ MAX TEMP 792.9 °F @ 3500  
 REMARKS: \_\_\_\_\_

STABILIZATION PERIOD  
 \_\_\_\_\_  
 \_\_\_\_\_



PRESSURES	GAUGE	BOH
CASING. PSI		

DEPTH	PRESSURE	GRADIENT
1000	Nil	
1600	15.92	.159
1700	57.55	.116
1800	96.13	.392
1900	137.19	.401
2000	178.15	.416
2250	215.51	.351
2400	354.69	.377
2750	422.97	.373
3000	553.97	.351
3200	625.57	.351
3300	666.11	.321
3400	696.93	.351
3500	730.95	.345
3600	766.67	.357
3700	798.61	.321

BY: TEFFELER / MINETTE

76

BA-57P

# GEO THERMAL DIVISION

## SUBSURFACE PRESSURE SURVEY

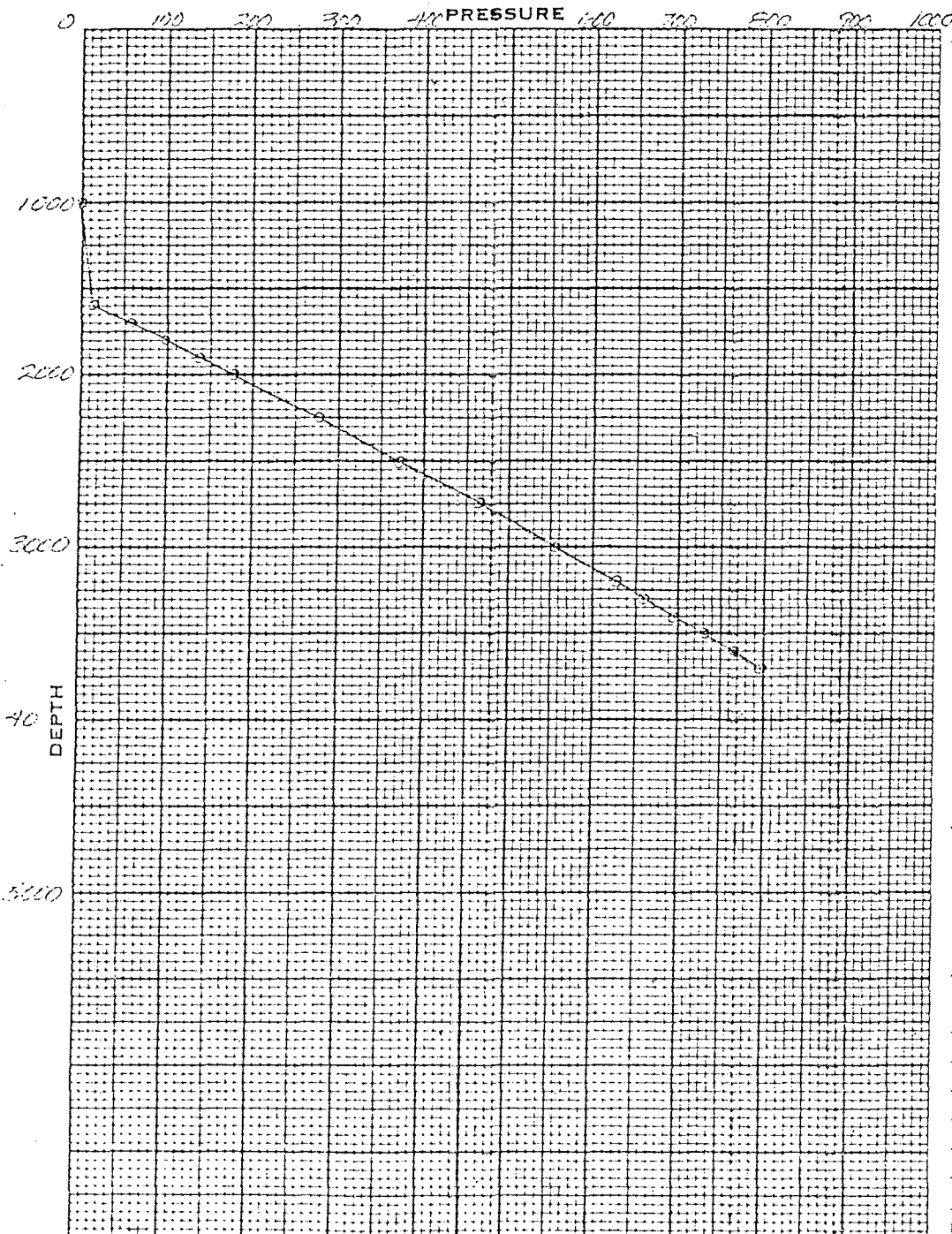
OWNER Union Oil Co of Calif. FIELD \_\_\_\_\_ WELL NAME BACA No. 4  
 CASING \_\_\_\_\_ ELEV. 9313 GL DATE MAY 28, 1973  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT \_\_\_\_\_  
 DEPTH 3700

HOLE DESCRIPTION: \_\_\_\_\_  
 INSTRUMENT O-2900  
 SERIAL NO 6609N

PURPOSE \_\_\_\_\_ MAX TEMP 492.9 °F @ 3500

REMARKS: \_\_\_\_\_

STABILIZATION PERIOD \_\_\_\_\_



PRESSURES	GAUGE	BOMB
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
1000	Nil	
1600	15.92	.159
1700	57.55	.416
1800	96.73	.392
1900	137.14	.409
2000	178.75	.416
2250	275.51	.357
2500	369.69	.377
2750	462.99	.373
3000	553.94	.369
3200	628.57	.361
3300	660.71	.321
3400	696.43	.357
3500	730.95	.395
3600	766.67	.357
3700	798.81	.321

BY: TEFFELER / MINETTE

76

# GEOTHERMAL DIVISION

B1-56PT

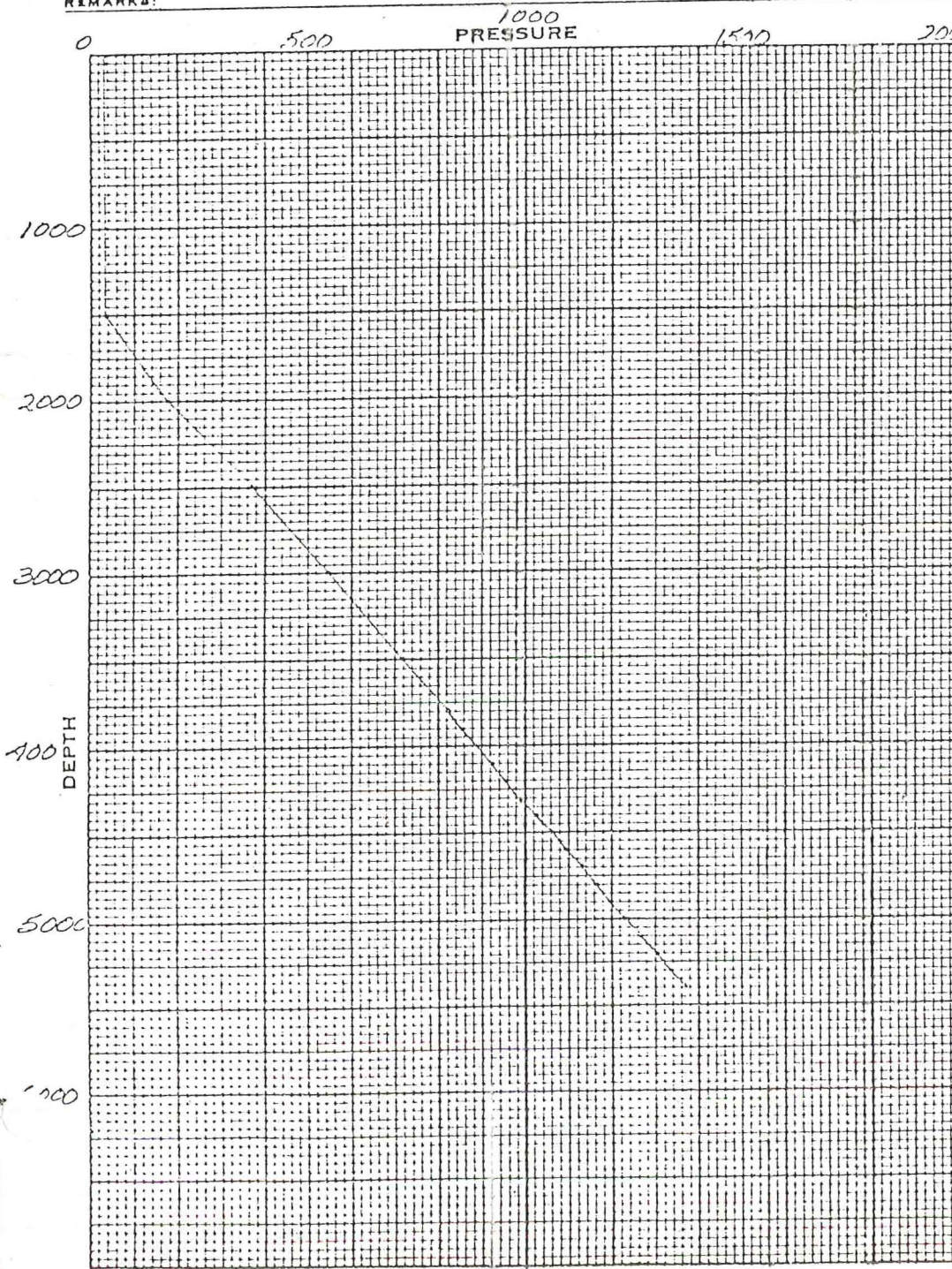
## SUBSURFACE PRESSURE SURVEY

OWNER UNION OIL CO of CALIF. FIELD VALLE GRANDE WELL NAME BACA No. 1  
 CASING 9-5/8" surface to 3182' ELEV. 9318 GL DATE: 8-8-73  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT swab gate  
 \_\_\_\_\_ DEPTH 6278

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 2500 P  
 \_\_\_\_\_ SERIAL NO KPG 9595

PURPOSE STATIC PRESSURE/TEMPERATURE SURVEY MAX TEMP 531.6 °F @ 5400  
 REMARKS: \_\_\_\_\_

STABILIZATION PERIOD

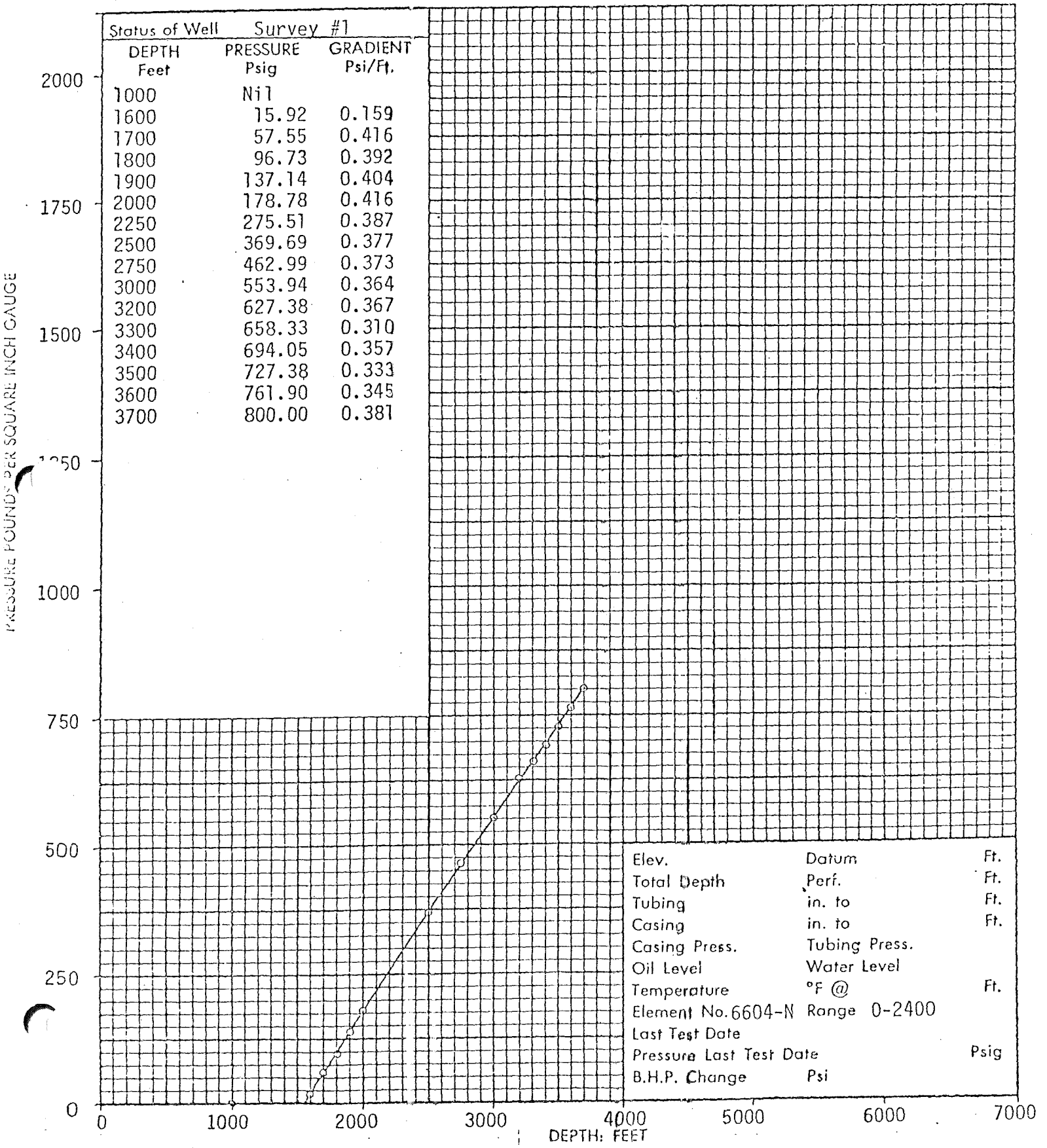



PRESSURES	GAUGE	BOMB
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
50	28.6	—
500	31.7	—
1000	32.1	—
1500	33.4	—
2000	176.1	.295
2500	367.6	.283
3000	544.2	.353
3500	717.2	.346
3800	822.0	.349
3900	856.1	.341
4000	886.9	.323
4100	924.2	.253
4200	958.3	.311
4300	991.2	.327
4400	1026.6	.354
4500	1060.8	.342
4600	1093.7	.329
4700	1129.1	.354
4800	1164.6	.355
4900	1195.7	.341
5000	1232.9	.342
5100	1267.1	.342
5200	1302.5	.354
5300	1336.7	.342
5400	1369.6	.329

BY: C. JUNKER

Company UNION OIL CO. OF CALIFORNIA Lease BACA Well No. 4  
 Field \_\_\_\_\_ County SANDOVAL State NEW MEXICO  
 Formation \_\_\_\_\_ Test Date MAY 28, 1973

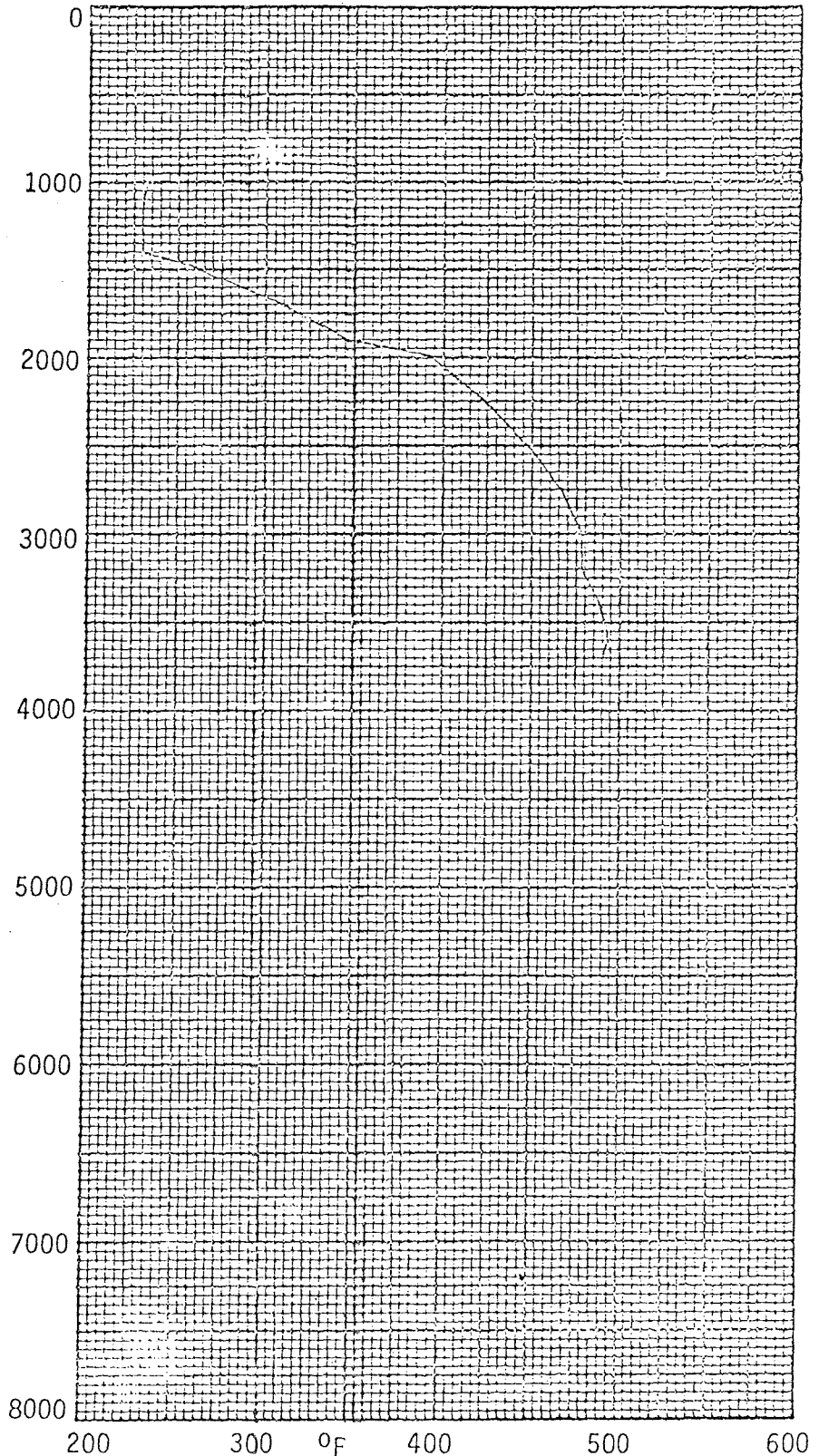


UNION OIL CO. OF CALIFORNIA  
BACA # 4  
SANDOVAL COUNTY, NEW MEXICO



TEMPERATURE SURVEY # 1  
MAY 28, 1973  
Our File No. 2-5258-P

DEPTH FEET	TEMP. OF
1000	233.3
1100	233.0
1200	233.0
1300	233.0
1400	233.0
1500	259.0
1600	292.7
1700	309.3
1800	326.1
1900	347.9
2000	392.7
2250	424.7
2500	447.0
2750	466.9
3000	479.1
3200	478.9
3300	483.6
3400	488.1
3500	492.9
3600	494.0
3700	490.8



Temperature Element 10005 Range 84° - 646°F

REMARKS



76

GEOTHERMAL DIVISION  
SUBSURFACE TEMPERATURE SURVEY

B4-56PT

OWNER Naval Air Station FIELD Naval Air Station  
CASING 3" 1/2" Galv. Pipe R.E.V. 9318 CK DATE May 28, 1973

LINER DESCRIPTION: \_\_\_\_\_  
ZERO POINT \_\_\_\_\_ DEPTH \_\_\_\_\_

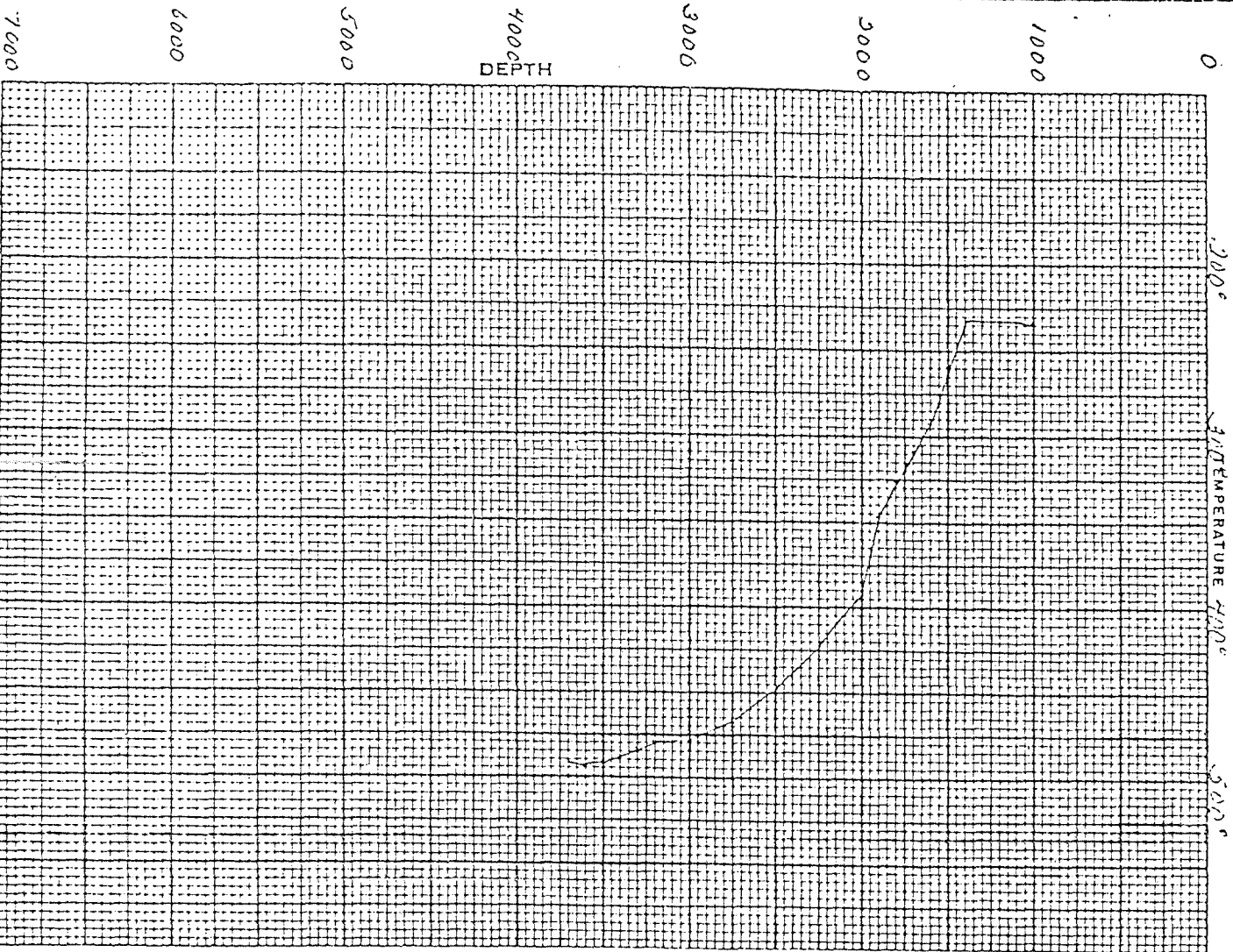
HOLE DESCRIPTION: \_\_\_\_\_  
INSTRUMENT \_\_\_\_\_

SERIAL NO \_\_\_\_\_

MAX TEMP \_\_\_\_\_ °F @ \_\_\_\_\_

PURPOSE \_\_\_\_\_  
REMARKS: \_\_\_\_\_

STABILIZATION PERIOD \_\_\_\_\_



DEPTH	TEMP.	DEPTH	TEMP.
1000	233.3		
1100	233.0		
1200	233.1		
1300	233.0		
1400	233.0		
1500	233.0		
1600	233.0		
1700	233.0		
1800	233.0		
1900	234.7		
2000	234.7		
2250	242.0		
2500	242.0		
2750	246.9		
3000	279.1		
3200	278.9		
3300	283.6		
3400	285.1		
3500	293.9		
3600	294.0		
3700	290.8		

BY \_\_\_\_\_

76

# GEO THERMAL DIVISION

24-56PT

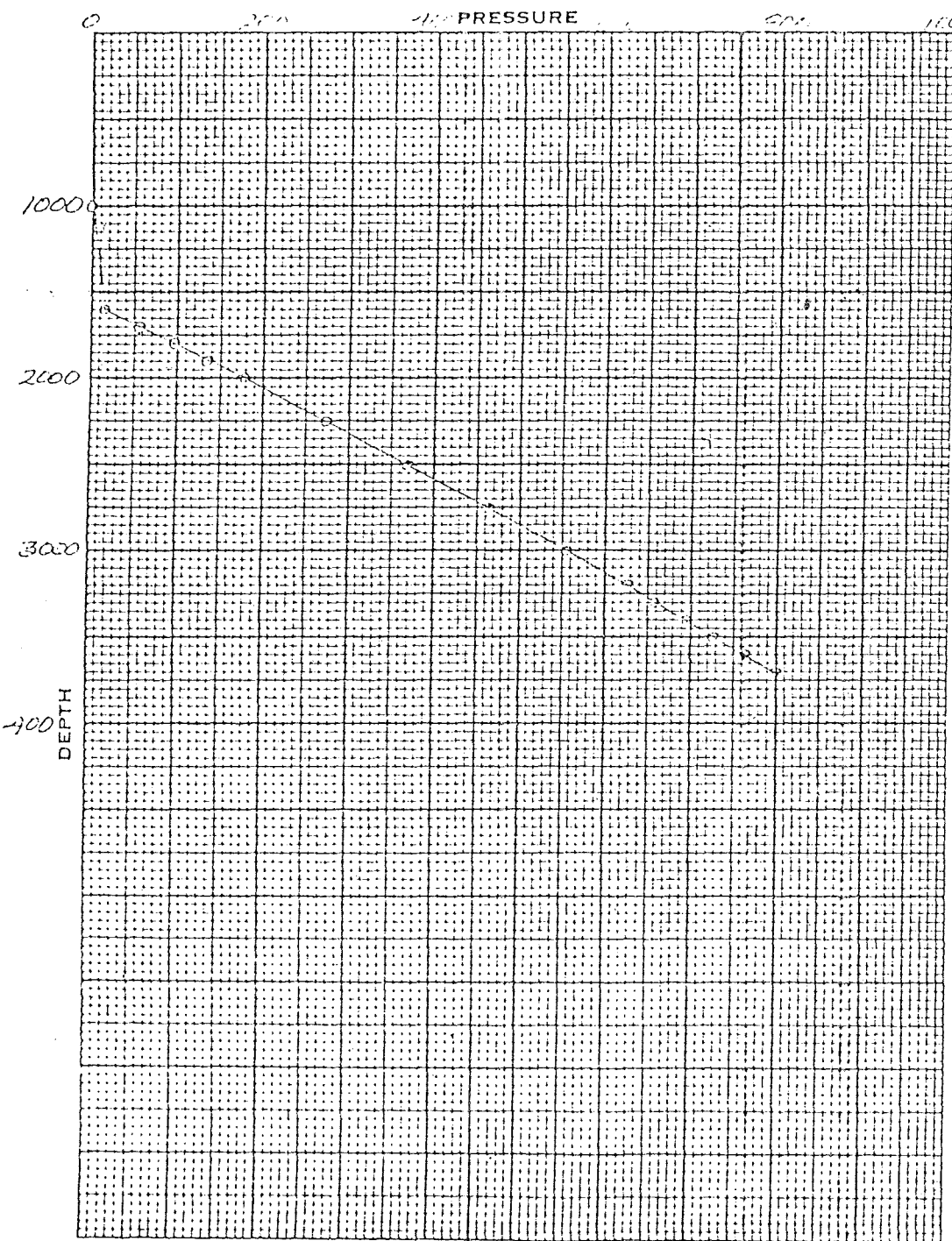
## SUBSURFACE PRESSURE SURVEY

OWNER Union Oil Co of Calif. FIELD \_\_\_\_\_ WELL NAME Bacon No. 1  
 CASING \_\_\_\_\_ ELEV 7318 GA DATE MAY 28, 1973  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT \_\_\_\_\_  
 \_\_\_\_\_ DEPTH \_\_\_\_\_

HOLE DESCRIPTION: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_ INSTRUMENT 0-2400  
 \_\_\_\_\_ SERIAL NO 6-604N

PURPOSE \_\_\_\_\_ MAX TEMP \_\_\_\_\_ °F @ \_\_\_\_\_

REMARKS: \_\_\_\_\_



STABILIZATION PERIOD \_\_\_\_\_

PRESSURES	GAUGE	BOM
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
1000	Nil	
1600	15.92	0.159
1700	57.55	0.311
1800	46.73	0.392
1900	137.14	0.404
2000	178.15	0.416
2250	275.81	0.387
2500	368.69	0.377
2750	461.99	0.373
3000	553.97	0.364
3200	627.55	0.361
3300	654.33	0.310
3400	691.65	0.357
3500	727.34	0.333
3600	761.90	0.345
3700	800.00	0.321

BY: TEETER



76

# GEO THERMAL DIVISION

## SUBSURFACE TEMPERATURE SURVEY

B-9-55PT

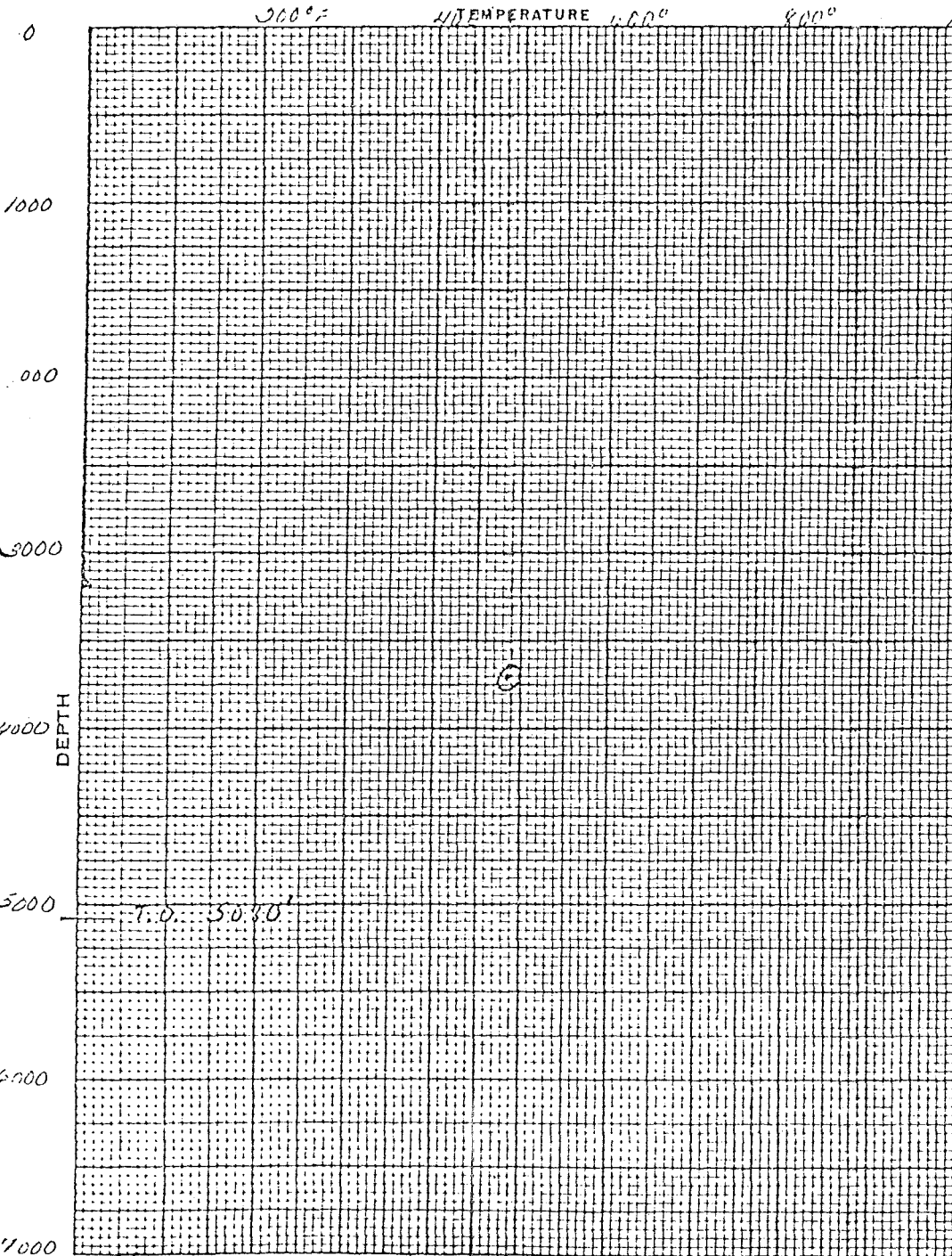
OWNER Union Oil Co. of Calif. FIELD Redondo Valley WELL NAME Baco # 4  
 CASING 9 3/8" C. from surface to 3200' ELEV 9318.61 DATE: 1-10-73  
 LINER DESCRIPTION: 8 3/4" open hole 3200' to 5080' ZERO POINT 14' above ground  
 DEPTH 5080'

HOLE DESCRIPTION:

INSTRUMENT 84° to 646° F F  
 SERIAL NO KTB-10005

PURPOSE Bottom Hole Temperature and Pressure Survey MAX TEMP \_\_\_\_\_ °F @ \_\_\_\_\_  
 REMARKS: \_\_\_\_\_

STABILIZATION PERIOD



PRESSURES.	GAUGE	BOMB
CASING. PSI		
DEPTH	TEMP.	DEPTH
3700	486.8	

BY:

# GEOHERMAL DIVISION

## SUBSURFACE PRESSURE SURVEY

B-1-347

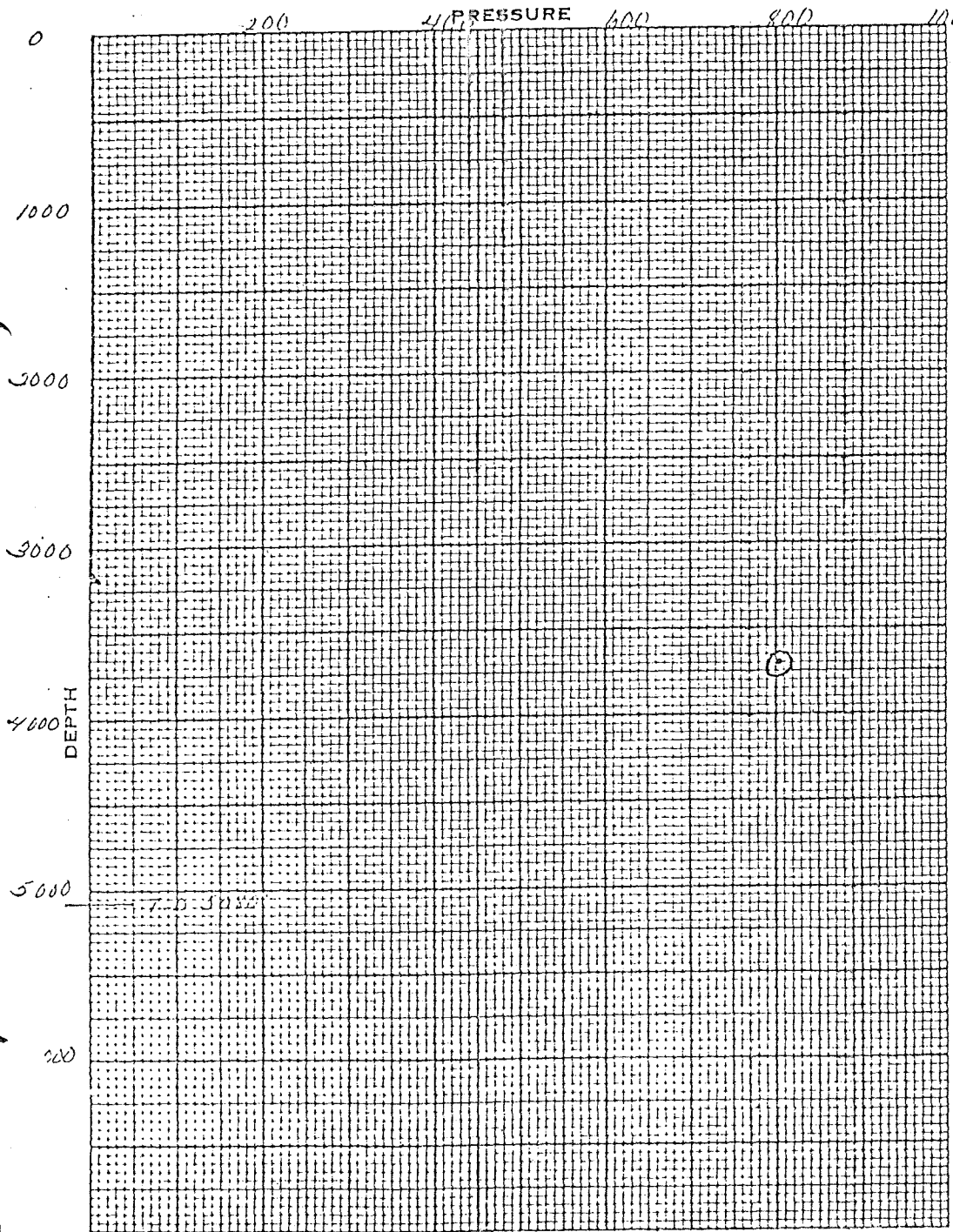
76

OWNER Union Oil Co of Calif FIELD Redondo Valley WELL NAME Boca #4  
 CASING 9 5/8" P from surface to 3200' ELEV 9318 GL DATE 12-2-72  
 LINER DESCRIPTION: 8 3/4" open hole 3200' to 5080' ZERO POINT 14' above ground  
 DEPTH 5080'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 2400  
 SERIAL NO 6604 N

PURPOSE Bottom Hole Pressure Survey MAX TEMP \_\_\_\_\_ °F @ \_\_\_\_\_

REMARKS: \_\_\_\_\_ STABILIZATION PERIOD \_\_\_\_\_



PRESSURE	GAUGE	BOMF
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
<u>3700</u>	<u>803.83</u>	

BY: \_\_\_\_\_

76

# GEO THERMAL DIVISION

BA-53P

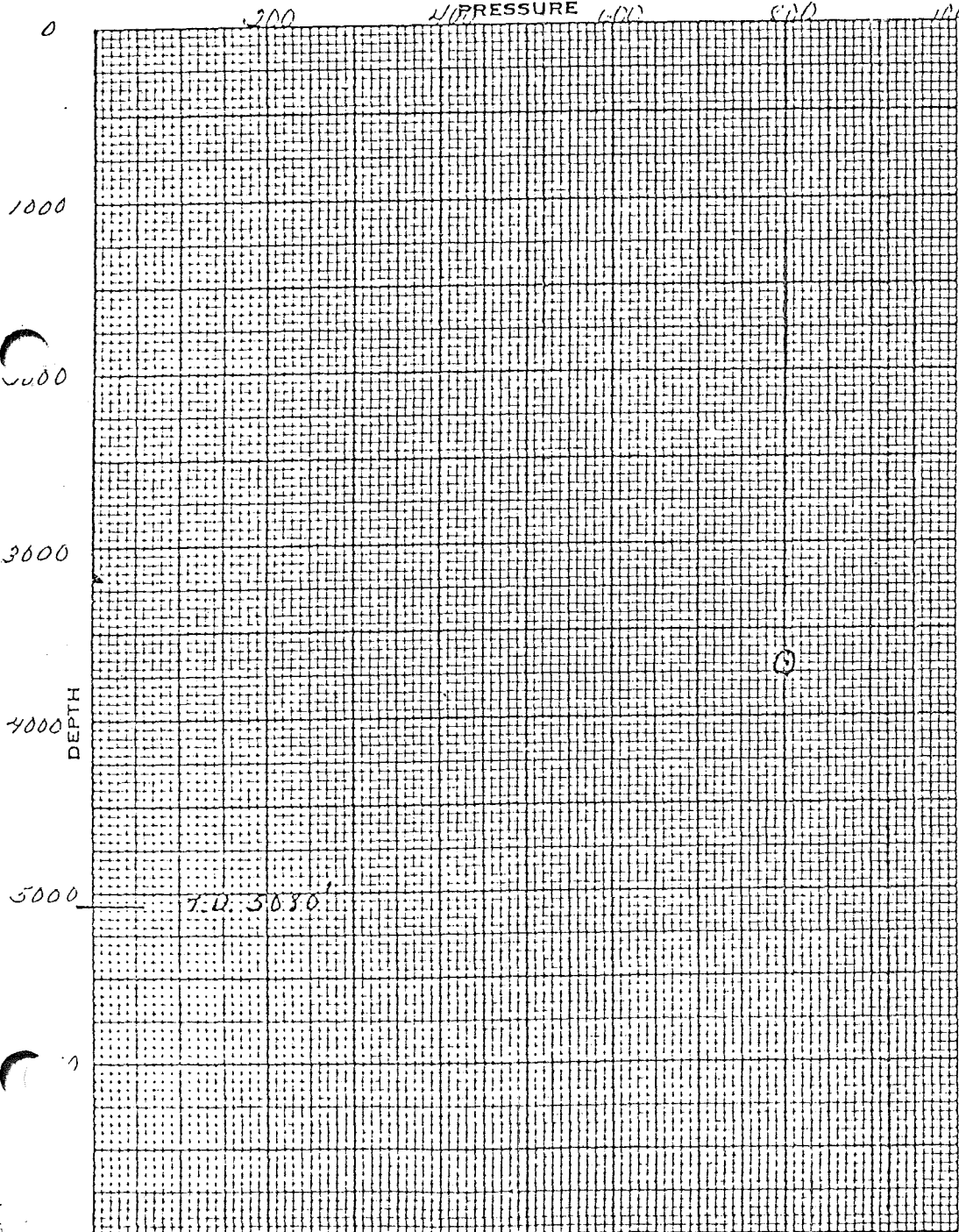
## SUBSURFACE PRESSURE SURVEY

OWNER Baca Land & Cattle Co FIELD Redondo Valley WELL NAME Baca #4  
 CASING 9 5/8" C. from surface to 300' ELEV 9318 G.L. DATE 10/29/72  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT \_\_\_\_\_  
 \_\_\_\_\_ DEPTH 5080'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 2400 PSIG  
 \_\_\_\_\_ SERIAL NO 6604 N

PURPOSE Bottom Hole Pressure Survey MAX TEMP \_\_\_\_\_ °F @ \_\_\_\_\_

REMARKS: \_\_\_\_\_ STABILIZATION PERIOD \_\_\_\_\_



PRESSURES	GAUGE	BOMB
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
3700	800.24	

BY: \_\_\_\_\_

76

# GEOHERMAL DIVISION

## SUBSURFACE PRESSURE SURVEY

11/11/72

B4-52PT

OWNER Baca Land & Cattle Co. FIELD Redondo Valley WELL NAME Baca #4

CASING 9 5/8" d. from surface to 3200' elev DATE 10-13-72

LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT 1410 base gouch

HOLE DESCRIPTION: \_\_\_\_\_ DEPTH 5080'

INSTRUMENT D400

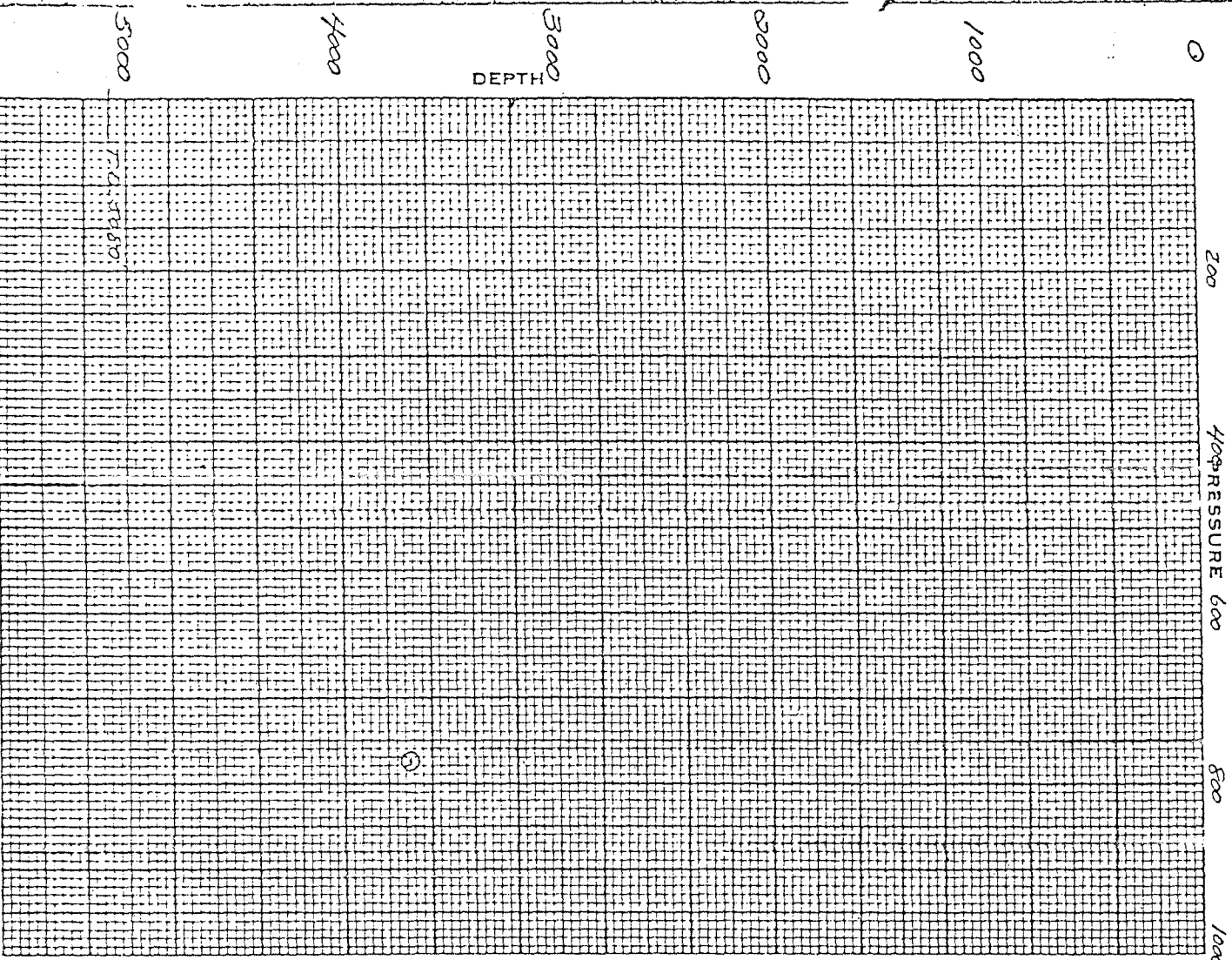
SERIAL NO 6604N

MAX TEMP 485.0 °F @ 3700

PURPOSE Bottom Hole Press. & Temp. Survey

STABILIZATION PERIOD \_\_\_\_\_

REMARKS: \_\_\_\_\_



PRESSURE, CASING, PSI	GAUGE	BOH
3700	726.19	

BY: Paul J. Funderburk

76

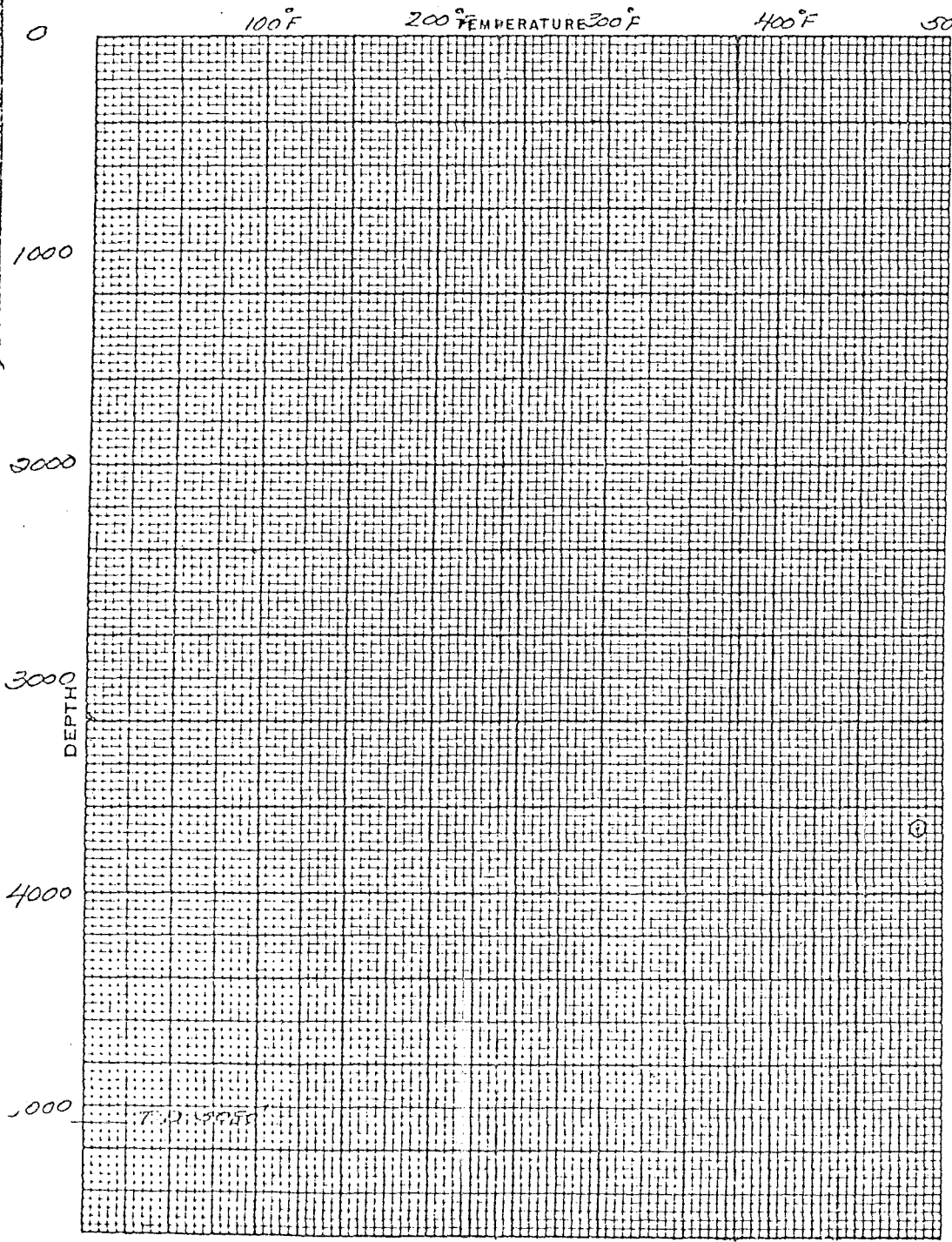
# GEO THERMAL DIVISION

## SUBSURFACE TEMPERATURE SURVEY

OWNER Baca Land & Cattle Co. FIELD Redondo Valley WELL NAME Baca # 4  
CASING 9 3/8" C. from surface to 3200' ELEV 9318 GL DATE: 10-13-72  
LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT 14' above grade  
DEPTH 5080'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 84°-646°  
SERIAL NO KT-B 10005

PURPOSE Bottom Hole Press. & Temp. Survey MAX TEMP 485.0 °F @ 3700  
REMARKS: \_\_\_\_\_



STABILIZATION PERIOD

PRESSURE,	GAUGE	BOME
CASING, PSI		
DEPTH	TEMP.	DEPTH
3700	485.0	

BY: Carl Jander





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# GEO THERMAL DIVISION

## SUBSURFACE PRESSURE SURVEY

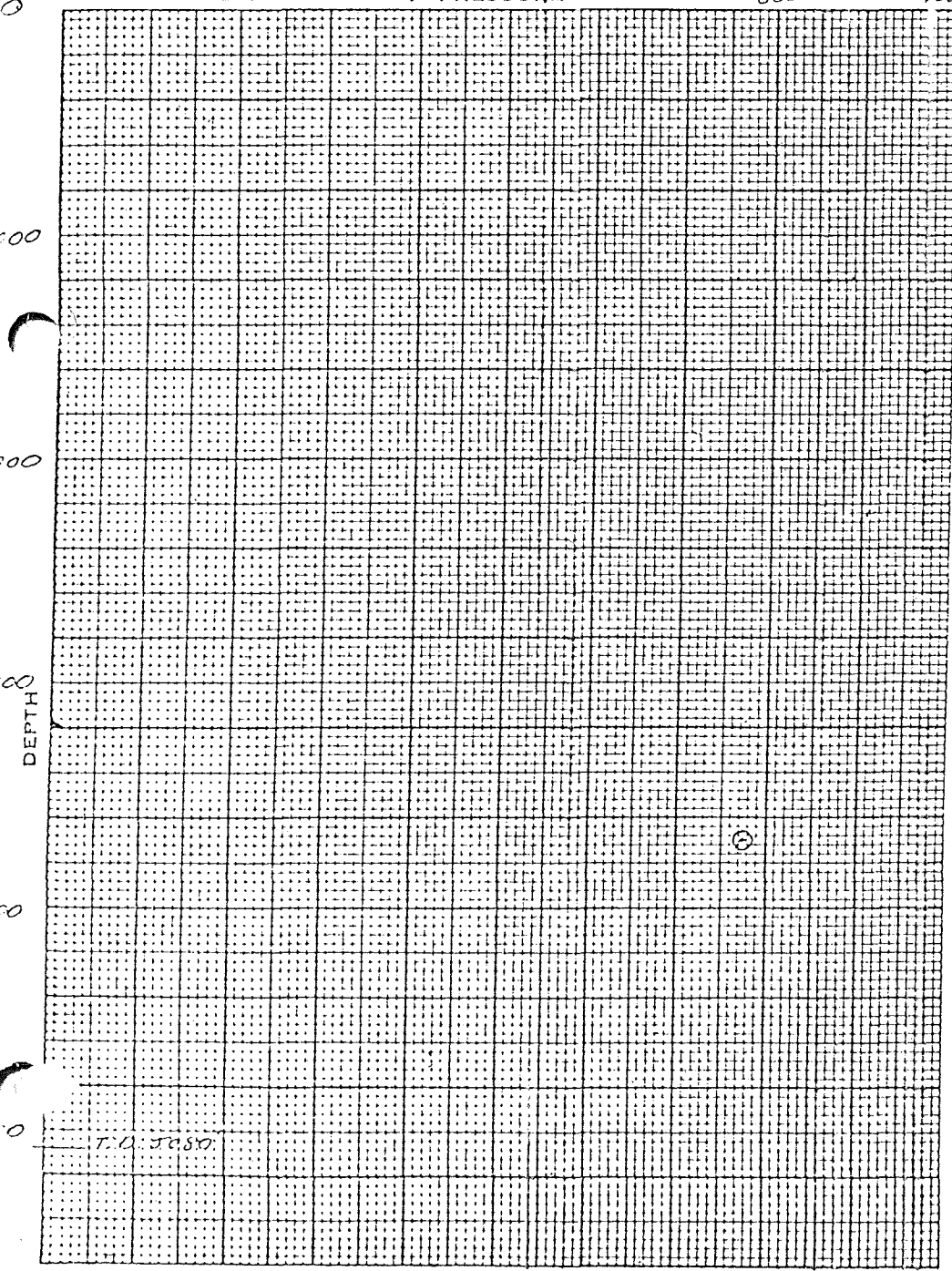
OWNER Baca Land & Cattle Co. FIELD 4 Ando Valley WELL NAME Baca #4  
 CASING 7 7/8" c. from surface to 3200' ELEV \_\_\_\_\_ DATE 10-13-72  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT 14' above ground  
 \_\_\_\_\_ DEPTH 5080'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 5400 PSIG  
 SERIAL NO 6604N

PURPOSE Bottom Hole Press. & Temp. Survey MAX TEMP 485.0 °F @ 3700'  
 REMARKS: \_\_\_\_\_

200 400 PRESSURE 600 800 1000

STABILIZATION PERIOD



PRESSURES.	GAUGE	BOMB
CASING. PSI		

DEPTH	PRESSURE	GRADIENT
3700	776.19	

Unrecorded 117  
 Temp.

BY: Carl Jankel

76

# GEO THERMAL DIVISION

B4-51PT

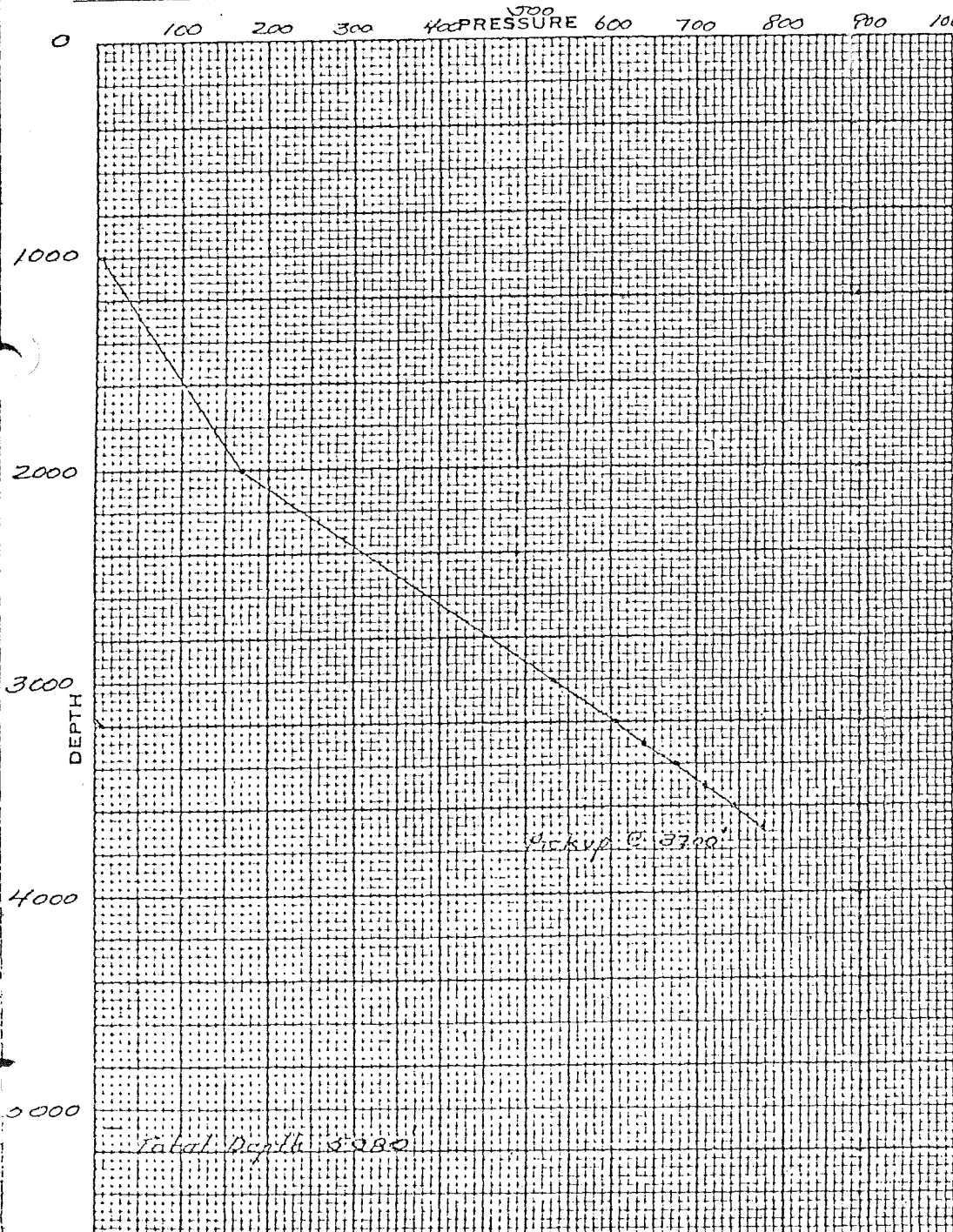
## SUBSURFACE PRESSURE SURVEY

OWNER Boca Land & Cattle Co. FIELD Redondo Valley WELL NAME Boca #4  
 CASING 9 5/8" C. from surface to 3200' ELEV. 9318 ft DATE: 10/5/72  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT 14' above ground  
 DEPTH 5080'

HOLE DESCRIPTION: 8 3/4" open hole from 3200' to 5080'  
 INSTRUMENT 2400  
 SERIAL NO 6604 N

PURPOSE Tandem Temperature and Pressure MAX TEMP 491.3 °F @ 3600  
 REMARKS: \_\_\_\_\_

STABILIZATION PERIOD  
Static



PRESSURES.	GAUGE	BOMB
CASING. PSI	0	0

DEPTH	PRESSURE	GRADIENT
1000	4.72	
2000	169.81	.1659
3000	533.33	.3638
3200	604.76	.3572
3300	639.29	.3452
3400	675.00	.3571
3500	709.52	.3452
3600	742.86	.3333
3700	777.38	.3452

BY: Carl Junken

GEO THERMAL DIVISION  
SUBSURFACE TEMPERATURE SURVEY

WINDSON

B4-51 PT

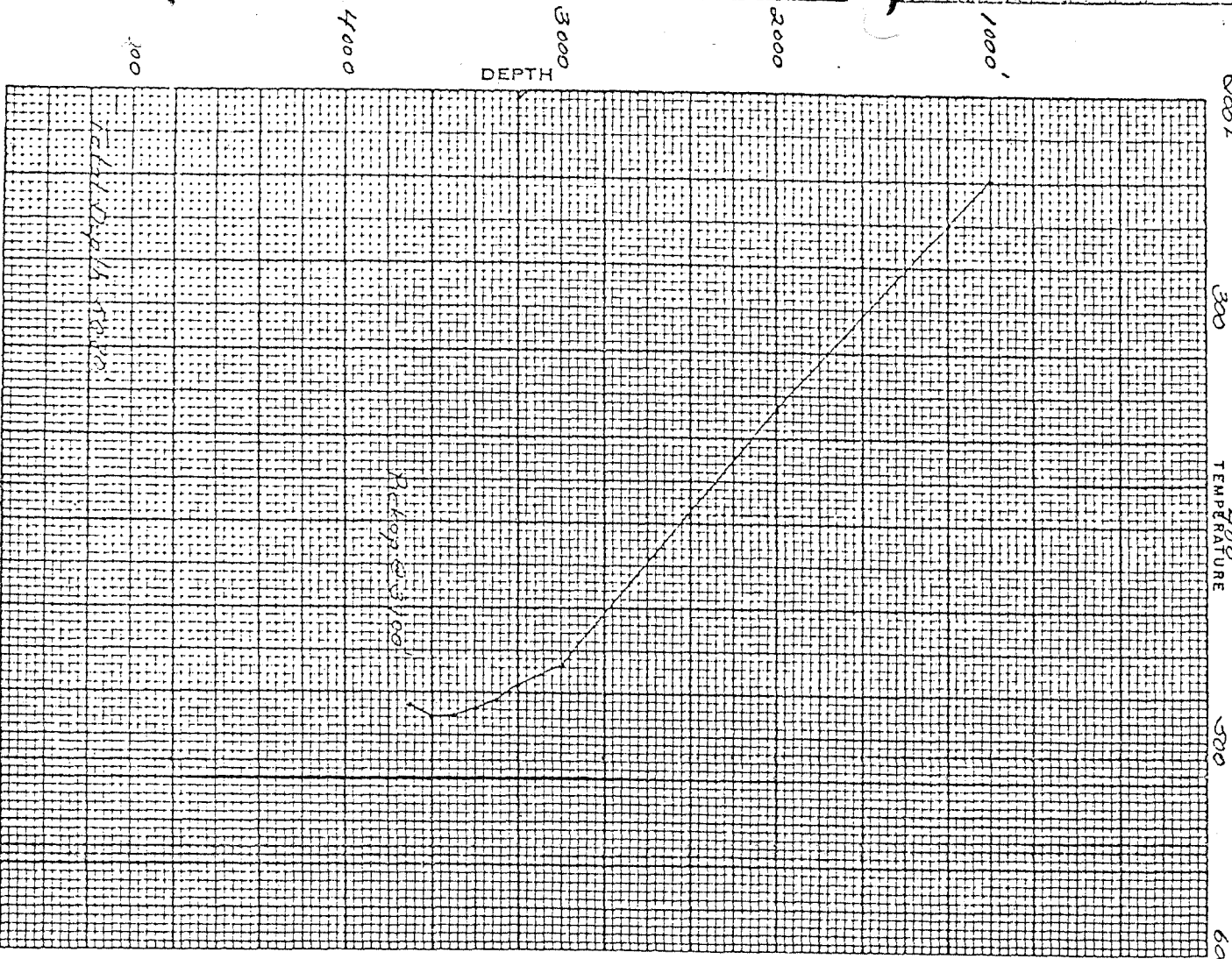
76

OWNER Boca Land & Cattle Co. FIELD Redondo Valley well name Boca # 4  
 CASING 9 5/8" A. From surface to 3200' ELEV 9312.66 DATE: 10/5/72  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT 14' above ground  
 DEPTH 5080'

HOLE DESCRIPTION: 8 3/4" open hole from 3200' to 5080'  
 INSTRUMENT 84° - 646° FM

PURPOSE Indirect Temperature and Pressure MAX TEMP 491.3 °F @ 3600'

REMARKS: \_\_\_\_\_  
 STABILIZATION PERIOD Stable



DEPTH	TEMP.	DEPTH	TEM
1000	339.0		
2000	346.5		
3000	466.9		
3200	476.5		
3300	483.4		
3400	487.6		
3500	490.8		
3600	491.3		
3700	486.3		

BY Earl Jewell