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GL03881

Open-File Report # NM/Baca- **19 K**

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

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B15 542 P17

OWNER: UNION OIL COMPANY FIELD: VALLE CLANDE WELL NAME: BALA # 15  
 CASING: 20" AT 210'; 13 3/8" AT 1273' ELEV. 9177 DATE: 6/22/76  
 LINER DESCRIPTION: 9 5/8" 2509 ZERO POINT: 64 + 6'  
 OPEN HOLE 2509 - TD DEPTH: 5498

TUBING DETAIL:

PURPOSE:

REMARKS:

ELEMENT 0-2950 PSI SN 7235 CL-12 hr 15 T

ELEMENT 30-696' SERIAL NO. 10052 CLOCK 12 hr 15 TURN STABILIZATION PERIOD

ENGAGE STYLUS P 0953 T 0950 DISENGAGE STYLUS P 1230 T 1230

WELL HEAD 581 PSI

PICKUP 5497 TIME ON BOTTOM 1153-1208 MAX. °F 500

WELL STATUS

SHUT IN:

ON PRODUCTION:

RATE

PRESSURE

TEMPERATURE

TIME	PRESSURE					TEMPERATURE					
	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
0	100	.383	546		-012	1048	100	076	104		
10	1000	.400	621		0	1100	1000	990	351		
111	2000	.410	635		+001	1112	2000	1.372	486		
1124	3000	.434	672		+001	1124	3000	1.400	494		
1136	4000	.470	725		+001	1136	4000	1.431	502		
1150	5000	.537	825		+001	1150	5000	1.485	516		
1208	5497	.616	943		+001	1208	5497	1.535	530		

COMMENTS:

76

Union

GEOHERMAL DIVISION

SUBSURFACE PRESSURE SURVEY

B15-542-PT

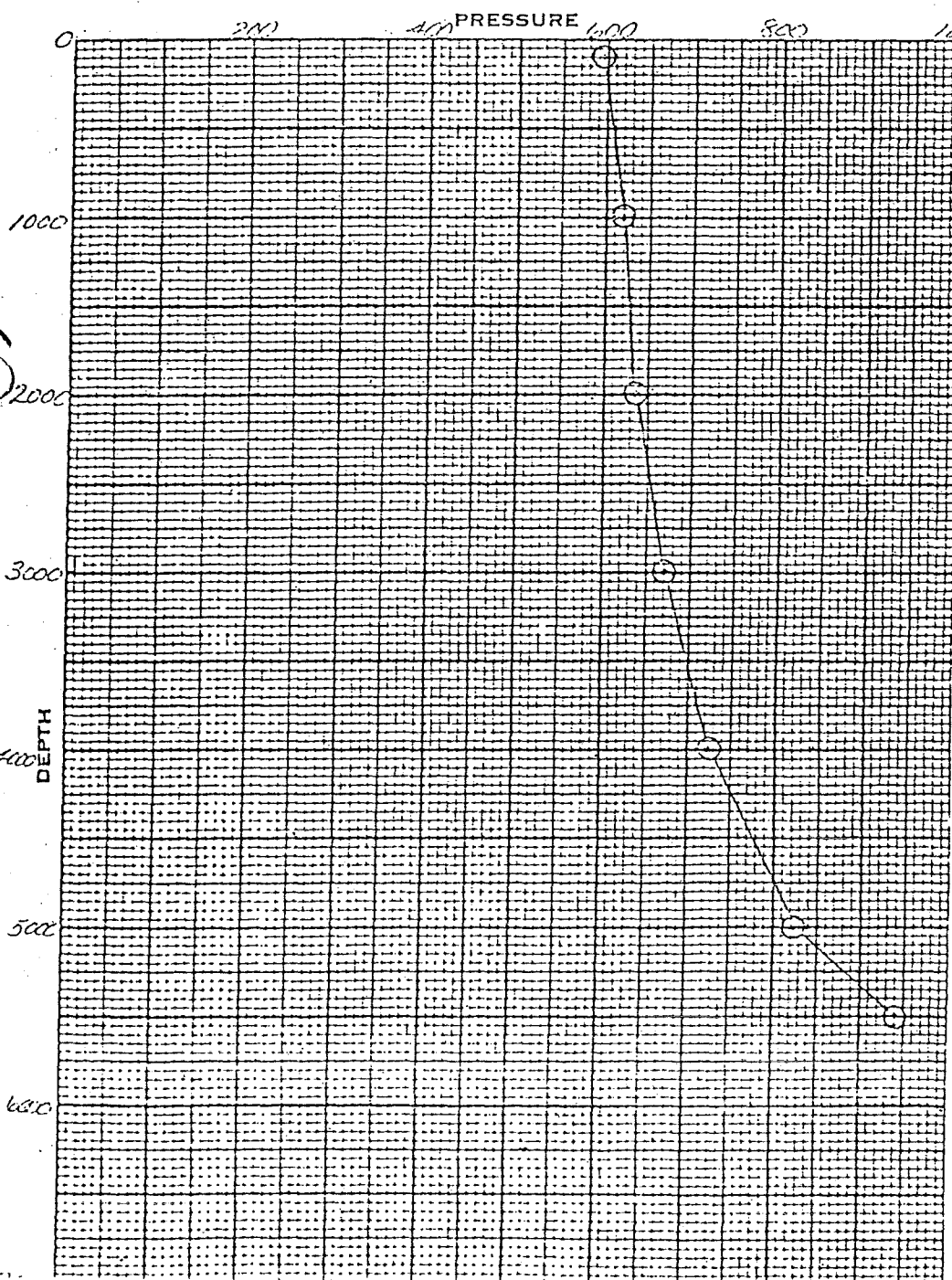
OWNER \_\_\_\_\_ FIZLO Hille Grande WELL NAME BACA #15  
 CASING \_\_\_\_\_ ELEV 9177' DATE 6/22/76  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT GL +1'  
 \_\_\_\_\_ DEPTH 5498'

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

PURPOSE \_\_\_\_\_ MAX TEMP 530 °F @ 5497'

REMARKS:

STABILIZATION PERIOD



PRESSURE	GAUGE	BOMB
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
100	596	
1000	621	
2000	635	
3000	672	
4000	725	
5000	825	
5497	943	

BY:

76

UNION

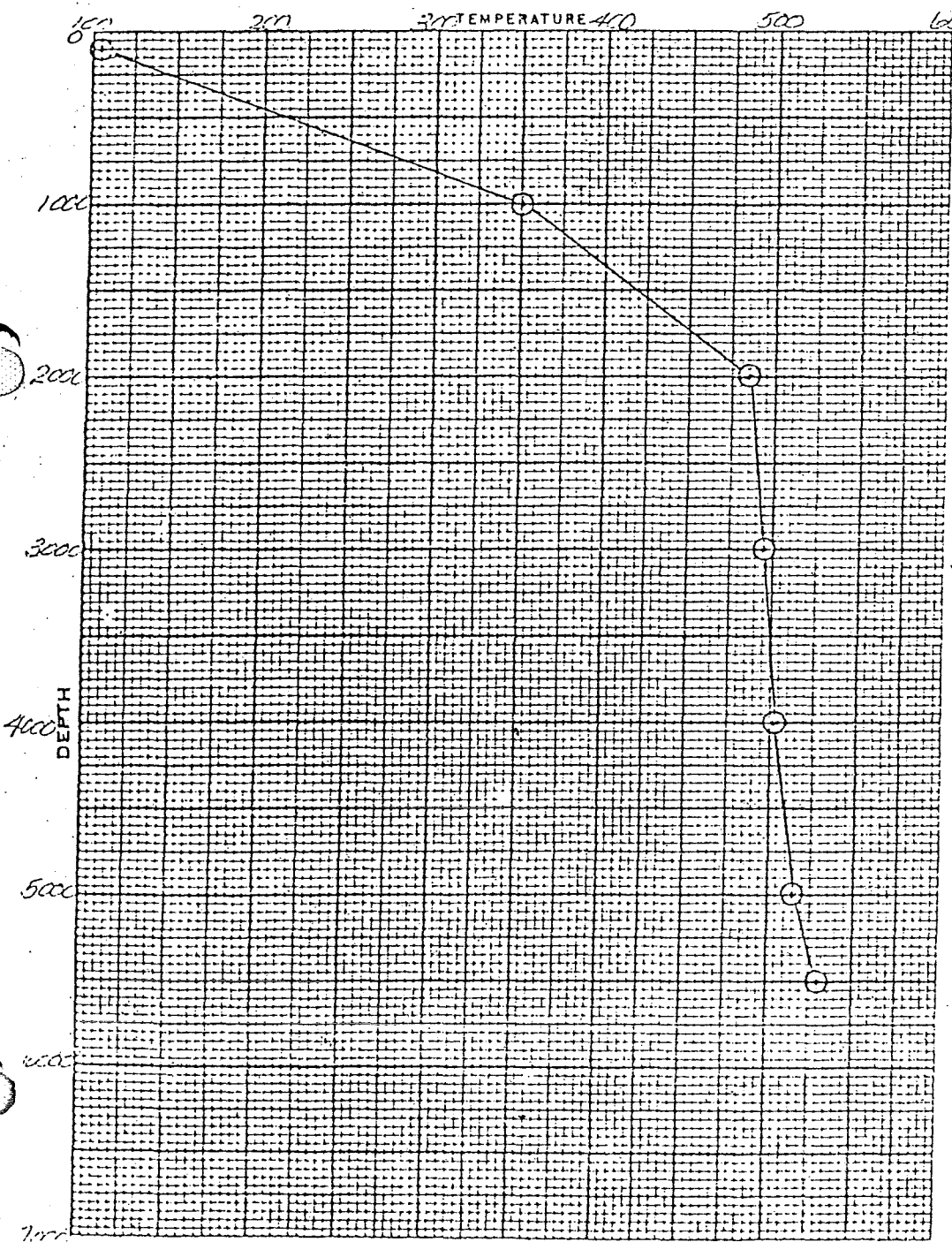
GEO THERMAL DIVISION

SUBSURFACE TEMPERATURE SURVEY

B15-S42-PT

OWNER \_\_\_\_\_ FIELD Valle Grande WELL NAME BPCA #15  
 CASING \_\_\_\_\_ ELEV 9177' DATE 6/22/76  
 LINEA DESCRIPTION: \_\_\_\_\_ ZERO POINT G.L. 161  
 \_\_\_\_\_ DEPTH 5498'  
 HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT \_\_\_\_\_ FAHP  
 \_\_\_\_\_ SERIAL NO 10052  
 PURPOSE \_\_\_\_\_ MAX TEMP 530 °F @ 5497'  
 REMARKS: \_\_\_\_\_

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



PRESSURES.	GAUGE	BOMB	
CASING. PSI			
DEPTH	TEMP.	DEPTH	TEMP.
100	104		
1000	351		
2000	486		
3000	494		
4000	502		
5000	516		
5497	530		

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

76

UNION

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

BRAH 15-548-P/1

OWNER UNION OIL CO. CALIF FIELD VALLE GRANDE WELL NAME BRAH 15  
 CASING 20" @ 210' 13 3/8" @ 223' ELEV. 9177 DATE: 9-3-76  
 LINER DESCRIPTION: 9 5/8" @ 2509' ZERO POINT CLT 7'  
 OPEN HOLE 2509 - T.O. DEPTH 5496'

TUBING DETAIL:

PURPOSE

REMARKS:

P-O-1700 FSIC 13012 12/12 15  
 ELEMENT 7-809-6469 SERIAL NO. 10052 CLOCK 12/12 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-1245 T-1245 DISENGAGE STYLUS P-1550 T-1550  
 WELL HEAD 570  
 PICKUP @ 5496' TIME ON BOTTOM 1457-1507 MAX. °F 533  
 WELL STATUS SHUT IN.  
 SHUT IN: ON PRODUCTION:  
 RATE

FSIG.

TEMP

TIME	DEPTH	DEFL.	P-Ø	GRAD.	NOTE	TIME	DEPTH	DEFL.	Ø-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
2	160	.237	584		-	1355	160	.058	98								
2	200	.237	581		-1.01	1409	160	.823	332								
119	2000	.216	602		-	1419	2000	1.376	488								
131	2000	.260	635		-	1431	2000	1.410	494								
143	4000	.287	699		-	1443	4000	1.435	503								
55	5000	.330	801		-	1455	5000	1.495	519								
507	5496	.382	924		-	1507	5496	1.550	533								

COMMENTS:

76

UNION

GEOHERMAL DIVISION

SUBSURFACE SURVEY  
Field Work Sheet

8415-519-711

OWNER UNION OIL CO. CALIF. FIELD VALLE GRANDE WELL NAME B-115  
 CASING 20" @ 210', 13.35" @ 273' ELEV. 9177 DATE: 9-28-76  
 LINER DESCRIPTION: 9-5/8" @ 2509' ZERO POINT 1.6715'  
OPEN HOLE 2509' - T.D. DEPTH 5479'  
 TUBING DETAIL: 2" TUBING FROM SURFACE TO 5472'

PURPOSE

REMARKS:

P-O-4650 F-16 9222 1211 15  
 ELEMENT 1009 - 792 SERIAL NO. 10098 CLOCK 1211R 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-1211, T-1213 DISENGAGE STYLUS P-1133, T-1134  
 WELL HEAD 540  
 PICKUP @ 5472' TIME ON BOTTOM 1342-1352 MAX. T 544  
 WELL STATUS SHUT IN  
 SHUT IN: ON PRODUCTION:  
 RATE

PRESSURE TEMPERATURE  $P_{surf}, P_{sig}$

TIME	DEPTH	DEFL.	PRESSURE		GRAD.	CORR.	TEMPERATURE		P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
			P-V	GRAD.			P-T	GRAD.									
51	20	1.220	545			-0.010	1252	100	122								
72	600	1.233	575			-0.002	1302	160	342		110.7						
81	1000	1.242	597			0	1311	210	487		594.0						
121	3160	1.215	651			0	1321	310	499		658.2						
131	4160	1.300	737			0	1331	400	513		754.0						
140	5110	1.351	854			0	1342	510	530		814.7						
152	5472	1.428	983			0	1352	5472	544		984.7						

COMMENTS:

76

UNION

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B15-550-717

OWNER UNION OIL CO. CALIF. FIELD VALLE GRANDE WELL NAME BACH 15  
 CASING 20" @ 210'; 13 3/8" @ 273' ELEV. 9177. DATE: 10/5/76  
 LINER DESCRIPTION: 9 5/8" @ 2509'; ZERO POINT 61+18'  
 OPEN HOLE 2509' - T.O. DEPTH 5472'  
 TUBING DETAIL: 2" TUBING FROM SURFACE TO 5472'

PURPOSE

REMARKS:

P-O-4650 PSIG 9222 12 hr 15  
 ELEMENT T-1009-9999 SERIAL NO. 10098 CLOCK 12 hr 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-1425 T-1500 DISENGAGE STYLUS P-1425 T-1800  
 WELL HEAD 510  
 PICKUP @ 5472'. TIME ON BOTTOM 1717-1737 MAX. °F 545  
 WELL STATUS SHUT IN.  
 SHUT IN: ON PRODUCTION:  
 RATE

PSIG TEMP Psat 9-28

TIME	DEPTH	DEFL.	P-T	GRAD.	CORR	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1457	100	.221	547		-.008	1457	100	.2067	128	92.8	122						
1513	200	.229	571		-.002	1513	200	.637	334	98.3	342						
1539	300	.242	597		-	1539	300	1.060	495	532.5	487						
1545	500	.242	644		-	1545	3000	1.103	499	664.3	493						
1601	1000	.300	734		-	1601	4000	1.146	513	754.0	513						
1617	500	.357	868		-	1617	5000	1.198	530	872.7	530						
1632	510	.372	905		-	1632	5000	1.208	534	905.2							
1647	520	.383	929		-	1647	5200	1.218	537	923.5							
1702	530	.395	955		-	1702	5300	1.231	541	960.3							
1717	540	.407	986		-	1717	5400	1.238	544	984.7							
1737	5472	.408	983		-	1737	5472	1.243	545	993.0	544						

COMMENTS:

BY: TEST TELLER / I. M. A. R.





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# GEO THERMAL DIVISION

## SUBSURFACE PRESSURE SURVEY

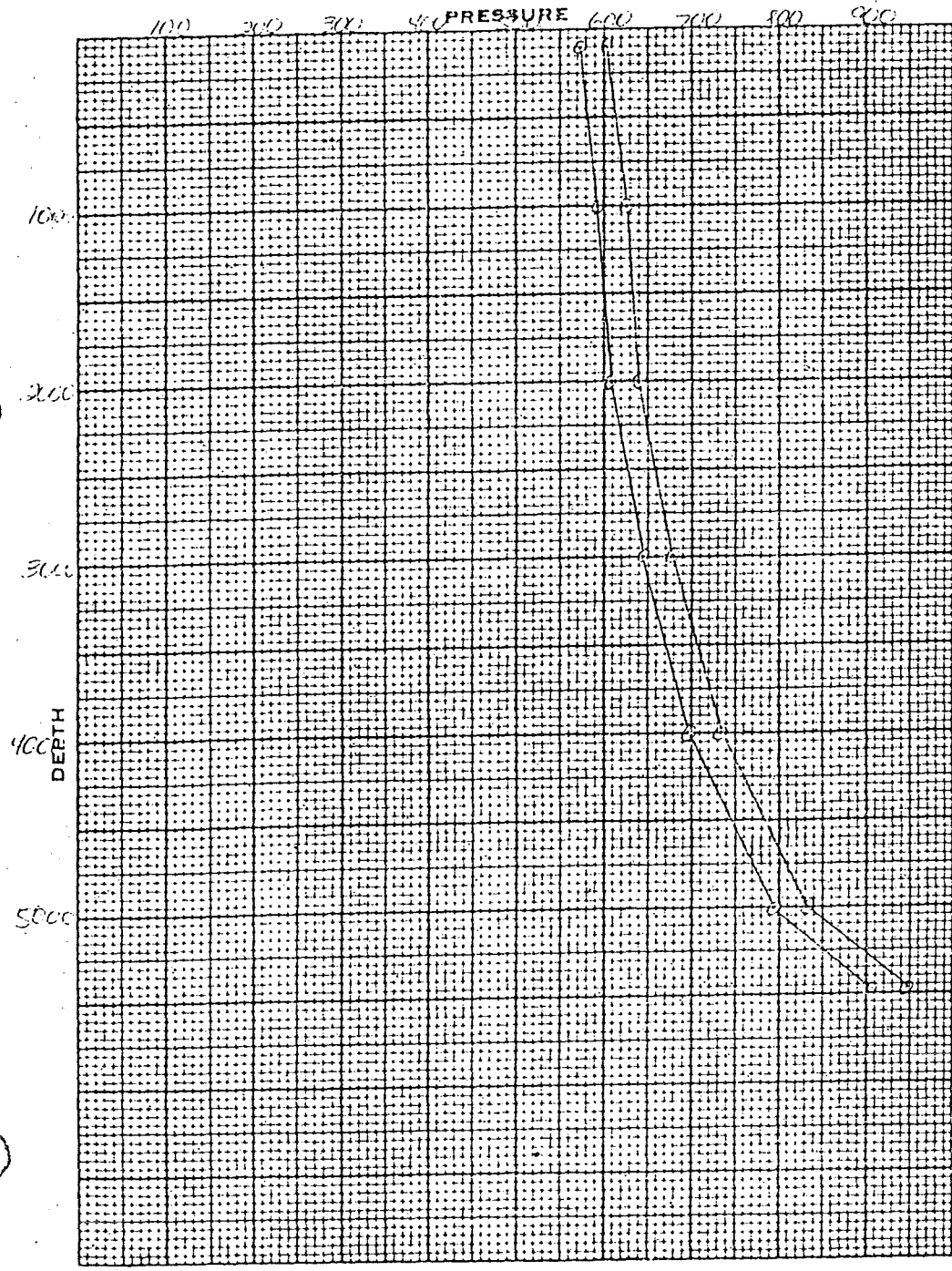
B15 545 H/P

OWNER \_\_\_\_\_ FIELD VALLE GRANDE WELL NAME BACA #15  
 CASING \_\_\_\_\_ ELEV 9177' DATE 7-8-76  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT G.L. + 7'  
 \_\_\_\_\_ DEPTH 5496'

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

PURPOSE \_\_\_\_\_ MAX TEMP 531 °F @ \_\_\_\_\_  
 REMARKS: \_\_\_\_\_

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



PRESSURES	GAUGE	BOMB
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
100	574	
1000	592	
2000	609	
3000	645	
4000	697	
5000	794	
5496	908	

100	602
1000	625
2000	640
3000	676
4000	734
5000	831
5496	948

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

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UNION

GEO THERMAL DIVISION

SUBSURFACE SURVEY  
Field Work Sheet

B15 544 PIT

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15  
 CASING 20" AT 210'; 13 3/8" 1273' ELEV. 9177 DATE: 7/1/76  
 LINER DESCRIPTION: 9 5/8" AT 2509' ZERO POINT GL+7'  
2509 - TD = OPEN HOLE DEPTH

TUBING DETAIL:

PURPOSE

REMARKS:

ELEMENT - 0-4700 SN 13012 CLOCK 12 HR 15 T  
 ELEMENT 80° - 64.6° SERIAL NO. 10052 CLOCK 12 HR 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P 1215 T 1216 DISENGAGE STYLUS P 1436 T 1436  
 WELL HEAD 575 PS19  
 PICKUP @ 5496 TIME ON BOTTOM 1330 - 1400 MAX. °F 531  
 WELL STATUS  
 SHUT IN: ON PRODUCTION:  
 RATE

PS1

TEMP.

DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
100	.233	571		-006	1320	100	.087	107								
5496	.372	901		0	1350	5496	1.543	531								
1400	5496	.372	901	0	1400	5496	1.543	531								

COMMENTS:

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UNION

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B15-543-P17

OWNER UNION OIL CO. CRUI FIELD WALLE GRANDE WELL NAME BADA 15  
 CASING 31" @ 210' 13 3/8" @ 1223' ELEV. 9177 DATE: 6/24/76  
 LINER DESCRIPTION: 9 3/8" @ 2509' ZERO POINT 61+6'  
OPEN HOLE - 2509' - T.O. DEPTH 5119'

TUBING DETAIL:

PURPOSE

REMARKS:

P-C-2950 P-510 9.235 12 HR 15

ELEMENT T-510-6216 SERIAL NO. 10052 CLOCK 12 HR 12 FURN STABILIZATION PERIOD

ENGAGE STYLUS P-1315 T-1317 DISENGAGE STYLUS P-1510 T-1510

WELL HEAD 590

PICKUP @ 5497 TIME ON BOTTOM 1349-1449 MAX. P 531

WELL STATUS SHUT IN

SHUT IN:

ON PRODUCTION:

RATE

P-510

TEMP

TIME	DEPTH	DEFL.	P-Ø	GRAD.	Ø 10"	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
110	110	0.315	538		-0.12	1340	100	0.35	107								
1349	5497	0.13	539		+0.01	1349	5497	1.543	531								
1449	5497	0.13	539		+0.01	1449	5497	1.543	531								

COMMENTS:

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UNION

GEO THERMAL DIVISION

DEL PYLE  
MAY 21 1976

SUBSURFACE SURVEY

Field Work Sheet

B#15 S-43 1/4

OWNER Union Oil Co of Calif. FIELD Valle Grande WELL NAME Union #15  
 CASING 2 1/2" x 11 3/4" @ 1273 ELEV. 9177' DATE: 4/19/76  
 LINER DESCRIPTION: 7 3/8" @ 2509' ; Open hole 2509' - T.D. ZERO POINT 16.1'  
 DEPTH 3498'

TUBING DETAIL:

PURPOSE

REMARKS:

Element - C 4000 Big SAL - 7198 Clock 12 hr 15 Turn  
 ELEMENT 1.40°F SERIAL NO. 10050 CLOCK 12 hr 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-1009; T-1002 DISENGAGE STYLUS P-1238; T-1237  
 WELL HEAD 5.51 Deg  
 PICKUP @ 3497' TIME ON BOTTOM 1154-1224 MAX. T. 530.1°F  
 WELL STATUS Shut-in  
 SHUT IN: ON PRODUCTION:  
 RATE

Pressure

Temp

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1154	100	2.39	58.1		-0.11	1051	100	1.09	113.8								
1155	112	2.72	60.9		-0.02	1104	1000	3.58	341.8								
1156	1176	1.17			-0.03	1116	2000	1.351	488.9								
1157	1245	1.57			-0.03	1128	3000	1.407	495.3								
1158	1324	7.19			-0.02	1140	4000	1.437	503.6								
1159	1363	8.00			-0.04	1152	5000	1.484	515.3								
1224	3497	9.14	916.6		-0.0	1224	3497	1.539	530.1								

COMMENTS:

no oil at



U117611

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# GEOHERMAL DIVISION

## SUBSURFACE TEMPERATURE SURVEY

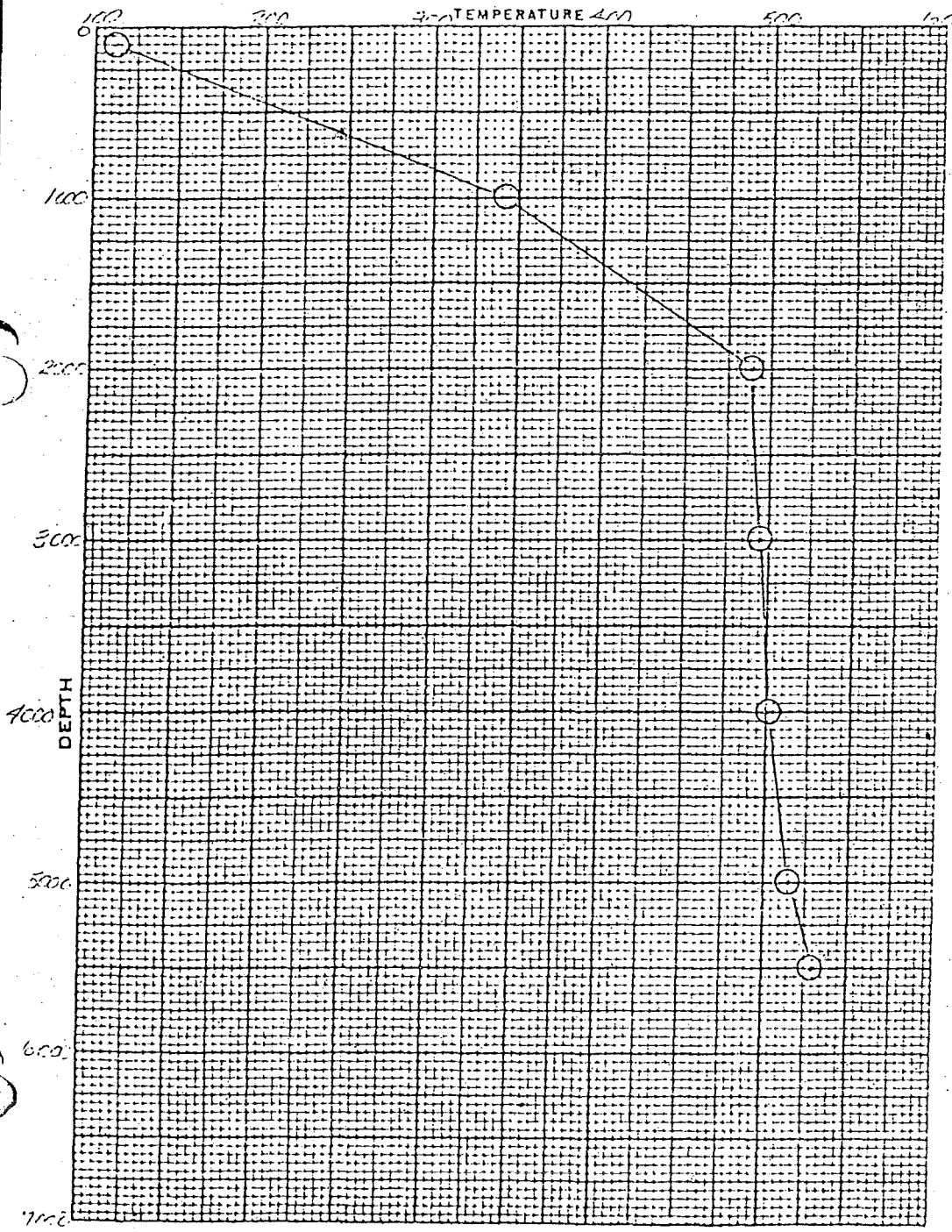
B15-541-PT

OWNER \_\_\_\_\_ FIELD Water Grade WELL NAME B.P.O.P #15  
 CASING \_\_\_\_\_ ELEV 9177 DATE 5/19/76  
 LINER DESCRIPTION \_\_\_\_\_ ZERO POINT SL + 2'  
 \_\_\_\_\_ DEPTH 5497'

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

PURPOSE \_\_\_\_\_ MAX TEMP 530.1 °F @ 5497'  
 REMARKS: \_\_\_\_\_

STABILIZATION PERIOD



PRESSURES	GAUGE	BOMB
CASING, PSI		

DEPTH	TEMP.	DEPTH	TEMP.
100	113.8		
1000	341.8		
2000	400.9		
3000	445.8		
4000	503.6		
5000	515.8		
5497	530.1		

BY:

76

UNION

DEL PYLE

GEOHERMAL DIVISION MAY 26 1975

SUBSURFACE SURVEY

Field Work Sheet

815-542 P/T

OWNER UNION OIL CO. CALIF FIELD VALLE GRANDE WELL NAME BAOR 15  
 CASING 20" @ 210'; 13 7/8" @ 1273' ELEV. DATE: 5/12/76  
 LINER DESCRIPTION: 9 7/8" @ 2509' ZERO POINT 647'  
 DEPTH 5497'

TUBING DETAIL:

PURPOSE

REMARKS:

P-0-4000 FSIG 7198 12 HR 15  
 ELEMENT F-80-446F SERIAL NO. 10255 CLOCK 12 HR 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-0905 T 0907 DISENGAGE STYLUS P1150 T1153  
 WELL HEAD 582  
 PICKUP @ 5497 TIME ON BOTTOM 1039-1109 MAX. °F 529  
 WELL STATUS SHUT IN  
 SHUT IN: ON PRODUCTION:  
 RATE

RSIG

TEMP

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
100	1301	5145		-011	1007	100	114	115									
1037	5200	1.432	515														
1100	5497	1.536	529														

COMMENTS:



76

UNION  
GEOHERMAL DIVISION

SUBSURFACE SURVEY  
Field Work Sheet

BIG S~~59~~ PIT

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15  
 CASING 20" AT 210'; 1378-1273' ELEV. DATE: 5/5/76  
 LINER DESCRIPTION: 9 7/8 AT 2509' ZERO POINT CL 7.7  
 OPEN HOLE - TD DEPTH 5498

TUBING DETAIL:

PURPOSE

REMARKS:

ELEAHT - O-4000 PSI SN 7198 LOCK 12 hr 15T

ELEMENT 80-626 SERIAL NO. 10052 CLOCK TURN STABILIZATION PERIOD

ENGAGE STYLUS P-1004 T 1008 DISENGAGE STYLUS P-1315 T 1315

WELL HEAD 591

PICKUP @ 5497 TIME ON BOTTOM 1139-1209 MAX. F 529

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
11	100	.207	598		7.011	100	.110	114									
12	5600	1362	870		7.001	5600	1.483	516									
12	5497	.417	911		0	5497	1.536	529									

COMMENTS:

BY: M. B. A. D. D.

76

GEO. W. DEL' PYLE

SUBSURFACE SURVEY  
FIELD WORK SHEET

APR 22 1976

3710 25-16-17

OWNER: Union Oil Co. of Calif. Field Office  
 CASING: 2 1/2" ID 3105' ELEV. 1000'  
 LITH DESCRIPTION: 2905' - T.D. Open hole  
 SURFACE POINT: 1000'  
 DEPTH: 2905'

TYPING DETAILS:

PURPOSE:  
 REMARKS:  
1st hole 2905' 2905' 19 1/2" 15' 15'  
 INSTRUMENT: 200-1405 SERIAL NO. 12085 CLOCK: 10 1/2 TURN STABILIZATION: 15  
 ENGAGE STYLUS: P-1306, T-1309 DISENGAGE STYLUS: P-1307, T-1310  
 WELLS HEAD: 110 Rig  
 PICKUP: 1524' TIME ON BOTTOM: 1524' - 1526' MARK 3-2-76  
 WALL STATUS: Shut-in  
 SHUT IN: ON PRODUCTION:

TIME	DEPTH	DEFL.	P.T.	GRAD.	ID	TIME	DEPTH	DEFL.	P.T.	GRAD.	ID	TIME	DEPTH	DEFL.	P.T.	GRAD.	ID
						1428	100	151	112								
						1439	100	178	1108								
						1524	674	784	1515								

COMMENTS:

BY: A.D. D2

76

GEOGRAPHICAL DIVISION

DEL PYLE

APR 25 1975

SUBSURFACE CONVEY  
FIELD WORK SHEET

315-536-7/T

OPERATION OFF OF CALIF FIELD NAME 2198  
CASINO 9" @ 210' 17" @ 1273' ELEV. 9174'  
LOG DESCRIPTION: 9" @ 2509' 12" @ 1273' 2509' - 7.0

DATE 4-25-75  
DEPTH 5497'

TUNING DETAILS:

PURPOSE

REMARKS:

EXHIBIT P-0-4110 R310 7193  
EXHIBIT T-80-0465 SERIAL NO. 10653 CLOCK 1270000 TURN  
ENGAGE BYLUS P-0912 T-0915 DIS-ENGAGE BYLUS P-1200 T-1301  
WELL HEAD 925 R310  
PICKUP @ 5497 TIME ON BOTTOM 1121-1126 MILE 530.4  
WELL STATUS SHUT IN  
GRUT IN: ON PRODUCTION:  
RATE

PRESSURE

TEMPERATURE

TIME	DEPTH	DEFL.	P-V	GRAD.	TIME	DEPTH	DEFL.	P-T	GRAD.	TIME	DEPTH	DEFL.	P-T	GRAD.
1120	275	641		-602	1101	100	671	133						
1121	51	718		-601	1048	500	643	51.1						
1122	107	415	913	-	1126	7407	1,546	531.4						

COMMENTS:

BY:

76

UNION

DEL PYLE

GEO THERMAL DIVISION NOV 13 1975

SUBSURFACE SURVEY

Field Work Sheet

B # 15-538 2/5

OWNER UNION oil co of CAL. FIELD Upllo Exands WELL NAME B # 15  
 CASING 20" @ 210 - 13 3/4" @ 1273 ELEV. 9127 DATE: 4-27-76  
 LINER DESCRIPTION: 7 5/8" @ 2509 2509 TO TD is open Hole ZERO POINT GL + 6  
 DEPTH 5498

TUBING DETAIL:

PURPOSE

REMARKS:

Element - 0-4000-7198 SN Clock 12hr 15 Turn

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

ENGAGE SYLUS 1452 T 1456 DISENGAGE SYLUS P 1818 - T 1817

WELL HEAD 593

PICKUP @ 5497 TIME ON BOTTOM MAX. °F 529.4

WELL STATUS

SHUT IN:

ON PRODUCTION:

RATE

Pressure

Temperature

TIME	DEPTH	DEFL.	P-T	GRAD.	COMP	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1541	100	.269	602.1		-.011	1541	100	.110	114.1								
1553	1000	.283	631.9		-.002	1553	1000	.871	345.6								
1605	2000	.288	642.5		-.002	1605	2000	1.385	489.9								
1617	3000	.302	672.3		-.002	1617	3000	1.409	493.3								
1629	4000	.326	723.4		-.002	1629	4000	1.438	503.9								
1701	5000	.363	802.1		-.001	1701	5000	1.485	516.1								
1733	5497	.416	914.9		-0-	1733	5497	1.536	529.4								

COMMENTS:

## GEO THERMAL DIVISION

### SUBSURFACE TEMPERATURE SURVEY

815-S38-PT

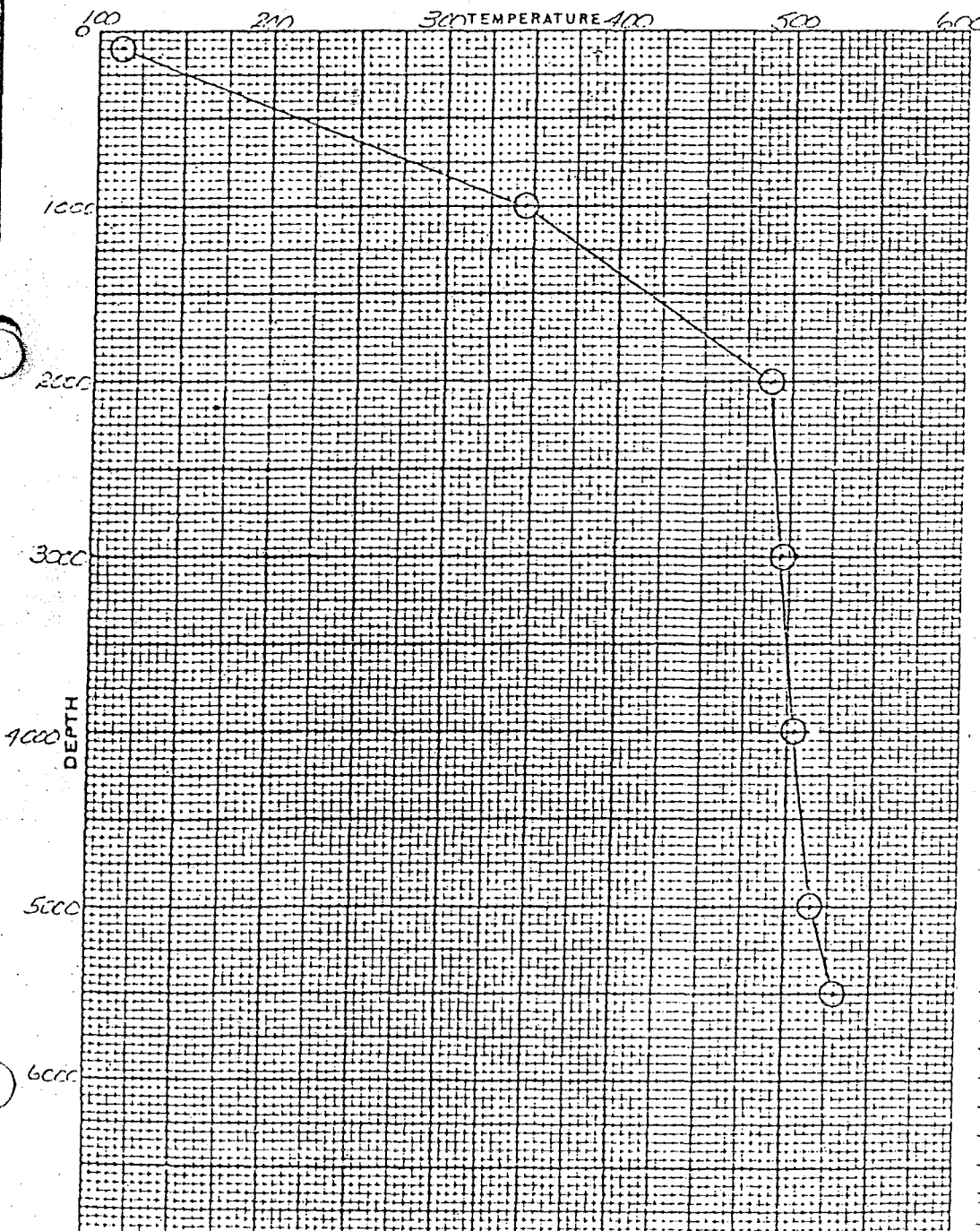
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OWNER \_\_\_\_\_ FIELD White Grande WELL NAME BPCP #15  
CASING \_\_\_\_\_ ELEV 9177' DATE 4/27/76  
LINER DESCRIPTION \_\_\_\_\_ ZERO POINT GL +6'  
DEPTH 5498'

HOLE DESCRIPTION: \_\_\_\_\_  
INSTRUMENT 50" - 646" FAH  
SERIAL NO 10052

PURPOSE \_\_\_\_\_ MAX TEMP 529.4 °F @ 5497'  
REMARKS: \_\_\_\_\_

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



PRESSURE	GAUGE	BOMB
CASING PSI		

DEPTH	TEMP.	DEPTH	TEMP.
100	114.1		
1000	345.6		
2000	489.9		
3000	496.3		
4000	503.9		
5000	516.1		
5497	529.4		

# 76

## UNION

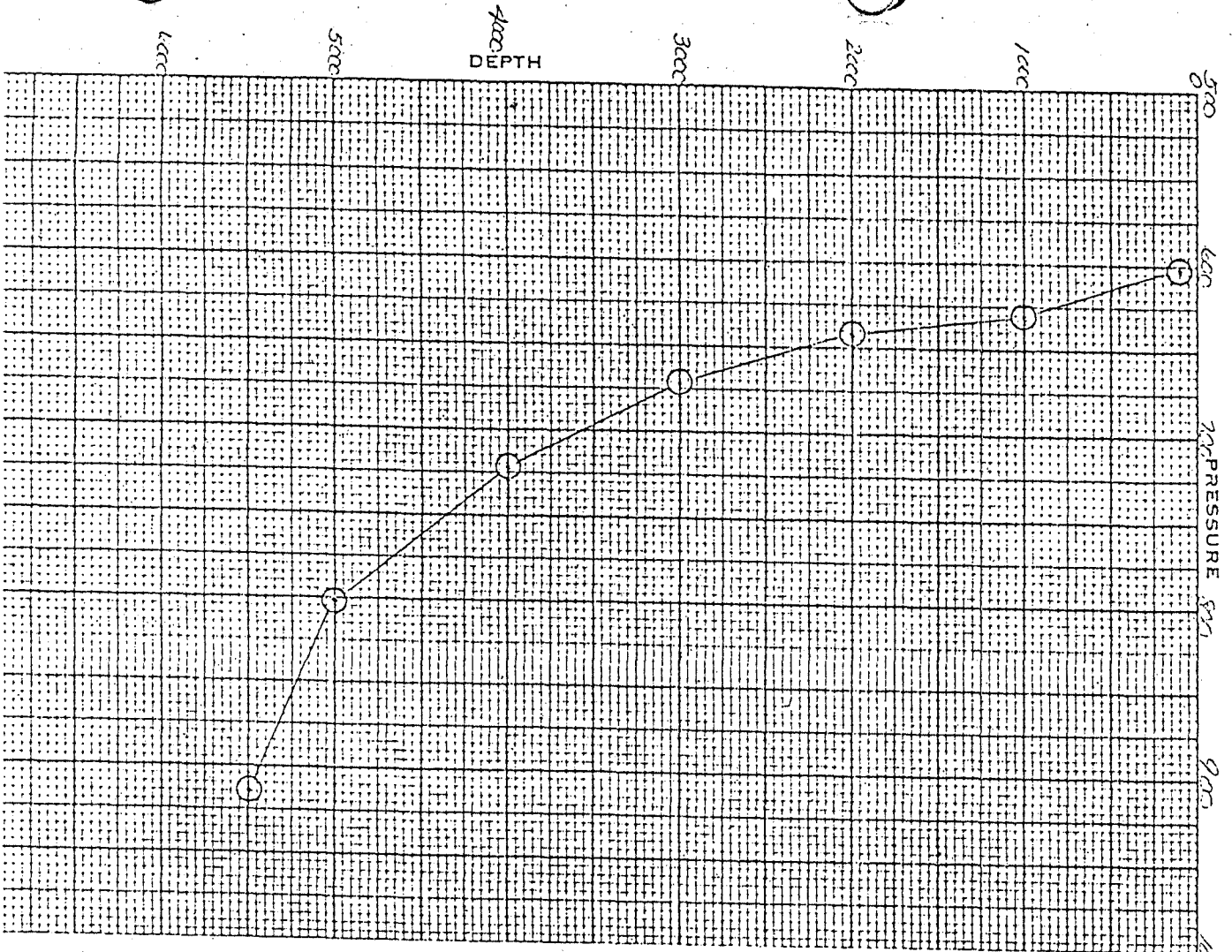
### GEOTHERMAL DIVISION SUBSURFACE PRESSURE SURVEY

B15-S38-PT

OWNER \_\_\_\_\_  
 CASING \_\_\_\_\_  
 LINER DESCRIPTION \_\_\_\_\_  
 HOLE DESCRIPTION: \_\_\_\_\_

FIELD White Granite WELL NAME BQA4 F15  
 ELEV 9177' DATE 4/27/76  
 ZERO POINT GL 4.6'  
 DEPTH 5498'

PURPOSE \_\_\_\_\_  
 MAX TEMP 522.4 °F @ 5497'  
 INSTRUMENT 0 - 4000 PS  
 SERIAL NO 7198



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

PRESSURES	GAUGE	BORE
CASING PSI		

DEPTH	PRESSURE	GRADIENT
100	602.1	
1000	631.9	
2000	642.5	
3000	672.3	
4000	723.4	
5000	802.1	
5497	914.9	

76

UNION

DEE PYLE

GEOHERMAL DIVISION

SUBSURFACE SURVEY  
Field Work Sheet

B# 15 5-37 1/2

OWNER Union Oil Co. of Calif. FIELD Valle Grande WELL NAME B# 15  
 CASING 30" @ 210' - 15 1/2" @ 1273' ELEV. 9177' DATE: 9/25/76  
 LINER DESCRIPTION: 9 5/8" @ 2509' ; Open hole 2905' - T.D. ZERO POINT GL + 6'  
 DEPTH 5497'

TUBING DETAIL:

PURPOSE

REMARKS:

P 0-1000 Rig SN 7198 12 h.c. 15 Turn  
 ELEMENT SCF - 6.46°F SERIAL NO. 1005-2 CLOCK 12 h.c. 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-1034 ° T-1037 DISENGAGE STYLUS P-1349 ° T-1598  
 WELL HEAD 60.5 Rig  
 PICKUP @ 5497' TIME ON BOTTOM 1236-1306 MAX. # 529.6°F  
 WELL STATUS Shut-in  
 SHUT IN: ON PRODUCTION:  
 RATE

Pressure

Temp

TIME	DEPTH	DEFL.	P-T	GRAD.	CC-27	TIME	DEPTH	DEFL.	D-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
	100	1.275	6.15		-0.002	1155	100	1.150	126.5								
	5066	1.361	7.98		-0.001	1234	5066	1.481	515								
	5497	1.415	9.13		-0-	1306	5497	1.537	530								

COMMENTS:

BY: AP AD

76

UNION

DEPT. FILE

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B#15-5-55 7/1

OWNER Union Oil Co. of Calif FIELD Valle Grande WELL NAME BACH #15  
 CASING 20' @ 210' ; 15 3/8" @ 1275' ELEV. 9177' DATE: 4-6-76  
 LINER DESCRIPTION: 9 5/8" @ 2509' ; Open hole - 2509' - T.D. ZERO POINT C.L. + 6'  
 DEPTH 5497'

TUBING DETAIL:

PURPOSE

REMARKS:

P<sub>1</sub> - @ 1600 Big 5H-7198 13790-L 15  
 ELEMENT B-1750 Big SERIAL NO. 13012 CLOCK 12890-L 15 TURN STABILIZATION PERIOD  
 ENGAGE SYLUS P-0927 ; P-0923 DISENGAGE SYLUS A-1158 ; P-1157  
 WELL HEAD 59.3 Big  
 PICKUP @ 5497' TIME ON BOTTOM 1111 - 1130 MAX. °F  
 WELL STATUS Shut in  
 SHUT IN: ON PRODUCTION:  
 RATE

P <sub>1</sub>						P <sub>2</sub>											
TIME	DEPTH	DEFL.	P-Y	GRAD.	GRAD. °/ft	TIME	DEPTH	DEFL.	P-X	GRAD.	GRAD. °/ft	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
5	100	.275	671.3		-.002	1007	100	.240	670.2		-.009						
14	1150	.283	651.9		-.002	1019	1650	.252	649.0		-.002						
33	2100	.287	644.7		-.002	1032	2600	.254	653.8		-0-						
55	3100	.302	672.3		-.002	1045	3000	.21.8	687.5		-0-						
7:10.5	4000	.326	723.4		-.002	1057	4000	.29.1	740.8		+0.01						
8:11.5	5000	.364	804.3		-.001	1109	5000	.323	819.7		+0.01						
11:30	5497	.416	914.9		-0-	1130	5497	.369	930.3		+0.01						
Libra's Check		.944	2023.1		+0.11	Calibration Check		.825	2219.0		(# 13012)						

COMMENTS: Corrections based on B#15-5-34 - 11



76

# UNION

## GEO THERMAL DIVISION

### SUBSURFACE PRESSURE SURVEY

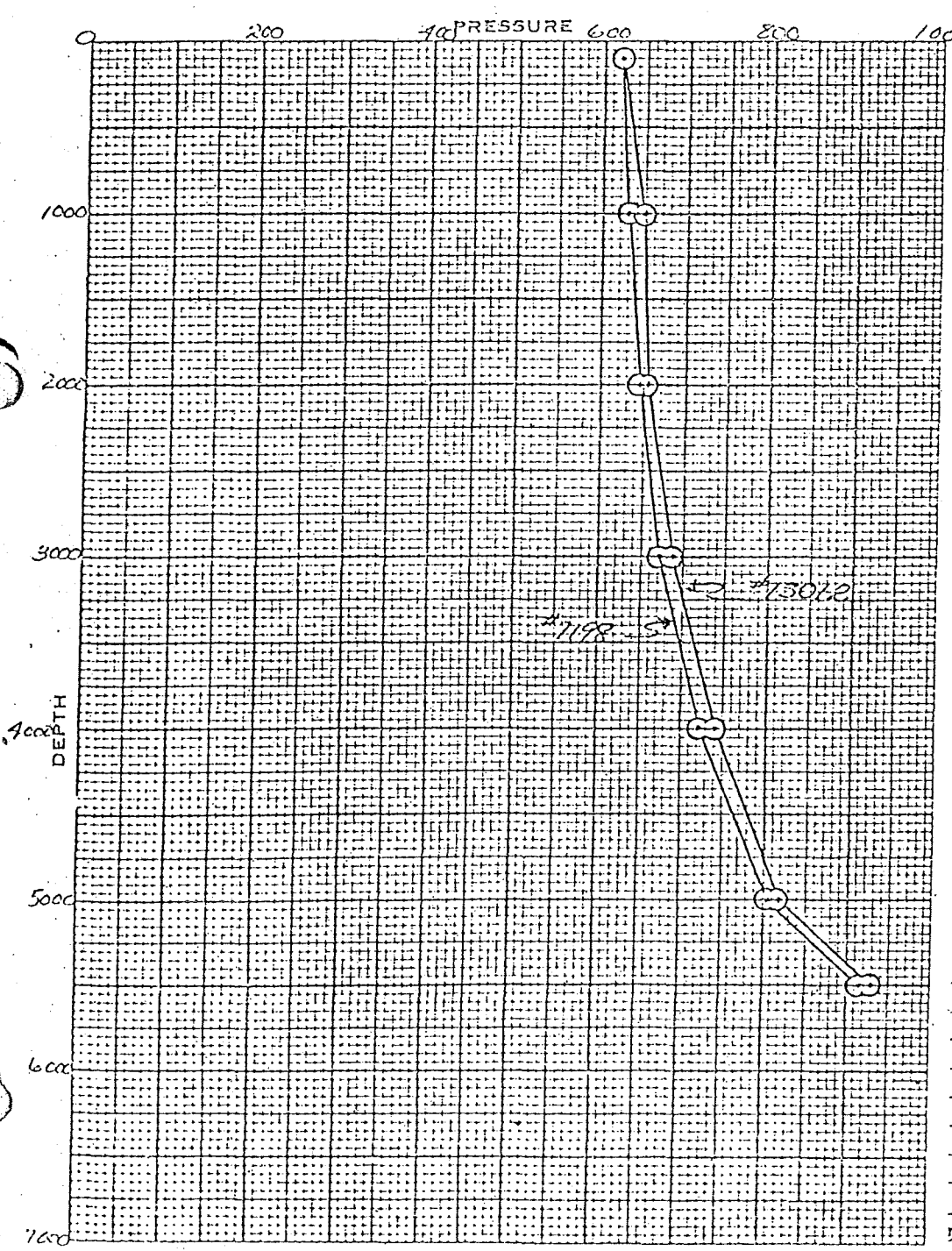
B15-535-PP

OWNER \_\_\_\_\_ FIELD Valle Grande WELL NAME BACA #15  
 CASING \_\_\_\_\_ ELEV 9177' DATE 7/6/76  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT GL + 6'  
 \_\_\_\_\_ DEPTH 5497'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT \_\_\_\_\_ PSIC  
 \_\_\_\_\_ SERIAL NO 7198 & 13012

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

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



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

PRESSURE	GAUGE	BOMB
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
	#7198	
100	621.3	
1000	631.9	
2000	644.7	
3000	672.3	
4000	723.7	
5000	804.3	
5497	914.9	

DEPTH	PRESSURE	GRADIENT
	#13012	
100	620.2	
1000	649.0	
2000	653.8	
3000	687.5	
4000	742.8	
5000	814.7	
5497	930.3	

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

76

UNION

GEOHERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

DATE

B15 534 T/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15  
 CASING 20" AT 210' ; 13 3/8" AT 1273 ELEV. 944 - 2005' 9177 DATE: 4/5/76  
 LINER DESCRIPTION: 9 5/8 2509 ZERO POINT 62 + 6'  
 2509 - TD - OPEN HOLE DEPTH 5497

TUBING DETAIL:

PURPOSE

REMARKS:

ELEMENT - T<sub>1</sub> = 80° - 6.46°f ; SN 10052 CLOCK 12 HR 15 TURN  
 ELEMENT T<sub>2</sub> 100° - 7.12° SERIAL NO. 10098 CLOCK 12 HR 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS T<sub>1</sub> 1003 T<sub>2</sub> - 1008 DISENGAGE STYLUS T<sub>1</sub> - 1258 T<sub>2</sub> 1257  
 WELL HEAD 590 PSIG  
 PICKUP @ 5497 TIME ON BOTTOM 1143 - 1158 MAX. °F  
 WELL STATUS SHUT  
 SHUT IN: fcb ON PRODUCTION:  
 RATE

T<sub>1</sub> # 10052 T<sub>2</sub> # ~~10052~~ 10098

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1042	100	.246	156.7			1042	100	.156	165.8								
	1030	.917	353.7			1056	1000	.715	370.3								
	1050	1.570	491.3			1108	2000	1.097	477.1								
1130	5000	1.412	472.1			1120	5000	1.119	504.3								
1151	9000	1.441	504.7			1131	4000	1.142	511.9								
1147	5000	1.487	510.6			1142	5000	1.181	524.7								
1158	5497	1.540	530.4			1158	5497	1.226	539.6								

COMMENTS:

BY: JMC.P CD JB

76

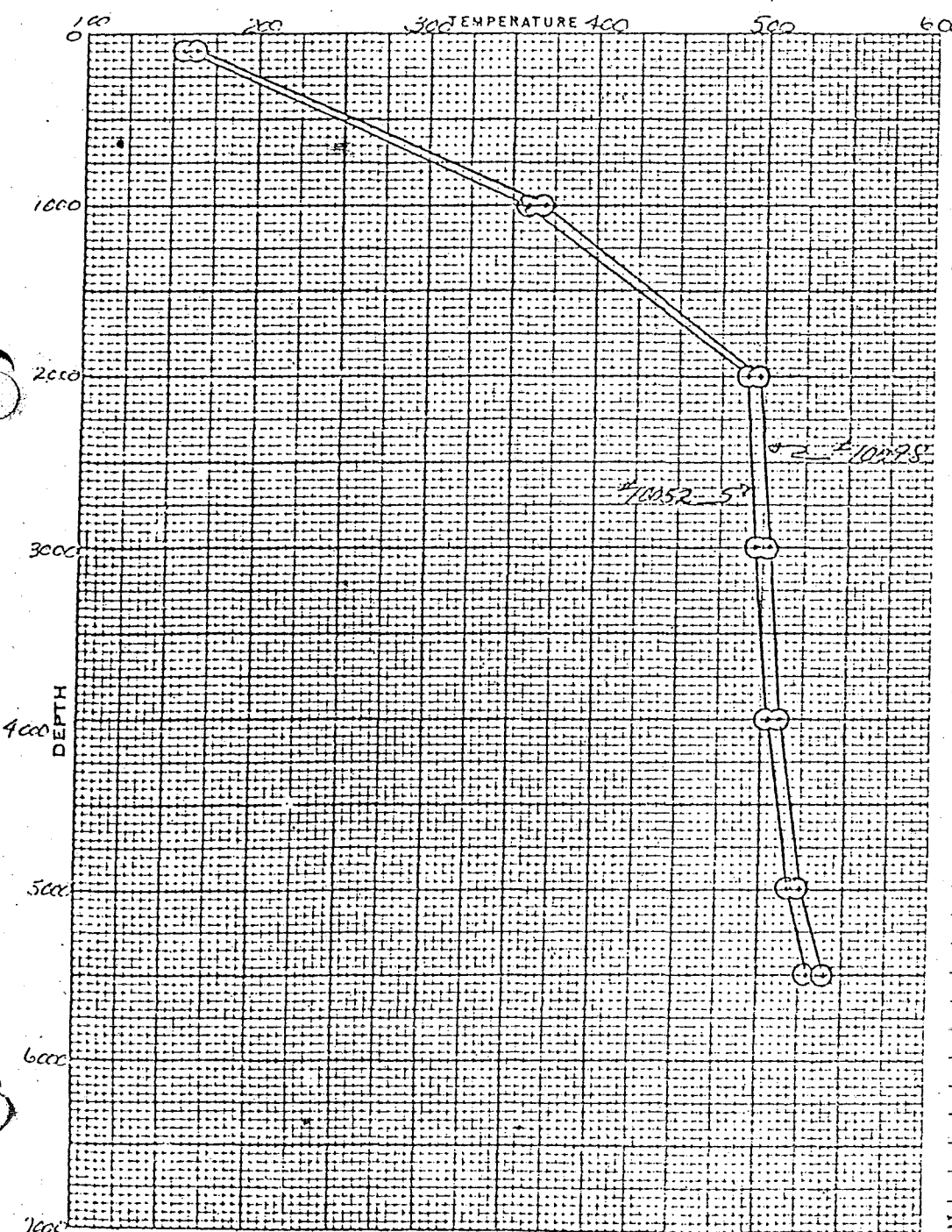
# GEOTHERMAL DIVISION SUBSURFACE TEMPERATURE SURVEY

B15-S34-TT

OWNER \_\_\_\_\_ FIELD Valle Grande WELL NAME BACA #15  
 CASING \_\_\_\_\_ ELEV 9177' DATE 4/5/76  
 LINER DESCRIPTION \_\_\_\_\_ ZERO POINT GL + 6'  
 DEPTH 5497'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT \_\_\_\_\_ FAHR  
 SERIAL NO 10052 & 10098

PURPOSE \_\_\_\_\_ MAX TEMP \_\_\_\_\_ OF @ \_\_\_\_\_  
 REMARKS: \_\_\_\_\_



STABILIZATION PERIOD

PRESSURES	GAUGE	BOMB
CASING PSI		

DEPTH	TEMP.	DEPTH	TEMP.
<u>10052</u>			
100	156.7		
1000	358.7		
2000	491.3		
3000	497.1		
4000	504.7		
5000	516.6		
5497	530.4		
<u>10098</u>			
100	163.8		
1000	370.3		
2000	497.1		
3000	504.3		
4000	511.9		
5000	524.7		
5497	539.6		

76

UNION

GEO THERMAL DIVISION

DEL PYLE

SUBSURFACE SURVEY

APR 5 1976

Field Work Sheet

B15-532-P/T

OWNER UNION OIL CO. OF CALIF. FIELD VALLE GRANDE WELL NAME BACH #15  
 CASING 20" @ 210', 13 3/8" @ 1273' ELEV. 9177' DATE: 3/18/76  
 LINER DESCRIPTION: 9 5/8" @ 2509', OPEN HOLE - 2509' - T.D. ZERO POINT 64.6'  
 DEPTH 5497'

TUBING DETAIL:

PURPOSE

REMARKS:

P-0-11000 PSIG. 7198 12589-L 15  
 ELEMENT - 80°F - 646°F SERIAL NO. 10052 CLOCK 13374 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-1407 T-1411 DISENGAGE STYLUS P-1721 T-1725  
 WELL HEAD 610  
 PICKUP @ 5497 TIME ON BOTTOM 1553-1623 MAX. F 530  
 WELL STATUS SHUT IN.  
 SHUT IN: ON PRODUCTION:  
 RATE

PSIG

TEMP

DEPTH	DEFL.	P-T	GRAD.	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1447	.275	621			100	1.280	462								
1502	.281	634			1000	1.375	487								
2000	.290	647			2000	1.388	491								
3000	.303	675			3000	1.410	497								
4000	.325	731			4000	1.438	504								
5000	.361	798			5000	1.482	515								
5497	.415	913			5497	1.537	530								

COMMENTS:

76

union

GEO THERMAL DIVISION

SUBSURFACE PRESSURE SURVEY

315-532-PT

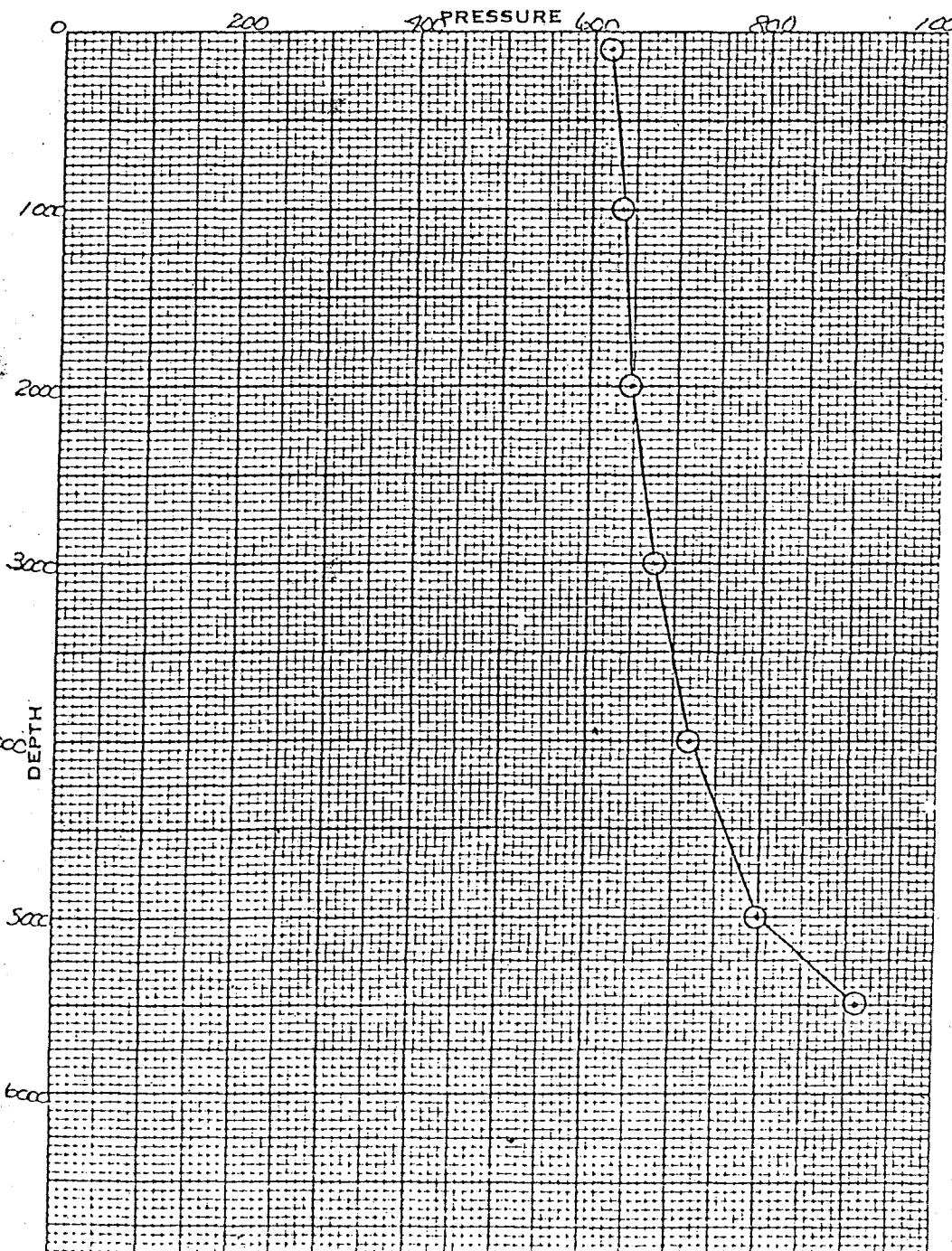
OWNER \_\_\_\_\_ FIELD \_\_\_\_\_ WELL NAME BACA #15  
 CABING \_\_\_\_\_ ELEV \_\_\_\_\_ DATE 3/18/76  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT GLT 6'  
 \_\_\_\_\_ DEPTH 5497'

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

PURPOSE \_\_\_\_\_ MAX TEMP 530 °F @ 5497'

REMARKS:

STABILIZATION PERIOD



PRESSURES	GAUGE	BOMB
CASING PSI		

DEPTH	PRESSURE	GRADIENT
100	621	
1000	634	
2000	647	
3000	675	
4000	721	
5000	798	
5497	913	

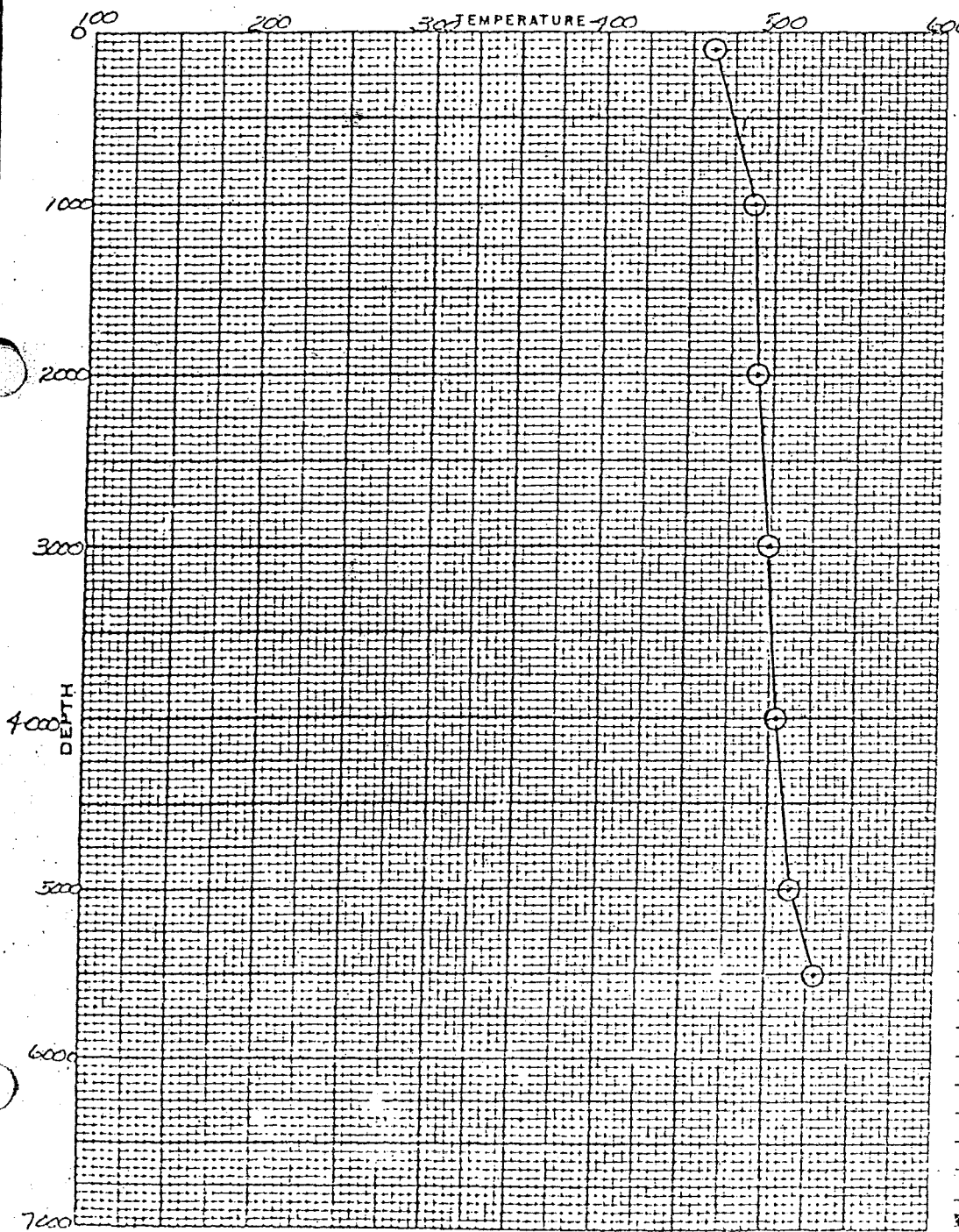
76



GEO THERMAL DIVISION  
SUBSURFACE TEMPERATURE SURVEY

B15-332-PT

OWNER \_\_\_\_\_ FIELD \_\_\_\_\_ WELL NAME BACA #15  
 CASING \_\_\_\_\_ ELEV \_\_\_\_\_ DATE 3/18/76  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT GL +6'  
 \_\_\_\_\_ DEPTH 5497'  
 HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT \_\_\_\_\_ FAHR  
 \_\_\_\_\_ SERIAL NO 10052  
 PURPOSE \_\_\_\_\_ MAX TEMP 530 °F @ 5497'  
 REMARKS \_\_\_\_\_



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

PRESSURES	GAUGE	BOMBS
CASING, PSI		

DEPTH	TEMP.	DEPTH	TEMP.
100	462		
1000	487		
2000	491		
3000	497		
4000	507		
5000	515		
5497	530		

BY:

76

UNION

DEL PYLE

APR 19 1976

GEOHERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B15-533-P/T

OWNER UNION OIL CO. CALIF FIELD VALLE GRANDE WELL NAME BH15  
 CASING 20" @ 210'; 13 1/2" @ 1273'; ELEV. DATE: 4/13/76  
 LINER DESCRIPTION: 9 5/8" @ 2509'; OPEN HOLE 2509 - 5497 ZERO POINT GLC1  
 DEPTH 5497'

TUBING DETAIL:

PURPOSE

REMARKS:

ELEMENT P-0-4600 PSIG 7198 12887-L  
 ELEMENT T-8 SERIAL NO. 10052 CLOCK 12890-L TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-0943 T-0950 DISENGAGE STYLUS P-1221 T-1222  
 WELL HEAD 595 0-1000 T/C  
 PICKUP @ 5497 TIME ON BOTTOM 110-1150 MAX. °F 531.7  
 WELL STATUS SHUT IN  
 SHUT IN: ON PRODUCTION:  
 RATE

PSIG

TEMP

TIME	DEPTH	DEFL.	P-T	GRAD.	PSIG	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1028	100	1275	614		-1002	1028	100	1253	62								
1108	500	1359	794		-1601	1108	500	1486	5 1/2								
1150	5497	1413	909		0	1150	5497	1515	532								
JACK / REFER TO SURVEY B15-534-P/T																	
TEMP @ 100' INCORRECT.																	

COMMENTS:

76

UNION

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MAR 24 1976

GEOHERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B#15-533-P/1

OWNER UNION OIL CO. OF CALIF. VALLE GRANDE WELL NAME BACAT 15  
 CASING 20' @ 210'; 13 7/8" - 1273' ELEV. 9177 DATE: 3/11/76  
 LINER DESCRIPTION: 9 7/8" - 2509'; 2509' - T.D. - OPEN HOLE ZERO POINT GL + 6'  
 DEPTH 5497'

TUBING DETAIL:

PURPOSE

REMARKS:

P-0-4000PSIG - 7198 12889-L 15  
 ELEMENT T-820F-6560F SERIAL NO. 10055 LOCK 13374-L15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-1122 T-1122 DISENGAGE STYLUS P-1145 T-1145  
 WELL HEAD 610  
 PICKUP @ 5497 TIME ON BOTTOM 1240-1310 M.F. 537  
 WELL STATUS SHUT IN  
 SHUT IN: ON PRODUCTION:  
 RATE

PSIG

TEMP

DEPTH	DEFL.	P-T	GRAD.	TIME	DEPTH	DEFL.	P-T	GRAD.	TIME	DEPTH	DEFL.	P-T	GRAD.	TIME
100	277	619	-003	1201	100	1204	467							
500	35	794	-001	1238	500	1395	524							
5497	415	813	-	1310	5497	1443	537							

COMMENTS:



76

UNION

DEC PYLE

GEOHERMAL DIVISION

SUBSURFACE SURVEY  
Field Work Sheet

B<sup>15</sup> 530  
P/T

OWNER UNION OIL CO. FIELD VALLE GRANDE WELL NAME B<sup>15</sup>  
 CASING 20" AT 210' 13 3/8" - 1273 ELEV. 9122 DATE: 3/3/76  
 LINER DESCRIPTION: 9 3/8" - 2509, 3509 - TO - OPEN HOLE ZERO POINT GL + 6'  
 DEPTH 5498

TUBING DETAIL:

PURPOSE INTER TEST

REMARKS:

ELEMENT 0-4000 PSI SK 7198 CLOCK 12 HR 15 T  
ELEMENT 82° - 6860 SERIAL NO. 10055 CLOCK 12 HR TURN STABILIZATION PERIOD  
ENGAGE SYLUS P0913 - T0915 DISENGAGE SYLUS P1200 - T1201  
WELL HEAD 610 PSIG  
PICKUP @ 5498 TIME ON BOTTOM 1042 - 1112 MAX. 'F 532°  
WELL STATUS SHUT IN  
 SHUT IN: ON PRODUCTION:  
 RATE

PSI		OF														
TIME	DEPTH	DEFL.	P-X	GRAD.	TIME	DEPTH	DEFL.	X-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
16	100	.276	621		1600	100	1.204	462°								
24	5000	3.57	789		1640	5000	1.394	523°								
42	5498	4.15	915		1112	5498	1.444	536°								

COMMENTS:

# 76



## GEOHERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

BIS 589 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACH #15  
 CASING 30" AT 210'; 13 3/8" AT 1273' ELEV. 9177 DATE: 2/23/76  
 LINER DESCRIPTION: 7 5/8" AT 2509'; 2509 - TD = OPEN HOLE ZERO POINT 6246'  
 DEPTH 5498

TUBING DETAIL:

PURPOSE INTER. TEST

REMARKS:

ELEMENT - 0-4000 PSI SN 7198 CLOCK - 12 hr 15T  
 ELEMENT 82°-686° SERIAL NO. 10055 CLOCK 12 hr 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-0944 T 0946 DISENGAGE STYLUS P-1345 T 1345  
 WELL HEAD 6.10 PSIG  
 PICKUP @ 5498 TIME ON BOTTOM 1229 - 1249 MAX. °F 537.3  
 WELL STATUS  
 SHUT IN: ON PRODUCTION:  
 RATE

PSI

of

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1031	110	.275	614.9		-.003	1031	110	1.200	466.0								
1043	1100	.285	636.2		-.002	1043	1100	1.243	493.4								
1107	2100	.292	651.1		-.002	1107	2100	1.305	496.8								
1120	3100	.304	676.6		-.002	1120	3100	1.327	503.5								
1131	4000	.324	719.1		-.002	1131	4000	1.351	510.5								
1142	5100	.360	795.7		-.001	1142	5100	1.390	522.0								
1153	5100	.369	814.9		-.001	1153	5100	1.400	525.0								
1204	5200	.375	827.7		0	1204	5200	1.410	527.9								
1215	5300	.385	848.9		0	1215	5300	1.422	531.3								
1226	5400	.396	872.3		0	1226	5400	1.433	534.6								
1229	5498	.409	900.0		0	1229	5498	1.443	537.3								
1249	5498	.404	900.0		0	1249	5498	1.443	537.3								

COMMENTS: CALIBRATION CHECK W/ DWI AT 72°f

def = .925

cor = +.010

def = .645

no. 1

WIND

76

# GEOHERMAL DIVISION

## SUBSURFACE TEMPERATURE SURVEY

B15-S29-PT

OWNER \_\_\_\_\_ FIELD \_\_\_\_\_ ELEV \_\_\_\_\_

WELL NAME BACA #15

CASING \_\_\_\_\_ DATE 2/23/76

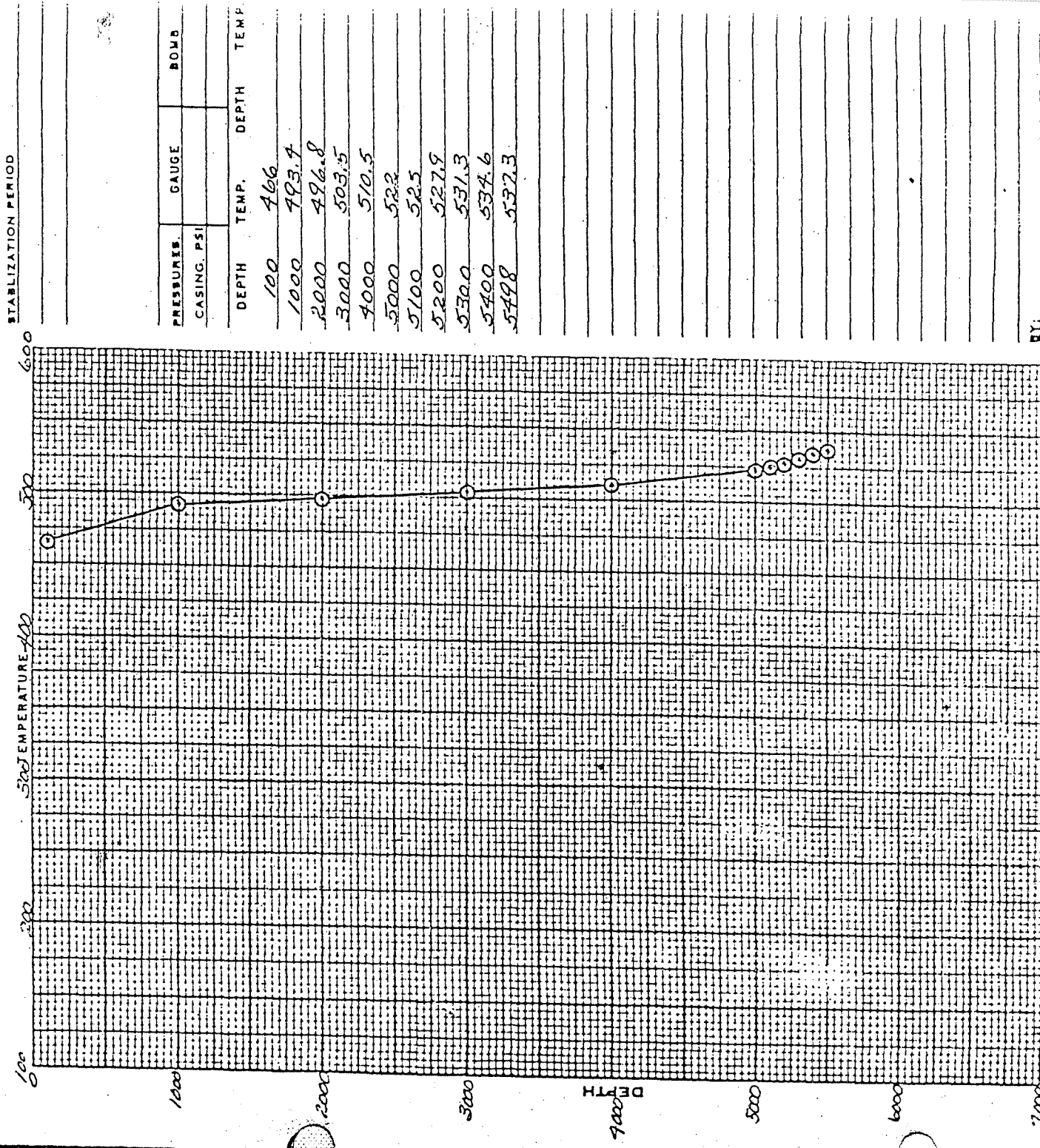
LINER DESCRIPTION \_\_\_\_\_ ZERO POINT GL ± 6'

DEPTH \_\_\_\_\_ DEPTH 5498'

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

PURPOSE \_\_\_\_\_ SERIAL NO 10055

REMARKS \_\_\_\_\_ MAX TEMP 537.3 F @ 5498'



## GEOTHERMAL DIVISION

### SUBSURFACE PRESSURE SURVEY

BIS-S29-PT

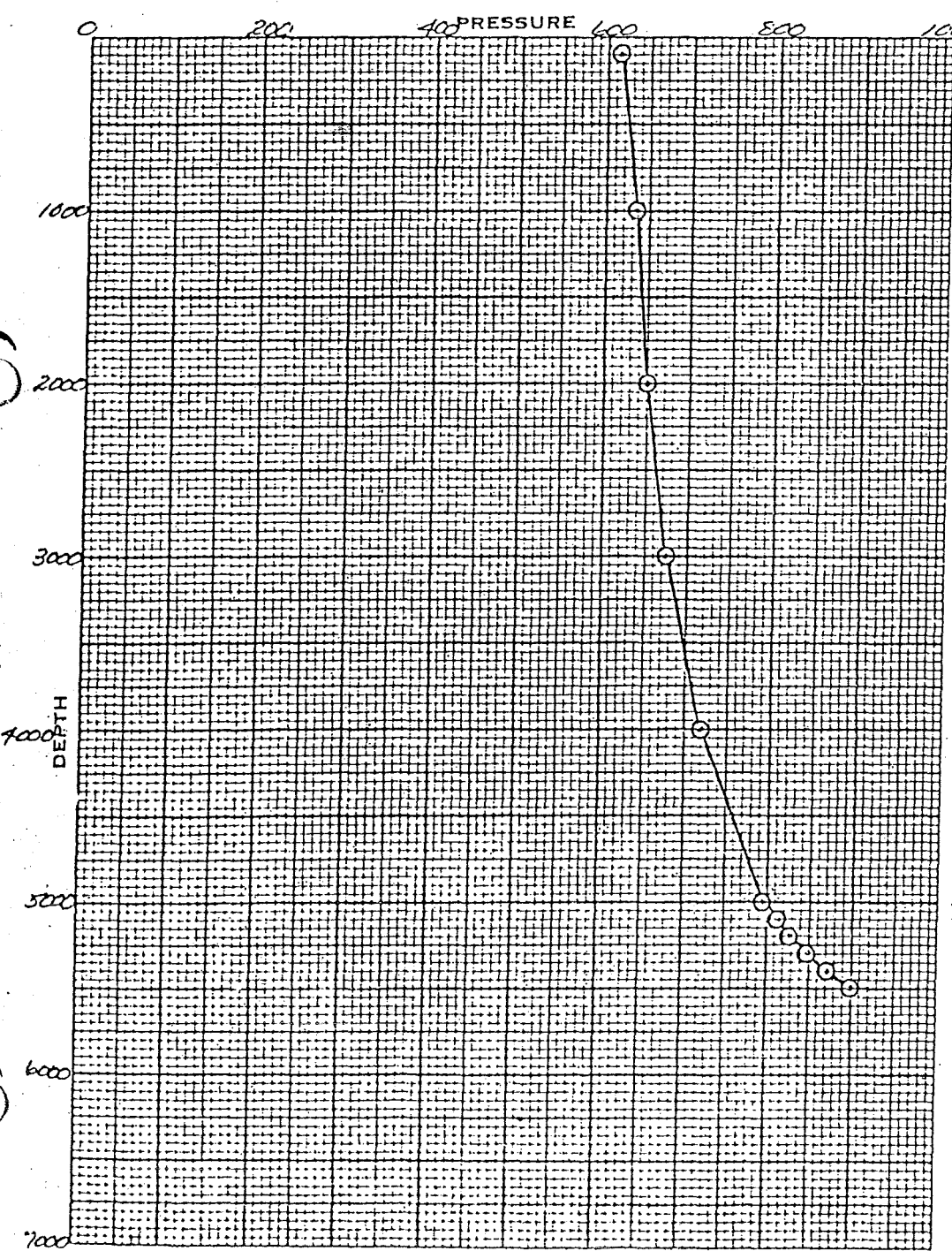
76

OWNER \_\_\_\_\_ FIELD \_\_\_\_\_ WELL NAME BACA #15  
 CASING \_\_\_\_\_ ELEV \_\_\_\_\_ DATE 2/23/76  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT GL +6'  
 \_\_\_\_\_ DEPTH 5498'

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

PURPOSE \_\_\_\_\_ MAX TEMP 537.3 °F @ 5498'

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



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

PRESSURES	GAUGE	BOMB
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
100	614.9	
1000	636.2	
2000	651.1	
3000	676.6	
4000	719.1	
5000	795.7	
5100	814.9	
5200	827.7	
5300	848.9	
5400	872.3	
5498	900.0	

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

76

UNION

DEE PYLE

GEO THERMAL DIVISION

FEB 20 1976

SUBSURFACE SURVEY  
Field Work Sheet

131529 PIT

OWNER UNION OIL COMPANY FIELD NAME CANDE WELL NAME 13001 #15  
 CASING 20" AT 210'; 13 3/8" AT 1273 ELEV. 9177 DATE: 2/4/76  
 LINER DESCRIPTION: 1 3/8" AT 2509'; 2509 - TD = OPEN HOLE ZERO POINT CL + 6'  
 DEPTH 5498

TUBING DETAIL:

PURPOSE WELL FLOWING THROUGH 1/4" VENT

REMARKS:  
 ELEMENT 0-1100 PSI SN 7198 CLOCK 12hr 15 TURN  
 ELEMENT 820-686 °F SERIAL NO. 10055 CLOCK 12hr 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-1234 T-1237 DISENGAGE STYLUS P-1655 T-1655  
 WELL HEAD 550 PSI9 THROUGH MESH 1/4" NEEDLE VALVE  
 PICKUP @ 5498 TIME ON BOTTOM 1529 1559 MAX. °F 536.4  
 WELL STATUS TURNOFF WELL ON (1/4" VENT) 1315 hrs 5/3/76  
 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
1334	1100	.282	629.8		-0.02	1334	1100	1.281	489.9								
1346	1100	.286	638.3		-0.02	1346	1100	1.297	494.6								
1354	2100	.291	648.9		-0.02	1354	2100	1.312	499.0								
1417	3100	.304	676.6		-0.02	1417	3100	1.325	502.9								
1429	4000	.322	714.9		-0.02	1429	4000	1.347	509.4								
1443	5000	.356	787.2		-0.01	1443	5000	1.386	520.9								
1454	5100	.363	802.1		-0.01	1454	5100	1.395	525.5								
1505	5200	.374	825.5		0	1505	5200	1.407	527.0								
1516	5300	.384	846.8		0	1516	5300	1.416	529.6								
1527	5400	.391	872.3		0	1527	5400	1.429	532.0								
1529	5498	.406	893.6		0	1529	5498	1.440	536.4								
1559	5498	.406	893.6		0	1559	5498	1.440	536.4								

COMMENTS:

RY:

516

# GEOTHERMAL DIVISION

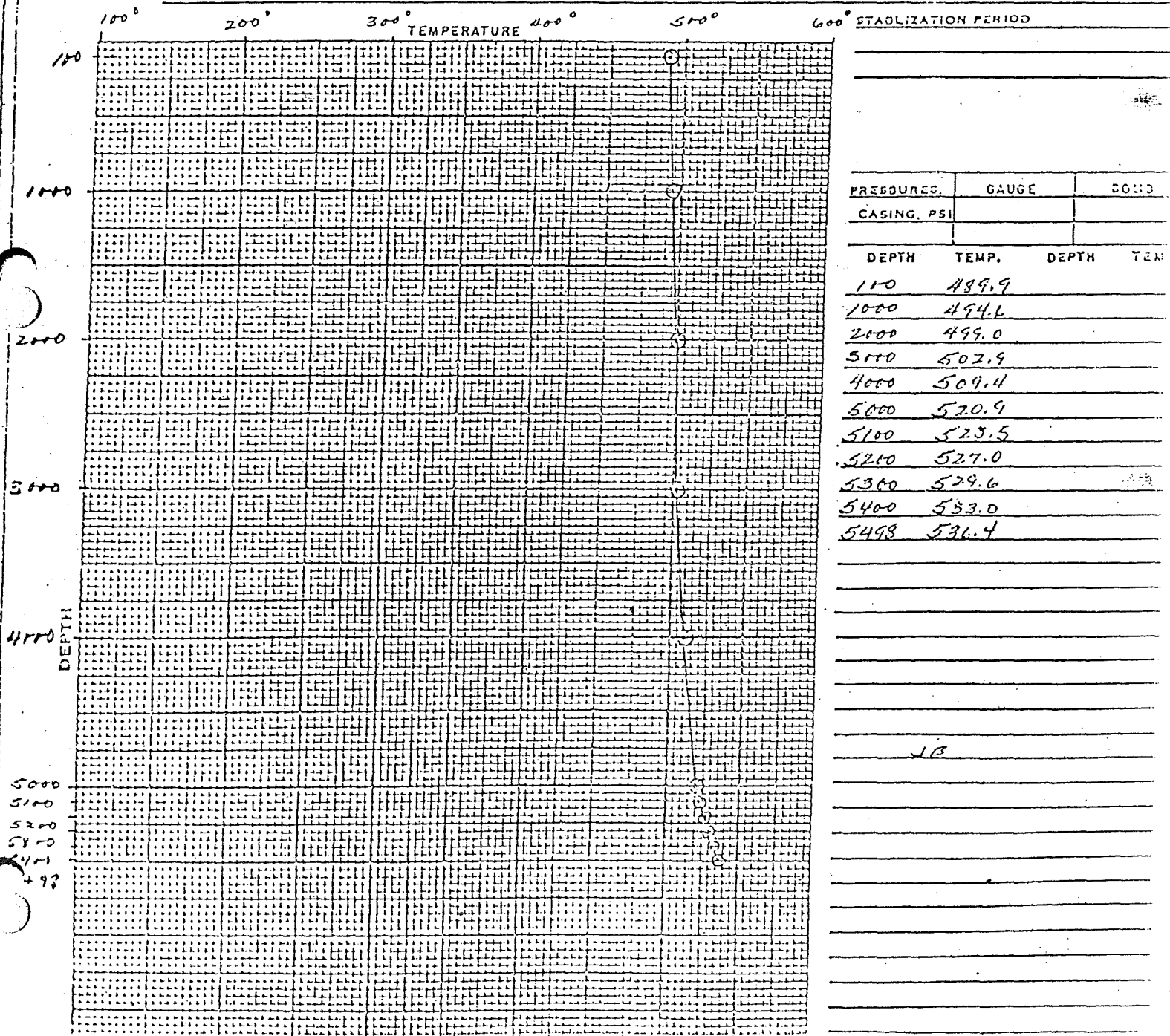
## SUBSURFACE TEMPERATURE SURVEY

BIS 529 T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BARCA #15  
 CASING 20" AT 210'; 13 3/8" AT 1273' ELEV. 9177 DATE: 7/24/76  
 LINER DESCRIPTION: 9 5/8" AT 2509' ZERO POINT GL + 6'  
2509' - TD = OPEN HOLE DEPTH 5498

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

PURPOSE SLOWING WELL THROUGH 1/4" VENT MAX TEMP 536.4 °F @ 5498'  
 REMARKS: \_\_\_\_\_



PRESSURE GAUGE CORRECTION  
 CASING, PSI

DEPTH	TEMP.	DEPTH	TEMP.
110	489.9		
1000	494.6		
2000	499.0		
3110	502.9		
4000	509.4		
5000	520.9		
5100	523.5		
5200	527.0		
5300	529.6		
5400	533.0		
5498	536.4		

JB

76

# GEO THERMAL DIVISION

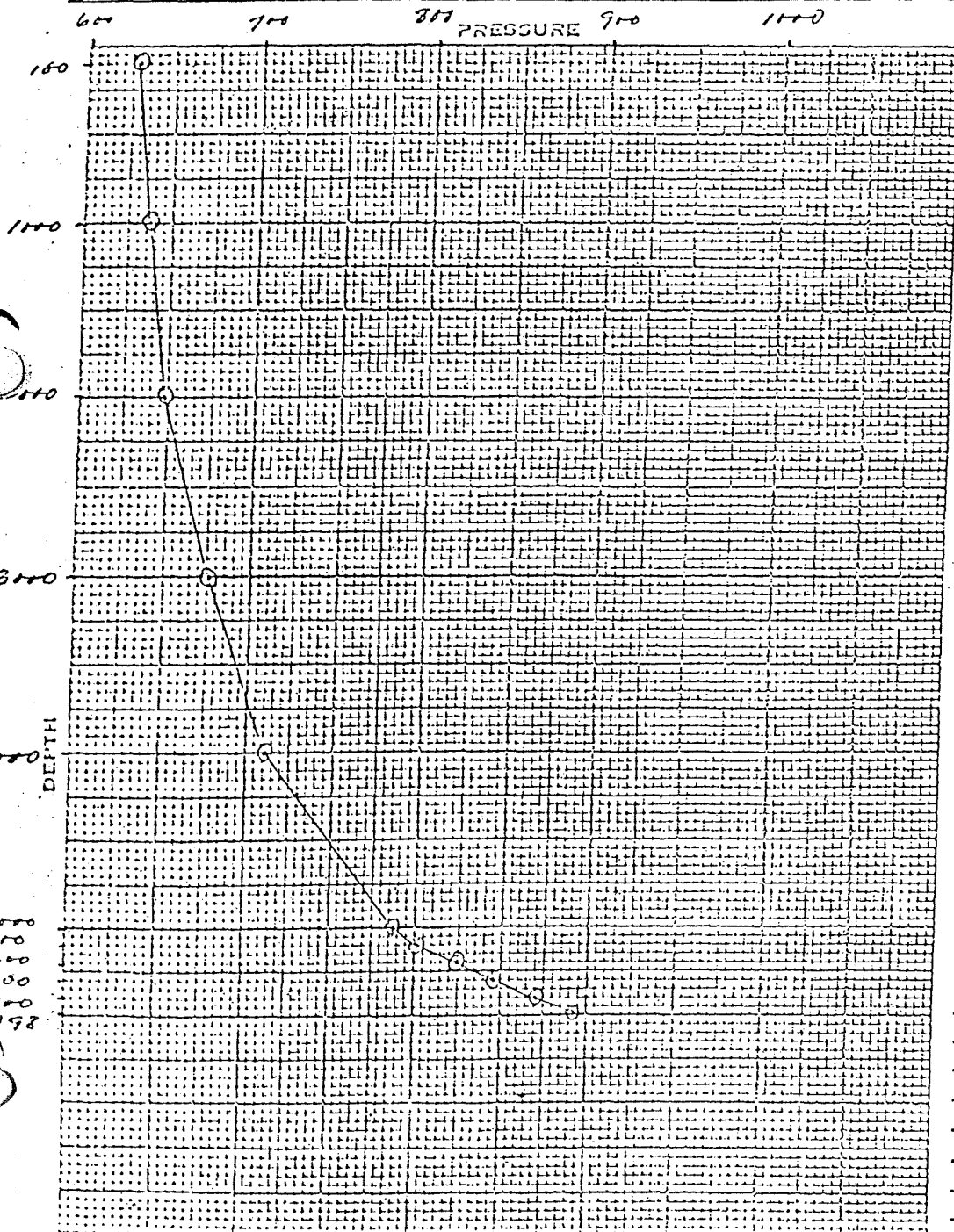
## SUBSURFACE PRESSURE SURVEY

B15-527-PT

OWNER \_\_\_\_\_ FIELD \_\_\_\_\_ WELL NAME \_\_\_\_\_  
 CASING \_\_\_\_\_ ELEV. \_\_\_\_\_ DATE: \_\_\_\_\_  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT \_\_\_\_\_  
 \_\_\_\_\_ DEPTH \_\_\_\_\_

WELL DESCRIPTION: \_\_\_\_\_ INSTRUMENT \_\_\_\_\_ PS  
 \_\_\_\_\_ SERIAL NO \_\_\_\_\_

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



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

PRESSURES	GAUGE	DEPTH
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
100	629.8	-
1000	638.3	.009
2000	648.9	.011
3000	676.6	.038
4000	714.9	.038
5000	787.2	.072
5100	806.1	.149
5200	825.5	.234
5300	846.8	.213
5400	872.3	.255
5498	893.6	.213

SB

76



DEL EYLE

GEO THERMAL DIVISION

SUBSURFACE SURVEY  
Field Work Sheet

B#15-528-71r

OWNER UNION OIL CO. OF CALIF FIELD VALLE GRANDE WELL NAME EMPA#12  
 CASING 20' @ 210'; 13 3/8" @ 1273 ELEV. 9177' DATE: 2/12/76  
 LINER DESCRIPTION: 9 7/8" @ 2509'; 2509' - T.D. - OPEN HOLE ZERO POINT GLY#1  
 DEPTH 5498

TUBING DETAIL:

PURPOSE

REMARKS:

ELEMENT - P-0-4000 PSIG 7198 13371-L  
 ELEMENT - T-89F-6869 SERIAL NO. 10055 CLOCK 12889-L TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-0950 T-0955 DISENGAGE STYLUS P-1500 T-1500  
 WELL HEAD 6.5' OFF LUBRICATOR - 0-1000 TG -  
 PICKUP @ 5498' TIME ON BOTTOM 1352-1422 MAX. °F 538  
 WELL STATUS FLOWING THRU 1/4" VENT  
 SHUT IN: 1315 hrs - 5/3/76 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
11	0	.276	617		-1.002	1150	0	1.277	489								
12	100	.278	621		-1.002	1203	100	1.297	495								
128	1000	.283	632		-1.002	1216	1000	1.307	498								
228	2000	.289	645		-1.002	1228	2000	1.313	499								
241	3000	.299	666		-1.002	1241	3000	1.332	505								
254	4000	.321	713		-1.002	1254	4000	1.335	512								
306	5000	.356	787		-1.001	1306	5000	1.395	524								
317	5100	.363	802		-1.001	1317	5100	1.405	526								
328	5200	.374	826		0	1328	5200	1.415	529								
340	5300	.384	847		0	1340	5300	1.425	532								
351	5400	.397	875		0	1351	5400	1.435	535								
422	5498	.407	896		0	1422	5498	1.446	538								

COMMENTS: PRIOR TO SURVEY - 5000' OF WIRE WAS REMOVED - GONE BAD SINCE LAST FLOWING SURVEY.



## GEOHERMAL DIVISION SUBSURFACE TEMPERATURE SURVEY

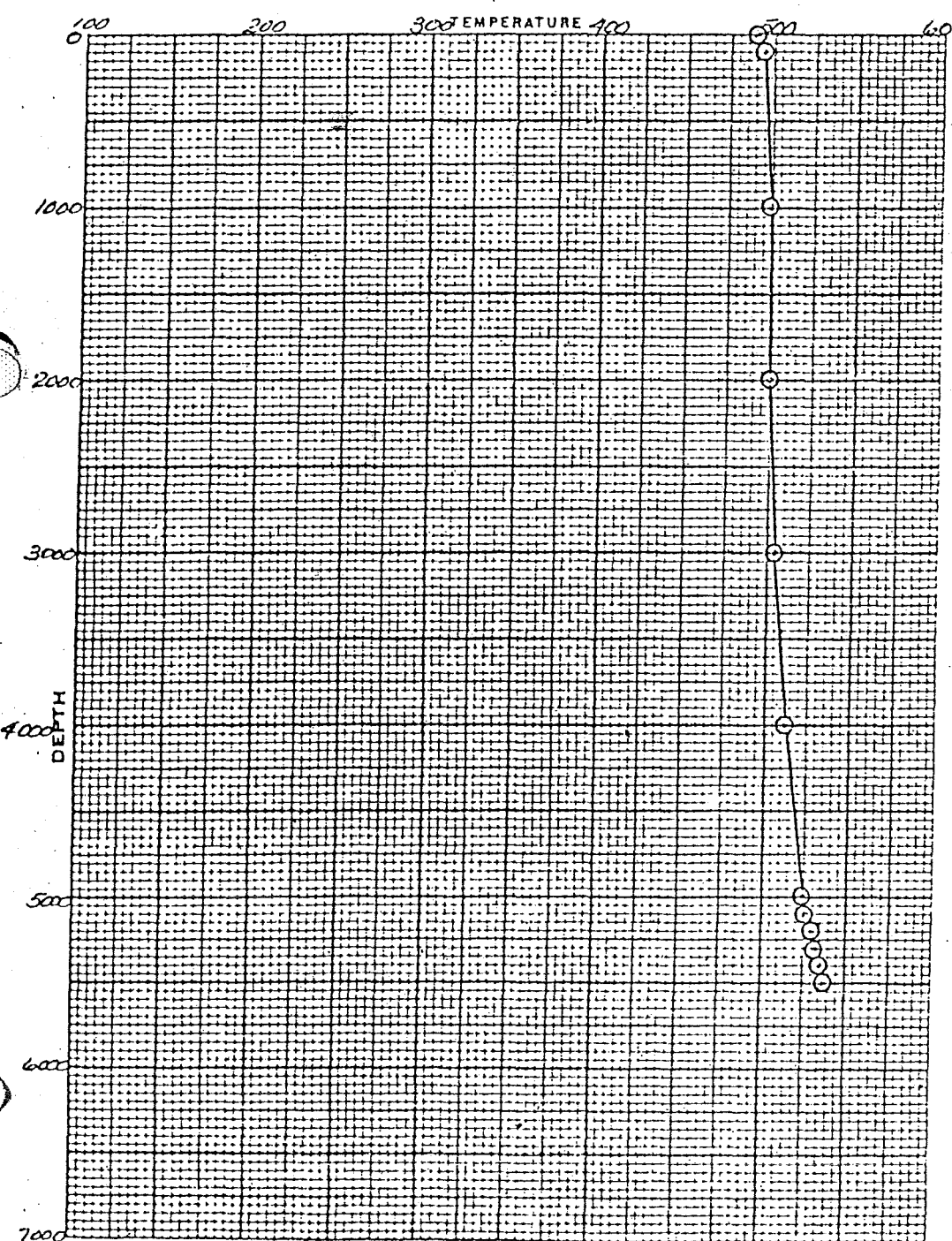
B15-S28-PT

76

OWNER \_\_\_\_\_ FIELD \_\_\_\_\_ WELL NAME BPCA #15  
CASING \_\_\_\_\_ ELEV \_\_\_\_\_ DATE 2/12/76  
LINER DESCRIPTION \_\_\_\_\_ ZERO POINT GL + 6'  
DEPTH 5498'

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

PURPOSE \_\_\_\_\_ MAX TEMP 538 °F @ 5498'  
REMARKS \_\_\_\_\_



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

PRESSURES	GAUGE	BOMB
CASING, PSI		

DEPTH	TEMP.	DEPTH	TEMP.
0	489		
100	495		
1000	498		
2000	499		
3000	505		
4000	512		
5000	524		
5100	526		
5200	529		
5300	532		
5400	535		
5498	538		

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

76

UNION

GEOHERMAL DIVISION

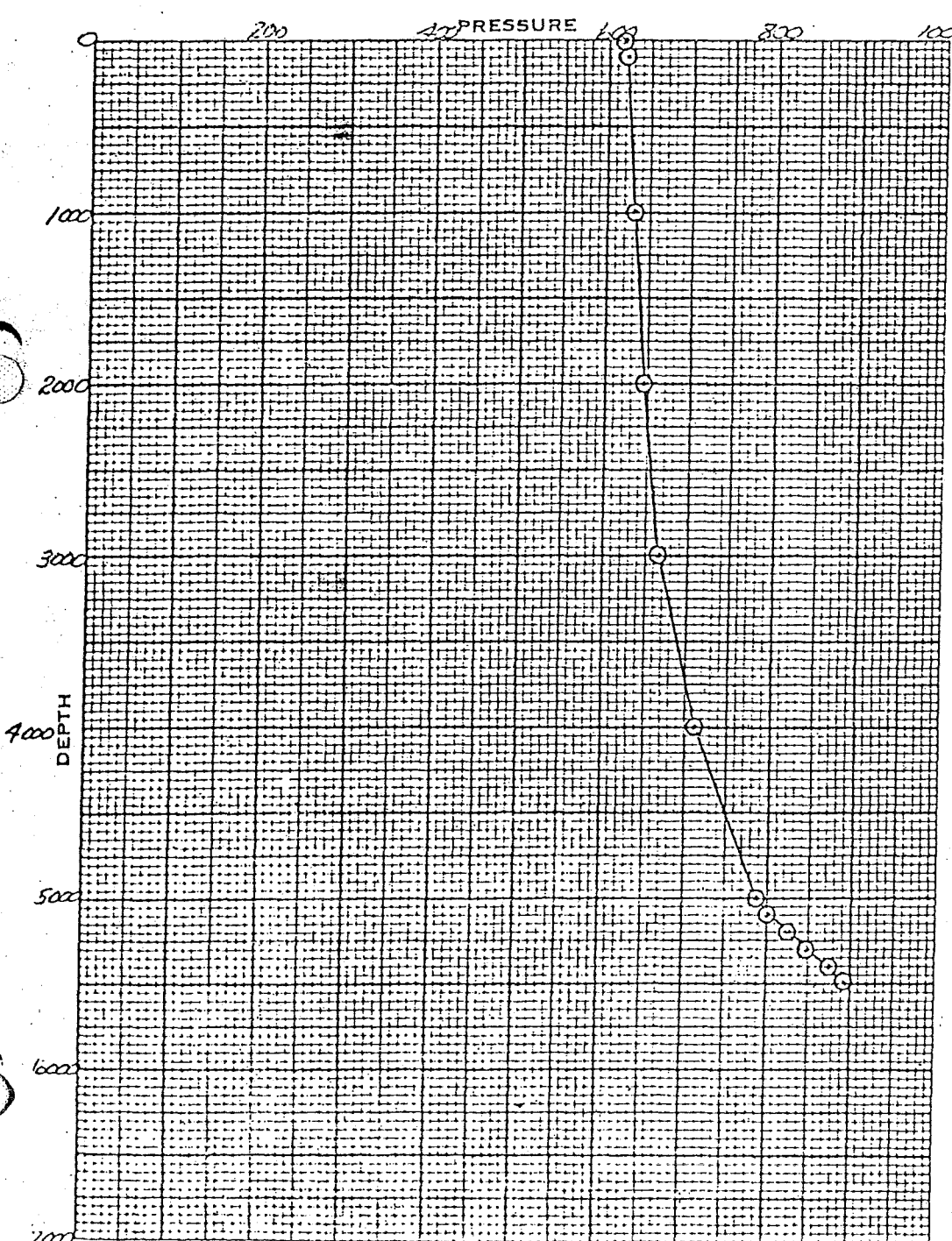
SUBSURFACE PRESSURE SURVEY

B15-S28-PT

OWNER \_\_\_\_\_ FIELD \_\_\_\_\_ WELL NAME BACA #15  
 CASING \_\_\_\_\_ ELEV \_\_\_\_\_ DATE 2/12/76  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT SL. +6'  
 \_\_\_\_\_ DEPTH 5498'

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

PURPOSE \_\_\_\_\_ MAX TEMP 538 °F @ 5498'  
 REMARKS: \_\_\_\_\_



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

PRESSURES	GAUGE	BOMB
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
0	617	
100	621	
1000	632	
2000	645	
3000	666	
4000	713	
5000	787	
5100	802	
5200	826	
5300	847	
5400	875	
5498	896	

DY: \_\_\_\_\_

76

U.S. GEOLOGICAL SURVEY  
GEO THERMAL DIVISION

DEL PYLE

FEB 10 1976

SUBSURFACE SURVEY  
Field Work Sheet

15508 AT

OWNER: Oil Co. of Cal. FIELD: Upper Grande WELL: ME Basin #15  
 CASING: 20" @ 210' - 13 7/8" @ 1273' ELEV.: 9177 DATE: 1-25-76  
 LINER DESCRIPTION: 9 7/8" @ 2509' Open Hole 2509' to TD ZERO POINT: SL T6  
 DEPTH: 28'

TUBING DETAIL:

PURPOSE:

REMARKS:

Element 0-4000 P.S.E.G. SN 7198 12 hr 15 T  
 ELEMENT 32°F - 686°F SERIAL NO. 10055 CLOCK 12 hr 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-0936 T-0940 DISENGAGE STYLUS P-1310 T-1314  
 WELL HEAD 535  
 PICKUP @ 5498' TIME ON BOTTOM 1124-1224 MAX. °F 536  
 WELL STATUS Shut in  
 SHUT IN: 7-14-75 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	
	100	263	587	-	7.011	1015	100	263	96									
	5000	322	500			1020	5000	1.391	522									
	5000	322	500			1050	5000	1.391	522									
	5000	322	500			1120	5000	1.391	522									
	5498	112	966.4			1124	5498	1.141	536									
	5498	112	966.4			1151	5498	1.141	536									
	5498	112	966.4			1224	5498	1.141	536									

COMMENTS:

BY: R.R.

76



DEL' PYLE  
JAN 6 1976

GEOTHERMAL DIVISION

SUBSURFACE SURVEY  
Field Work Sheet

B15 S 23 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15  
 CASING 20" AT 210', 13 3/8" AT 1273' ELEV. 9177' DATE: 12/19/75  
 LINER DESCRIPTION: 9 5/8" AT 2509'; 2509' - TD = OPEN HOLE ZERO POINT 61 + 6  
 DEPTH 5498'

TUBING DETAIL:

PURPOSE INTERFERENCE TEST

REMARKS:

ELEMENT - 0-400 PSI SN 7198 CLOCK - 12hr 15 TURN

ELEMENT 82'-6.26 SERIAL NO. 10055 CLOCK 12hr 15 TURN STABILIZATION PERIOD

ENGAGE STYLUS P-0838 T-0834 DISENGAGE STYLUS P-1204 T-1204

WELL HEAD 586 R516 0-2000 T/B

PICKUP # 5498 TIME ON BOTTOM 1029-1129 MAX. P 53.7

WELL STATUS

SHUT IN: 7/14/75 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
0925	100	.268	600.0		7.012	0925	100	.049	97.5								
0937	1100	.286	638.3		7.001	0937	1000	.680	305.2								
0950	2100	.294	655.3		7.001	0950	2100	1.000	406.0								
1002	3100	.318	685.1		7.002	1002	3100	1.330	504.5								
1015	4000	.328	727.7		7.002	1015	4000	1.353	511.1								
1027	5000	.365	806.4		7.001	1027	5000	1.393	522.9								
1029	5498	.417	917.0		0	1029	5498	1.441	536.7								
1059	5498	.417	917.0		0	1059	5498	1.441	536.7								
1129	5498	.417	917.0		0	1129	5498	1.441	536.7								

COMMENTS:

## GEOTHERMAL DIVISION

### SUBSURFACE TEMPERATURE SURVEY

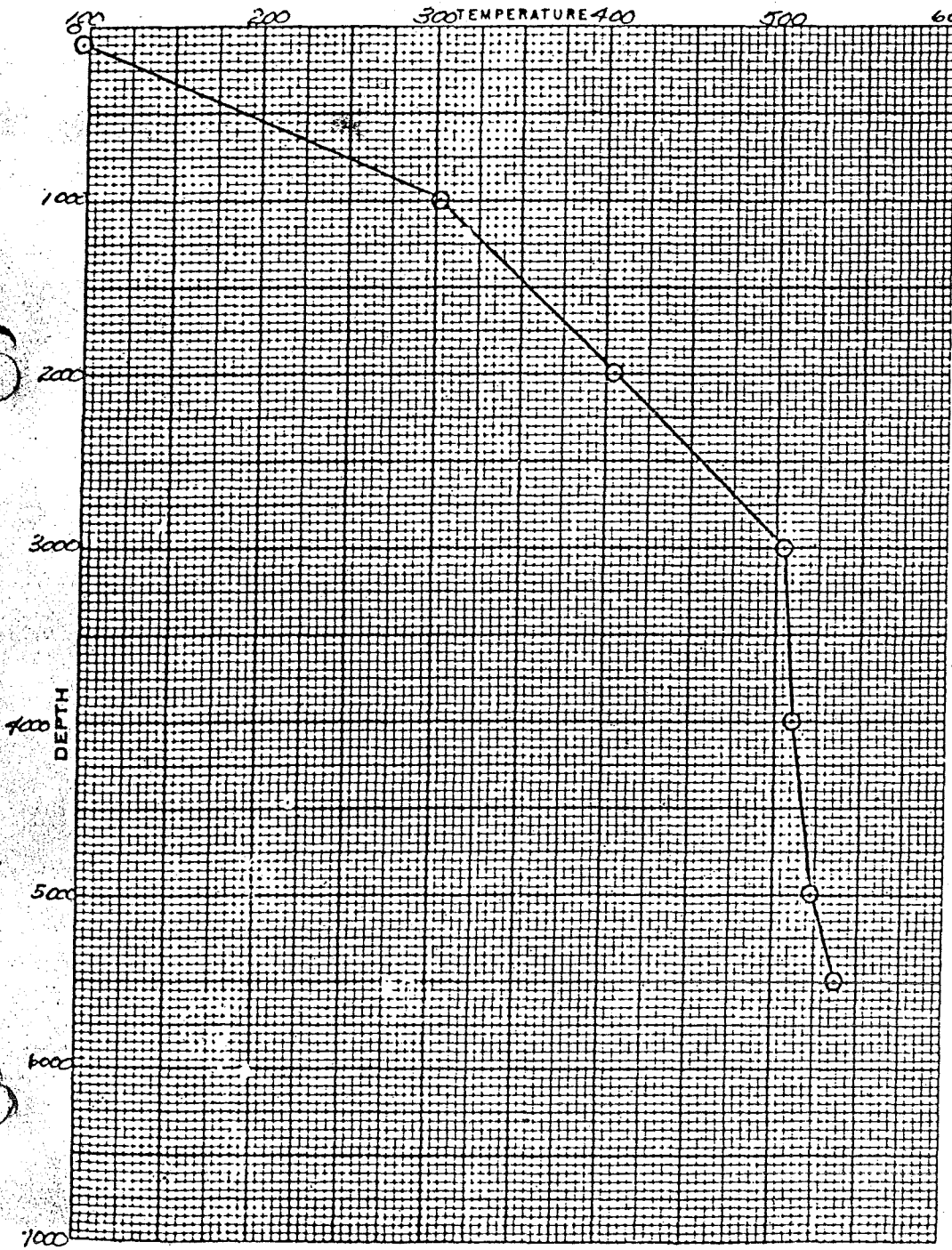
76

OWNER Union Oil Co. FIELD Valle Grande WELL NAME BACA #15  
 CASING \_\_\_\_\_ ELEV \_\_\_\_\_ DATE 12/19/75  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT GL + 6'  
 \_\_\_\_\_ DEPTH 5498'

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

PURPOSE INTERFERENCE TEST MAX TEMP 536.7°F @ 5498'  
 REMARKS: \_\_\_\_\_

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



PRESSURES.	GAUGE	BOMB
CASING, PSI		

DEPTH	TEMP.	DEPTH	TEMP.
100	97.5		
1000	303.2		
2000	405.0		
3000	504.5		
4000	511.1		
5000	522.9		
5498	536.7		

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

## GEOTHERMAL DIVISION

### SUBSURFACE PRESSURE SURVEY

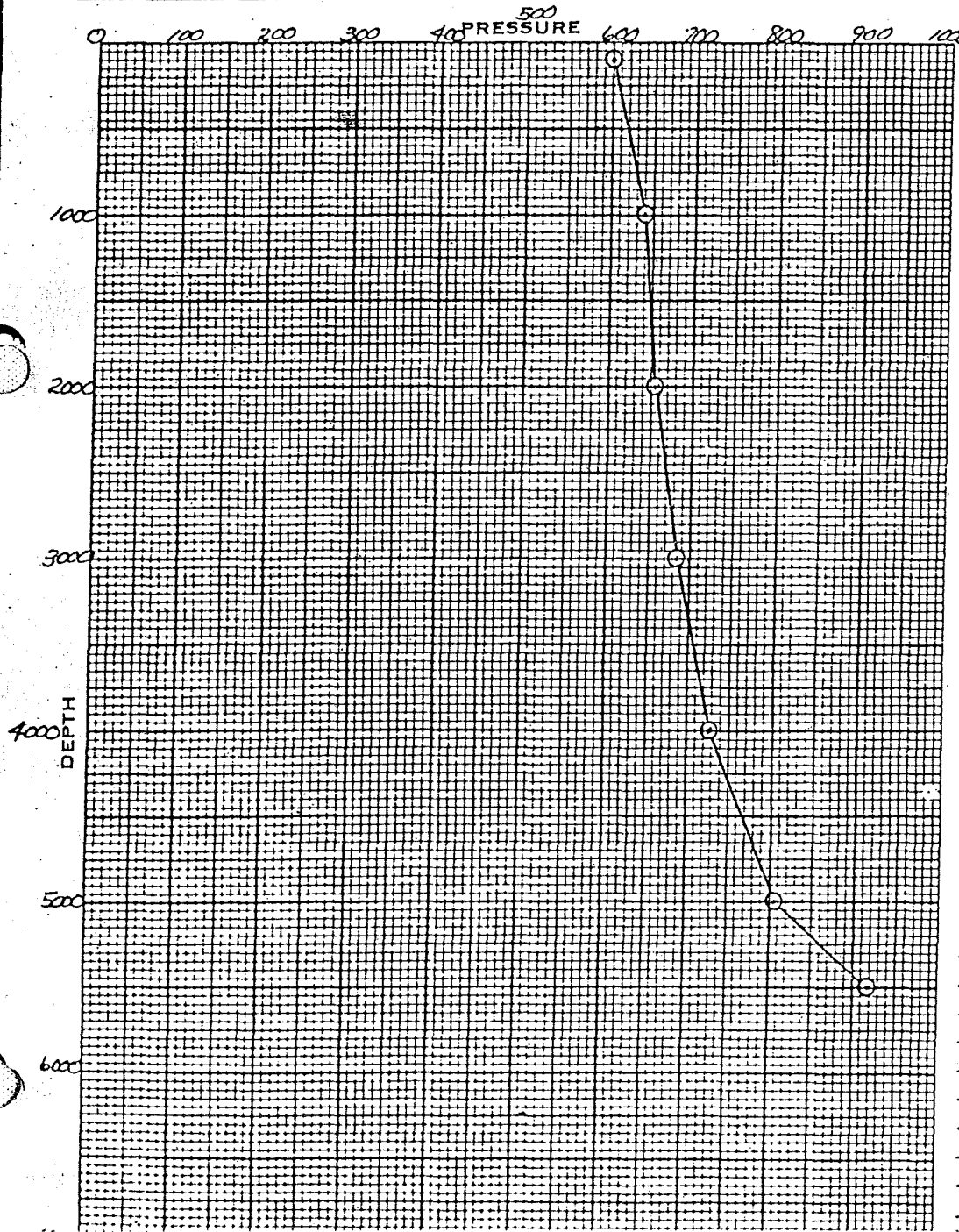
76

OWNER Union Oil Co. FIELD Valle Grande WELL NAME BACA #15  
 CASING \_\_\_\_\_ ELEV \_\_\_\_\_ DATE 12/19/75  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT GL + 6'  
 \_\_\_\_\_ DEPTH 5498'

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

PURPOSE INTERFERENCE TEST MAX TEMP 536.7 °F @ 5498'

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



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

PRESSURES.	GAUGE	BOMB
CASING. PSI		

DEPTH	PRESSURE	GRADIENT
100	600.0	
1000	638.3	
2000	655.3	
3000	685.1	
4000	727.7	
5000	806.4	
5498	917.0	

76

UNION

GEO THERMAL DIVISION

DEL PYCE

DEC 18 1975

SUBSURFACE SURVEY

Field Work Sheet

B# 15-523 P/H

OWNER UNION OIL & CHEM. FIELD Valle Grande WELL NAME BACA # 15

CASING 20" @ 2.10 ; 13 7/8 @ 1273' ELEV. 9117 DATE: 12-8-75

LINER DESCRIPTION: ZERO POINT GL + 6 DEPTH 5498

TUBING DETAIL:

PURPOSE Interference Test

REMARKS: ELEMENT 0-4000 PSI SN 7198 Clock 12hr 15T

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

ENGAGE SYLUS P 1024 T 1021 DISENGAGE SYLUS P 1414 T 1410

WELL HEAD 595

PICKUP @ 5498 TIME ON BOTTOM 1207-1307 MAX. F 538.1

WELL STATUS Shut in

SHUT IN: 0722 hrs 7/14/75 ON PRODUCTION:

RATE

PSI Temp

TIME	DEPTH	DEFL.	P-T	GRAD.	COY	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
	100	.267	547.9		-.012	1248-105	100	.251	98.2								
	5000	.366	808.5		-.011	1105	5000	1.393	522.9								
	5000	.366	808.5		-.001	1135	5000	1.393	522.9								
1205	5000	.366	808.5		-.001	1205	5000	1.393	522.9								
1207	5498	.418	919.1		0	1207	5498	1.446	538.1								
1237	5498	.418	919.1		0	1237	5498	1.446	538.1								
1307	5498	.418	919.1		0	1307	5498	1.446	538.1								

COMMENTS: Face calibration check, w/new DWL @ 2000 PSI @ 75°F  
 DeF - .924 COY PSI - 2004.2  
 COY - .011  
 COY DEP. - .935

BY: JB

76



DEL' PYLE

GEO THERMAL DIVISION JAN 6 1976

SUBSURFACE SURVEY

Field Work Sheet

B15-522-PH

OWNER UNION OIL CO. OF CALIF FIELD VALLE GRANDE WELL NAME BACA-15  
 CASING 20" @ 210'; 13 3/8" @ 1273' ELEV. 9177 DATE: 12-15-75  
 LINER DESCRIPTION: 9 5/8" @ 2509 To T.D. OPEN HOLE ZERO POINT GL+6'  
 DEPTH 5498'

TUBING DETAIL:

PURPOSE

REMARKS:

ELEMENT-P-0-4000 PSIG 7198 12/17-14091 L-12

ELEMENT-T-825F-686F SERIAL NO. 10055 CLOCK 12/17-12589-115-TURN STABILIZATION PERIOD

ENGAGE STYLUS P-1044 T-1044 DISENGAGE STYLUS P-1525 T-1525

WELL HEAD 592 PSIG

PICKUP @ 5498' TIME ON BOTTOM 1370-1420 MAX. °F

WELL STATUS SHUT IN

SHUT IN: 0922 hrs on 7/14/75 ON PRODUCTION:

RATE

PRESSURE

TEMPERATURE

TIME	DEPTH	DEFL.	P-0	GRAD.	CORR.	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
	100	.287	597.8		-.012	1200-1210	100	.045	96.2								
	5000	.365	806.4		-.001	1210-1220	5000	1.392	522.6								
	5498	.415	912.8		0	1320-1420	5498	1.445	537.3								

COMMENTS:

RY: 10 10 10



76

UNION

GEO THERMAL DIVISION

DEL PYLE

DEC 15 1975

SUBSURFACE SURVEY

Field Work Sheet

B #15 S-20 P/T

OWNER UNION Oil Co. of Cal. FIELD Valle Grande WELL NAME BACH #15  
 CASING 20" @ 210 ; 13 3/8" @ 1273' ELEV. 9117 DATE: 12-2-75  
 LINER DESCRIPTION: 7 7/8" @ 2509 T. TD = Open Hole ZERO POINT CL 7 6  
 DEPTH 5498

TUBING DETAIL:

PURPOSE Interference Test

REMARKS:

ELEMENT 0-4000 PSI SN 7198 Clock 12 hr 15 T.

ELEMENT 87° - 686° F SERIAL NO. 10055 CLOCK 12 hr 15 TURN STABILIZATION PERIOD

ENGAGE STYLUS P-8955 T-0950 DISENGAGE STYLUS P1345-T1347

WELL HEAD 593 0-1000 T/G

PICKUP @ 5498 TIME ON BOTTOM 1152-1252 MAX. F 537

WELL STATUS Shut in

SHUT IN: 0722 hrs 7/14/75 ON PRODUCTION:

RATE

Pressure

Temperature

TIME	DEPTH	DE L	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
	100	.267	598	-.002		1040	100	.055	99.5								
11	1000	.286	639	-.001		1055	1000	.677	302								
1110	2000	.294	655	-.001		1110	2000	.999	405								
1126	3000	.308	685	-.002		1126	3000	1.830	504								
1138	4000	.328	728	-.002		1138	4000	1.352	511								
1150	5000	.365	806	-.001		1158	5000	1.393	523								
1252	5498	.418	919	0-		1152-1252	5498	1.440	536								
1252	5498	.418	919	0-		1152-1252	5498	1.442	537								
1252	5498	.418	919	0-		1152-1252	5498	1.442	537								

COMMENTS:

76

UNRECORDED

GEO THERMAL DIVISION  
SUBSURFACE PRESSURE SURVEY B15-S20-PT

OWNER Union Oil Co. of Calif. FIELD Halle Grande WELL NAME BACH #15

CASING \_\_\_\_\_ DATE 12-2-75

LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT 6.4, +6'

DEPTH 5498'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 0-4000 PS

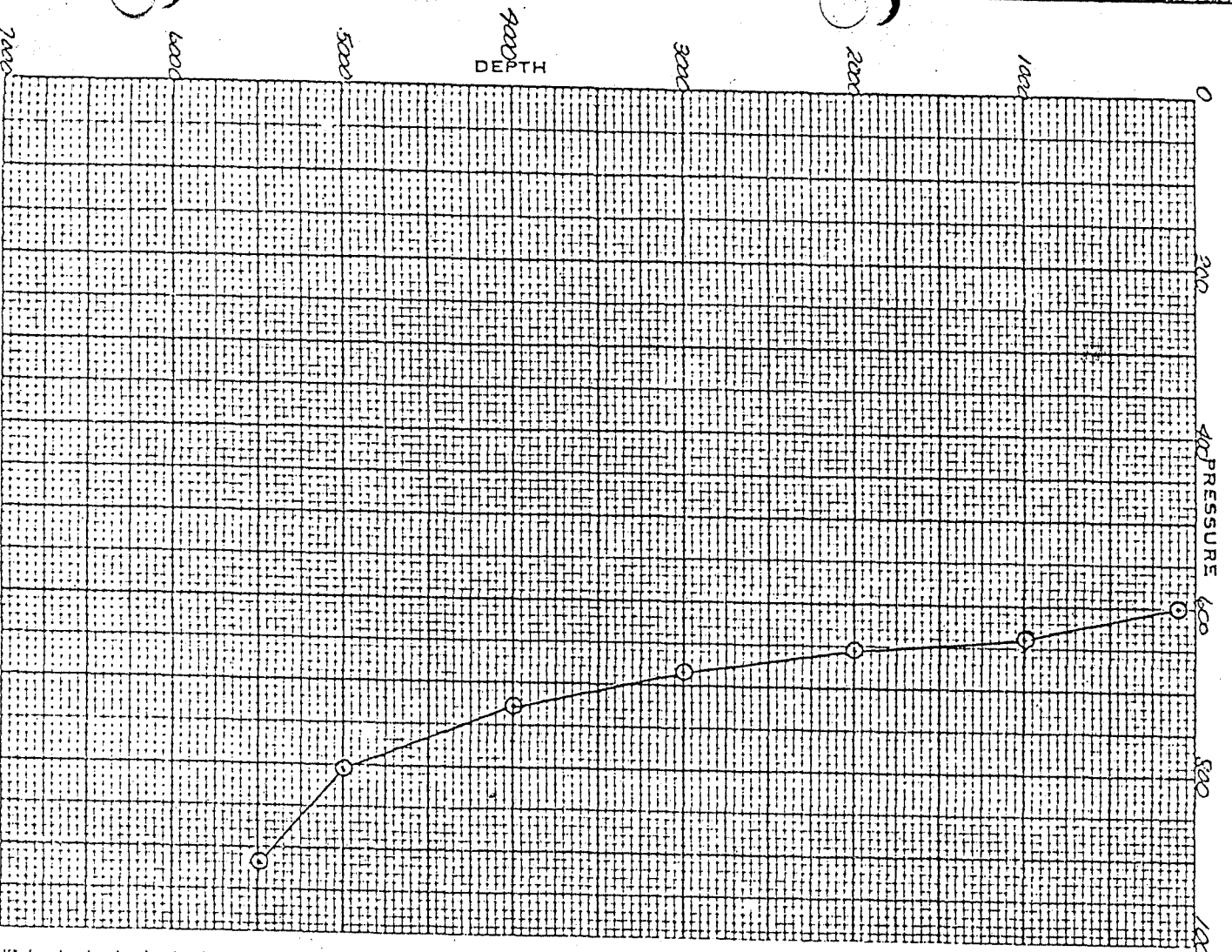
SERIAL NO 7198

MAX TEMP 537 °F @ 5498'

PURPOSE Interference Test

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

REMARKS:



PRESSURES, CASING, PSI	GAUGE	BOMB
DEPTH	PRESSURE	GRADIENT
100	598	
2000	639	
3000	685	
4000	728	
5000	806	
5498	919	

BY:

76

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

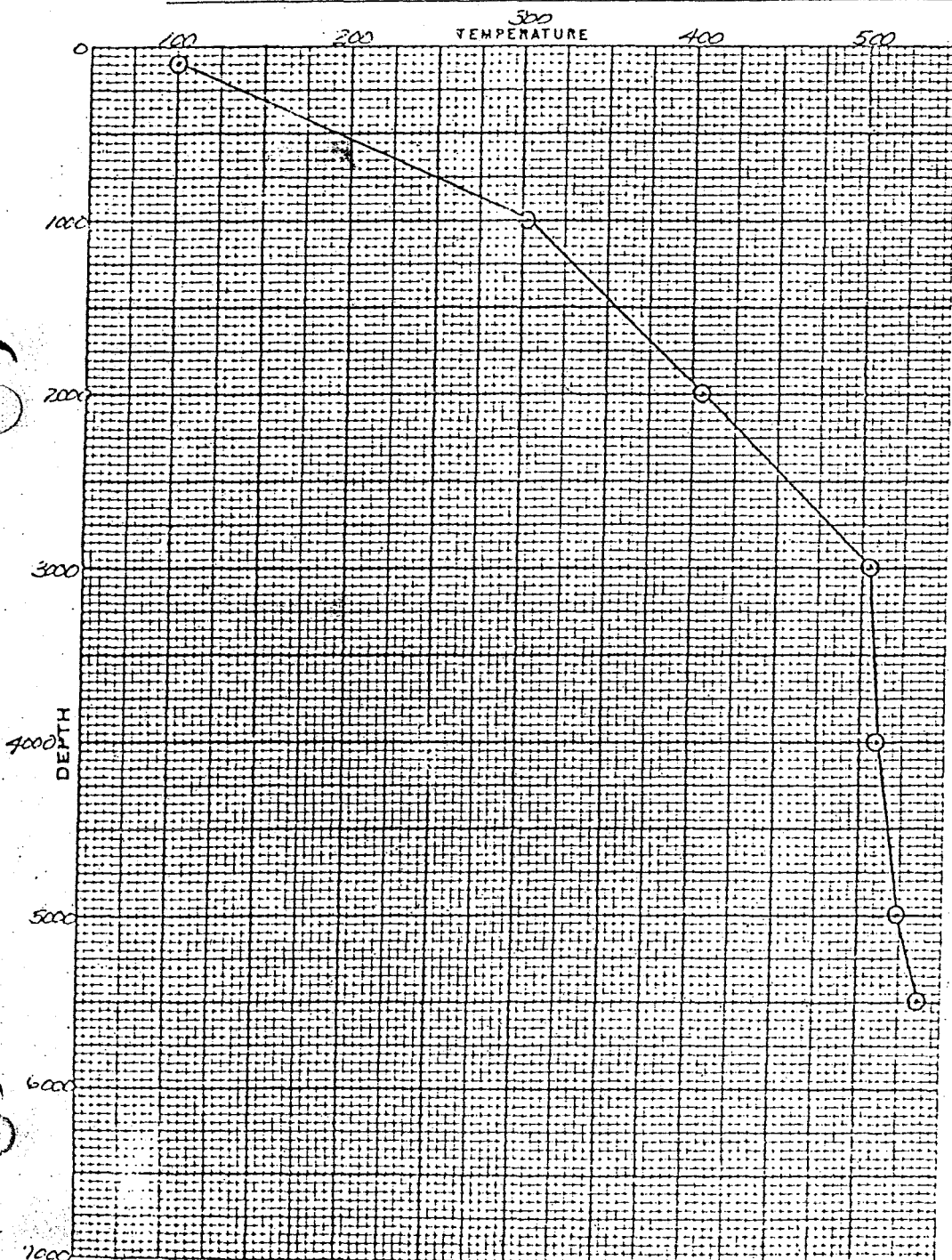
B15-520-PT

OWNER Union Oil Co. of Calif. FIELD Valle Grande WELL NAME BACA #15  
 CASING \_\_\_\_\_ ELEV \_\_\_\_\_ DATE 12-2-75  
 LINER DESCRIPTION \_\_\_\_\_ ZERO POINT G.T. + 6'  
 \_\_\_\_\_ DEPTH 5498'

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

PURPOSE \_\_\_\_\_ MAX TEMP 537 °F @ 5498'  
 REMARKS: \_\_\_\_\_

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



PRESSURES	GAUGE	BOMB
CASING PSI		

DEPTH	TEMP.	DEPTH	TEMP.
100	99.5		
1000	302		
2000	405		
3000	504		
4000	511		
5000	523		
5498	536		
5498	537		

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

76

UNION

DELL PYLE

GEO THERMAL DIVISION DEC 5 1975

SUBSURFACE SURVEY

Field Work Sheet

BIS 549 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACH #15  
 CASING 20' AT 210' 13 3/8" 1373' ELEV. 9117' DATE: 11/21/75  
 LINER DESCRIPTION: 9 5/8" 2509' 2509 - TD = OPEN HOLE ZERO POINT CL +6'  
 DEPTH 5498'

TUBING DETAIL:

PURPOSE INTERFERENCE TEST

REMARKS:

ELEMENT - 0.4020 PSI SN 7158 CLOCK 12 HC 15 T

ELEMENT 82°-6.86°F SERIAL NO. 10055 CLOCK 12 HC 15 TURN STABILIZATION PERIOD

ENGAGE STYLUS P-0924 T-0927 DISENGAGE STYLUS F-1346 T-1346

WELL HEAD 513 - 0-1800 T/B

PICKUP @ 5498 TIME ON BOTTOM 1201-1301 MAX. F 538.1

WELL STATUS SHUT IN

SHUT IN: 0722 hrs 7/14/75 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
1052	110	.269	597.8		7.012	1052	110	.055	99.5								
1100	5110	.369	814.9		-1.001	1100	5110	1.396	523.8								
1130	5110	.369	814.9		-1.001	1130	5110	1.396	523.8								
1200	5110	.569	814.9		-1.001	1200	5110	1.396	523.8								
1201	5498	.420	923.4		0	1201	5498	1.446	538.1								
1231	5498	.420	923.4		0	1231	5498	1.446	538.1								
1301	5498	.420	923.4		0	1301	5498	1.446	538.1								

COMMENTS:



# GEO THERMAL DIVISION

## SUBSURFACE SURVEY Field Work Sheet

B15-519 P1

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BALA #15  
 CASING 20" AT 210'; 13 3/8" AT 1273' ELEV. 9117' DATE: 11/4/75  
 LINER DESCRIPTION: 9 5/8" AT 2509'; 2509 - TD = OPEN HOLE ZERO POINT CL+6'  
 DEPTH 5498'

TUBING DETAIL:

PURPOSE INTERFERENCE TEST

REMARKS:

CLEARHT. 0-4000 PSIG SN 7198 CLOCK 12 hr 15 TURN

ELEMENT 82°-6.86° SERIAL NO: 10055 CLOCK 12 hr 15 TURN

STABILIZATION PERIOD

ENGAGE STYLUS P-0831 T 0834 DISENGAGE STYLUS P-1217 T 1217

WELL HEAD 598 PSIG 0-1000 T/G

PICKUP @ 5498' TIME ON BOTTOM 1036-1136 MAX. F 538.7

WELL STATUS

SHUT IN: 7/14/75 ON PRODUCTION

RATE

PRESSURE

TEMPERATURE

PRESSURE					TEMPERATURE												
TIME	DEPTH	DEFL.	P-P	GRAD.	ID	TIME	DEPTH	DEFL.	°-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
0919	100	.268	600.0		7.012	0919	100	.063	102.1								
0	5110	.368	812.8		-0.001	0929	5100	1.400	525.0								
0	5110	.368	812.8		-0.001	0959	5110	1.400	525.0								
1029	5110	.368	812.8		-0.001	1029	5110	1.400	525.0								
1036	5498	.414	910.6		0	1036	5498	1.448	538.7								
1106	5498	.414	910.6		0	1106	5498	1.448	538.7								
1136	5498	.414	910.6		0	1136	5498	1.448	538.7								

COMMENTS:

BY: LIL JB CP ON

JOHN D. HARTZ  
NOV 23 1975



# GEO THERMAL DIVISION

## SUBSURFACE SURVEY Field Work Sheet

B16 5-23 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15  
 CASING 20" AT 210' 13 3/8" AT 1273' ELEV. 9117' DATE: 11/4/75  
 LINER DESCRIPTION: 9 5/8" AT 2509' ; 2509' - TD = OPEN HOLE ZERO POINT 6216'  
 DEPTH 5498'

TUBING DETAIL:

PURPOSE INTERFERENCE TEST

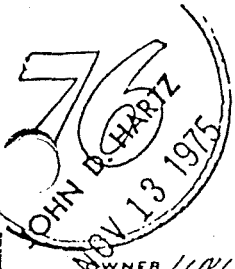
REMARKS:

ELEMENT - 0-4000 PSI SN 7198 CLOCK - 12 hr. 15 TURN  
 ELEMENT - 82°-686°F SERIAL NO. CLOCK 12 hr. 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-1013 ~~1012~~ 1012 DISENGAGE STYLUS P-1350 ~~T-1350~~ hrs  
 WELL HEAD 598 PSI6 0-1000 T/R  
 PICKUP @ 5498 TIME ON BOTTOM 1242-1252 MAX. °F 538.1  
 WELL STATUS 0  
 SHUT IN: 0922 hrs 7/14/75 ON PRODUCTION:  
 RATE

PRESSURE TEMPERATURE

PRESSURE						TEMPERATURE											
TIME	DEPTH	DEFL.	P-F	GRAD.	ID	TIME	DEPTH	DEFL.	S-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1043	100	.249	602.1		-.012	1043	100	.057	100.1								
1055	1100	.247	640.4		-.001	1055	1000	.671	300.4								
1107	2000	.243	653.2		-.001	1107	2000	.498	404.4								
1120	3000	.308	683.1		-.002	1120	3000	1.230	504.4								
1133	4000	.327	725.5		-.002	1133	4000	1.355	511.7								
1146	5000	.363	802.1		-.001	1146	5000	1.396	525.8								
1157	5100	.371	814.1		-.001	1157	5100	1.403	525.9								
1208	5210	.383	844.7		-.001	1208	5210	1.413	528.7								
1219	5300	.391	861.7		0	1219	5310	1.423	531.6								
1230	5400	.407	895.7		0	1230	5400	1.434	534.7								
1241	5450	.411	904.8		0	1241	5450	1.440	536.4								
1252	5498	.412	906.4		0	1252	5498	1.446	538.1								

COMMENTS:



# GEO THERMAL DIVISION

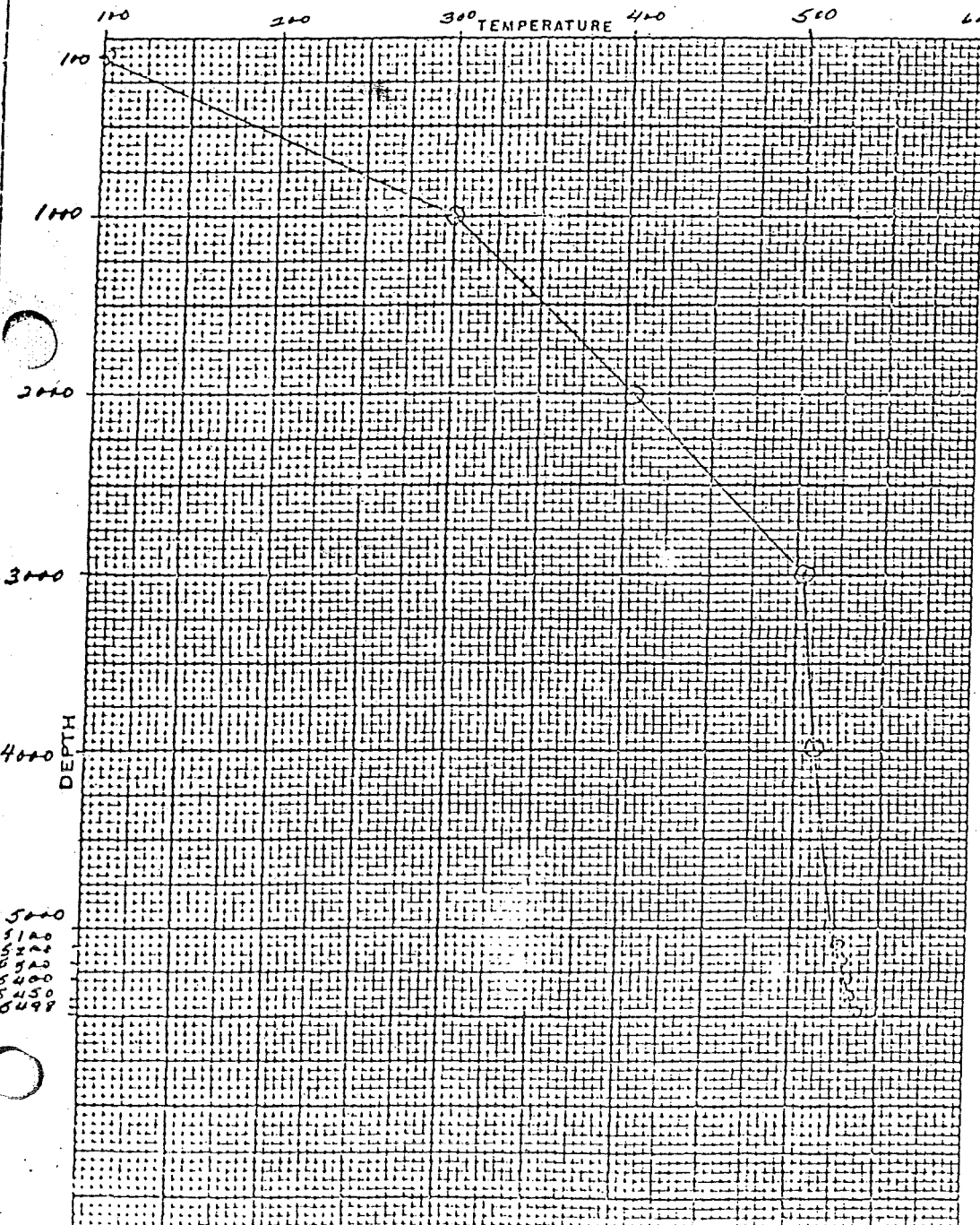
## SUBSURFACE TEMPERATURE SURVEY

B15 528 T

OWNER UNION OIL COMPANY FIELD VALLE WELL NAME BACA # 15  
 CASING 2 1/2" AT 210'; 1 3/8" AT 1273' ELEV. 9117' DATE: 11/9/75  
 LINER DESCRIPTION: 9 5/8" AT 2509' 2509' - TD = OPEN HOLE ZERO POINT CL + 6'  
 DEPTH 5498'

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 82° - 656° FAH?  
 SERIAL NO 10055

PURPOSE INTERFERENCE TEST MAX TEMP. 538.1 °F @ 5498'  
 REMARKS: \_\_\_\_\_



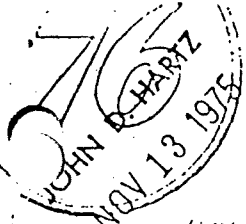
DEPTH	TEMP.	DEPTH	TEMP.
100	100.1		
1000	300.4		
2000	404.4		
3000	504.4		
4000	511.7		
5000	525.8		
5100	525.9		
5200	528.7		
5300	531.6		
5400	534.6		
5450	536.4		
5498	538.1		

JAN 16 1976

# GEO THERMAL DIVISION

## SUBSURFACE PRESSURE SURVEY

815 518 P



OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #13  
 CASING 30" AT 210'; 13 3/8" AT 1273' ELEV. \_\_\_\_\_ DATE 11/9/75  
 LINER DESCRIPTION: 9 5/8" AT 2509'; 2509-TD = OPEN HOLE ZERO POINT CL+6'  
 DEPTH 5498'

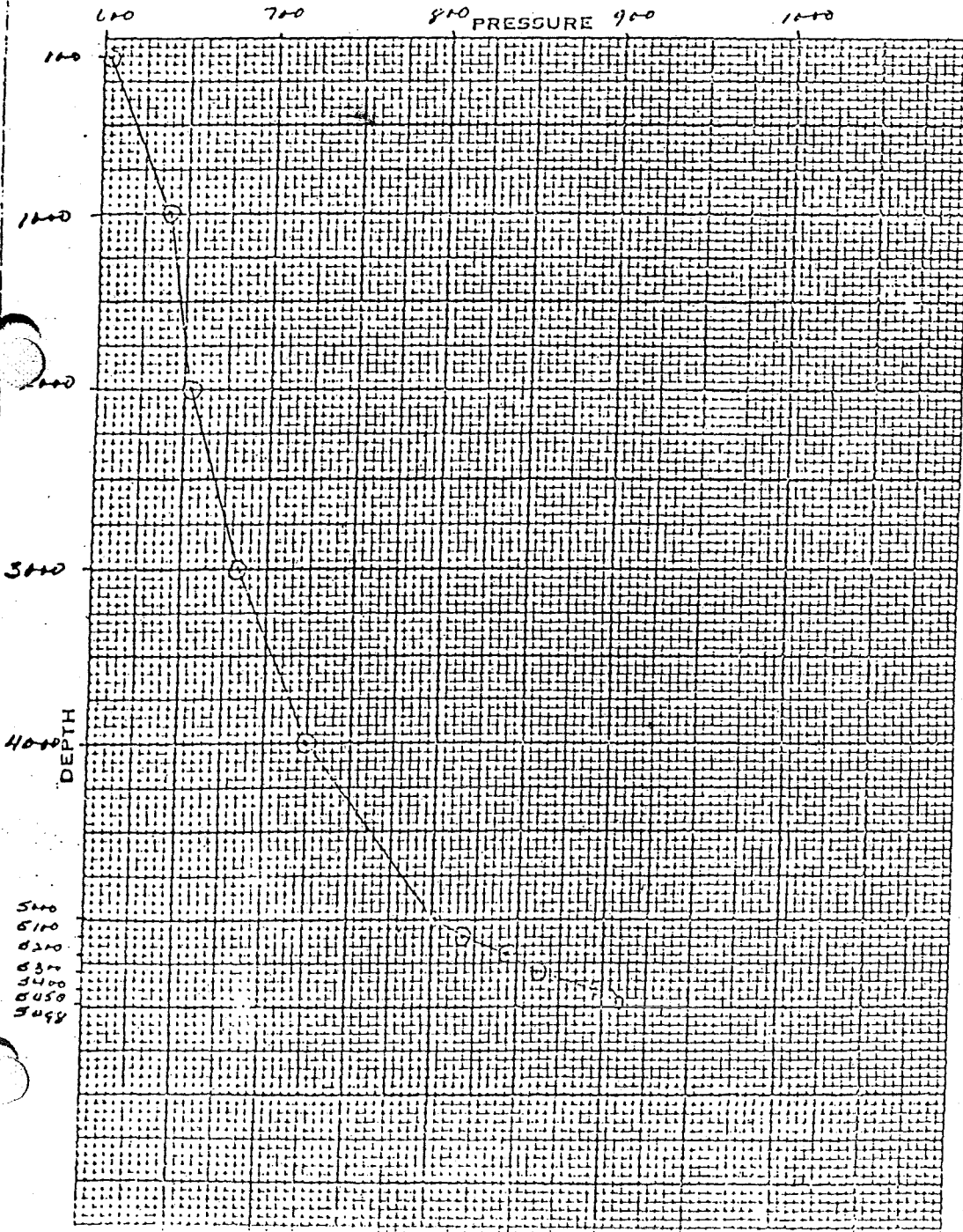
HOLE DESCRIPTION: INTERFERENCE TEST

INSTRUMENT 0-9000 PSIG  
 SERIAL NO 7198

PURPOSE \_\_\_\_\_

MAX TEMP 538.1 OF @ 5498'

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



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

PRESSURE	GAUGE	BOIIB

DEPTH	PRESSURE	GRADIENT
100	602.1	-
1000	640.4	.042
2100	653.2	.013
3100	685.1	.032
4100	725.5	.042
5100	800.1	.077
5100	819.1	.175
5200	844.7	.250
5300	861.7	.170
5400	895.7	.340
5450	904.3	.172
5498	906.4	.044

DEPTH  
 100  
 1000  
 2000  
 3000  
 4000  
 5000  
 5100  
 5200  
 5300  
 5400  
 5498



76



JOHN D. HARTZ  
NOV 06 1975

# GEO THERMAL DIVISION

## SUBSURFACE SURVEY Field Work Sheet

BIS 518 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACH #15  
 CASING 20" AT 210' ; 15 1/2" AT 1273' ELEV. 9117' DATE: 10/29/75  
 LINER DESCRIPTION: 9 5/8" AT 2509' ; 2509 - TD OPEN HOLE ZERO POINT CL + 10 1/2'  
 DEPTH 5498'

TUBING DETAIL:

PURPOSE:

REMARKS:

ELEMENT - 0 - GOOD PSI SN 7198 CLOCK 12 hr 15 TURN  
 ELEMENT - 82° - 486°F SERIAL NO. 10055 CLOCK 12 hr 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-0824 K; T-0811 DIS-ENGAGE STYLUS P-1200 T-1200  
 WELL HEAD 596 PSIG  
 PICKUP @ 5498' TIME ON BOTTOM 10:12 - 11:17 MAX. P 539.0  
 WELL STATUS \_\_\_\_\_  
 SHUT IN: 7/14/75 ON PRODUCTION: \_\_\_\_\_  
 RATE \_\_\_\_\_

PRESSURE

TEMPERATURE

PRESSURE					TEMPERATURE						
TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
0	14	.249	602.1		7.012	0901	14	.063	102.1		
05	5110	.366	808.5		7.001	0910	5110	1.402	525.6		
09	5110	.366	808.5		7.001	0940	5110	1.402	525.6		
1010	5110	.366	808.5		7.001	1010	5110	1.402	525.6		
1012	5498	.413	908.5		0	1012	5498	1.449	537.0		
1032	5498	.413	908.5		0	1032	5498	1.449	537.0		
1117	5498	.413	908.5		0	1117	5498	1.449	537.0		

COMMENTS:

76

UNION

DEL PYLE

GEOHERMAL DIVISION

NOV 7 1975

SUBSURFACE SURVEY

Field Work Sheet

B#15-315-P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BRA #15  
 CASING 20" ATZIO; 13 3/4 AT 1273 ELEV. 9117' DATE 10/23/75  
 LINER DESCRIPTION: 9 5/8 A; 2509'; 2509 - TD = OPEN HOLE ZERO POINT GL+6'  
 DEPTH 5498'

TUBING DETAIL:

PURPOSE GRADIENT SURVEY

REMARKS:  
 ELEMENT: 0-4000 PSI SN 7198 CLOCK-12 HR 15 TURN  
 ELEMENT 7-82°F-686°F SERIAL NO. 10055 CLOCK 12:12 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-0843 T-0838 DISENGAGE STYLUS P-1213 T-1212  
 WELL HEAD 600  
 PICKUP @ 5497' TIME ON BOTTOM 1100-1130 MAX. P 539.3  
 WELL STATUS STATIC  
 SHUT IN: 0722hrs 7/14/75 ON PRODUCTION:  
 RATE

PSIG TEMP

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
07	100	.271	606.4			-	100	.062	102	10							
08	1000	.290	647			-	1000	.690	306.4								
0925	2000	.297	662			-	2000	1.011	408.4								
1010	3000	.312	694			-	3000	1.336	506.1								
1022	4000	.335	743			-	4000	1.357	512.3								
1053	5000	.372	821			-	5000	1.403	526								
1130	5497	.425	934			-	5497	1.450	539.3								

COMMENTS:

76

UNION

GEOHERMAL DIVISION

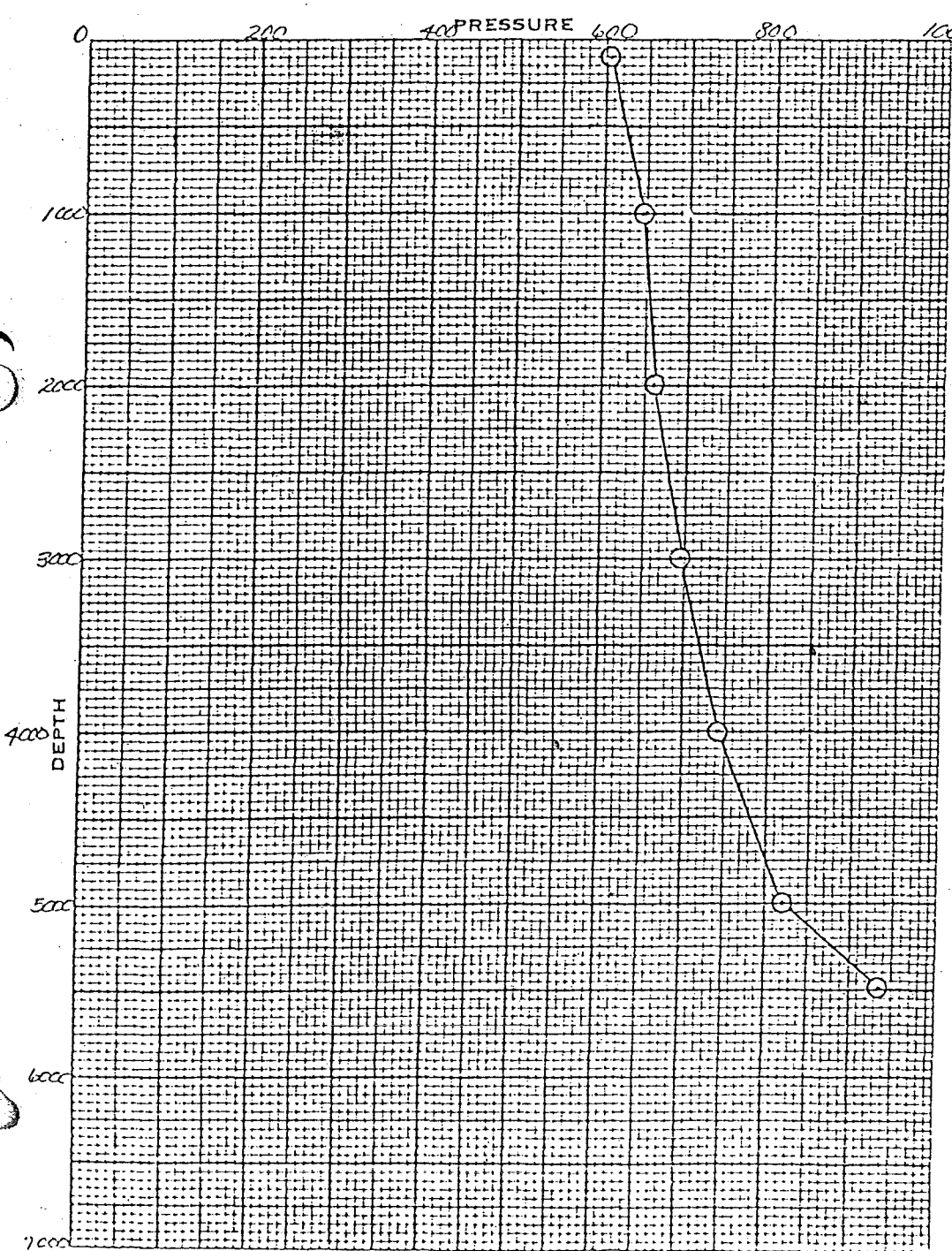
SUBSURFACE PRESSURE SURVEY

B15-S15-PT

OWNER Union Oil Company FIELD Valle Grande WELL NAME Baca #15  
 CASING \_\_\_\_\_ ELEV \_\_\_\_\_ DATE 10/23/75  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT G.L. +6'  
 \_\_\_\_\_ DEPTH 5498'

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

PURPOSE \_\_\_\_\_ MAX TEMP 539.3°F @ 5497'  
 REMARKS: \_\_\_\_\_



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

PRESSURES	GAUGE	BOWS
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
100	606.4	
1000	647	
2000	662	
3000	694	
4000	743	
5000	821	
5497	934	

BY: J.M. & J.B.

76

WINDSON

# GEOHERMAL DIVISION SUBSURFACE TEMPERATURE SURVEY

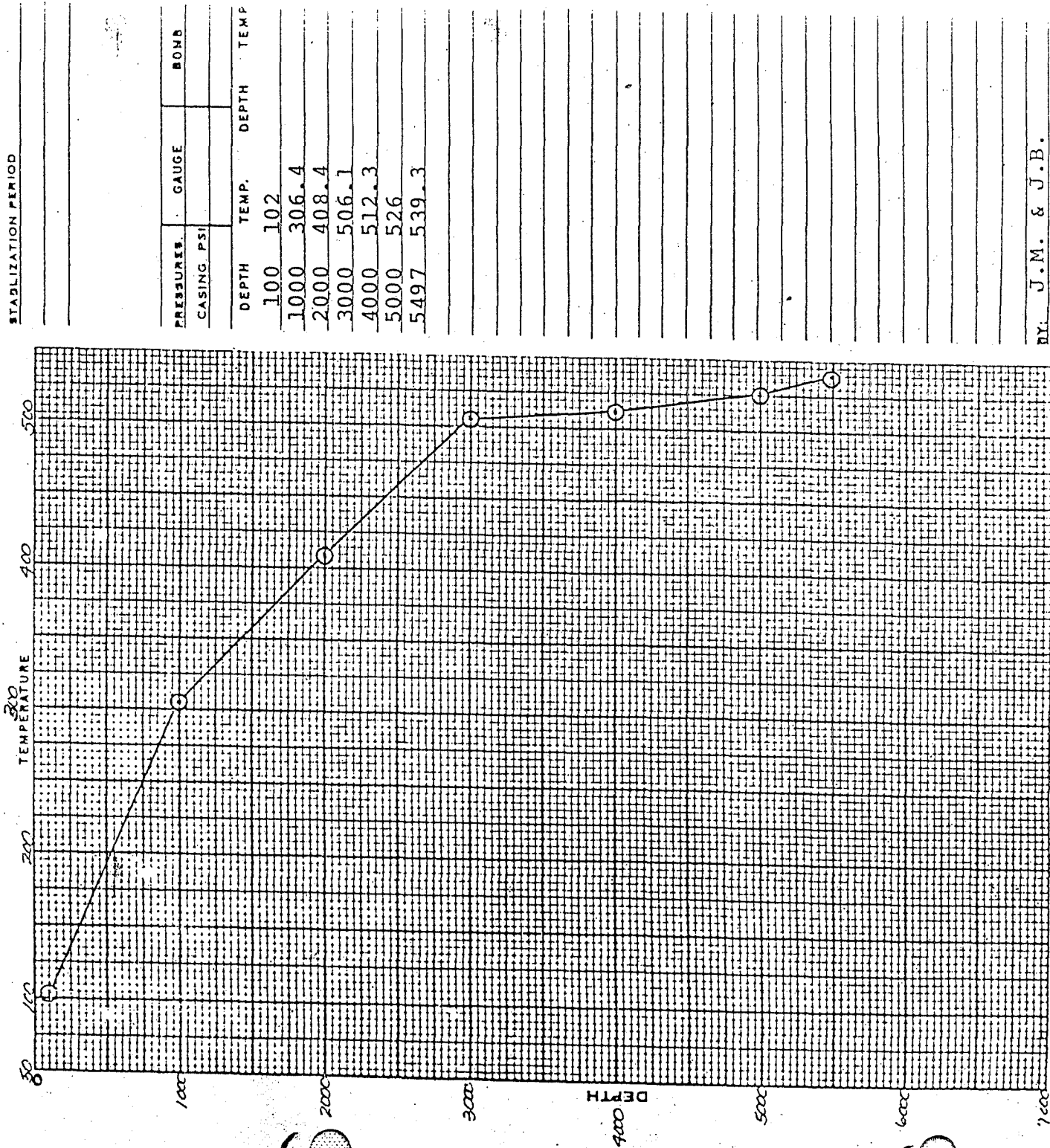
B/S-S/S-PT

OWNER Union Oil Company FIELD Valle Grande WELL NAME Baca #15  
 CASING ELEV DATE 10/23/75  
 LINER DESCRIPTION \_\_\_\_\_ ZERO POINT G.I. +6  
 \_\_\_\_\_ DEPTH 5498'

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

PURPOSE \_\_\_\_\_ MAX TEMP 539.3 °F @ 5497'

REMARKS \_\_\_\_\_



PRESSURES	GAUGE	BOND
CASING, PSI		

DEPTH	TEMP.	DEPTH	TEMP
100	102		
1000	306.4		
2000	408.4		
3000	506.1		
4000	512.3		
5000	526		
5497	539.3		

BY: J.M. & J.B.

76

UNION

DEL' PYLE

GEO THERMAL DIVISION OCT 22 1975

SUBSURFACE SURVEY  
Field Work Sheet

B15-514-PT

OWNER UNION OIL CO. FIELD Valle Grande WELL NAME BACH #15  
 CASING 20" @ 210'; 13 1/2" @ 1275' ELEV. 9117' DATE: 10-8-75  
 LINER DESCRIPTION: 9 5/8" @ 2509'; 2509 to TD=OPEN Hole ZERO POINT GL # 6'  
 DEPTH 5498'

TUBING DETAIL:

PURPOSE

REMARKS:

Element - 0-4250 PSTG SP 7198 Clock - 12 hr 15 Turn  
 ELEMENT 82° - 686°F SERIAL NO. 10055 CLOCK 12 hr - 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-0952 T-0949 DISENGAGE STYLUS P-1725 T-1725  
 WELL HEAD 603  
 PICKUP @ 5498' TIME ON BOTTOM 1105-1635 MAX. °F 537.5  
 WELL STATUS SHUT IN  
 SHUT IN: 0722 hrs 7-14-75 ON PRODUCTION:  
 RATE

Pressure				Temperature											
DEPTH	DEFL.	P-T	GRAD.	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
5498	.121	921.6		7:001	1105	5498	1.1435	535.5							
"	.121	-		-	-	-	1.1444	537.5							
25	.121	921.6		7:001	-	-	1.1444	537.5							
235	.121	-		-	-	-	-	-							
265	.121	921.6		-	-	-	-	-							
335	.121	-		7:001	-	-	-	-							
405	.121	921.6		-	-	-	-	-							
435	.121	-		-	-	-	-	-							
505	.121	921.6		7:001	-	-	-	-							
535	.121	-		-	-	-	-	-							
605	.121	921.6		-	-	-	-	-							
635	.121	-		7:001	1635	5498	1.1444	537.5							

COMMENTS:

76

union

DEL PYLE  
SEP 25 1975

GEO THERMAL DIVISION

SUBSURFACE SURVEY  
Field Work Sheet

B15-513 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15  
 CASING 20" AT 210'; 13 3/8" AT 1273' ELEV. 9117' DATE: 9/19/75  
 LINER DESCRIPTION: 9 3/8" AT 2509'; 2509-TD = OPEN HOLE ZERO POINT GL + 6'  
 DEPTH 5500'

TUBING DETAIL:

PURPOSE

REMARKS:

ELEMENT - 0-4250 PSIG SN 7198 CLOCK - 12 hr 15 TURN  
 ELEMENT - 92° - 686°F SERIAL NO. 10055 CLOCK - 12 hr 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-0958; T-1001 DISENGAGE STYLUS P-1645; T-1645  
 WELL HEAD 600 PSIG  
 PICKUP @ 5500' TIME ON BOTTOM 1207-1607 MAX. °F 538.7  
 WELL STATUS - SHUT IN  
 SHUT IN: 0722 hrs 7/14/75 ON PRODUCTION:  
 RATE

PRESSURE

TEMPERATURE

PRESSURE					TEMPERATURE												
TIME	DEPTH	DEFL.	P-F	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1104	100	.271	603.8		-0.009	1104	100	.083	108.5								
	1000	.275	612.3		-0.008	1115	1000	.683	304.1								
	2000	.290	644.1		0	1127	2000	1.030	414.2								
	3000	.305	676.8		0	1140	3000	1.338	506.7								
	4000	.328	724.6		0	1153	4000	1.360	513.2								
	5000	.362	796.6		+0.001	1205	5000	1.400	525.0								
	5500	.411	900.4		+0.001	1207	5500	1.446	538.1								
	5500	.414	906.8		+0.001	1237	5500	1.448	538.7								
	5500	.414	906.8		+0.001	1307	5500	1.448	538.7								
	5500	.414	906.8		+0.001	1337	5500	1.448	538.7								
	5500	.414	906.8		+0.001	1407	5500	1.448	538.7								
	5500	.414	906.8		+0.001	1437	5500	1.448	538.7								
	5500	.414	906.8		+0.001	1507	5500	1.448	538.7								
	5500	.414	906.8		+0.001	1537	5500	1.448	538.7								
	5500	.414	906.8		+0.001	1607	5500	1.448	538.7								

COMMENTS:

BY: JHM/JB



716

# GEO THERMAL DIVISION

## SUBSURFACE TEMPERATURE SURVEY

B15 S13 T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15  
 CASING 20" AT 210'; 13 3/8" AT 1273' ELEV. 9117' DATE: 9/18/75  
 LINEAR DESCRIPTION: 4 5/8" AT 2509'; 2509' - TD = OPEN HOLE ZERO POINT GL + 6'  
 DEPTH 5500'

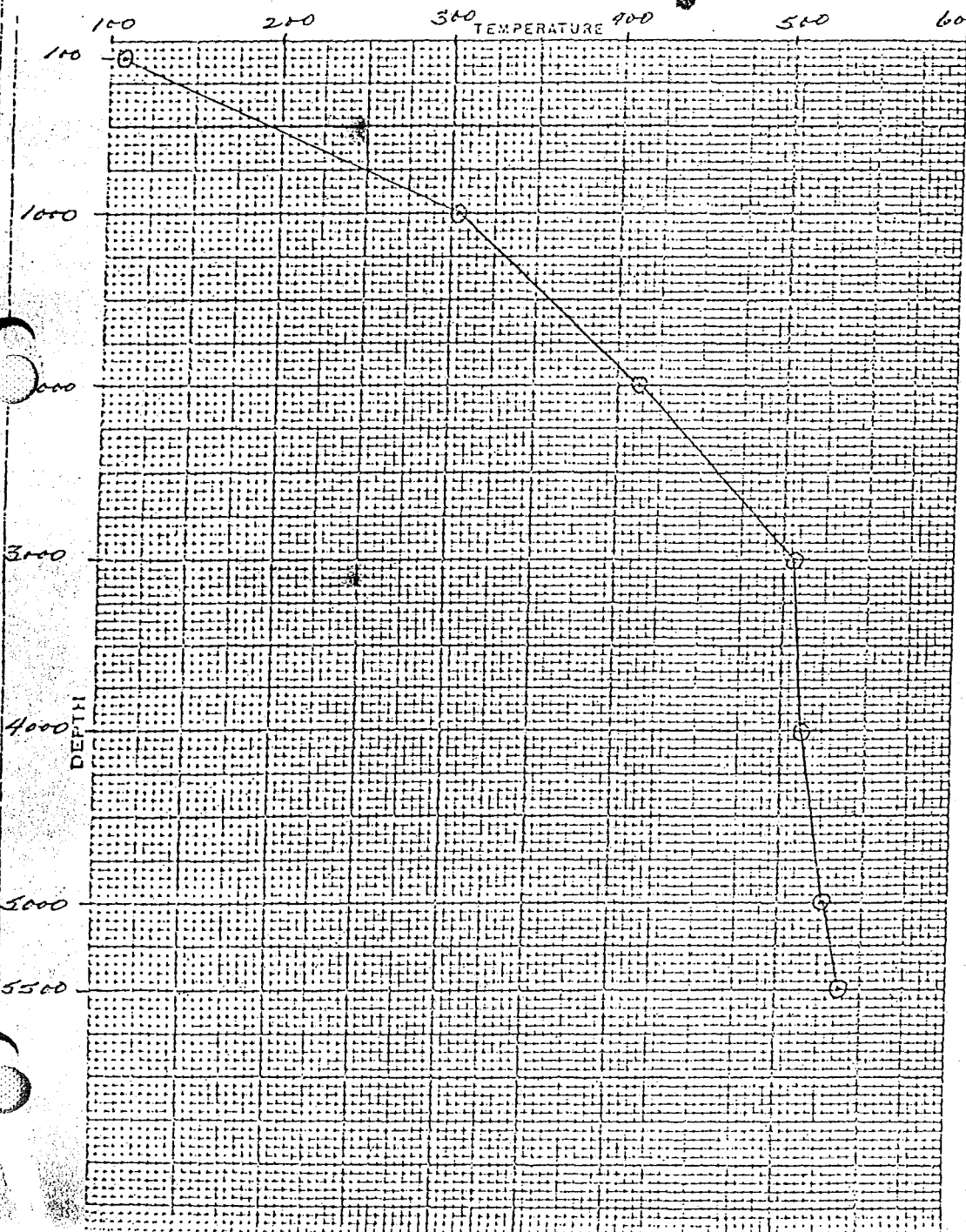
WELL DESCRIPTION:

INSTRUMENT 820-686  
 SERIAL NO 10055

PURPOSE

MAX TEMP. 538.7°F @ 5500'

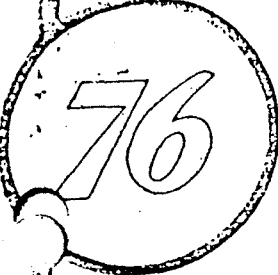
REMARKS:



DEPTH	TEMP.	DEPTH	TEMP.
100	108.5		
1000	304.1		
2000	411.2		
5000	506.7		
4000	513.2		
5000	525.0		
5500	538.1		
5500	538.7		
5500	538.7		
5500	538.7		
5500	538.7		
5500	538.7		
5500	538.7		
5500	538.7		
5500	538.7		
5500	538.7		

JM/JB





UNION

BACA-15

# GEOHERMAL DIVISION

## SUBSURFACE SURVEY

### Field Work Sheet

B15-512 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA#16  
 CASING 20" AT 210', 13 3/8" AT 1273' ELEV. 9117' DATE: 8/14/75  
 LINER DESCRIPTION: 9 5/8" AT 2509'; 2509' - TD = OPEN HOLE ZERO POINT CL + 12'  
 DEPTH 5500'

TUBING DETAIL:

PURPOSE:

REMARKS:

ELEMENT 0-4250 PSIC SN 7198 CLOCK-12 hr 15 TURN

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

ENGAGE STYLUS P-0930; T-0926 DISENGAGE STYLUS P-1737 - T-1737

WELL HEAD SEE ATTACHED CHART

PICKUP @ 5500' TIME ON BOTTOM 1000 - 1600 MAX. °F 534.4

WELL STATUS STATIC

SHUT IN: 7/14/75 0722 hrs ON PRODUCTION:

RATE

### PRESSURE

### PRESSURE CONT

### TEMPERATURE

### CON'T

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1000	5500	.411	900.4		+ .001	1653	2000	.296	650.8		0	1445	5500	1.433	534.4		
	"	.416	911.0		+ .001	1705	1000	.287	629.2		-.008	1500	"	1.433	534.4		
	"	.416	911.0		+ .001	1717	100	.280	612.3		-.008	15	"	1.433	534.4		
	"	.416	911.0		+ .001							30	"	1.433	534.4		
1100	"	.415	908.9		+ .001							45	"	1.433	534.4		
15	"	.415	908.9		+ .001							1600	"	1.433	534.4		
30	"	.416	911.0		+ .001							1615	5000	1.397	524.1		
45	"	.416	911.0		+ .001							1629	4000	1.359	512.9		
1200	"	.416	911.0		+ .001							1641	3000	1.335	505.8		
15	"	.416	911.0		+ .001	1000	5500	1.387	521.6			1653	2000	1.280	489.6		
30	"	.416	911.0		+ .001	15	"	1.433	534.4			1705	1000	1.766	330.3		
45	"	.416	911.0		+ .001	30	"	1.433	534.4			1717	100	1.180	139.1		
1300	"	.416	911.0		+ .001	45	"	1.433	534.4								
15	"	.415	908.9		+ .001	1100	"	1.433	534.4								
30	"	.415	908.9		+ .001	15	"	1.433	534.4								
45	"	.415	908.9		+ .001	30	"	1.433	534.4								
1400	"	.415	908.9		+ .001	45	"	1.433	534.4								
15	"	.414	906.8		+ .001	1200	"	1.433	534.4								
30	"	.413	904.7		+ .001	15	"	1.433	534.4								
45	"	.413	904.7		+ .001	30	"	1.433	534.4								
1500	"	.414	906.8		+ .001	45	"	1.433	534.4								
15	"	.414	906.8		+ .001	1300	"	1.433	534.4								
30	"	.414	906.8		+ .001	15	"	1.433	534.4								
45	"	.415	908.9		+ .001	30	"	1.433	534.4								
1600	"	.416	911.0		+ .001	45	"	1.433	534.4								
1615	5000	1.347	796.6		+ .001	1400	"	1.433	534.4								
1629	4000	1.330	723.8		0	15	"	1.433	534.4								
	3000	1.309	684.3		0	30	"	1.433	534.4								

COMMENTS:

BY: J. BOWEN

# GEO THERMAL DIVISION

## SUBSURFACE TEMPERATURE SURVEY

1315 512 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15  
 CASING 20" AT 210" ; 13 3/4" AT 1273' ELEV. 9117' DATE: 8/14/75  
 LINEH DESCRIPTION: 4 5/8" AT 2509' ; 2509 - TD = OPEN HOLE ZERO POINT CL + 12  
 DEPTH 5500

MOLE DESCRIPTION:

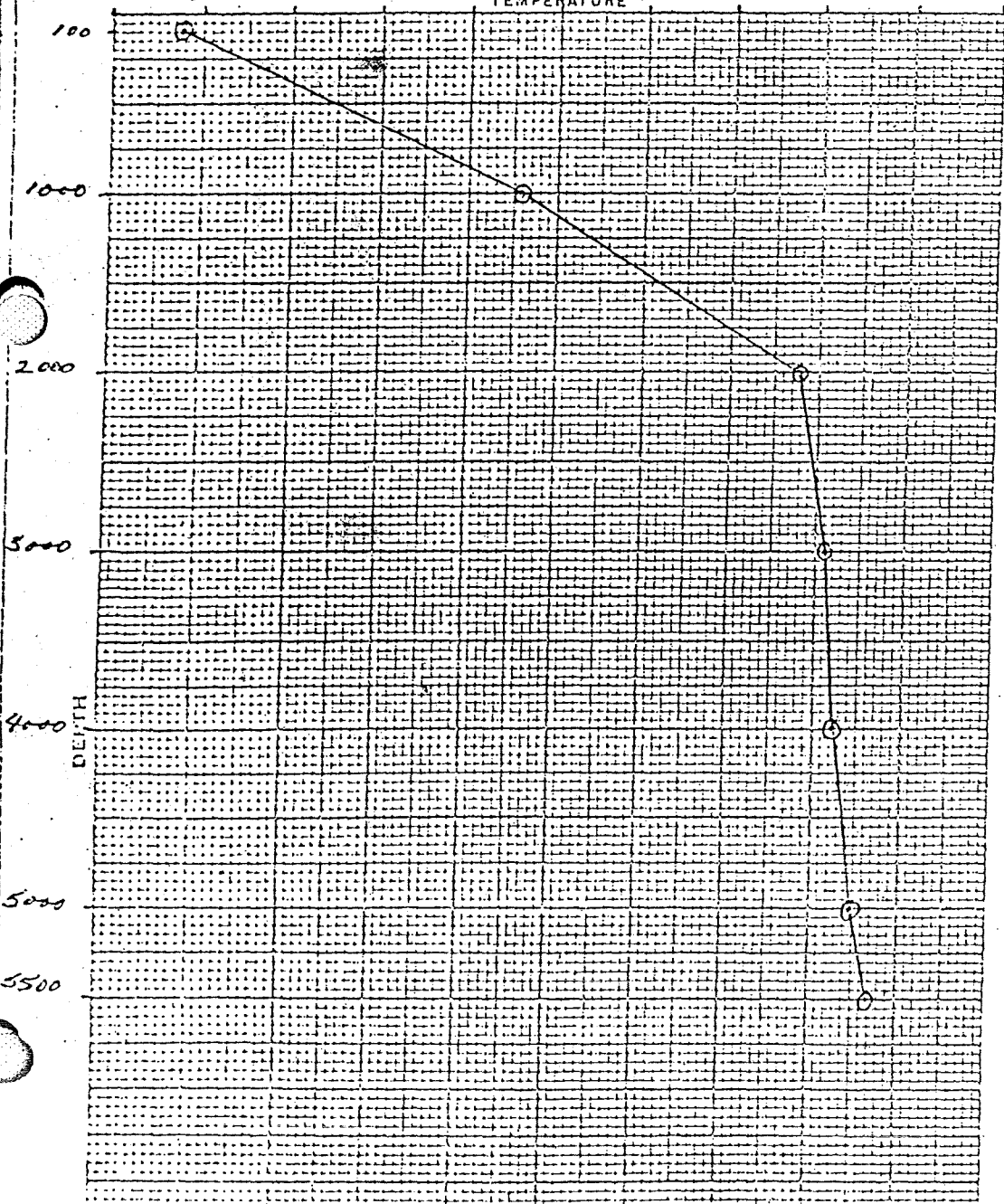
INSTRUMENT 82' - 6.86° F  
 SERIAL NO 10055

PURPOSE

MAX TEMP. 534.4°F @ 5500

REMARKS:

100 150 200 250 300 350 400 450 500 550 600 STABILIZATION PERIOD



PRESSURES	GAUGE	DOWN
CASING, PSI		
DEPTH	TEMP.	DEPTH
100	139.1	
1000	330.3	
2000	489.6	
3000	505.8	
4000	512.9	
5000	524.1	
5500	534.4	

J. BOWEN

# GEOHERMAL DIVISION

## SUBSURFACE PRESSURE SURVEY

BIS 512 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANIX WELL NAME BACA #15  
 CASING 20" AT 210' ; 13 3/8" AT 1273 ELEV. 9117' DATE 8/14/75  
 LINER DESCRIPTION: 9 5/8" AT 2509' ; 2509-TD = OPEN HOLE ZERO POINT CL + 12'  
 DEPTH 5500'

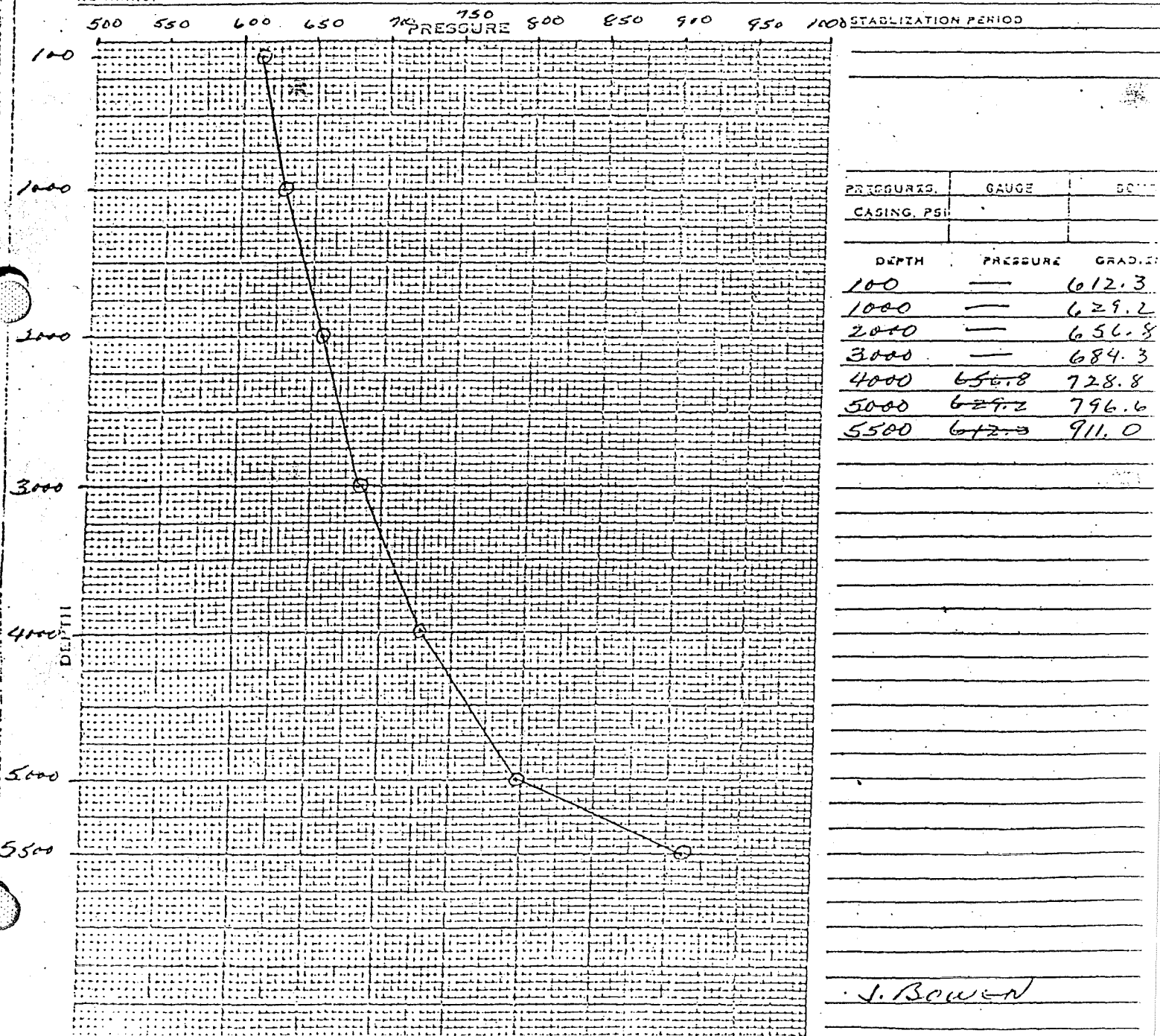
HOLE DESCRIPTION: \_\_\_\_\_

INSTRUMENT 0-4250  
 SERIAL NO 7198

PURPOSE \_\_\_\_\_

MAX. TEMP 534.4° @ 5500'

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



J. Bowen

76

union

JACK

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B15-5-11 A/T

OWNER UNION Oil Co. FIELD Valle GRANDE WELL NAME BACA # 15  
 CASING 20" AT 210'; 13 3/8" AT 1273' ELEV. 9117' DATE: 7/31/75  
 LINER DESCRIPTION: 9 3/8" AT 2509'; 2509' - TO = OPEN HOLE ZERO POINT GL 412'  
 DEPTH 5500'

TUBING DETAIL:

PURPOSE SHUT IN BUILD UP

REMARKS:

ELEMENT 0-4250 PS16 SN-7198 CLOCK-12 HR 15 TURNS  
 ELEMENT 82°-686° SERIAL NO. 10055 CLOCK 12 HR 15 TURN STABILIZATION PERIOD  
 ENGAGE SYLUS P-0857/T-0859 DISENGAGE SYLUS P-1130 T-1131  
 WELL HEAD 603 PS16 0-1000 T/L  
 PICKUP @ 5500 TIME ON BOTTOM 0931-1103 MAX. P 534.1  
 WELL STATUS STATIC  
 SHUT IN: 7/14/75 0722 HRS ON PRODUCTION:

RATE

PRESSURE

TEMPERATURE

TIME	DEPTH	DEFL.	P-T	GRAD.	CORR	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
0731-1007	5500	.404	886		+ .001	"	5500	1.432	534.1								
0830-08	5000	.354	780		+ .001	"	5000	1.392	522.9								
0930-30	5100	.362	797		+ .001	"	5100	1.394	523.2								
1030-03	5200	.372	818		+ .001	"	5200	1.403	526.0								
1142-1057	5300	.382	839		+ .001	"	5300	1.415	529.3								
1253-1103	5400	.394	864.4		+ .001	"	5400	1.425	532.1								

COMMENTS:

BY: JM HB

76

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GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

13-15 5-10 P/

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME 13ACA #15  
 CASING 20" AT 210'; 13 3/8" AT 1273' ELEV. 9117' DATE: 7/25/75  
 LINER DESCRIPTION: 9 5/8" AT 2509'; 2509' - TD = OPEN H&E ZERO POINT G4+12'  
 DEPTH 5500

TUBING DETAIL:

PURPOSE GRADIENT

REMARKS:

ELEMENT 0-4250 PSIG SN-7198 CLOCK-12 HR 15 TURN  
 ELEMENT - 82°-68° SERIAL NO. 10055 CLOCK-12 HR 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-1015; T-1019 DISENGAGE STYLUS P-1326; T-1326  
 WELL HEAD 598 PSIG 0-1000 T/C  
 PICKUP @ 5500' TIME ON BOTTOM 1235-1245 MAX. F 533.5  
 WELL STATUS STATIC  
 SHUT IN: 7/14/75 0722 HRS ON PRODUCTION:  
 RATE

PRESSURE

TEMPERATURE

TIME	DEPTH	DEFL.	P-F	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
25-1115	100	.279	620.8	0	-008	"	100	.163	134.2								
12-1000	1000	.284	631.4	.012	-008	"	1000	.780	309.6								
29-1500	1500	.290	644.0	.025	-004	"	1500	.893	370.8								
0-2000	2000	.298	661.0	.034	0	"	2000	1.270	486.7								
01-1211	3000	.312	690.7	.030	0	"	3000	1.326	503.2								
2-1222	4000	.333	735.2	.044	0	"	4000	1.350	510.2								
24-1231	5000	.369	811.4	.076	+001	"	5000	1.385	520.6								
15-1245	5500	.416	911.0	.199	+001	"	5500	1.430	533.5								

COMMENTS:

BY: JM JB

# 76

## GEO THERMAL DIVISION SUBSURFACE PRESSURE SURVEY

B-15 5-10 P

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BARRA #15

CASING 20" AT 310', 13 3/8" AT 1273' ELEV. 9117 DATE 7/25/75

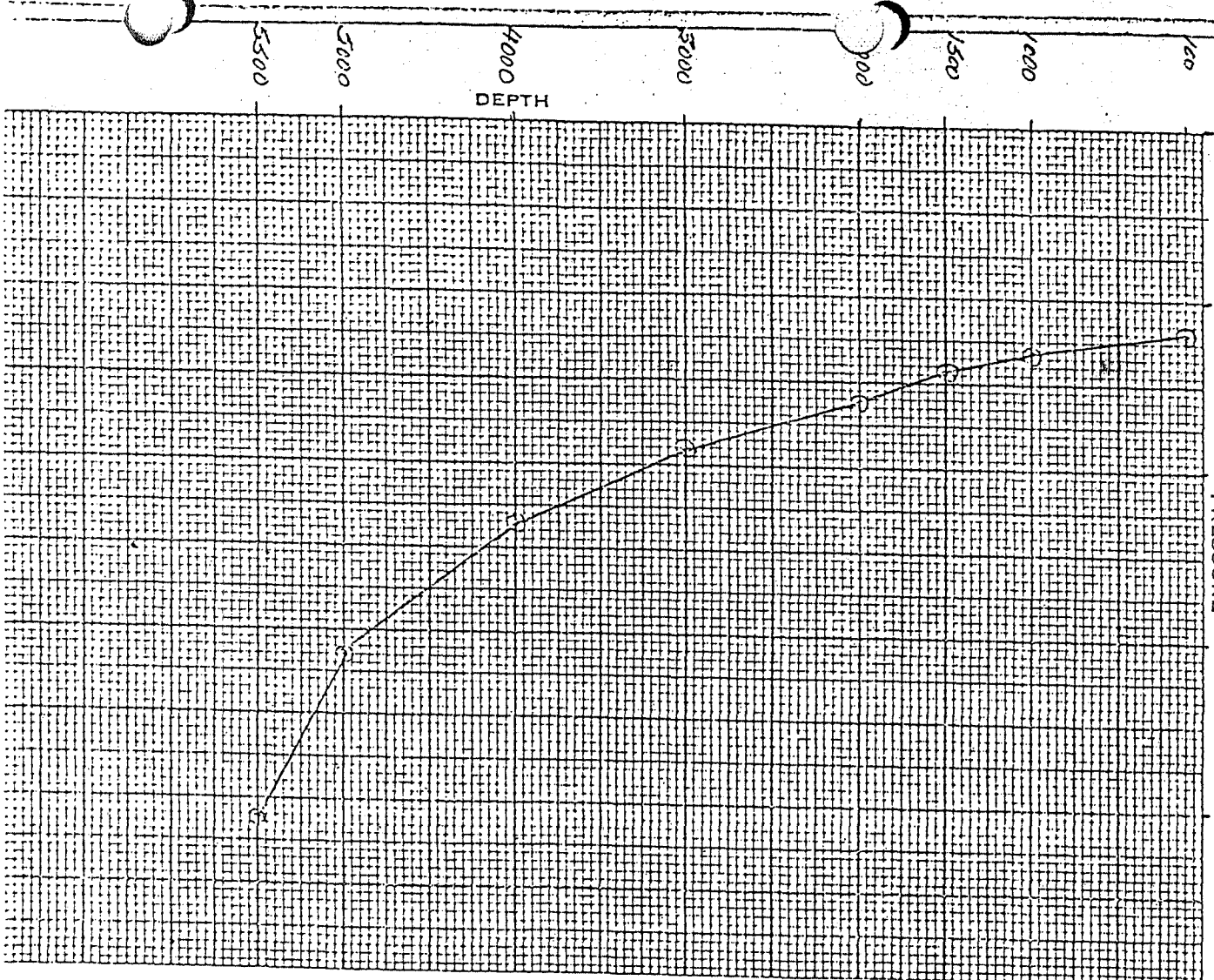
LINER DESCRIPTION: 9 5/8" AT 2509', 2509' TD = OPEN HOLE TERO POINT 62 + 12'

DEPTH 5500

HOLE DESCRIPTION:  
INSTRUMENT 0-4250 PS  
SERIAL NO 7198

PURPOSE GRADIENT MAX TEMP 53.5°F @ 5500'

REMARKS:  
1000 STABILIZATION PERIOD



PRESSURES	GAUGE	BOND
CASING, PSI	558	

DEPTH	PRESSURE	GRADIENT
100	620.8	0
1000	631.4	.012
1500	644.0	.025
2000	661.0	.034
3000	690.2	.030
4000	735.2	.044
5000	811.4	.076
5500	911.2	.199

JM + JTB

NY:

# GEO THERMAL DIVISION

## SUBSURFACE TEMPERATURE SURVEY

B-15 S-10 T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACH #15  
 CASING 20" AT 210'; 13 3/4" AT 1273' ELEV. 9117 DATE: 7/25/75  
 LINER DESCRIPTION: 9 5/8" AT 2509'; 2509-TD=OPEN HOLE ZERO POINT C.L.H.12  
 DEPTH 5500'

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

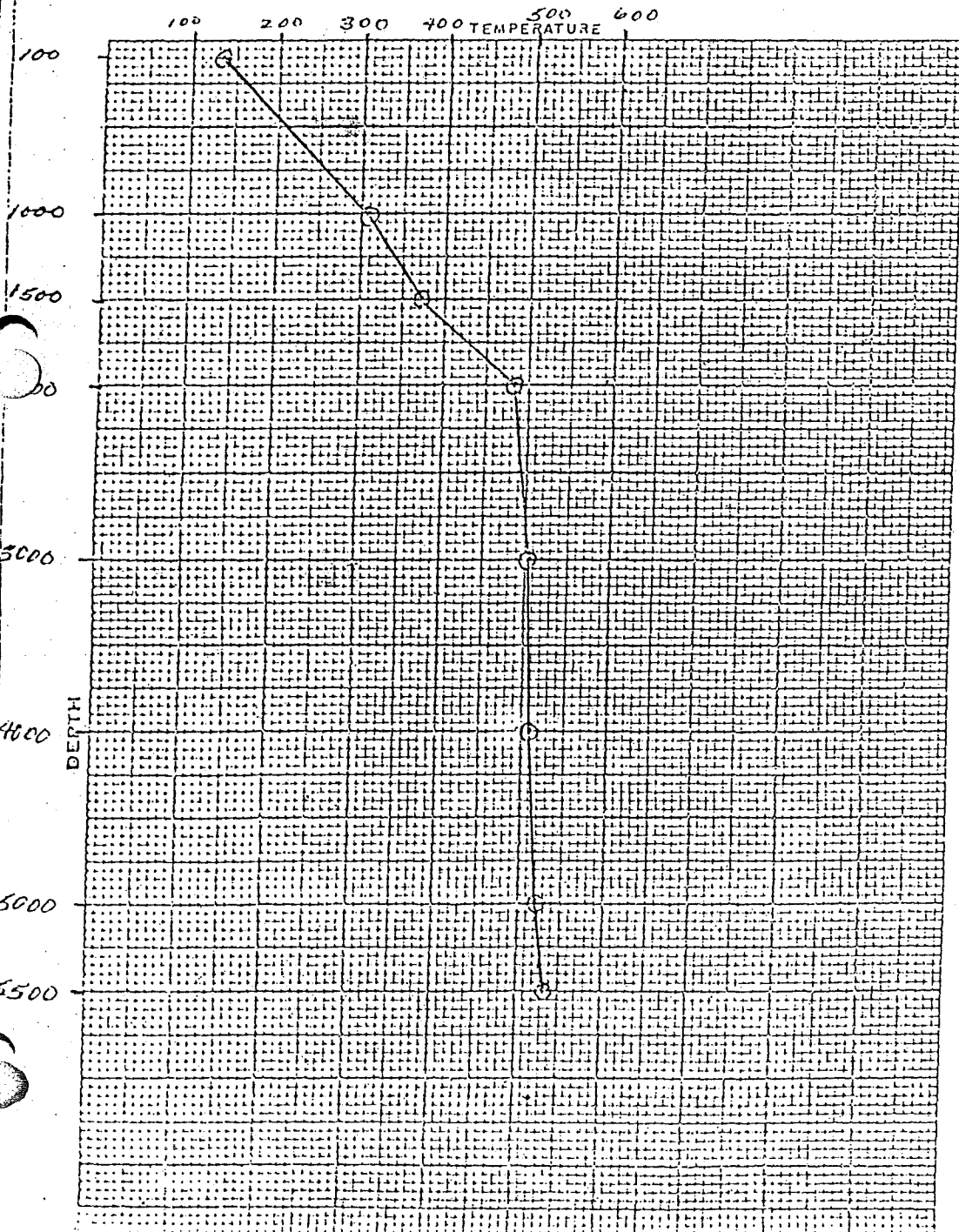
INSTRUMENT 82° - 686° FAH  
 SERIAL NO 10055

PURPOSE GRADIENT

MAX TEMP. 533.5°F @ 5500'

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

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



PRESSURE	GAUGE	ROWS	
CASING, PSI	598		
DEPTH	TEMP.	DEPTH	TEMP.
100	134.2		
1000	309.5		
1500	370.8		
2000	486.7		
3000	503.2		
4000	510.2		
5000	520.4		
5500	533.5		

J.M. JB

76

UNION

Jack

GEO THERMAL DIVISION

SUBSURFACE SURVEY  
Field Work Sheet

B# 15-59-P/T

OWNER UNION Oil CO. Calif. FIELD Valle Grande

WELL NAME BACA # 15

CASING 20" @ 210'; 13 3/4" @ 1273' ELEV. ?

DATE: 7/23/75

LINER DESCRIPTION: 9 7/8" @ 2509'  
2509 - T.D. OPEN HOLE

ZERO POINT GL + 12'  
DEPTH 5500'

TUBING DETAIL:

PURPOSE Shut IN build up

REMARKS:

P-0-4250 7198 12 hr. 13375 L 15

ELEMENT T-82-686 SERIAL NO. 10055 CLOCK 12 hr. 1409 L TURN 15 STABILIZATION PERIOD

ENGAGE STYLUS T-1202/P-1207 DISENGAGE STYLUS P&T-1434

WELL HEAD 599

PICKUP @ 5500 TIME ON BOTTOM 1236-1336 MAX. F 530.69

WELL STATUS SHUT IN

SHUT IN: 7/14/75 0722 hrs. 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
12	5500	.415	906.8		+001	1236	"	1.420	530.7								
13	5500	.417	906.8		+001	1306	"	1.420	530.7								
13	5500	.415	906.8		+001	1336	"	1.420	530.7								

COMMENTS:

BY: T H L R



JACK

UNION

GEO THERMAL DIVISION

SUBSURFACE SURVEY  
Field Work Sheet

BH15-58-P1T

76

OWNER UNION OIL CO. CALIF FIELD NAME GRANDE WELL NAME BH15-58-P1T  
 CASING 2 7/8" @ 210' 1 3/4" @ 210' ELEV. ? DATE: 7/13/75  
 LINER DESCRIPTION: 9 3/4" @ 250' ZERO POINT GLT 12'  
250' - T.D. OPEN HOLE DEPTH 5500'

TUBING DETAIL:

PURPOSE SHUT IN BUILD UP

REMARKS:

P-0-4250 7195 1212 13375 1 15  
 ELEMENT T-88-286 SERIAL NO. 10055 CLOCK 212140916 TURN 5 STABILIZATION PERIOD

ENGAGE SYLUS P-814 T-814 DISENGAGE SYLUS P-1015 T-1015

WELL HEAD 578 0-00076

PICKUP @ 5500 TIME ON BOTTOM 0921-1091 MAX. °F 527

WELL STATUS STATIC ALMOST

SHUT IN: 7/14/75 @ 792 HRS ON PRODUCTION:

RATE

PRESSURE

TEMPERATURE

PRESSURE					TEMPERATURE											
TIME	DEPTH	DEFL.	P-T	GRAD.	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
21	5500	.376	526.6		7.001	"	5500	1.405	526.4							
0	5500	.401	529.2		7.001	"	5500	1.407	527							
10-1	5500	.401	529.2		7.001	"	5500	1.407	527							

COMMENTS:

76

UNION

J HARTZ

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B# 15-57-P/T

OWNER UNION Oil Co. of Calif. FIELD Valle Grande

WELL NAME BACA #15

CASING 20" @ 210'; 13 7/8" @ 1273' ELEV. ?

DATE: 7/16/75

LINER DESCRIPTION: 9 5/8" @ 2509'  
2509' - T.D. - OPEN HOLE

ZERO POINT GL + 12'

DEPTH

TUBING DETAIL:

PURPOSE Shut in Build up

REMARKS:

P-0-4250 PS16 7198 12hr - 13375L 15

ELEMENT T-82-686°F SERIAL NO. 10055 CLOCK 12hr 14091L TURN 15 STABILIZATION PERIOD

ENGAGE STYLUS P-1038 T-1423 DISENGAGE STYLUS P-1035 T-1423

WELL HEAD 578 PS16

PICKUP @ 5500' TIME ON BOTTOM 1205-1305 MAX. °F 518.2

WELL STATUS SHUT IN

SHUT IN: 7/14/75 @ 0722 HRS ON PRODUCTION:

RATE

PRESSURE

TEMPERATURE

TIME	DEPTH	DEFL.	P-#	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
57-107	100	.260	581	0	0	"	100	.303	181	0							
01	1000	.262	585	.004	0	"	1000	.820	347	.184							
20	2000	.265	591	.006	0	"	2000	1.273	488	.191							
31-141	3000	.279	621	.030	0	"	3000	1.293	493	.005							
42-1152	4000	.299	663	.042	0	"	4000	1.313	499	.006							
54-1204	5000	.332	733	.070	0	"	5000	1.343	508	.009							
1205	5500	.382	839	.212	+ .001	"	5500	1.369	516	.016							
1235	5500	.392	839	-	+ .001	"	5500	1.376	518	-							
1305	5500	.382	839	-	+ .001	"	5500	1.379	518.2	-							

COMMENTS:

BY: JM JB HB

76

# GEO THERMAL DIVISION

## SUBSURFACE PRESSURE SURVEY

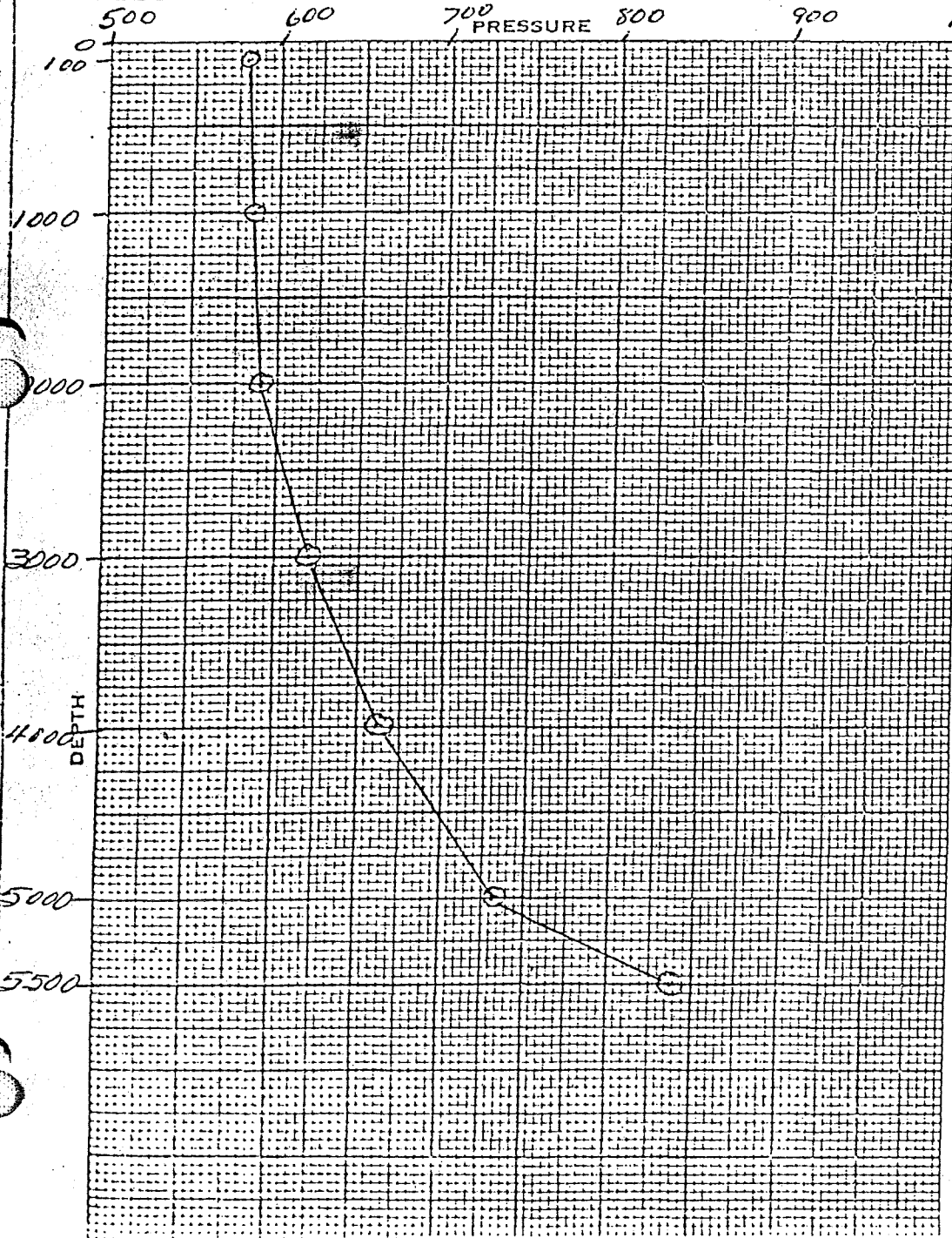
B#15-57-P1T

OWNER UNION OIL CO. OF CALIF. FIELD VALLE GRANDE WELL NAME BACA #15  
 CASING 20" @ 210' ; 13 3/8" @ 1273' ELEV. ? DATE: 7/16/75  
 LINER DESCRIPTION: 9 5/8" @ 2509' ZERO POINT GL+12'  
2509' - T.D. OPEN HOLE DEPTH 5509'

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

PURPOSE \_\_\_\_\_ MAX TEMP 518.2 °F @ 5500

REMARKS:



STABILIZATION PERIOD		
PRESSURE	GAUGE	BOI'S
CASING, PSI	578	100' 580

DEPTH	PRESSURE	GRADIENT
100	581	0
1000	585	.004
2000	591	.006
3000	621	.030
4000	663	.042
5000	733	.070
5500*	839	.212

NOTE: MAXIMUM PSII

BY: J.M. G.P. H.B.

576

# GEO THERMAL DIVISION

## SUBSURFACE TEMPERATURE SURVEY

B#15-57-71r

OWNER UNION OIL CO. OF CALIF FIELD VALLE GRANDE WELL NAME BRA#15  
 CASING 20" @ 210' ; 13 3/4" @ 1273' ELEV. ? DATE: 7/16/75  
 LINER DESCRIPTION: 9 5/8" @ 2509' ZERO POINT GLT 12'  
2509' - T.D. - OPEN HOLE DEPTH 5509'

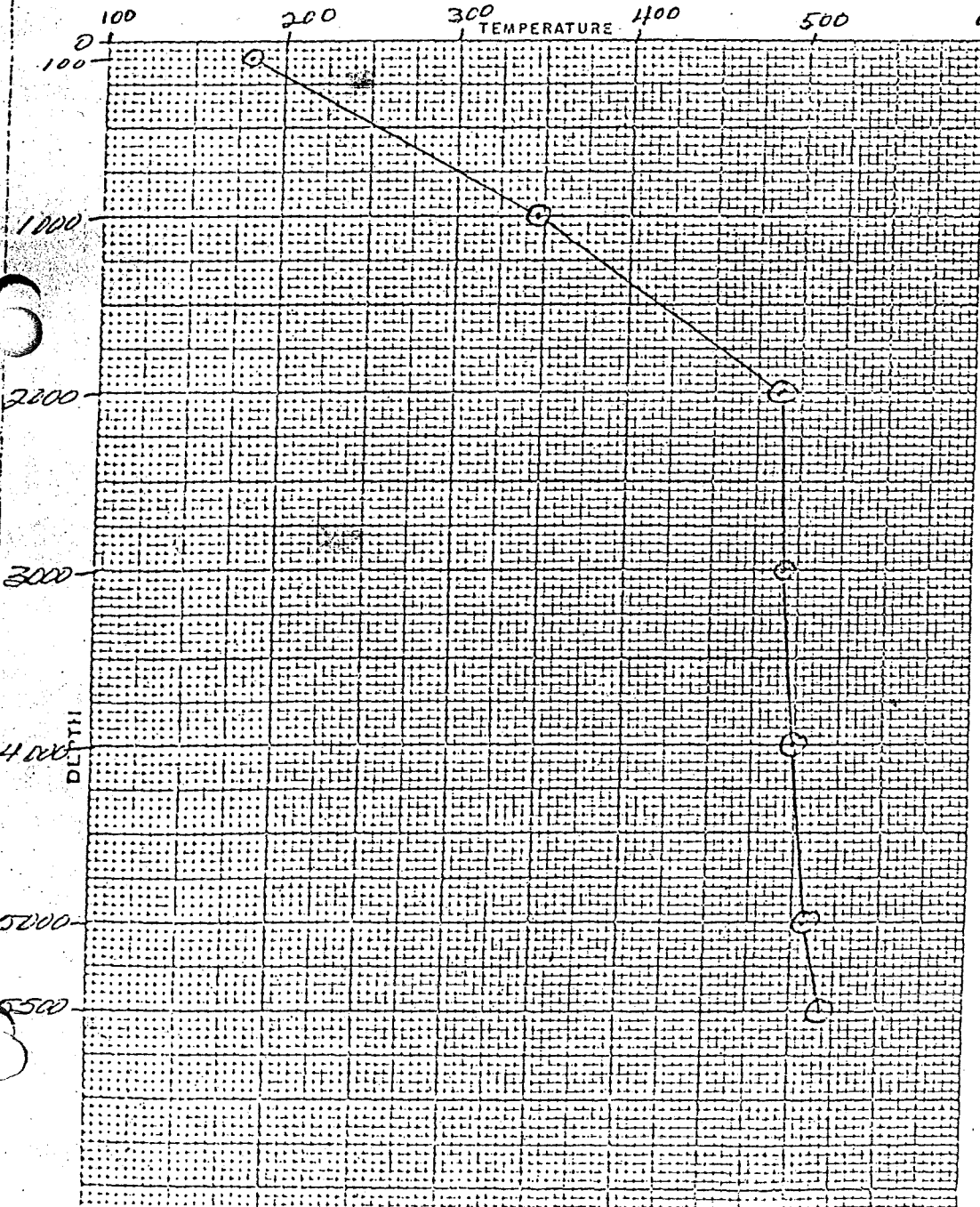
HOLE DESCRIPTION:

INSTRUMENT 820-69601F-FAR.  
 SERIAL NO 10055

PURPOSE

MAX TEMP. 518.2° F @ 5500'

REMARKS:



60' STABILIZATION PERIOD

PRESSURES,	GAUGE	BOHO
CASING, PSI	578	100' 53'

DEPTH	TEMP.	DEPTH	TEMP.
100	181		
1000	247		
2000	433		
3000	493		
4000	499		
5000	508		
5500	518.2		

NOTE: MAXIMUM OF

# 76

# Union

## GEOHERMAL DIVISION

### SUBSURFACE SURVEY

### Field Work Sheet

B-15 S-6 PIT

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15  
 CASING 20" AT 210' 13 3/8" AT 1273' ELEV. ? DATE: 7/15/75  
 LINER DESCRIPTION: 9 3/8" AT 2509' ; 2509' - TD OPEN HOLE ZERO POINT CL+12'  
 DEPTH 5500'

TUBING DETAIL:

PURPOSE SHUT IN BUILD UP

REMARKS:

ELEMENT- 0-4250 PSIG 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-1000 DISENGAGE STYLUS P-1540 ; T-1540  
 WELL HEAD  
 PICKUP @ 5500' TIME ON BOTTOM 1030 - 1530 MAX. °F  
 WELL STATUS STATIC  
 SHUT IN: 7/14/75 0722 HRS 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
1030	5500	.366	805.1		+ .001	1030	5500	1.328	503.8								
1100	"	.366	805.1		+ .001	1100	"	1.329	504.1								
1150	"	.366	805.1		+ .001	1150	"	1.330	504.4								
1200	"	.366	805.1		+ .001	1200	"	1.331	504.7								
1250	"	.366	805.1		+ .001	1250	"	1.333	505.2								
1300	"	.366	805.1		+ .001	1300	"	1.335	505.8								
1330	"	.366	805.1		+ .001	1330	"	1.337	506.4								
1400	"	.366	805.1		+ .001	1400	"	1.338	506.7								
1430	"	.366	805.1		+ .001	1430	"	1.340	507.3								
1500	"	.366	805.1		+ .001	1500	"	1.342	507.9								
1530	"	.367	807.2		+ .001	1530	"	1.344	508.5								

COMMENTS:

BY: JM JS HTB

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# GEOHERMAL DIVISION

SUBSURFACE SURVEY  
Field Work Sheet

B-16 S-5 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACH #15  
 CASING 20" AT 210' 13 3/8" AT 1273' ELEV. ? DATE: 7/14/75  
 LINER DESCRIPTION: 9 5/8" AT 2509' ; 2509 - TD OPEN HOLE ZERO POINT 62 + 12'  
 DEPTH 5500'

TUBING DETAIL:

PURPOSE SHUT IN BOTTOM HOLE BUILD UP

REMARKS:

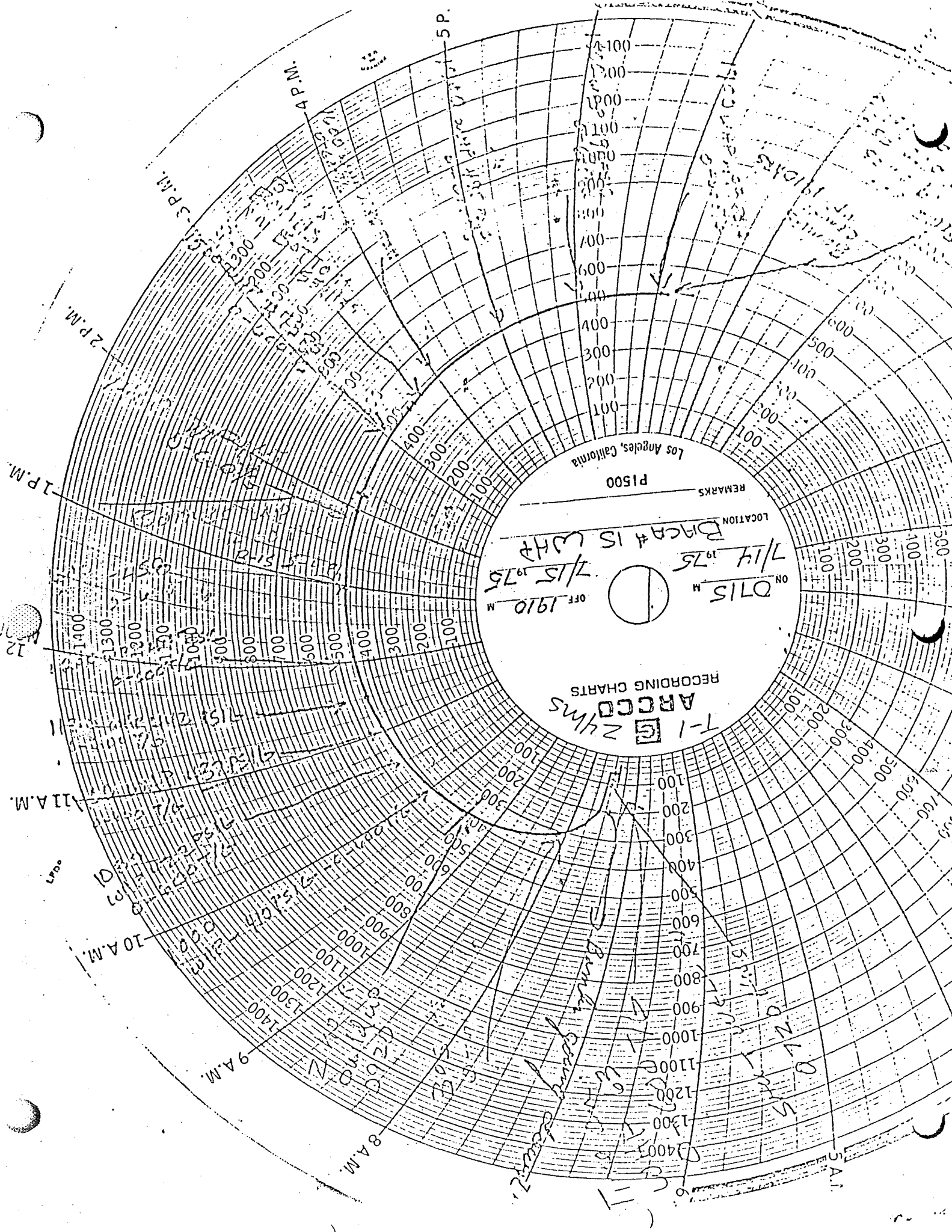
ELEMENT - 0-4250 PSIG SN 719R CLOCK - 12HR IS TURN  
 ELEMENT - 82°-656°F SERIAL NO. 10055 CLOCK - 12HR IS TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-1509; T-1513 DISENGAGE STYLUS P-1938; T-1940  
 WELL HEAD SEE CHART  
 PICKUP @ 5500' TIME ON BOTTOM 1540-1910 MAX. °F 477.2°F  
 WELL STATUS STATIC  
 SHUT IN: 7/14/75 0722 HRS ON PRODUCTION:  
 RATE

PRESSURE

TEMPERATURE

PRESSURE					TEMPERATURE											
DEPTH	DEFL.	P. F.	GRAD.	ID	TIME	DEPTH	DEFL.	P. T	GRAD.	ID	TIME	DEPTH	DEFL.	P. T	GRAD.	ID
5500	.318	703.4		0	1540	5500	1.211	469.2								
1610	.320	707.6		0	1610	"	1.214	470.1								
1640	.321	709.7		0	1640	"	1.218	471.0								
1710	.322	711.9		0	1710	"	1.221	472.2								
1740	.323	714.0		0	1740	"	1.225	473.1								
1810	.324	716.1		0	1810	"	1.229	474.6								
1840	.325	718.2		0	1840	"	1.235	476.3								
1910	.326	720.3		0	1910	"	1.238	477.2								

COMMENTS:



ARCCO T-1 RECORDING CHARTS

Los Angeles, California

P1500

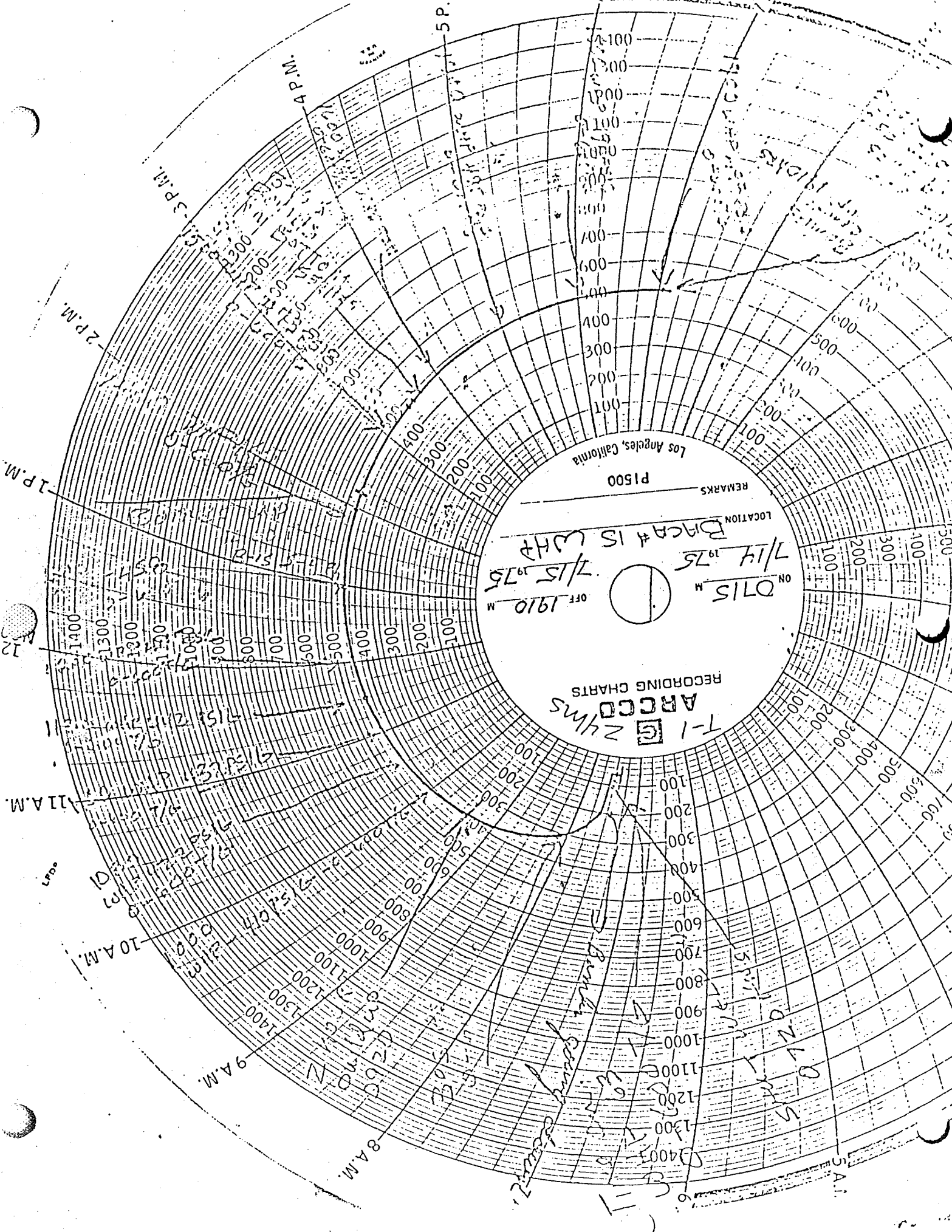
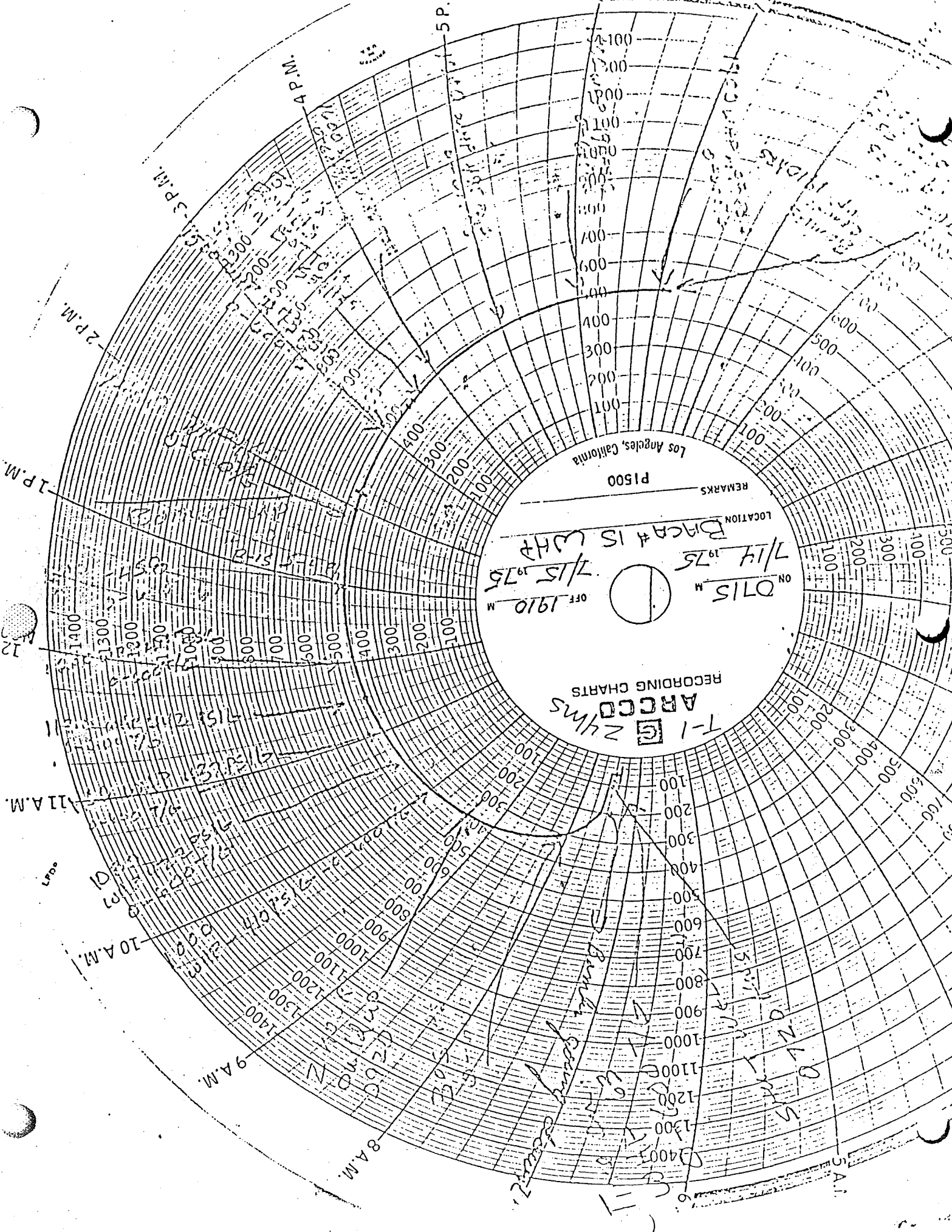
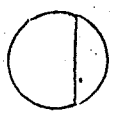
REMARKS

LOCATION

BACA # 15 WHP

ON 7/15 1975

OFF 1910 M



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UNION

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B-15 S-4 T

OWNER UNION OIL COMPANY FIELD VALLE GRANISE WELL NAME BACA #15  
 CASING 20" AT 210" ; 13 3/8" AT 1273' ELEV. ? DATE: 7/14/75  
 LINER DESCRIPTION: 9 5/8" AT 2509' ; 2509 - TD OPEN HOLE ZERO POINT GL+12'  
 DEPTH 5500'

TUBING DETAIL:

PURPOSE SHUT IN BUILD UP

REMARKS:

ELEMENT- 0-4250 PSIC SN-7198 CLOCK-12 HR 15 TURN  
 ELEMENT- 82°-686° SERIAL NO. 10055 CLOCK-12 HR 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-0650 ; T-0653 DISENGAGE STYLUS P-1429 ; T-1431  
 WELL HEAD SEE CHART  
 PICKUP @ 5500' TIME ON BOTTOM 0730-1400 MAX. °F  
 WELL STATUS STATIC  
 SHUT IN: 7/14/75 0722 HRS ON PRODUCTION:  
 RATE

TEMPERATURE

TEMPERATURE

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
0730	5500	1.031	414.5			1030	5500	1.137	446.8								
0731	"	1.036	415.9			1100	"	1.147	449.9								
0732	"	1.040	417.2			1130	"	1.157	452.9								
0733	"	1.045	418.7			1200	"	1.163	454.7								
0734	"	1.048	419.6			1230	"	1.170	456.5								
0735	"	1.050	420.3			1300	"	1.178	459.3								
0736	"	1.053	421.2			1330	"	1.184	461.1								
0737	"	1.055	421.7			1400	"	1.189	462.7								
0738	"	1.057	422.4														
0739	"	1.058	422.5														
0740	"	1.059	422.9														
0745	"	1.066	425.1														
0750	"	1.070	426.3														
0755	"	1.075	427.9														
0800	"	1.077	428.5														
0805	"	1.079	429.1														
0810	"	1.082	430.0														
0815	"	1.084	430.6														
0820	"	1.088	431.8														
0825	"	1.090	432.5														
0830	"	1.092	433.0														
0845	"	1.099	435.2														
0900	"	1.105	437.0														
0915	"	1.112	439.2														
0930	"	1.118	441.0														
0945	"	1.122	442.2														
	"	1.127	443.7														
	"	1.132	445.2														

COMMENTS:

BY: JM JB HB



76

U. 11



GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B-15 S-4 P

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15  
 CASING 210" = 20" ; 13 3/8" AT 1273' ELEV. ? DATE: 7/14/75  
 LINER DESCRIPTION: 9 5/8" AT 2509' ; 2509' - TD - OPEN HOLE ZERO POINT 62112"  
 DEPTH 5500'

TUBING DETAIL:

PURPOSE SHUT IN BUILD UP

REMARKS:

ELEMENT 0-4250 PSIG SN 7198 CLOCK - 12 hr 15 TURN  
 ELEMENT 82° - 686° SERIAL NO. 10055 CLOCK - 12 hr 15 TURN STABILIZATION PERIOD  
 ENGAGE STYLUS P-0650 ; T-0653 DISENGAGE STYLUS P-1429 ; T-1431  
 WELL HEAD SEE CHART  
 PICKUP @ 5500' TIME ON BOTTOM 0730 - 1400 MAX. °F 462.6  
 WELL STATUS STATIC  
 SHUT IN: 7/14/75 0722 HRS ON PRODUCTION:  
 RATE

PRESSURE

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
0750	5500	.170	383		0	1030	5500	.277	616.5		0						
0800	"	.171	385		0	1100	"	.284	631.4		0						
0810	"	.172	387.4		0	1130	"	.290	644.0		0						
0820	"	.173	390		0	1200	"	.294	652.5		0						
0734	"	.175	394.2		0	1230	"	.297	659.0		0						
0735	"	.177	399		0	1300	"	.301	667.4		0						
0736	"	.180	405.4		0	1330	"	.305	676.0		0						
0737	"	.183	412.2		0	1400	"	.309	684.3		0						
0738	"	.185	416.7		0												
0739	"	.187	421.2		0												
0740	"	.189	426.0		0												
0745	"	.195	437.2		0												
0750	"	.202	455.0		0												
0755	"	.209	471.0		0												
0800	"	.214	482.0		0												
0805	"	.219	493.2		0												
0810	"	.222	500.0		-.001												
0815	"	.226	508.5		-.001												
0820	"	.229	515.0		-.001												
0825	"	.232	521.2		-.001												
0830	"	.235	527.5		-.001												
0845	"	.244	547.0		-.001												
0900	"	.251	561.4		-.001												
0915	"	.258	576.3		-.001												
0930	"	.260	580.5		0												
0945	"	.264	589.0		0												
1000	"	.268	597.5		0												
1015	"	.273	608.0		0												

COMMENTS:

BY: JM JB HB

## SURFACE PRESSURE BUILD UP

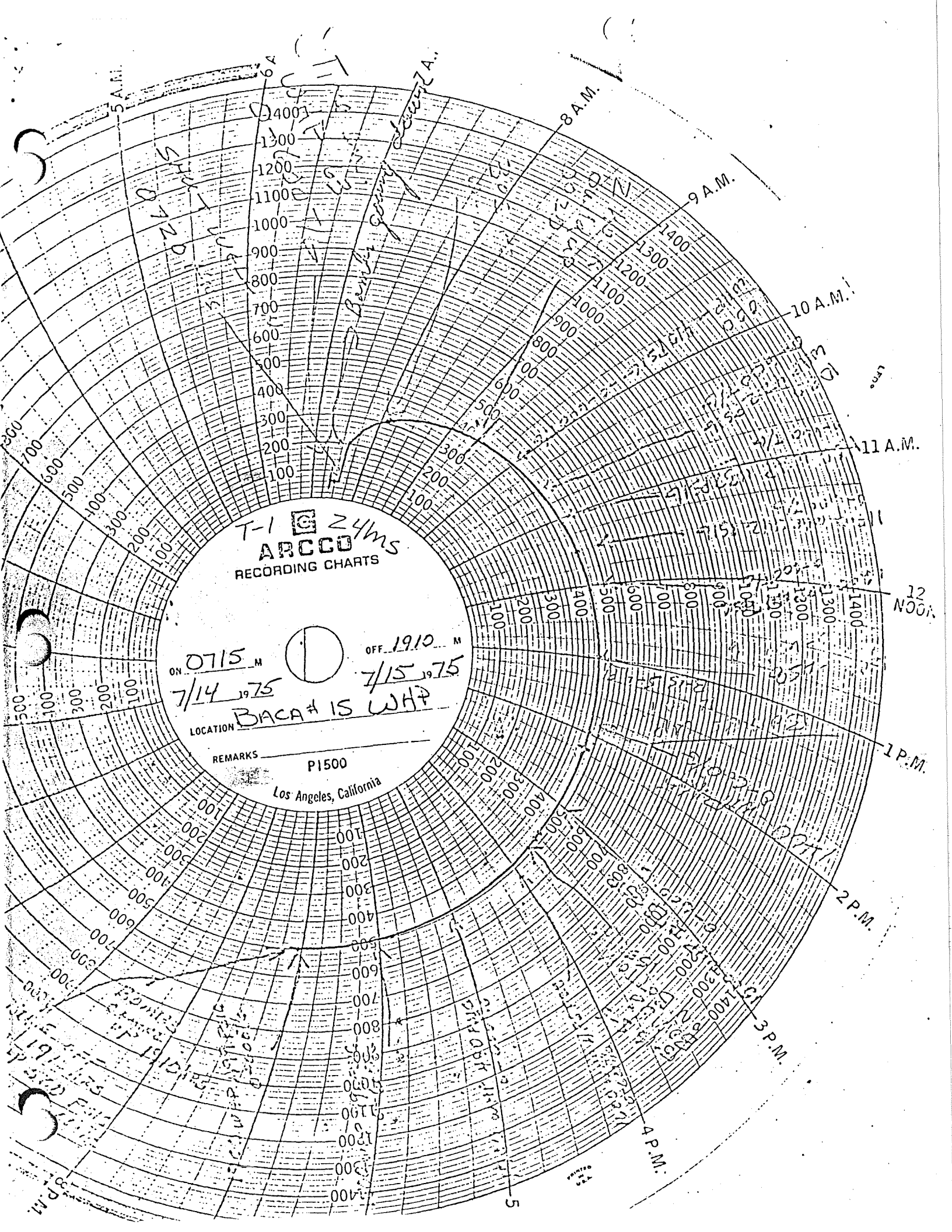
$P_{wh} = 63 \text{ PSIG}$       2 PHASE =  $P_1 - 49 \text{ PSIG}$      $\Delta P = 9.8 \text{ PSI}$   
 $T_{wh} = 320^\circ \text{ F}$

AVERAGE  $\text{H}_2\text{O}$  INJ. 110-160 GPM

TIME SHUT IN: 0722 HRS

$\Delta t$ hr. MIN. SEC.	$P_{wh}$ PSIG	$\Delta t$ hr. MIN	$P_{wh}$ PSIG
0722 : 10	80	0937 : 00	385
0722 : 20	110		
0722 : 30	142		
0722 : 40	171		
0722 : 50	181		
0723 : 00	192		
0724 : 00	198		
0725 : 00	205		
0724 : 00	211		
0727 : 00	215		
0728 : 00	222		
0729 : 00	224		
0730 : 00	231		
0732 : 00	236		
0737 : 00	242		
0742 : 00	259		
0747 : 00	271		
0752 : 00	285		
0757 : 00	293		
0802 : 00	299		
0807 : 00	306		
0812 : 00	312		
0817 : 00	319		
0822 : 00	324		
0837 : 00	331		
0852 : 00	346		
0907 : 00	355		

JIM JG HB



T-1  24ms  
ARCCO  
RECORDING CHARTS

ON 0715 M OFF 1910 M  
7/14, 1975 7/15, 1975

LOCATION BACA # IS WHP

REMARKS P1500  
Los Angeles, California

5 A.M.

8 A.M.

9 A.M.

10 A.M.

11 A.M.

12 NOON

1 P.M.

2 P.M.

3 P.M.

4 P.M.

5

SHAND  
WHP

Barley  
Gardner

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# GEO THERMAL DIVISION

SUBSURFACE SURVEY  
Field Work Sheet

B-15 S-3 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15  
 CASING 20" AT 210' 1 3/8" AT 1273' ELEV. ? DATE: 7/3/75  
 LINER DESCRIPTION: 9 5/8" AT 2509' ; 2509' - 5505' = OPEN HOLE ZERO POINT 6.2 + 12'  
 DEPTH 5505'

TUBING DETAIL:

PURPOSE FLOWING SURVEY

REMARKS:

ELEMENT - 0-4250 PSIC SN 7198 CLOCK 13375.6 15 TURN

ELEMENT 82-686 °F SERIAL NO. 10055 CLOCK 14091.6 15 TURN STABILIZATION PERIOD

ENGAGE STYLUS P-1025 ; T-1020 DISENGAGE STYLUS P-1331 ; T-1333

WELL HEAD 79 PSIC 0/1000 T/C

PICKUP @ 4100' TIME ON BOTTOM 1220-1227 MAX. °F 398.6°

WELL STATUS FLOWING SINCE 0950 HRS 6/27/75

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
	0	.036	81.1	0		"	0	.770	331.6	0							
	500	.036	81.1	0		"	500	.805	342.6	.022							
	1000	.036	81.1	0		"	1000	.836	352.5	.020							
	1500	.066	148.6	.1135	*	"	1500	.876	365.3	.024							
	2000	.075	168.9	.040		"	2000	.896	371.7	.014							
	2500	.082	184.7	.032		"	2500	.925	381.0	.019							
	3000	.083	186.9	.004		"	3000	.950	389.0	.016							
	3500	.090	202.7	.031		"	3500	.965	393.8	.010							
	4000	.093	209.5	.014		"	4000	.979	398.3	.009							
	4106	.094	211.7	.022		"	4106	.980	398.6	.003							

COMMENTS: CHARTS VERY DIFFICULT TO READ DUE TO VIBRATION  
\* 1500' EXTREMELY DIFFICULT TO READ

BY: J.M. JB. HA

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GEO THERMAL DIVISION  
SUBSURFACE TEMPERATURE SURVEY

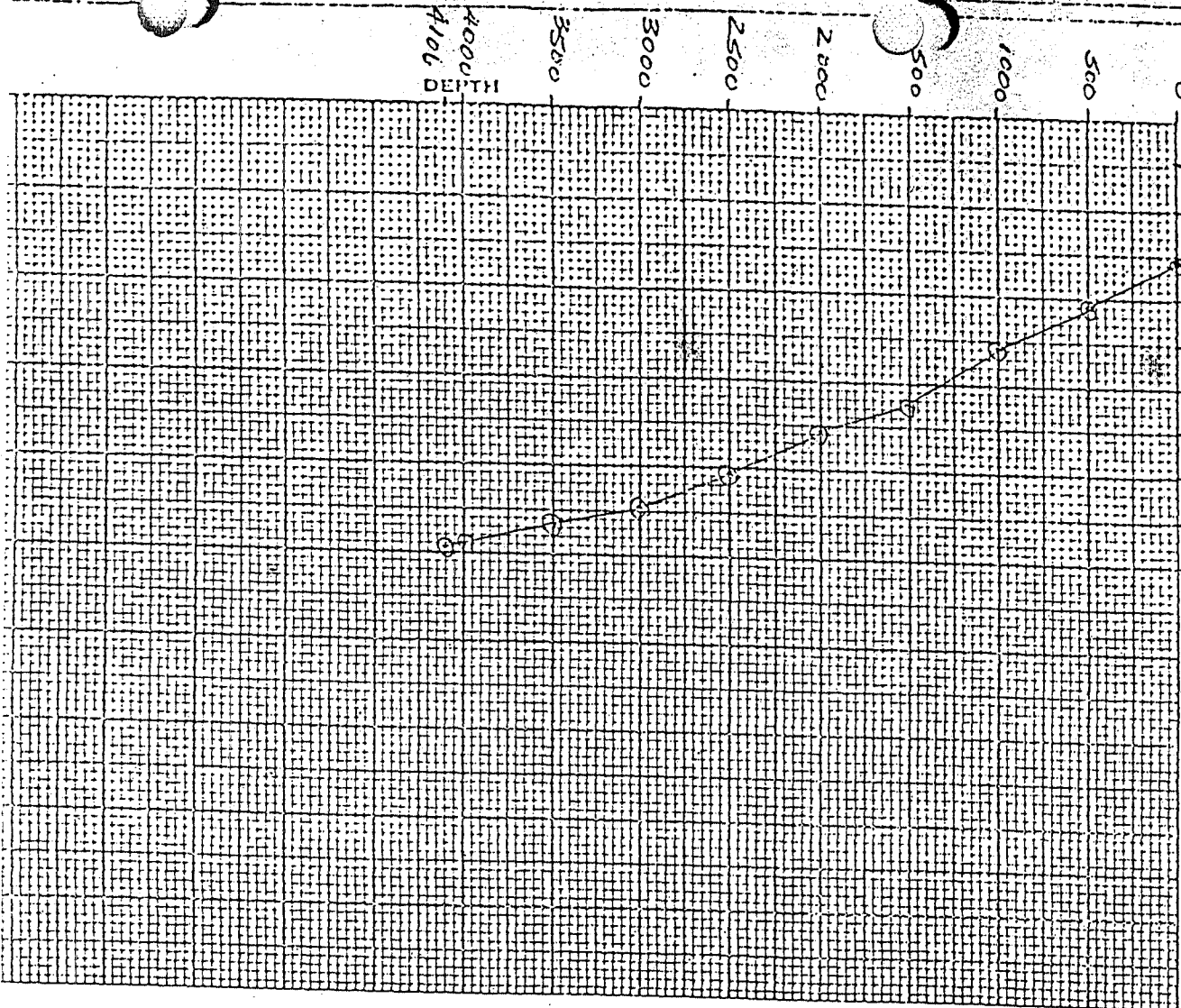
B-15 S-3 T

OWNER LINCOLN OIL COMPANY FIELD WALL GLENDE WELL NAME BROOK #15  
CASING 3 1/2" 20" AT 210' 13 3/8" AT 1273' ELEV. 2 DATE: 7/3/75  
LINER DESCRIPTION: 9 5/8" 2505' OPEN HOLE 2505-TD ZERO POINT 44+12'  
DEPTH: 5505'

HOLE DESCRIPTION: OPEN HOLE  
INSTRUMENT 820-6860 FA:  
SERIAL NO 10055

PURPOSE FLOWING SURVEY MAX TEMP. 358.6°F @ 4100'

REMARKS: 30" 320 350 340 350 360 370 380 390 400



PRESSURES	GAUGE	DOWN
	79	81.1

DEPTH	TEMP.	DEPTH	TEM
0	351.6		
500	342.6		
1000	352.5		
1500	345.3		
2000	371.7		
2500	351.0		
3000	385.0		
3500	393.8		
4000	398.3		
4100	358.6		

STABILIZATION PERIOD

# 76

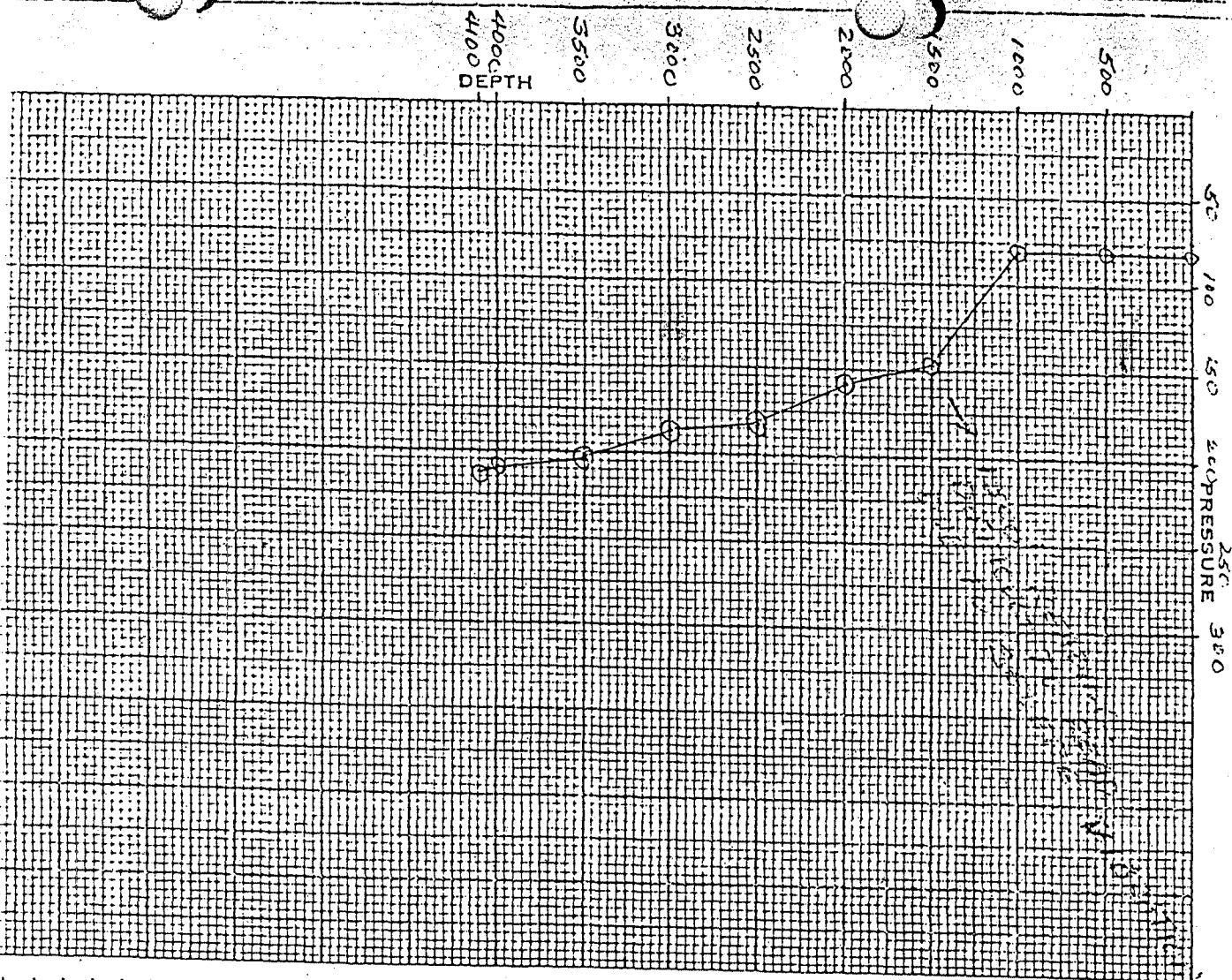
## GEOTHERMAL DIVISION SUBSURFACE PRESSURE SURVEY

B-15 5-3 P

OWNER MINN OIL COMPANY FIELD WILHELM WELL NAME BADA #15  
 CASING 20" AT 210" 13 3/8" AT 1273' DATE 7/3/75  
 LINER DESCRIPTION 9 5/8" 1-2569' FLEV 2 ZERO POINT GLHIZ  
 DEPTH 5805

HOLE DESCRIPTION: OPEN HOLE  
 INSTRUMENT 0-4250 PSI  
 SERIAL NO 7198  
 MAX TEMP 338.6 °F @ 4106'

PURPOSE FLUWING SURVEY  
 REMARKS: \_\_\_\_\_  
 STABILIZATION PERIOD \_\_\_\_\_



DEPTH	PRESSURE	CORRECTION
0	81.1	0
500	81.1	0
1000	81.1	0
1500	148.6	123.5
2000	168.5	140
2500	184.7	157
3000	186.5	159.1
3500	202.7	173.1
4000	209.5	179.4
4106	211.7	181.2

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UNION

GEOHERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B-15 S-2 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA # 15  
 CASING \_\_\_\_\_ ELEV. \_\_\_\_\_ DATE: 6/26/75  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT CL+12'  
 \_\_\_\_\_ DEPTH 5505

TUBING DETAIL:

PURPOSE

REMARKS:

0-4250 PSIG 7198 CLOCK 13375-6 15

ELEMENT 82-686 SERIAL NO. 10055 CLOCK 14091-2 15 TURN \_\_\_\_\_ STABILIZATION PERIOD \_\_\_\_\_  
 ENGAGE STYLUS P-1345 T-1330 DISENGAGE STYLUS P-1620; T-1630  
 WELL HEAD 652 PSIG 0-1000 T/E  
 PICKUP @ 5505 TIME ON BOTTOM 1509-1515 MAX. °F 529.6  
 WELL STATUS \_\_\_\_\_  
 SHUT IN: \_\_\_\_\_ ON PRODUCTION: \_\_\_\_\_  
 RATE \_\_\_\_\_

PRESSURE

TEMPERATURE

PRESSURE						TEMPERATURE											
TIME	DEPTH	DEFL.	P-F	GRAD.	ID	TIME	DEPTH	DEFL.	F-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
29	100	.296	656.8				100	.120	120.4								
31	1000	.298	661.1				1000	.493	243.7								
37-42	2100	.311	688.6				2000	1.270	486.6								
45-1450	3100	.323	714.0				3000	1.305	496.9								
53-1458	4100	.346	762.7				4000	1.326	503.2								
62-1507	5000	.398	872.9				5000	1.360	513.2								
69-1515	5505	.441	944.0				5505	1.416	529.6								

COMMENTS: NOTE B-15 S-2 WAS RUN TO CONFIRM B-15 S-1

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JACK

# GEO THERMAL DIVISION

## SUBSURFACE SURVEY

### Field Work Sheet

B-15 S-1 PIT

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACH #15  
 CASING \_\_\_\_\_ ELEV. \_\_\_\_\_ DATE: 6/26/75  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT 61 + 12'  
 \_\_\_\_\_ DEPTH 5505'

TUBING DETAIL:

PURPOSE

REMARKS:

0-4250 RSIG SN 7198 CLOCK 13375-L 15 TURN

ELEMENT 82°-686° SERIAL NO. 10055 CLOCK-12091-L 15 TURN STABILIZATION PERIOD \_\_\_\_\_

ENGAGE STYLUS P-0935; T-0931 DISENGAGE STYLUS P-1302; T-1301

WELL HEAD 652 RSIG 0-1000 T/C

PICKUP @ 5505' TIME ON BOTTOM 1130-1140 hrs MAX. °F 529.6

WELL STATUS

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
05	100	.296	656.8			"	100	.120	120.4								
3-	1000	.298	661.1			"	1000	.493	243.7								
3-11	2000	.311	688.6			"	2000	1.270	486.6								
7-1057	3000	.323	714.0			"	3000	1.305	496.9								
2-1117	4000	.346	762.7			"	4000	1.326	503.2								
9-1124	5000	.398	872.9			"	5000	1.360	513.2								
10-1140	5505	.441	964.0			"	5505	1.416	529.6								

COMMENTS:



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# GEO THERMAL DIVISION

## SUBSURFACE TEMPERATURE SURVEY

B-15 5-1 P/1

OWNER LINCOLN OIL COMPANY FIELD VALLE GRANDE WELL NAME BAD9 #15

CASING \_\_\_\_\_ DATE: 6/24/75

LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT 22 + 12

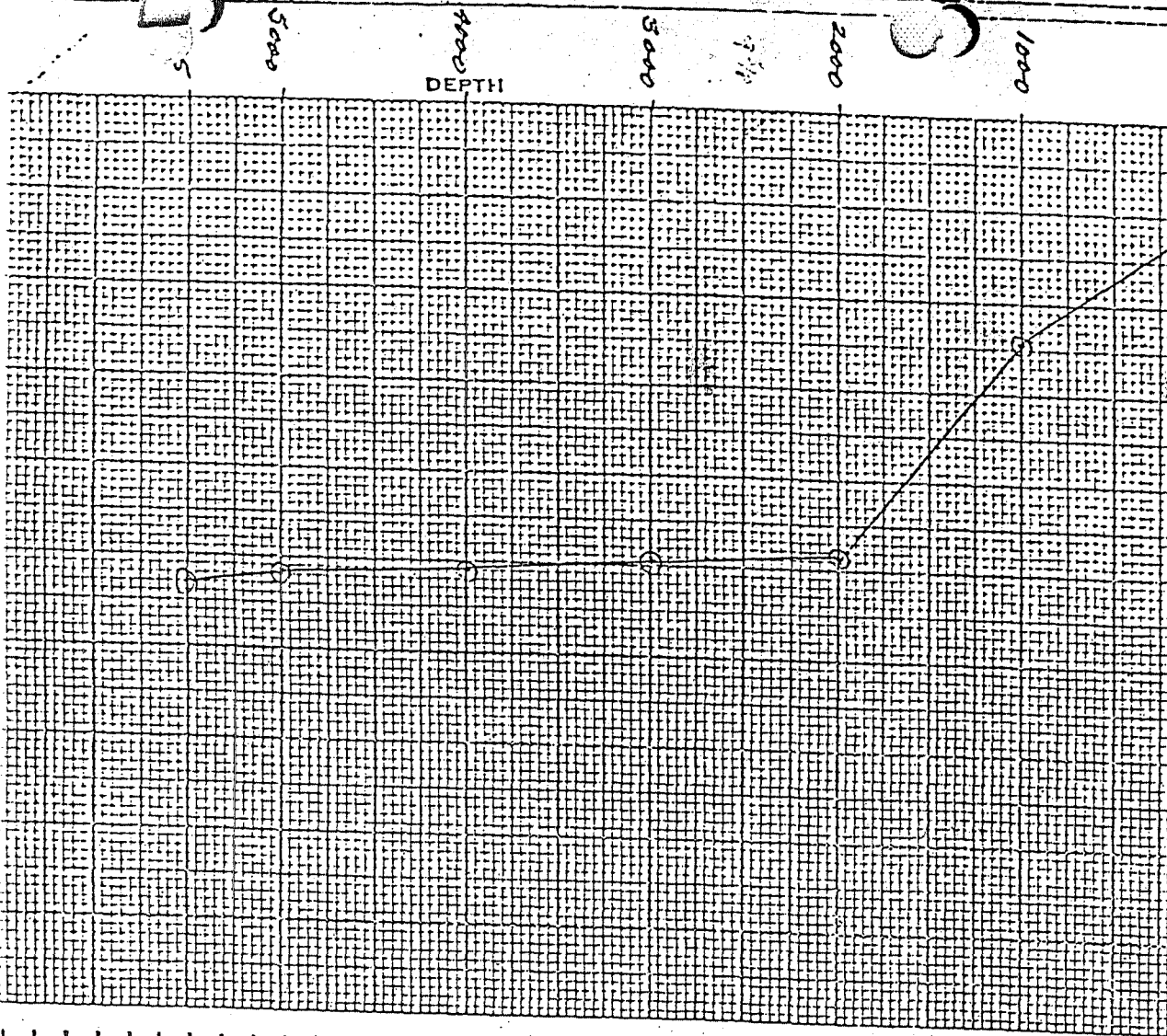
HOLE DESCRIPTION: \_\_\_\_\_ DEPTH: 5505

INSTRUMENT 82°-6.86° F.

SERIAL NO 10055

PURPOSE \_\_\_\_\_ MAX. TEMP. 529.6 °F @ 5505

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



PRECURSER	GAUGE	DEPTH	TEMP.	DEPTH	TEMP.
	652	654			

DEPTH	TEMP.	DEPTH	TEMP.
160	120.4		
1800	243.7		
2000	486.6		
3000	496.9		
4000	503.2		
5000	513.2		
5505	529.6		

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# GEO THERMAL DIVISION

## SUBSURFACE PRESSURE SURVEY

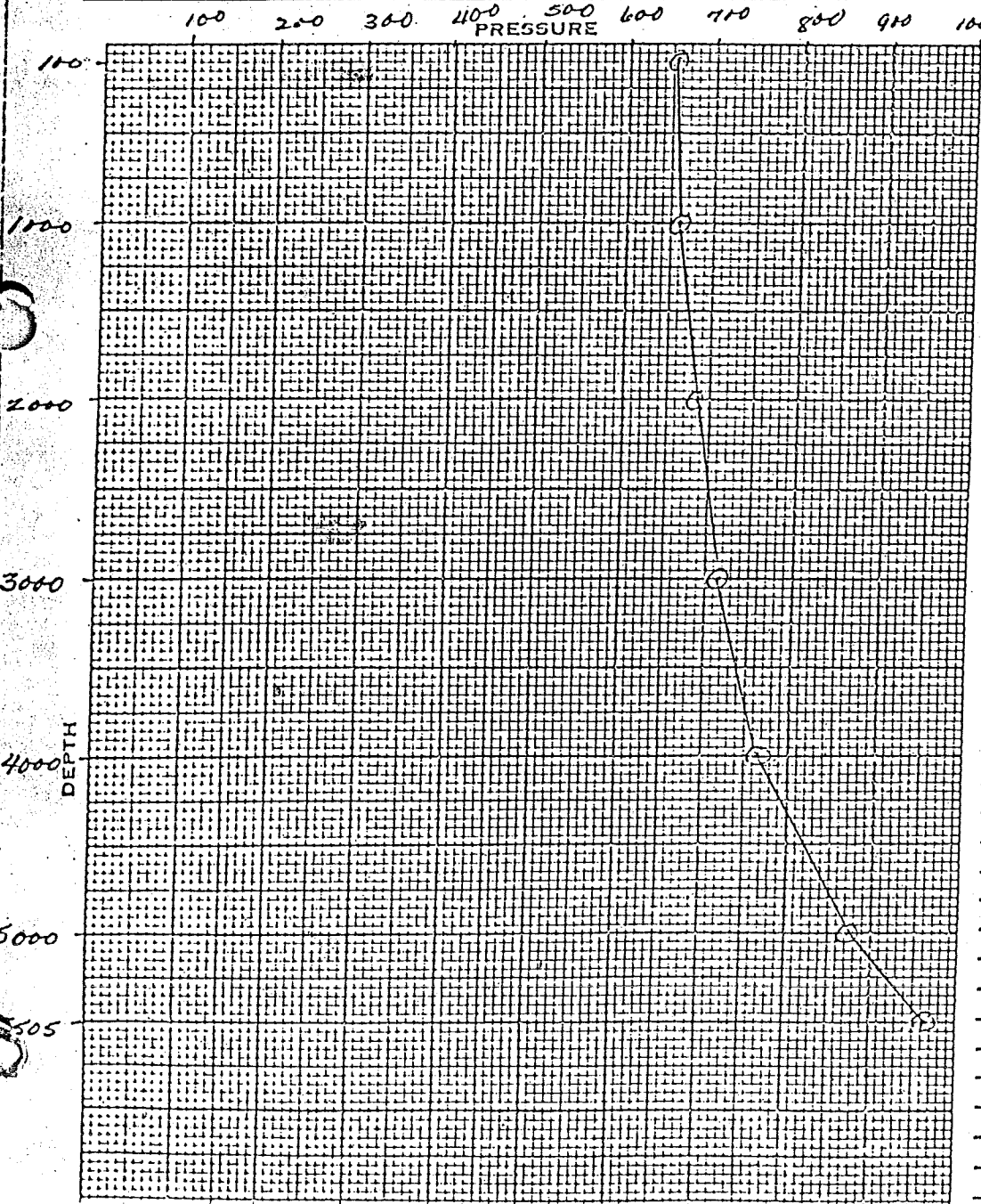
B-15 5-1 P1

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15  
 CASING \_\_\_\_\_ ELEV. \_\_\_\_\_ DATE: 6/26/75  
 LINER DESCRIPTION: \_\_\_\_\_ ZERO POINT CL + 12'  
 \_\_\_\_\_ DEPTH 5505

HOLE DESCRIPTION: \_\_\_\_\_ INSTRUMENT 0-9250 RS10 PSI  
 \_\_\_\_\_ SERIAL NO. 7198

PURPOSE \_\_\_\_\_ MAX. TEMP 524.6 °F @ 5505

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



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

PRESSURES	GAUGE	BOFF
CASING, PSI	652	654

DEPTH	PRESSURE	GRADIENT
100	656.8	
1000	666.1	
2000	688.6	
3000	714.0	
4000	762.7	
5000	872.9	
5505	964.0	