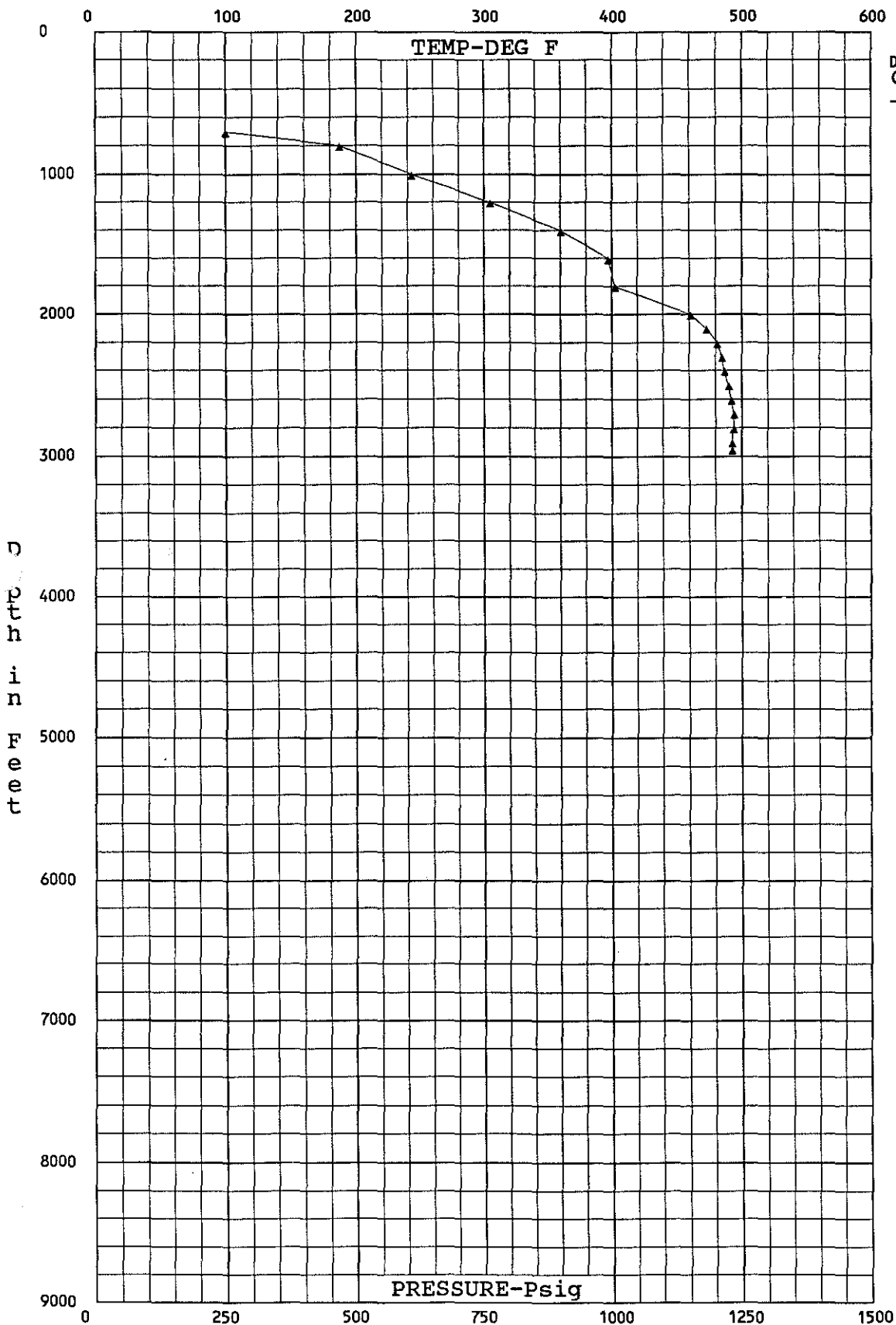


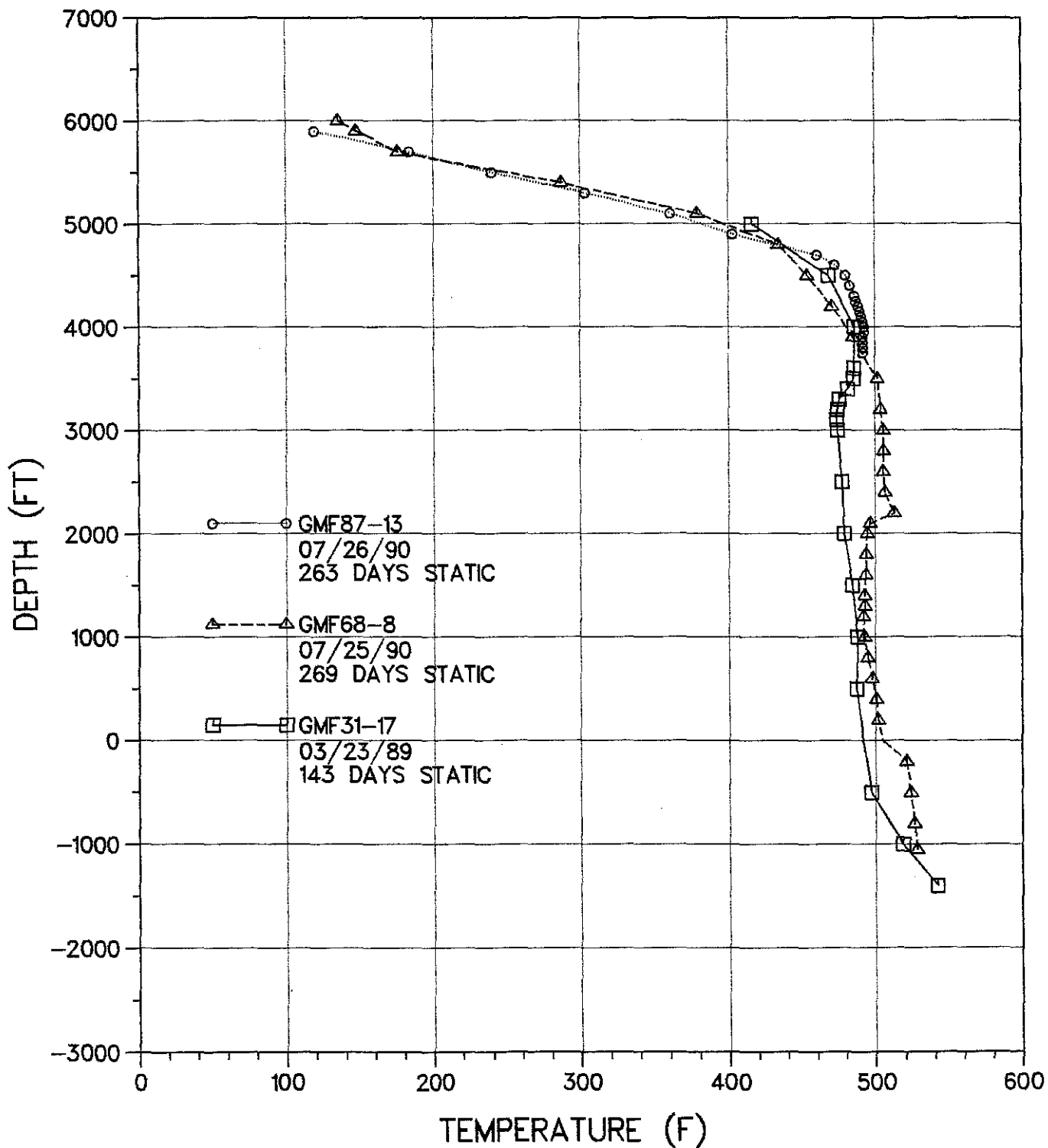
TEMPERATURE LOGS

WELL: GM87-13	SURFACE: T	Gradient No. 9	DATE: 7/26/1990
Total Measured Depth: 3010	Ground Level Elevation: 6720		
COMPLETION: 4.5 in. liner from 2158 to 3010			
Perfs from 2158 to 3010		7 in. from 660 to 2356	
9.625 in. from 0 to 870			WHP Start: 0
Status: Well Shut in Since 11/06/1989			End: 0



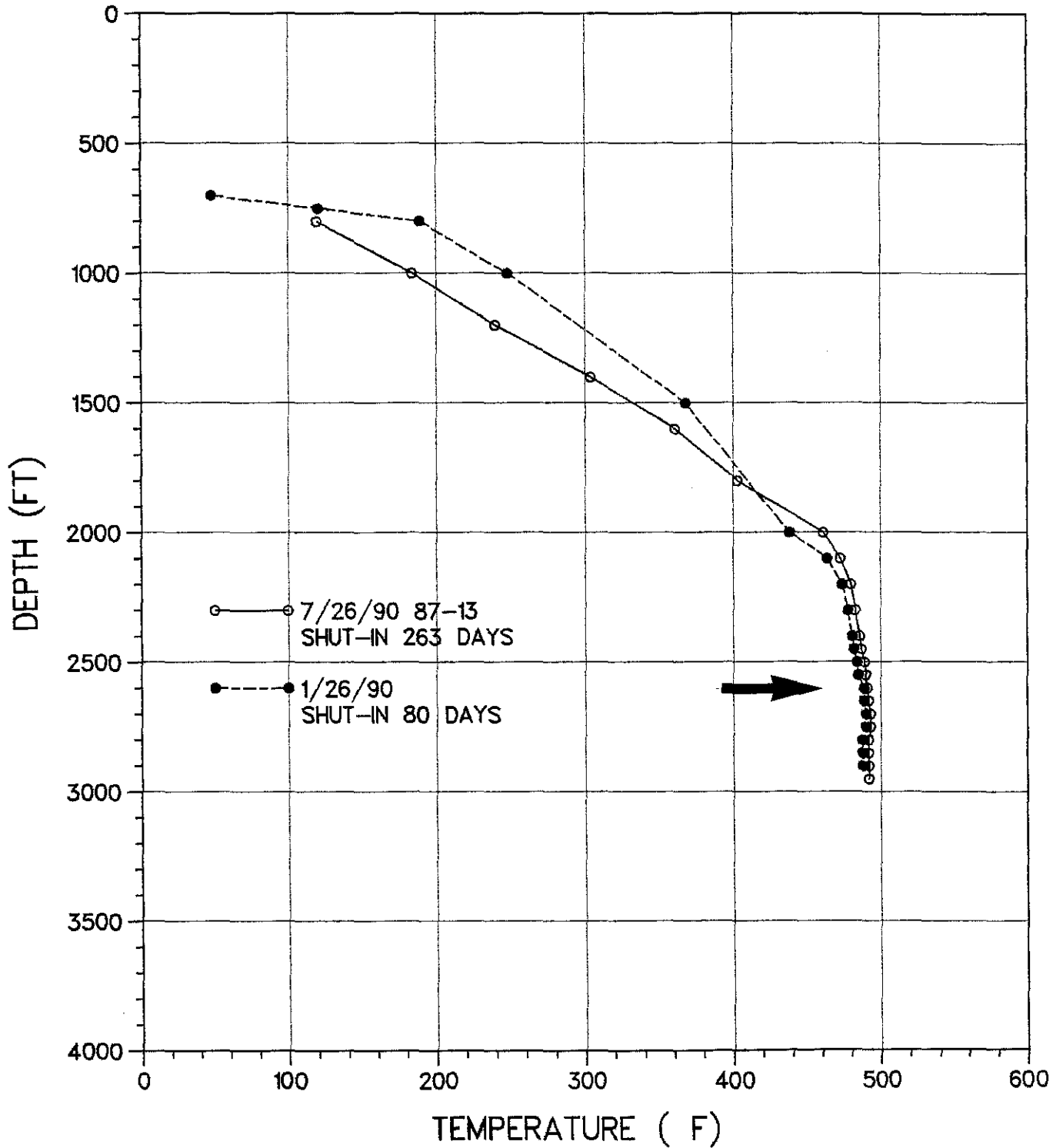
updated 8/20/94

GLASS MTN TEMPERATURE VS ELEVATION

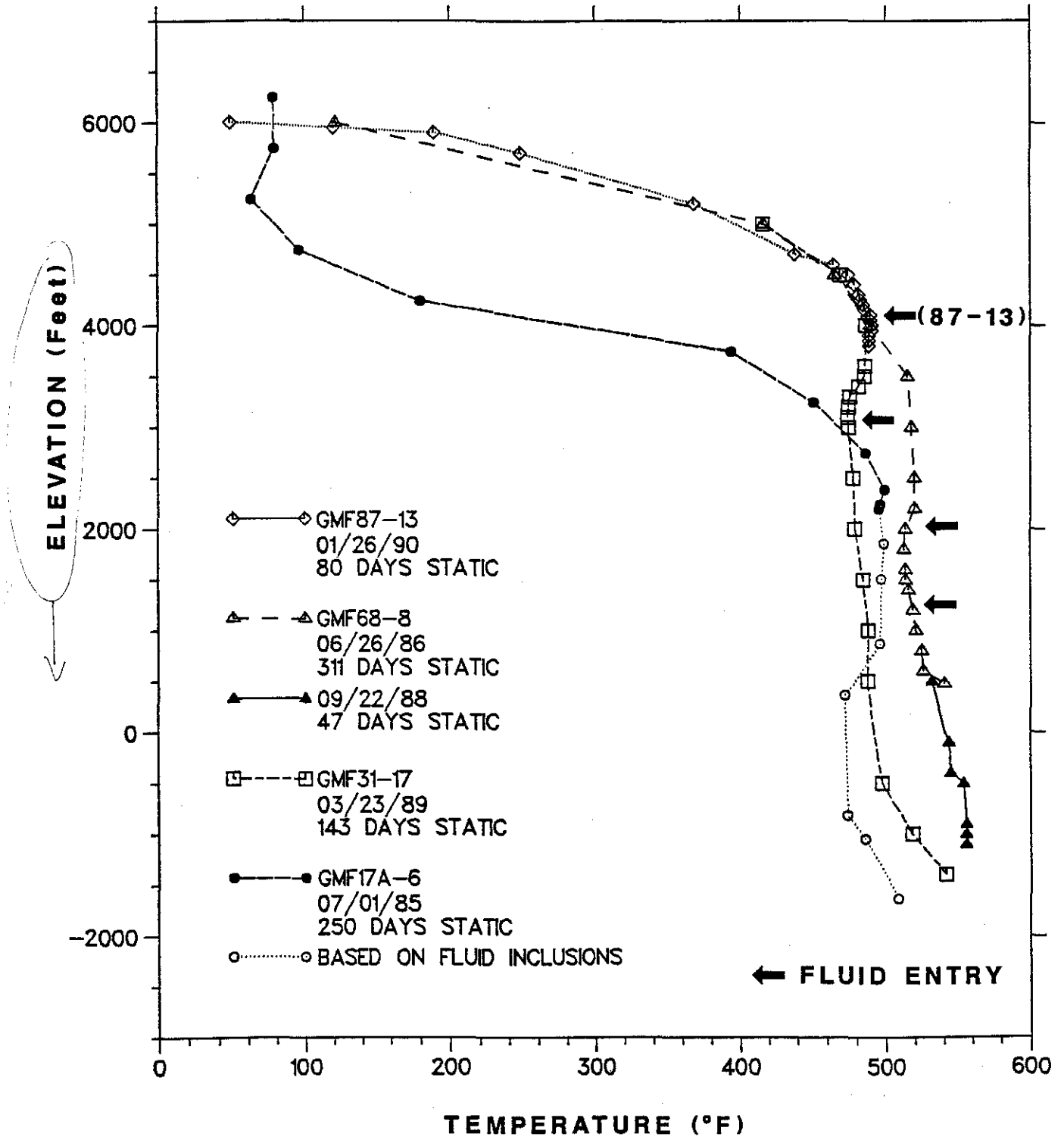


08/03/90

GMF87-13 TEMP VS DEPTH



TEMPERATURE vs ELEVATION





25-August-1999

Mr. Randy Sharp
Bureau of Land Management
800 West 12th Street
Alturas, CA 96101

Mr. Richard Estabrook
Bureau of Land Management
2550 North State Street
Ukiah, CA 95482-3023

Re: Glass Mountain Federal Unit - Recent Temperature Log on GMF 87-13

Attached please find a plot from the 19-August-1999 temperature logging run completed at the Glass Mountain Federal Unit on well 87-13. The data is transmitted to you as per requirement of the Glass Mountain Federal Unit Agreement.

The logging was conducted by Dr. Colin Williams (USGS) using one of his high-resolution temperature tools. The well was logged to a depth of 2126 feet, where at what point the well was 478 F. The tool did not reach TD, and apparently sat down on a bridge located just above the 4-½ inch liner at 2158 ft. This is almost exactly where the USGS and Sandia sat down last year when they attempted to log the well. The well was checked for wellhead pressure and H2S before logging. The WHP was about 20 psig and the wellhead gasses had at most between 4 and 10 ppm H2S.

This data should be considered CalEnergy Company Confidential, in as much as it is currently not in the public domain. I will forward to you any public release of the information, as it becomes available.

Please contact me if you have any questions. I can be reached by phone at 760-348-4016 (voice) and 760-348-4022 (fax), or by e-mail at the following address: alex.schriener@calenergy.com.

Sincerely yours;

Alexander Schriener, Jr.
Manager, Geothermal Resources

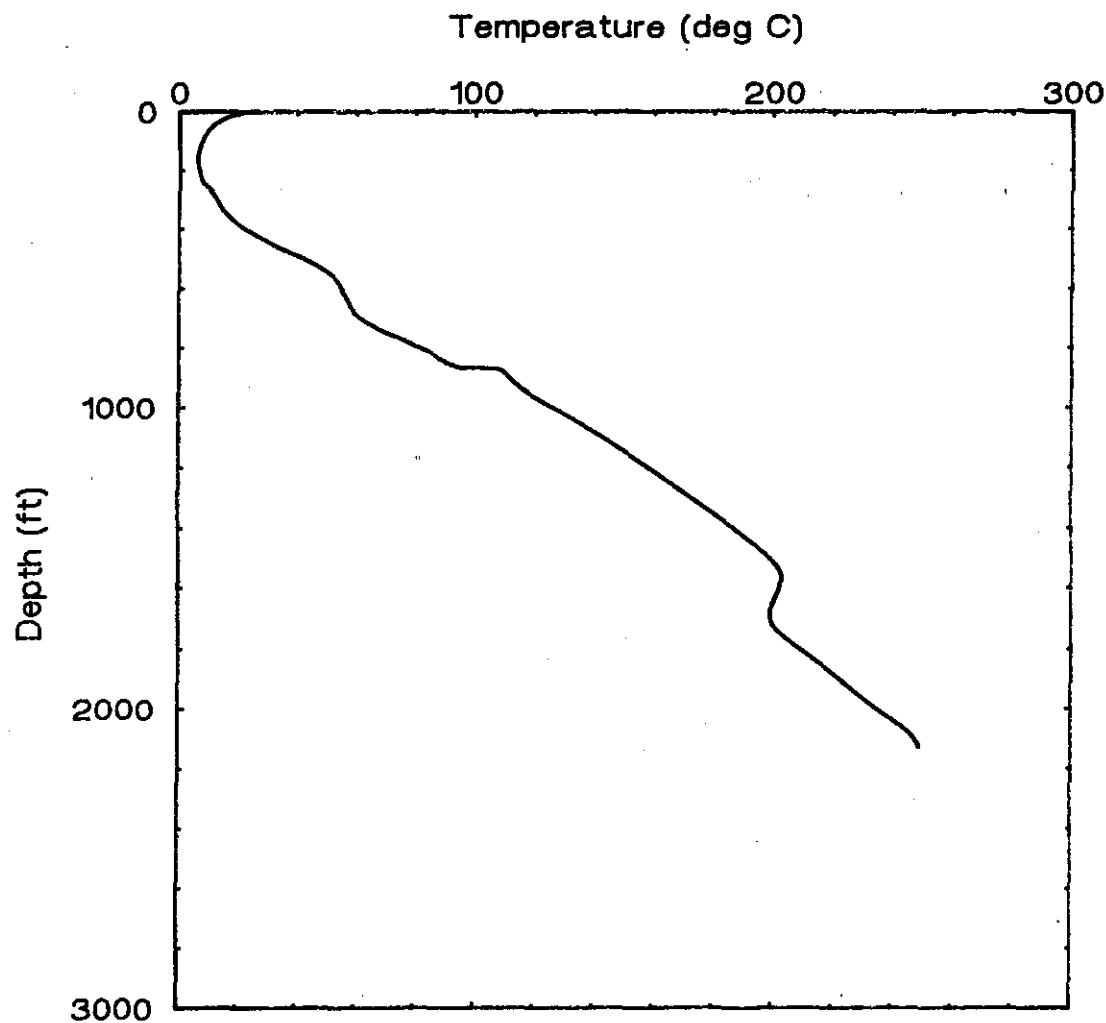
CalEnergy Operating Company

An Affiliate of CalEnergy Company, Inc.

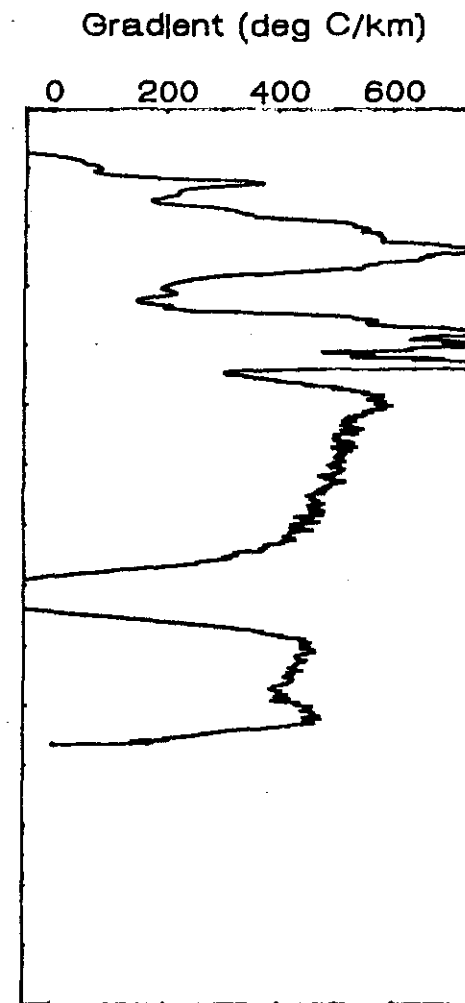
950 West Lindsey Road, Calipatria, California 92233 (760) 348-4000 Fax: (760) 348-2714

DRAFT

CONFIDENTIAL



ML87 (87-13), Telephone Flat, 19Aug99, HRTD1



D = 20 ft

CONFIDENTIAL

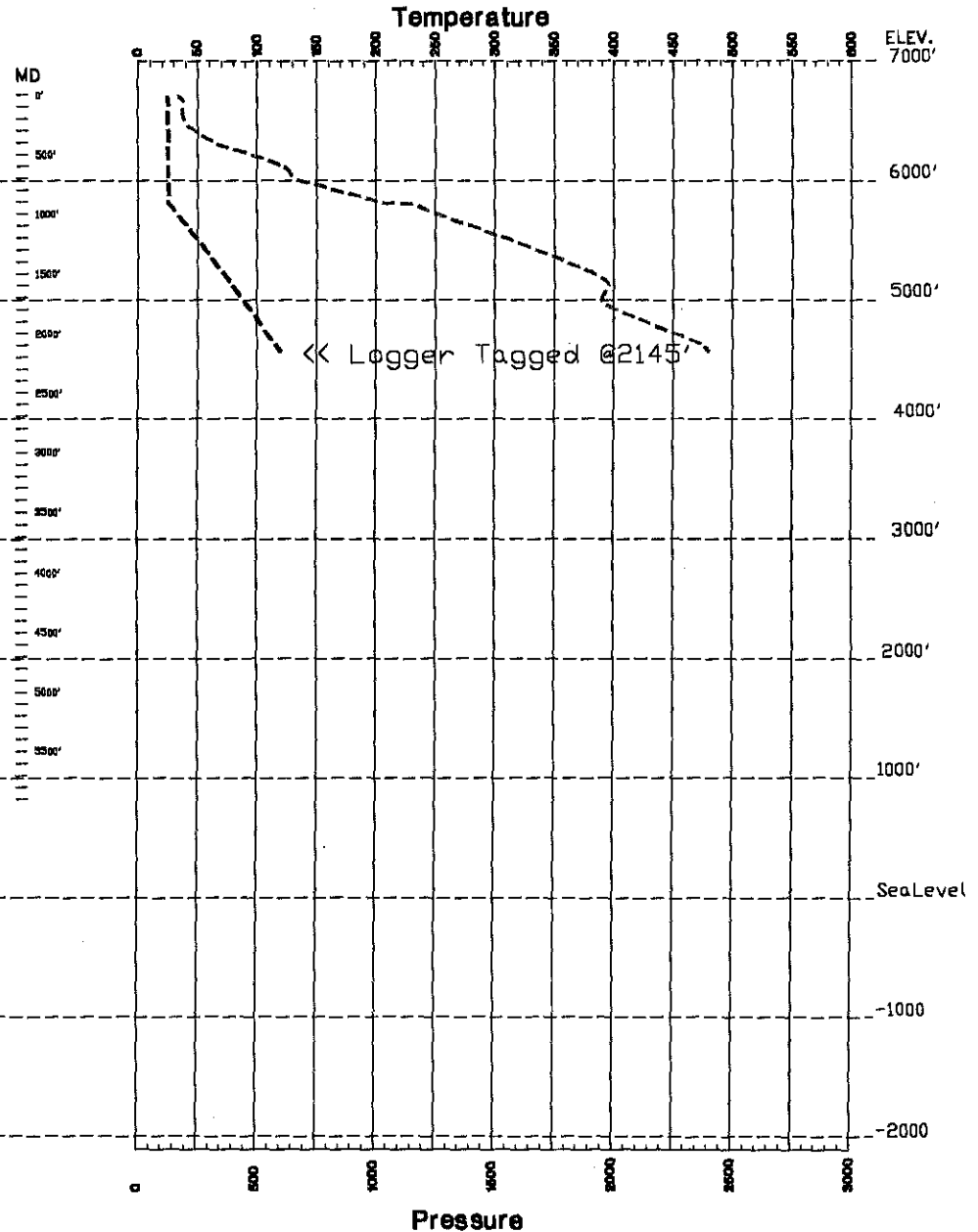
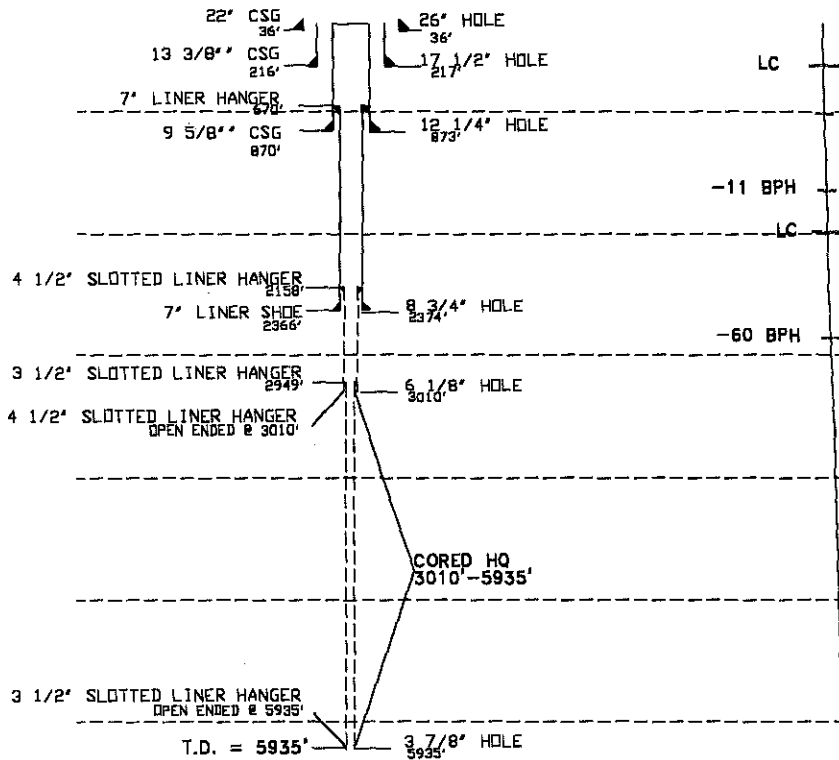
GMF 87-13

SPUD 10/11/89
 COMPLETION 10/31/89 - 3010'
 SPUD 9/8/91 - DEEPEN
 COMPLETION 10/9/91
 T.D.-MD 5935', TVD 5932', SSD 789'

S20E

87-13 STATIC Pressure USGS 10/22/98

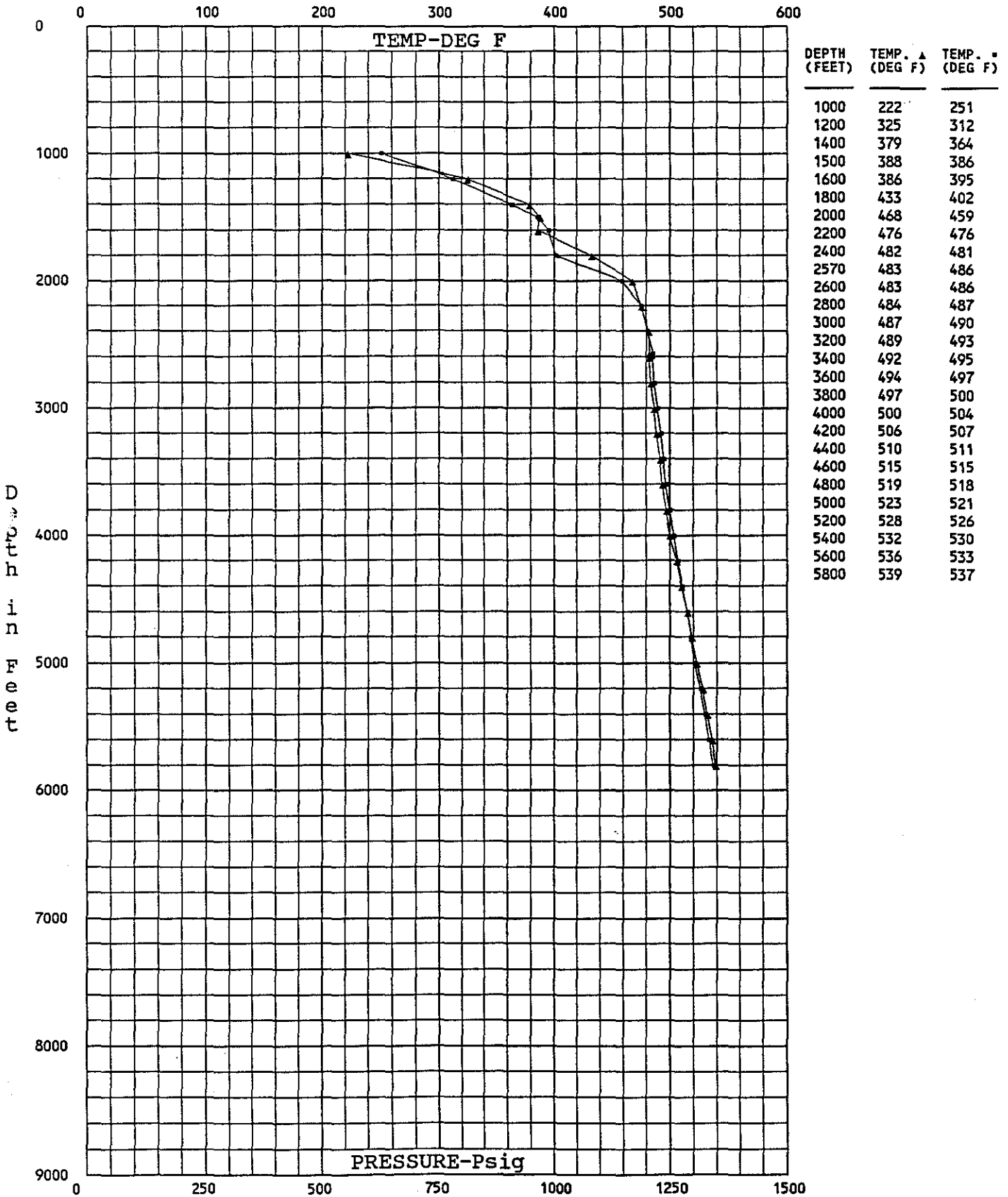
87-13 STATIC Temperature USGS 10/22/98



UNOCAL SUBSURFACE SURVEY

FIELD	Glass Mountain				Well Name	GMFU 87-13			
Casing	7"	660 to 2356			Date	7/21/92			
Liner Description	4.5" 2158 to 3010				Zero Point	Swab Gate			
	3.5" 2950 to 5935				Depth	5935			
					Elevation	6697			
Remarks	Fluid Level at ± 760 ft.								
	stops at: 2570, 4000, 5800 ± 10 min.								
Purpose	Temperature gradient traverse								
Element	temp 1	Serial #	K 2051	Clock	k 3057	Well head Press.	0		
Element	temp 2	Serial #	Sandia	Clock	Electronic	Pickup Depth	n.a.		
Element		Serial #		Clock		Last Depth	5866		
1. Engage Stylus	8:41	1. Disengage Stylus		13:00					
2. Engage Stylus		2. Disengage Stylus							
3. Engage Stylus		3. Disengage Stylus				Max. Temp (MRT)			
Well Status	Static				open swab gate	9:00			
injection rate					time on bottom	12:16			
production rate					time off bottom	12:33			
shut in	10/23/91				close swab gate	12:50			
k 2051					Sandia				
time	depth	deflection	p/t	gradient	time	depth	deflection	p/t	gradient
906	1000	0.566	222					251	
916	1200	0.946	325					312	
926	1400	1.145	379					364	
931	1500	1.18	388					386	
936	1600	1.173	386					395	
946	1800	1.347	433					402	
956	2000	1.479	468					459	
1006	2200	1.508	476					476	
1016	2400	1.531	482					481	
1025 - 35	2570	1.534	483					486	
1036	2600	1.535	483					486	
1046	2800	1.541	484					487	
1056	3000	1.549	487					490	
1101	3200	1.559	489					493	
1106	3400	1.568	492					495	
1111	3600	1.577	494					497	
1116	3800	1.587	497					500	
1121 - 31	4000	1.6	500					504	
1136	4200	1.62	506					507	
1141	4400	1.637	510					511	
1146	4600	1.654	515					515	
1151	4800	1.667	519					518	
1156	5000	1.683	523					521	
1201	5200	1.7	528					526	
1206	5400	1.716	532					530	
1211	5600	1.731	536					533	
1216 - 33	5800	1.741	539					537	

WELL: GM87-13	SURVEY: T/T	Gradient No. 9	DATE: 7/21/1992
Total Measured Depth: 5935	Ground Level Elevation: 6697		
COMPLETION: 4.5 in. liner from 2158 to 3010			
Perfs from 2158 to 5935		7 in. from 660 to 2356	
3.5 in. from 2950 to 5935			WHP Start: 0
Status: Well Shut in Since 10/23/1991			End: 0

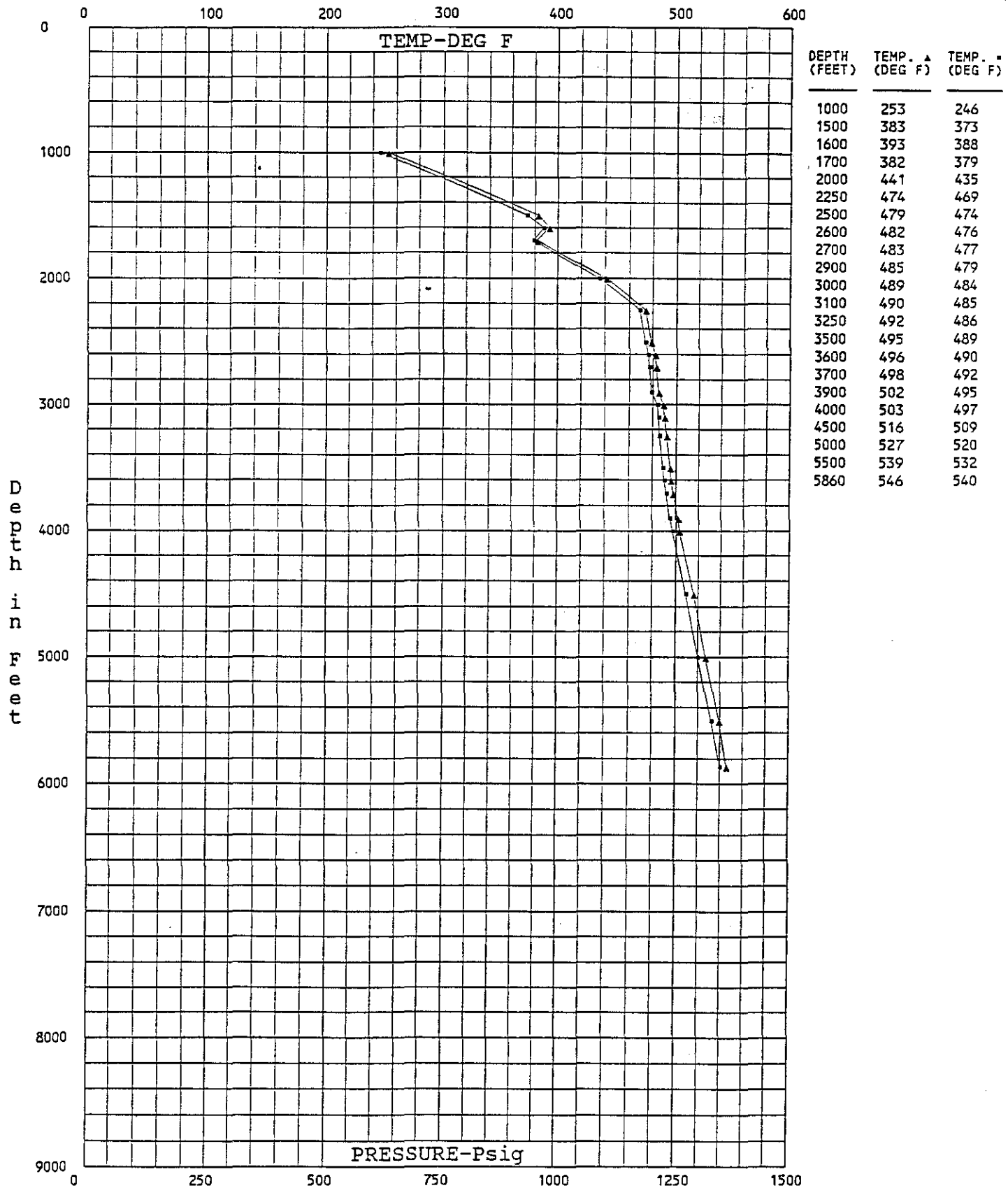


UNOCAL SUBSURFACE SURVEY

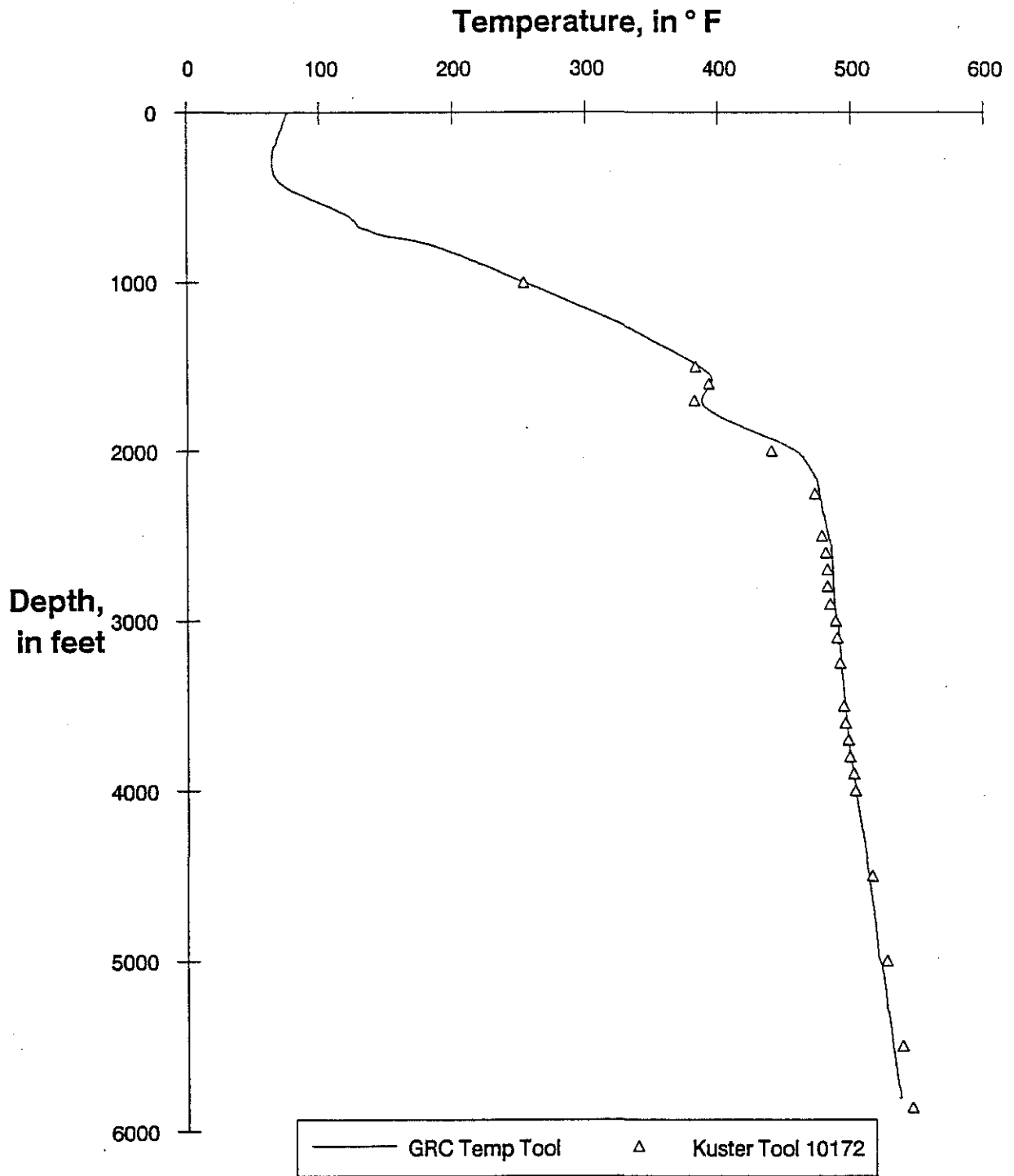
FIELD		Glass Mountain		Well Name		GMFU 87-13			
Casing	7"	660 to 2356		Date	2/26/92				
				Zero Point	Swab Gate				
Liner Description	4.5" 2158 to 3010			Depth	5935				
	3.5" 2950 to 5935			Elevation	6697				
Remarks									
Purpose Mid - Winter Gradient survey									
Element	T	Serial #	10172	Clock	K 3057	Well head Press.	0		
Element	T	Serial #	K 2051	Clock	K 1746	Pickup Depth	NA		
Element	P	Serial #	K 3582	Clock	K 3046	Last Depth	5866		
1. Engage Stylus	10:17	1. Disengage Stylus	15:28						
2. Engage Stylus	10:17	2. Disengage Stylus	15:28						
3. Engage Stylus	14:45	3. Disengage Stylus	16:09		Max. Temp (MRT)	NA			
Well Status	Static		open swab gate		10:29				
injection rate			time on bottom		14:31				
production rate			time off bottom		14:53				
shut in	10/23/91		close swab gate		15:09				
TEMP		10172		TEMP		K 2051			
time	depth	deflection	p/t	gradient	time	depth	deflection	p/t	gradient
1033-53	1000	0.384	253			1000	0.655	246	
54-1104	1500	0.76	383			1500	1.123	373	
1105-12	1600	0.789	393			1600	1.179	388	
13-21	1700	0.757	382			1700	1.146	379	
22-32	2000	0.935	441			2000	1.355	435	
35-45	2250	1.038	474			2250	1.482	469	
46-56	2500	1.052	479			2500	1.502	474	
57-1205	2600	1.061	482			2600	1.511	476	
1206-13	2700	1.064	483			2700	1.514	477	
14-21	2800	1.066	483			2800	1.516	478	
21-28	2900	1.071	485			2900	1.52	479	
28-36	3000	1.084	489			3000	1.538	484	
37-46	3100	1.087	490			3100	1.542	485	
47-58	3250	1.093	492			3250	1.548	486	
59-1309	3500	1.102	495			3500	1.558	489	
1309-16	3600	1.107	496			3600	1.563	490	
17-25	3700	1.111	498			3700	1.569	492	
25-32	3800	1.116	499			3800	1.574	493	
33-40	3900	1.123	502			3900	1.581	495	
40-47	4000	1.128	503			4000	1.589	497	
48-58	4500	1.167	516			4500	1.633	509	
59-1409	5000	1.201	527			5000	1.672	520	
1413-29	5500	1.239	539			5500	1.716	532	
1431-53	5860	1.263	546			5860	1.743	540	
		Pressure	K 3582						
1525-34	1200		175						
35-41	1500		288						
42-47	1800		409						
47-52	2000		485						

Survey by: Sam Timmons

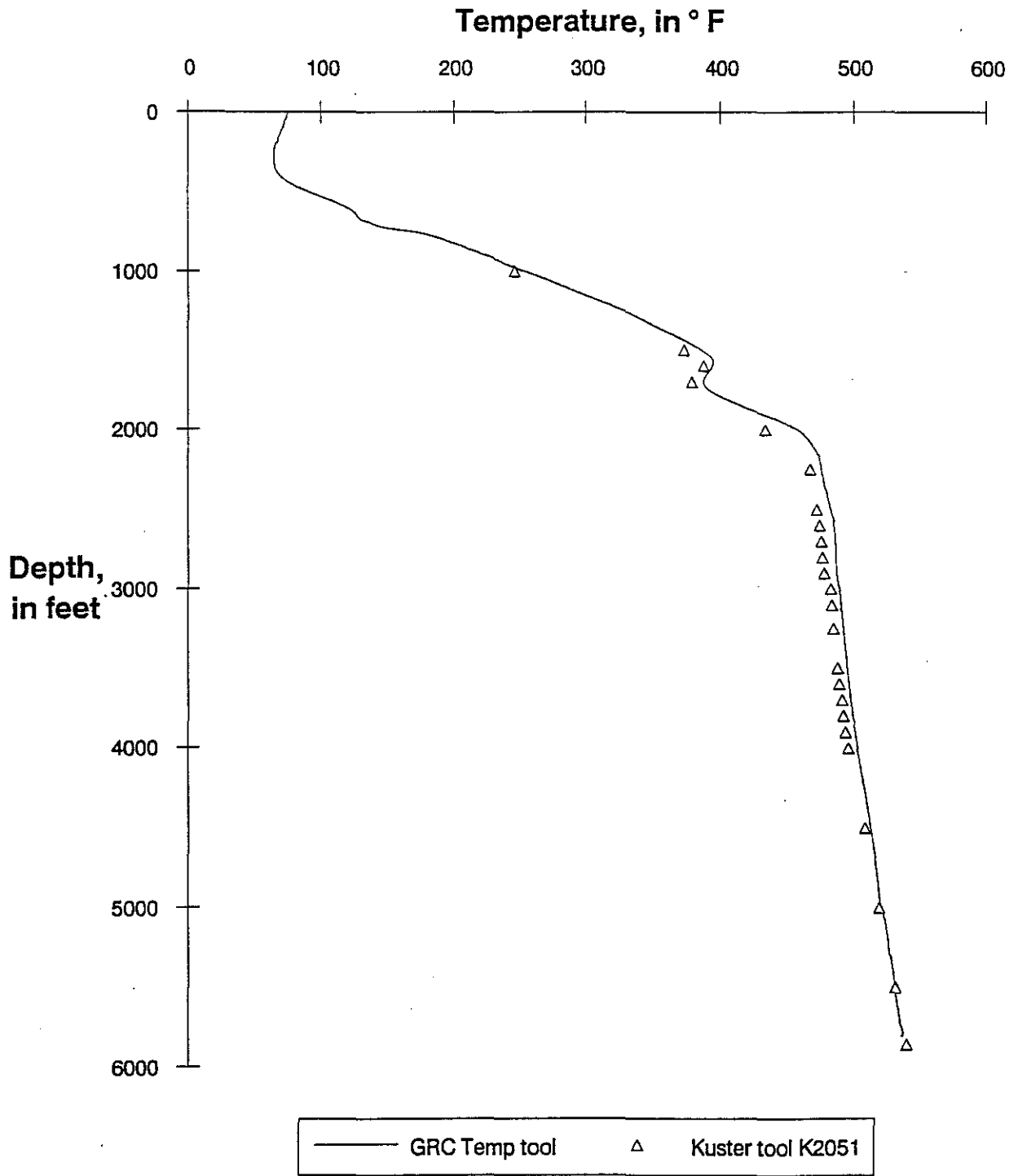
Total Measured Depth: 5935	Ground Level Elevation: 6697
COMPLETION: 4.5 in. liner from 2158 to 3010	
Perfs from 2158 to 5935	7 in. from 660 to 2356
3.5 in. from 2950 to 5935	WHP Start: 0
Status: Well Shut in Since 10/23/1991	End: 0



GMF 87-13



GMF 87-13



GMF 87-13

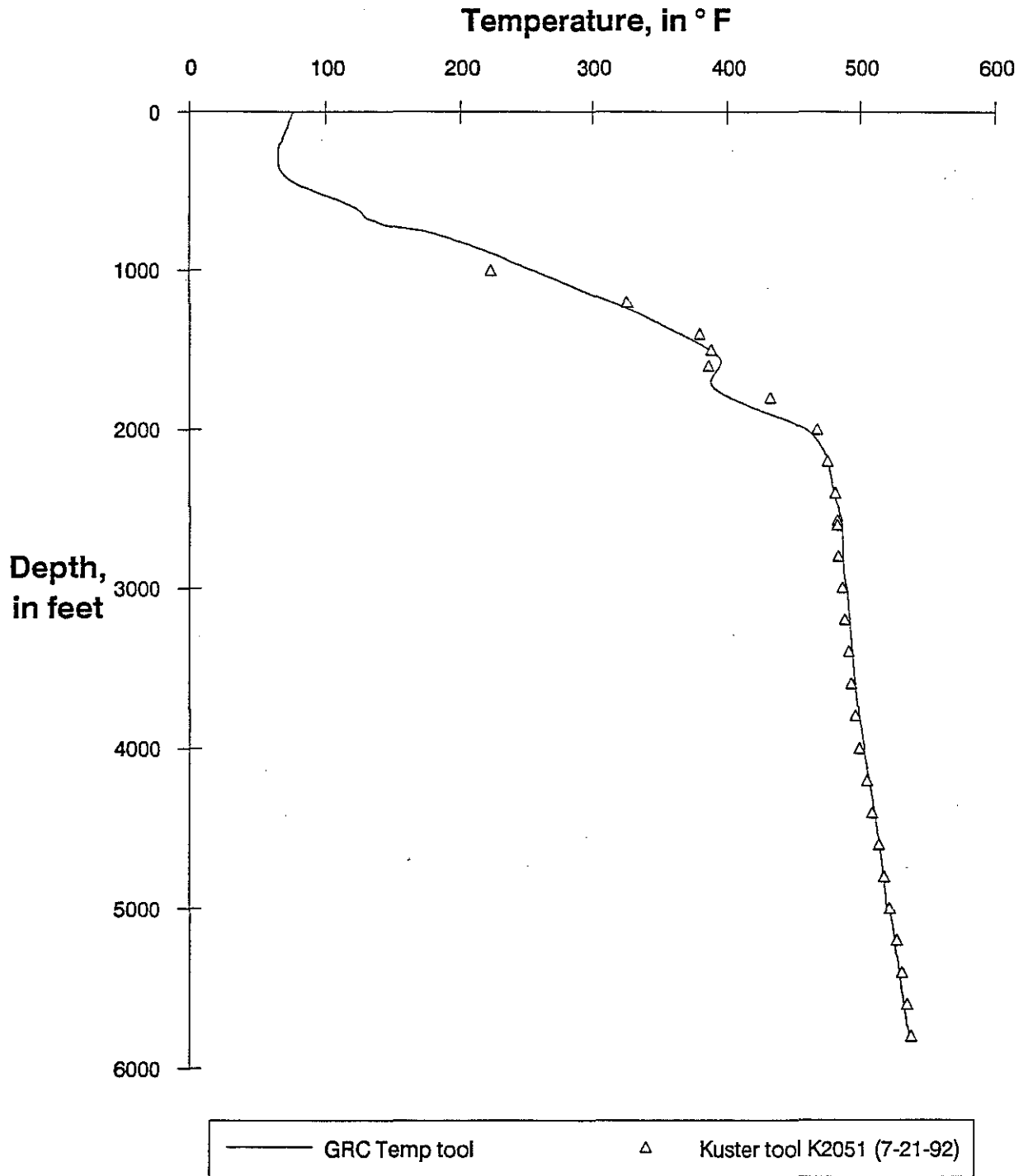
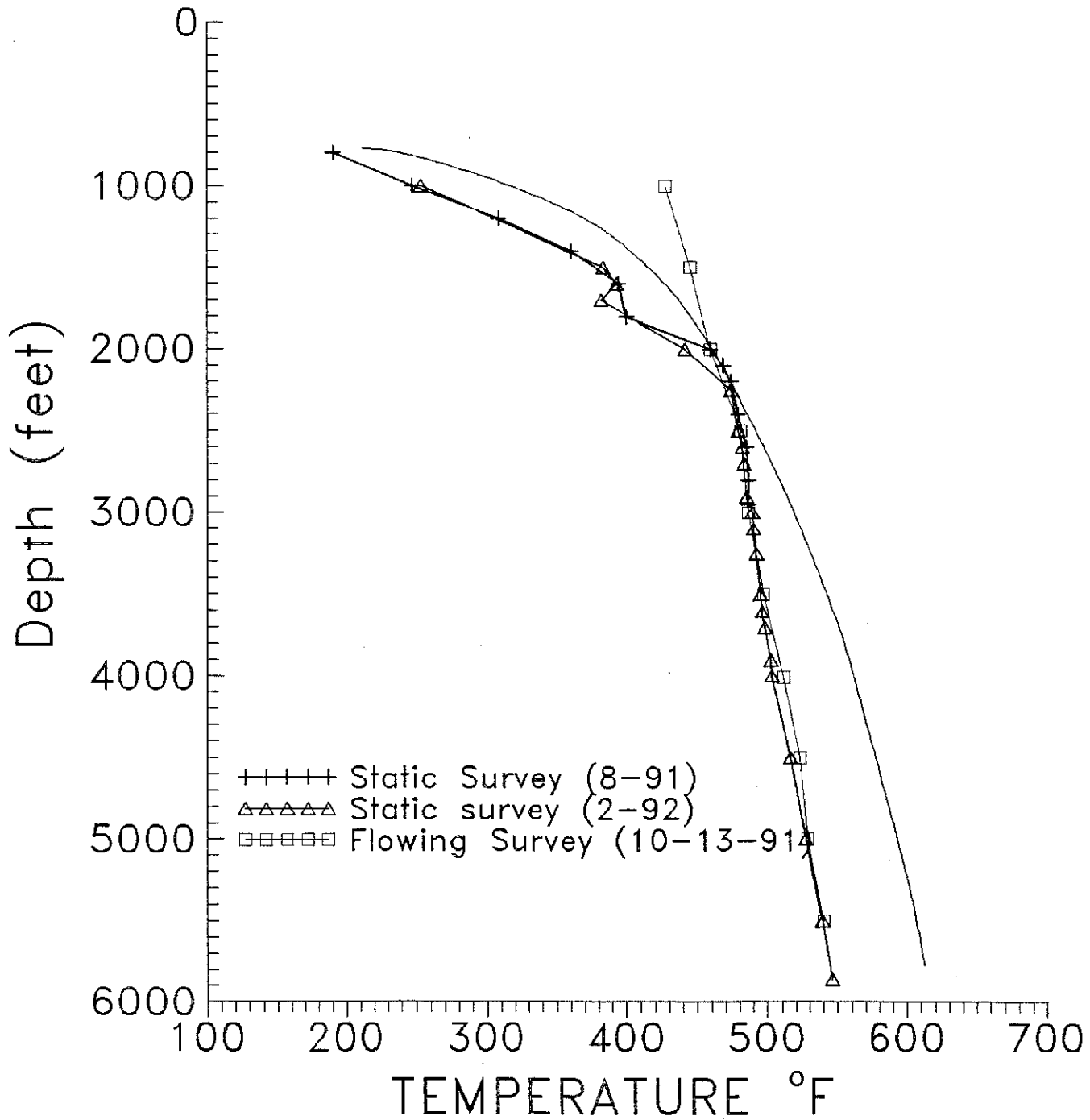
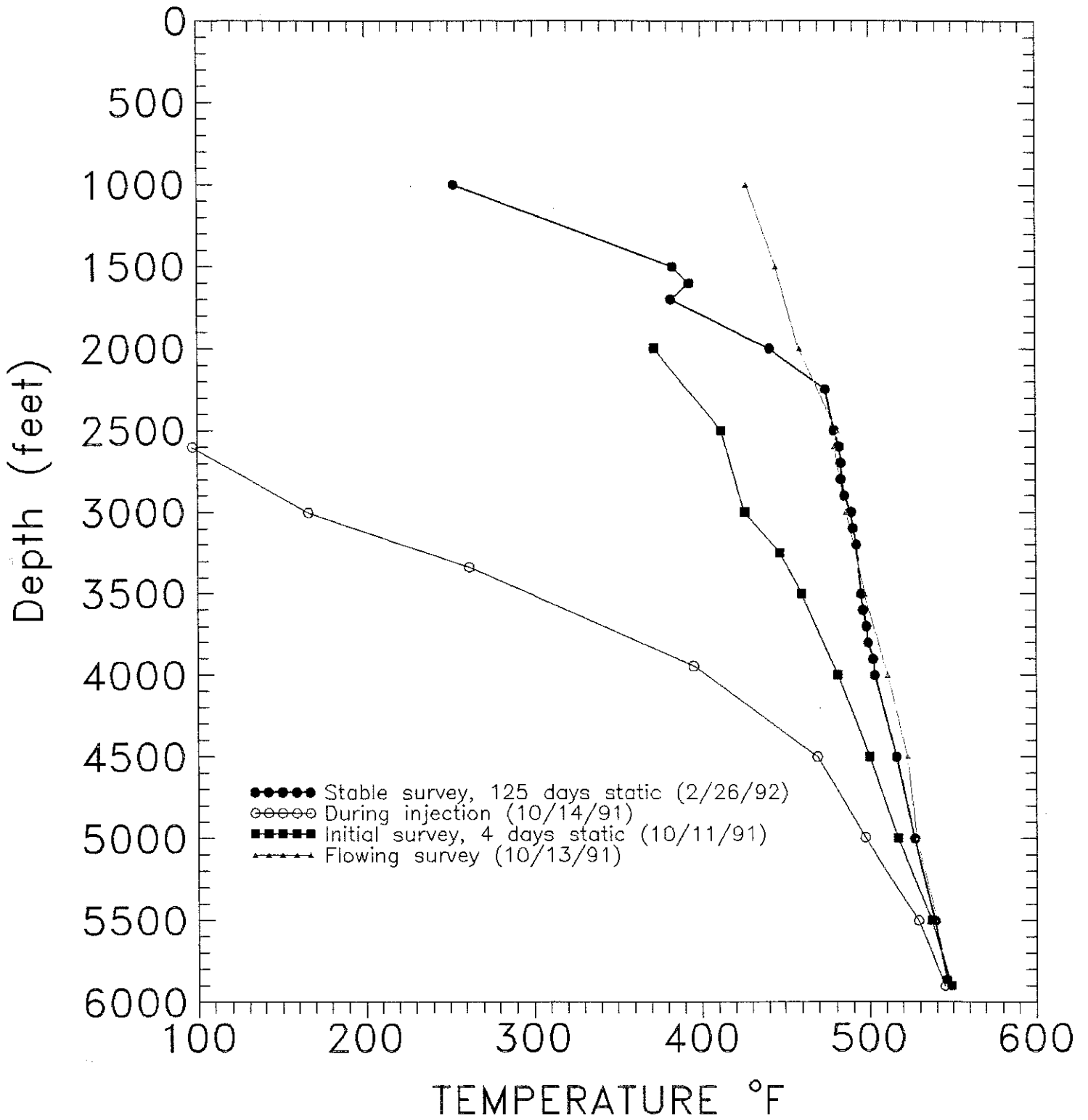


Figure 1

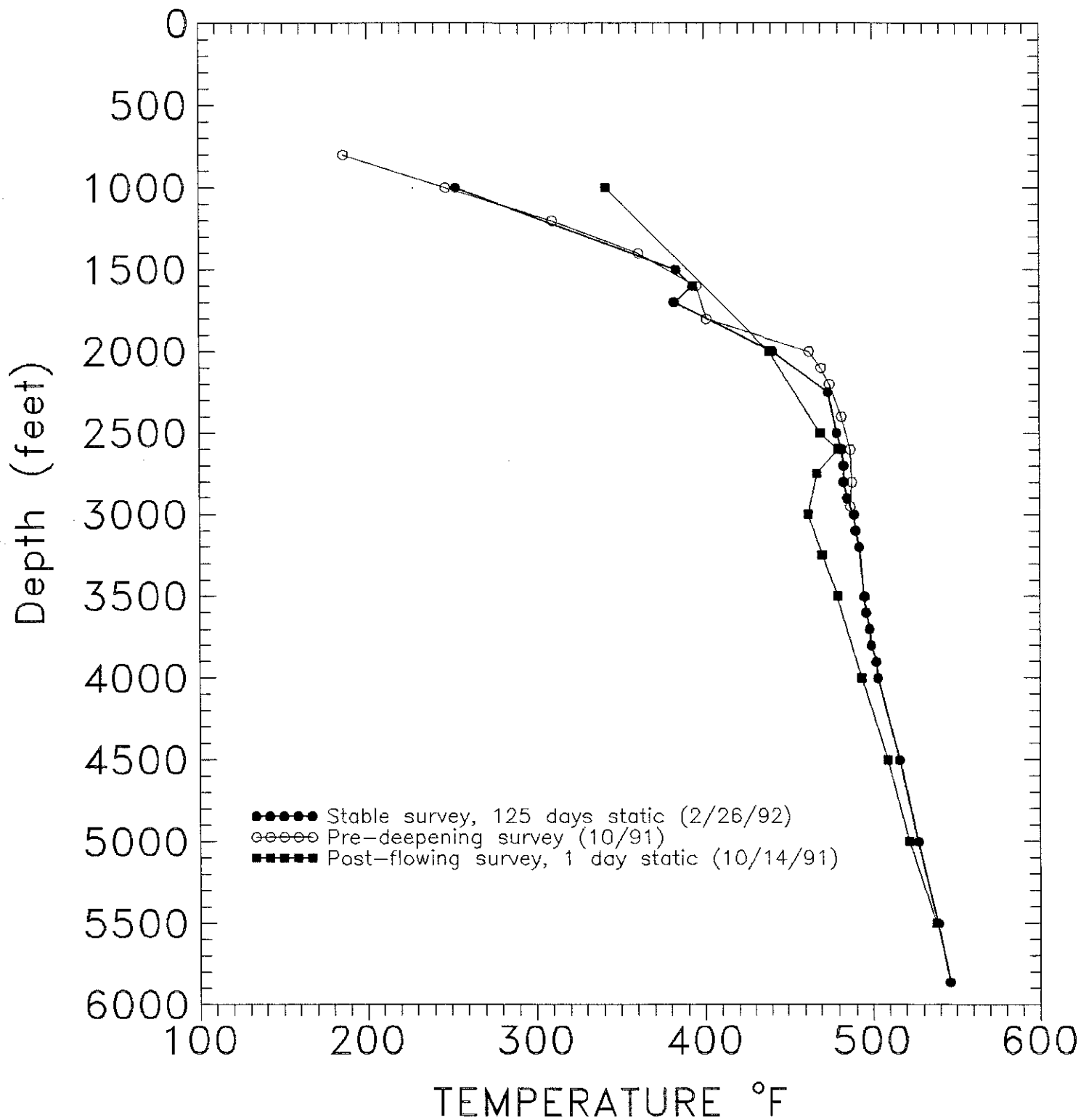
GLASS MOUNTAIN 87-13



87-13 STATIC, FLOWING, AND INJECTION SURVEYS



87-13 STATIC SURVEYS



GMF 87-13

