

PRELIMINARY SUMMARY  
OF CDMG  
STRONG-MOTION RECORDS FROM THE  
2 MAY 1983  
COALINGA, CALIFORNIA, EARTHQUAKE

1983

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CALIFORNIA DIVISION OF MINES AND GEOLOGY  
OFFICE OF STRONG MOTION STUDIES  
REPORT OSMS 83-5.2





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2 MAY 1983  
COALINGA, CALIFORNIA, EARTHQUAKE

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27 May 1983

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California Strong Motion Instrumentation Program

PRELIMINARY DATA

(Subject to Revision)

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## INTRODUCTION

A moderate-size earthquake occurred at 16:43 (PDT) on May 2, 1983 approximately 13 km northeast of Coalinga, on Anticline Ridge in Fresno County, California (Figure 1). Preliminary epicentral location estimates by the USGS and UC Berkeley put the epicenter near 36.25N, 120.30W, at a depth between 9 and 11 km. Berkeley estimates the magnitude to be 6.5 ( $M_L$ ) with an origin time of 23:42:38.5 UTC. To date, no tectonic surface rupture from a causative fault has been identified.

The main shock was felt widely throughout the state. It is the largest earthquake to occur in continental California since the San Fernando earthquake of 9 February 1971. The event destroyed many of the older buildings in the downtown business district of Coalinga and many homes throughout the area.

This report summarizes CDMG strong-motion accelerograph records recovered from the 2 May 1983 Coalinga earthquake. In order to allow for early distribution of CDMG strong-motion data from the earthquake, this report is limited to a summary of the data. The preliminary nature of this report makes the data presented here subject to later revision; however, reasonable precautions have been taken to ensure the accuracy of the data.

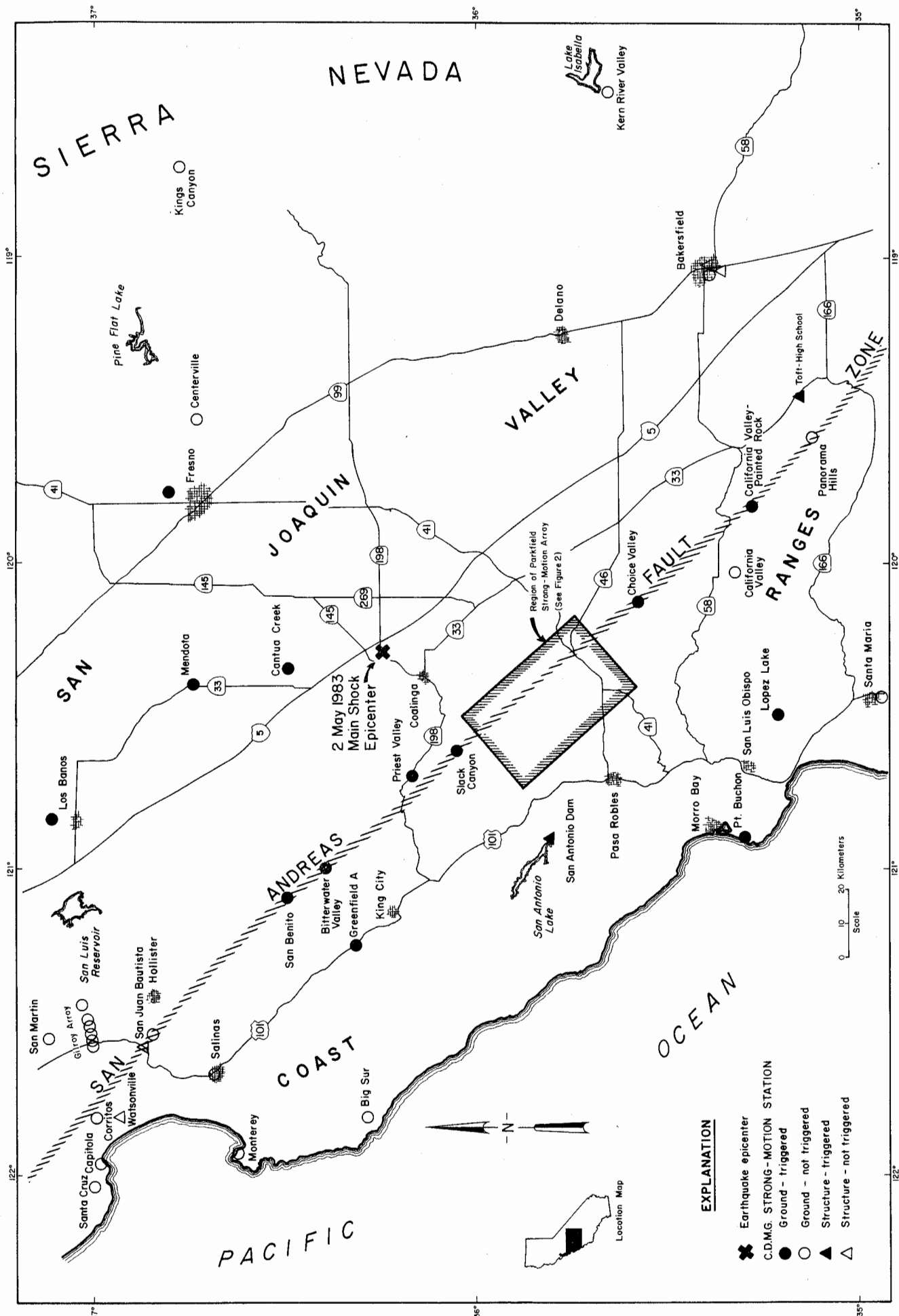


Figure 1. CDMG strong-motion stations in the region of the 2 May 1983 Coalinga earthquake. Parkfield array stations are shown by larger-scale map in figure 2.



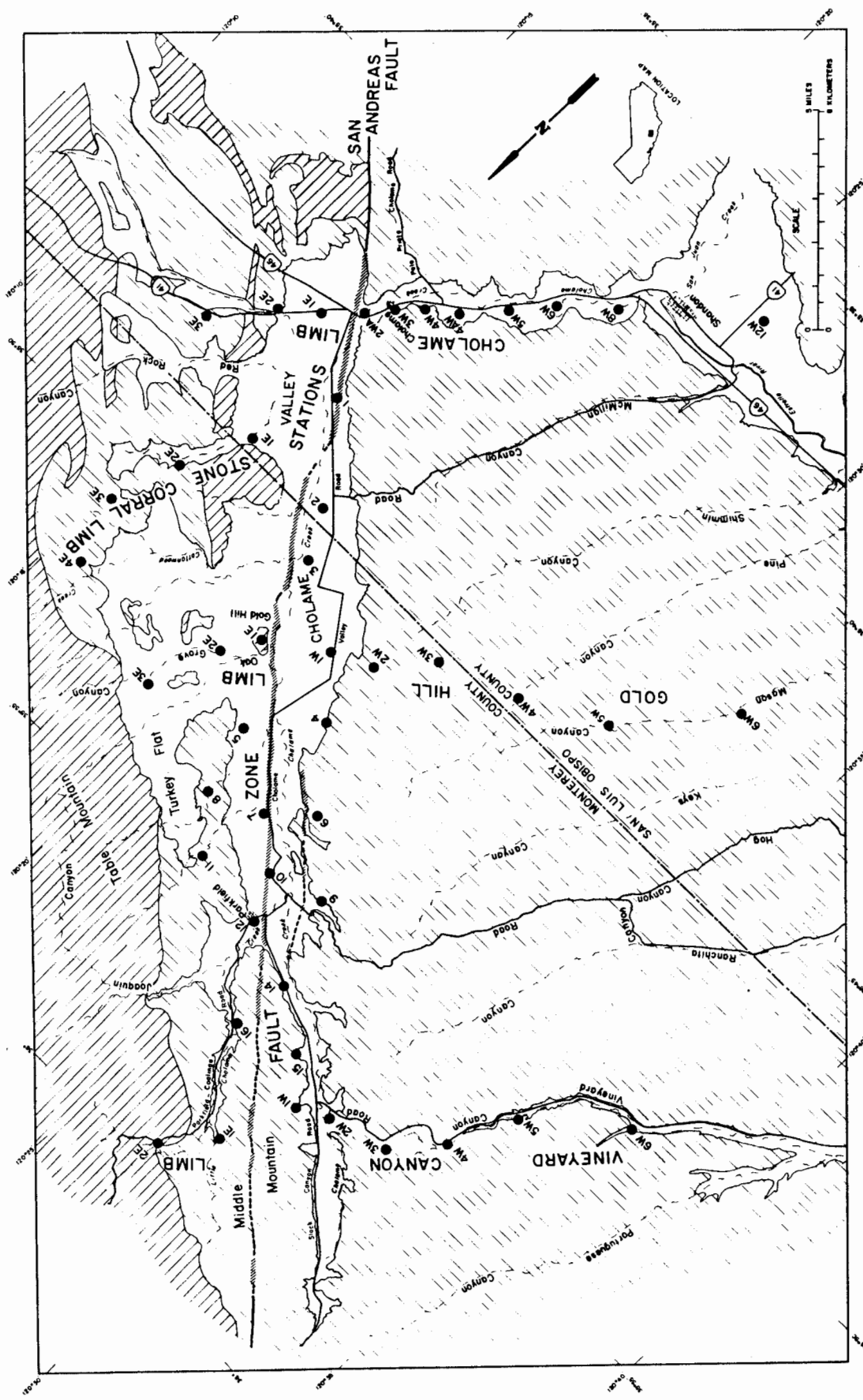


Figure 2. CDMG Parkfield strong-motion array and generalized geology along the San Andreas fault. The array configuration forms four limbs (Cholame, Stone Corral, Gold Hill, Vineyard Canyon) oriented perpendicular to the San Andreas fault and a central zone of stations paralleling the fault. San Andreas fault trace (diagrammatically shown) is of ground rupture from the 1966 Parkfield earthquake (after Brown and Vedder, 1967; Brown, 1970). Geologic data are modified after Jennings (1958), Dickenson (1966 a,b), Hanna and others (1972), and Dibblee (1973).



## STRONG MOTION DATA

The Coalinga earthquake triggered 60 CDMG accelerograph at distances from 25-140 km (figure 1 and 2; table 1). All but one of the CDMG stations triggered by the earthquake are within 125 km of the epicenter. The closest CDMG accelerograph that recorded the earthquake (approximately 28 km) is in a bus garage at Cantua Creek School. The recorded peak acceleration at this site is about 0.30 g. This facility experienced some non-structural damage (cracked plaster, shelf stock, etc.). The most distant station with a vertical trigger was at Pt. Buchon, on the Pacific Coast (figure 1). The Taft station which triggered at a distance of approximately 140 km, has a highly-sensitive horizontal trigger. Of the 60 stations triggered, 46 were in the Parkfield strong-motion array southwest of Coalinga at epicentral distances ranging from 35 to 70 km.

The Parkfield array, an extensive installation of strong-motion instruments, was recently completed in the Parkfield-Cholame Valley area which straddles the San Andreas fault (figure 2). The array was not designed to record a distant event like the Coalinga earthquake however, it nevertheless recorded a wealth of data for the study of attenuation and local site effects. Early work on the Parkfield array and its design involved cooperative efforts of the USGS and CDMG. The array as presently installed is described by McJunkin and Shakal (1983).

Strong-motion data from CDMG stations are presented in Table 2. Contact prints of CDMG Coalinga earthquake records are presented after Table 2. Parkfield array records are presented first. These records are arranged by east to west station order in each of the array limbs which in turn are presented from north to south (Vineyard Canyon, Gold Hill, Stone Corral, Cholame). Fault-zone stations are listed from north to south.

High quality accelerograms were recovered from all instruments in the array except for Station 1E of the Gold Hill Limb (a tripped AC breaker switch disabled seismic equipment at this site). Additionally, one component failed to record at station Vinyard Canyon 5W.

Most of the Parkfield-Cholame stations which recorded the 1966 Parkfield earthquake also recorded the 1983 Coalinga earthquake however, instruments presently in-place are all deployed by CDMG (not present in 1966). The well-known Station 2 that recorded the 1966 earthquake is now denoted 2WA to indicate that it has been moved a short distance from its original location. The remaining stations in-place during the 1966 event are identified in Table 2 by their present array name with superceded names in parentheses.

The Parkfield station records are followed by non-Parkfield array records. Non-Parkfield records are grouped by those from intermediate distance stations and distant stations.

TABLE 1

Listing of CDMG accelerograph stations  
for the Coalinga earthquake of 2 May 1983

Station			Site Geology	Structure Type/Size	Instrument Location(s)
Number	Name	Coordinates			
VINEYARD CANYON LIMB STATIONS					
36177	2E	35.973N 120.467W	Soil, Serpentine (Franciscan-Qls)	Inst Shelter	Ground level
36455	1E	35.957N 120.481W	Thin Alluvium, Sandstone	Inst Shelter	Ground level
36448	1W	35.934N 120.497W	Thin Alluvium, Sandstone	Inst Shelter	Ground level
36447	2W	35.927N 120.509W	Thin Alluvium, Sandstone	Inst Shelter	Ground level
36176	3W	35.922N 120.534W	Soil, Sandstone	Inst Shelter	Ground level
36446	4W	35.905N 120.550W	Thin Alluvium, Sandstone	Inst Shelter	Ground level
36440	5W	35.885N 120.565W	Thin Alluvium, Sandstone	Inst Shelter	Ground level
36441	6W	35.861N 120.600W	Thin Alluvium, Sandstone	Inst Shelter	Ground level
GOLD HILL LIMB STATIONS					
36439	3E	35.870N 120.334W	Thin Alluvium, Sandstone	Inst Shelter	Ground level
36421	2E	35.843N 120.348W	Thin Alluvium, Sandstone	Inst Shelter	Ground level
36137	1E	35.831N 120.353W	Soil, Gabbro	Inst Shelter	Ground level

Table 1 (continued)

Station			Site Geology	Structure Type/Size	Instrument Location(s)
Number	Name	Coordinates			
36415	1W	35.818N 120.378W	Alluvium, Sandstone	Inst Shelter	Ground level
36416	2W	35.812N 120.391W	Alluvium, Sandstone	Inst Shelter	Ground level
36420	3W	35.796N 120.411W	Sandstone	Inst Shelter	Ground level
36433	4W	35.785N 120.444W	Soil, Sandstone	Inst Shelter	Ground level
36434	5W	35.770N 120.477W	Soil, Sandstone	Inst Shelter	Ground level
36432	6W	35.738N 120.507W	Thin Alluvium Sandstone	Inst Shelter	Ground level
STONE CORRAL LIMB STATIONS					
36438	4E	35.855N 120.281W	Sandstone	Inst Shelter	Ground level
36437	3E	35.833N 120.270W	Thin Alluvium, Sandstone	Inst Shelter	Ground level
36422	2E	35.810N 120.282W	Thin Alluvium, Sandstone	Inst Shelter	Ground level
36419	1E	35.788N 120.294W	Alluvium, Serpentine	Inst Shelter	Ground level
CHOLAME LIMB STATIONS					
36450	3E	35.770N 120.247W	Soil, Sandstone	Inst Shelter	Ground level
36230	2E (Temblor II)	35.752N 120.264W	Soil, Sandstone	Inst Shelter	Ground level

Table 1 (continued)

Station		Coordinates	Site Geology	Structure Type/Size	Instrument Location(s)
Number	Name				
36452	1E	35.743N 120.277W	Alluvium, Sandstone(?)	Inst Shelter	Ground level
36228	2WA (Sta. 2)	35.733N 120.290W	Alluvium, Sandstone(?)	Inst Shelter	Ground level
36410	3W	35.724N 120.294W	Alluvium, Sandstone	Inst Shelter	Ground level
36411	4W	35.718N 120.304W	Thin Alluvium, Sandstone	Inst Shelter	Ground level
36412	4AW	35.707N 120.316W	Alluvium, Sandstone	Inst Shelter	Ground level
36227	5W (Sta. 5)	35.697N 120.328W	Alluvium, Sandstone	Inst Shelter	Ground level
36451	6W	35.684N 120.342W	Alluvium, Sandstone	Inst Shelter	Ground level
36226	8W (Sta. 8)	35.671N 120.359W	Alluvium, Sandstone	1-Story Bldg	Ground level
36229	12W (Sta. 12)	35.639N 120.404W	Alluvium, Sandstone	Inst Shelter	Ground level
FAULT ZONE STATIONS					
36457	16	35.927N 120.456W	Thin Alluvium, Sandstone	Inst Shelter	Ground level
36445	15	35.921N 120.481W	Thin Alluvium, Sandstone	Inst Shelter	Ground level
36456	14	35.908N 120.458W	Thin Alluvium, Sandstone	Inst Shelter	Ground level

Table 1 (continued)

Station			Site Geology	Structure Type/Size	Instrument Location(s)
Number	Name	Coordinates			
36138	12	35.899N 120.433W	Alluvium, Sandstone	Inst Shelter	Ground level
36453	11	35.896N 120.398W	Thin Alluvium, Sandstone	Inst Shelter	Ground level
36444	10	35.872N 120.422W	Soil, Sandstone	Inst Shelter	Ground level
36443	9	35.879N 120.445W	Thin Alluvium, Sandstone	Inst Shelter	Ground level
36449	8	35.878N 120.381W	Thin Alluvium, Sandstone	Inst Shelter	Ground level
36431	7	35.871N 120.404W	Soil, Sandstone	Inst Shelter	Ground level
36454	6	35.859N 120.420W	Thin Alluvium, Sandstone	Inst Shelter	Ground level
36414	4	35.836N 120.395W	Soil, Sandstone	Inst Shelter	Ground level
36408	3	35.803N 120.344W	Alluvium >100 m	Inst Shelter	Ground level
36413	2	35.787N 120.334W	Alluvium >100 m	Inst Shelter	Ground level
36407	1	35.758N 120.307W	Alluvium >100 m	Inst Shelter	Ground level

Table 1 (continued)

Station			Site Geology	Structure Type/Size	Instrument Location(s)
Number	Name	Coordinates			
NON-PARKFIELD STATIONS					
46314	Cantua Creek School	36.503N 120.320W	Alluvium >500 m	1-Story Bldg	Ground level
46175	Slack Canyon	36.034N 120.590W	Soil, Marble (Franciscan)	Inst Shelter	Ground level
46174	Priest Valley	36.191N 120.708W	Alluvium, Sandstone	Inst Shelter	Ground level
56073	Mendota	36.755N 120.382W	Alluvium >500 m	1-Story Bldg	Ground level
46173	Bitterwater Valley	36.395N 120.982W	Thin Alluvium, Sandstone(?)	Inst Shelter	Ground level
36258	San Antonio Dam	35.799N 120.884W	Siltstone and Shale	Earth Dam	Rt. & Ctr. Crest, Toe
47288	San Benito	36.519N 121.084W	Alluvium, Sandstone	Inst Shelter	Ground level
36077	Choice Valley	35.574N 120.123W	Soil, Sandstone	Inst Shelter	Ground level
45010	Fresno State U.	36.813N 119.746W	Alluvium >500 m	2-Story Bldg	Basement
36427	Pt. Buchon Los Osos	35.274N 120.885W	Thin Alluvium, Sandstone	1-Story Bldg	Ground level



Table 1 (continued)

Station			Site Geology	Structure Type/Size	Instrument Location(s)
Number	Name	Coordinates			
47460	Green- field A	36.321N 121.243W	Alluvium >500 m	1-Story	Ground level
35110	California Valley - Painted Rock	35.263N 119.815W	Soil, Sandstone	Inst Shelter	Ground level
36014	California Valley	35.304N 120.022W	Thin Alluvium, Sandstone	Inst Shelter	Ground level
36153	Lopez Lake	35.208N 120.457W	Alluvium, Sandstone	1-Story Bldg	Ground level
35409	Taft High	35.146N 119.459W	Alluvium, >250 m	3-Story Bldg	Tunnel, Ground level 2nd, roof

TABLE 2

Strong-motion data from CDMG accelerograph stations  
for the Coalinga earthquake of 2 May 1983

Station		Epicentral Dist(km)	<sup>1</sup> S-t <sup>2</sup> (sec)	WWVB <sup>3</sup> Trigger Time	Acceleration Component <sup>4</sup> Max	
Number	Name Coordinates					
VINEYARD CANYON LIMB STATIONS						
36177	2E 35.973N 120.467W	35.0	5.5	42:46.6	65 Up 335	0.19 0.07 0.12
36455	1E 35.957N 120.481W	37.1	5.5	42:47.2	90 Up 360	0.23 0.09 0.17
36448	1W 35.934N 120.497W	40.1	6.5	Unreadable	90 Up 360	0.09 0.07 0.09
36447	2W 35.927N 120.509W	41.3	6.5	42:47.4	90 Up 360	0.09 0.05 0.08
36176	3W 35.922N 120.534W	42.9	8.0	Unreadable	110 Up 20	0.14 0.06 0.10
36446	4W 35.905N 120.550W	45.2	6.0	Unreadable	90 Up 360	0.04 0.03 0.06
36440	5W 35.885N 120.565W	47.9	9.0	42:48.7	90 Up 360	0.12 0.05 No Trace
36441	6W 35.861N 120.600W	51.9	7.0	42:49.4	90 Up 360	0.08 0.04 0.06
GOLD HILL LIMB STATIONS						
36439	3E 35.870N 120.334W	42.3	5.5	42:49.1	90 Up 360	0.07 0.06 0.09
36421	2E 35.843N 120.348W	45.4	6.0	42:48.9	90 Up 360	0.08 0.03 0.07
36137	1E 35.831N 120.353W	46.8	--	---		Power Loss
36415	1W 35.818N 120.378W	47.5	7.5	Unreadable	90 Up 360	0.07 0.04 0.13

Table 2 (continued)

Station			Epicentral Dist(km)	<sup>1</sup> S-t <sup>2</sup> (sec)	WWVB <sup>3</sup> Trigger Time	Acceleration	
Number	Name	Coordinates				Component <sup>4</sup>	Max.
36416	2W	35.812N 120.391W	49.5	7.0	42:49.6	90 Up 360	0.08 0.04 0.08
36420	3W	35.796N 120.411W	51.4	6.5	42:50.0	90 Up 360	0.12 0.06 0.14
36433	4W	35.785N 120.444W	53.5	7.0	42:49.7	90 Up 360	0.10 0.05 0.06
36434	5W	35.770N 120.477W	56.0	6.5	42:51.2	90 Up 360	0.05 0.03 0.08
36432	6W	35.738N 120.507W	60.2	6.5	42:52.2	90 Up 360	0.07 0.04 0.07
STONE CORRAL LIMB STATIONS							
36438	4E	35.855N 120.281W	43.6	6.0	48:48.4	90 Up 360	0.06 0.03 0.07
36437	3E	35.833N 120.270W	46.1	5.5	42:49.7	90 Up 360	0.11 0.03 0.15
36422	2E	35.810N 120.282W	49.6	6.0	42:49.8	90 Up 360	0.09 0.04 0.06
36419	1E	35.788N 120.294W	51.1	6.5	42:50.9	90 Up 360	0.13 0.07 0.11
CHOLAME LIMB STATIONS							
36450	3E	35.770N 120.247W	53.1	4.0	42:55.8	90 Up 360	0.05 0.03 0.04
36230	2E (Temblor II)	35.752N 120.264W	55.1	5.5	42:52.3	90 Up 360	0.04 0.02 0.02

Table 2 (continued)

Number	Station		Epicentral Dist(km)	<sup>1</sup> S-t <sup>2</sup> (sec)	WWVB <sup>3</sup> Trigger Time	Acceleration	
	Name	Coordinates				Component <sup>4</sup>	Max.
36452	1E	35.743N 120.277W	56.1	3.0	Unreadable	90 Up 360	0.09 0.06 0.09
36228	2WA (Sta. 2)	35.733N 120.290W	57.2	7.5	42:50.7	90 Up 360	0.11 0.04 0.11
36410	3W	35.724N 120.294W	57.9	8.0	42:50.7	90 Up 360	0.08 0.04 0.10
36411	4W	35.718N 120.304W	59.0	7.5	42:50.9	90 Up 360	0.13 0.04 0.13
36412	4AW	35.707N 120.316W	60.1	8.0	Unreadable	90 Up 360	0.07 0.02 0.05
36227	5W (Sta. 5)	35.697N 120.328W	61.3	8.0	Unreadable	90 Up 360	0.14 0.03 0.13
36451	6W	35.684N 120.342W	62.8	8.5	Unreadable	90 Up 360	0.10 0.03 0.13
36226	8W (Sta. 8)	35.671N 120.359W	64.5	6.5	Unreadable	90 Up 360	0.10 0.03 0.10
36229	12W (Sta. 12)	35.639N 120.404W	68.5	8.5	42:52.8	90 Up 360	0.05 0.02 0.04
FAULT ZONE STATIONS							
36457	16	35.927N 120.456W	39.1	7.0	42:47.3	90 Up 360	0.15 0.08 0.19
36445	15	35.921N 120.481W	40.7	6.5	42:47.7	90 Up 360	0.13 0.09 0.20
36456	14	35.908N 120.458W	41.3	7.0	42:48.2	90 Up 360	0.28 0.10 0.27

Table 2 (continued)

Station			Epicentral Dist(km)	<sup>1</sup> S-t (sec)	WWVB <sup>3</sup> Trigger Time	Acceleration	
Number	Name	Coordinates				Component <sup>4</sup>	Max.
36138	12	35.899N 120.433W	41.2	7.0	42:48.3	90 Up 360	0.11 0.07 0.12
36453	11	35.896N 120.398W	46.9	5.5	42:48.3	90 Up 360	0.09 0.04 0.08
36444	10	35.872N 120.422W	42.5	6.5	42:48.4	90 Up 360	0.13 0.05 0.08
36443	9	35.879N 120.445W	43.7	5.0	42:49.7	90 Up 360	0.05 0.03 0.05
36449	8	35.878N 120.381W	42.1	6.0	42:48.4	90 Up 360	0.12 0.05 0.14
36431	7	35.871N 120.404W	43.3	6.0	42:49.1	90 Up 360	0.12 0.06 0.12
36454	6	35.859N 120.420W	45.1	7.0	42:48.8	90 Up 360	0.06 0.03 0.06
36414	4	35.836N 120.395W	46.4	6.0	42:49.3	90 Up 360	0.12 0.05 0.07
36408	3	35.803N 120.344W	49.7	7.5	42:49.5	90 Up 360	0.17 0.05 0.14
36413	2	35.787N 120.334W	51.4	7.0	Unreadable	90 Up 360	0.13 0.04 0.12
36407	1	35.758N 120.307W	55.4	7.0	42:50.3	90 Up 360	0.11 0.04 0.14

Table 2 (continued)

Station		Epicentral Dist(km)	<sup>1</sup> S-t (sec)	WWVB <sup>3</sup> Trigger Time	Acceleration		
Number	Name				Coordinates	Component <sup>4</sup>	Max.
NON-PARKFIELD STATIONS							
46314	Cantua Creek School	36.503N 120.320W	28.6	6.0	Unreadable	90 Up 360	0.23 0.12 0.29
46175	Slack Canyon	36.034N 120.590W	36.8	5.5	42:46.9	45 Up 315	0.17 0.06 0.14
46174	Priest Valley	36.191N 120.708W	39.3	3.5	Radio Inoperative	325 Up 235	0.10 0.03 0.11
56073	Mendota	36.755N 120.382W	57.0	8.0	No Radio	38 Up 308	0.03 0.03 0.05
46173	Bitterwater Valley	36.395N 120.982W	65.4	?	42:57.7	15 Up 285	0.04 0.02 0.04
36258	San Antonio Dam, Left Crest Toe	35.799N 120.884W	74.0	10.0	42:53.5	201 Up 111 218 Up 128	0.10 0.04 0.06 0.03 0.02 0.03
47288	San Benito	36.519N 121.084W	78.4	8.5	No Radio	271 Up 181	0.03 0.02 0.05
36077	Choice Valley	35.574N 120.123W	76.1	4.0	No Radio	90 Up 360	0.05 0.03 0.04
45010	Fresno State U.	36.813N 119.746W	78.7	?	No Radio	358 Up 268	0.03 0.03 0.03
36427	Pt. Buchon Los Osos	35.274N 120.885W	121.3	?	No Radio	90 Up 360	0.02 0.01 0.02

Table 2 (continued)

Station		Epicentral Dist(km)	S-t (sec)	WWVB Trigger Time	Acceleration		
Number	Name				Coordinates	Component	Max.
47460	Green- field A	36.321N 121.243W	87.2	10.0	Radio Inoperative	90 Up 360	0.03 0.02 0.03
35110	California* Valley - Painted Rock	35.263N 119.815W	117.0	?	42:51.8*	90 Up 360	0.05* 0.03 0.07
36014	California Valley	35.304N 120.022W	107.3	-	-	Not Triggered	
36153	Lopez Lake	35.208N 120.457W	116.5	?	No Radio	115 Up 25	<0.01 0.02 <0.01
35409	Taft High School Tunnel Roof	35.146N 119.459W	142.9	?	No Radio	200 Up 110 200 110	0.02 0.01 0.02 0.03 0.05

1. UCB preliminary epicenter at 36.248N - 120.277W.
  2. Approximate S-wave arrived minus trigger time. ?=S-t is not recognizable.
  3. Trigger time in minutes and seconds after 1600 hours (PDT) on 2 May 1983 as determined from WWVB time code.
  4. Azimuthal direction of ground or structure acceleration for upward trace deflection on accelerogram (degrees clockwise from north).
- \* WWVB time code indicates that this record was produced 2 hours earlier than the time of the Coalinga earthquake.

Parkfield Array - Vineyard Canyon Limb, Station 2E  
CDMG Station #36177  
Record #36177-S1857-83123.01

Coalinga Earthquake of  
2 May 83



65

0.19 g

UP

0.07 g

335

0.12 g

Timing: 2 marks/sec

Parkfield Array - Vineyard Canyon Limb, Station 1E  
CDMG Station #36455  
Record #36455-S4833-83123.01



90

0.23 g

UP

0.09 g

360

0.17 g

Timing: 2 marks/sec



Parkfield Array - Vineyard Canyon Limb, Station 1W  
CDMG Station #36448  
Record #36448-S4392-83123.01

Coalinga Earthquake of  
2 May 83

F0374

90

0.09 g

UP

0.07 g

360

0.09 g

Timing: 2 marks/sec

Parkfield Array - Vineyard Canyon Limb, Station 2W  
CDMG Station #36447  
Record #36447-S4812-83123.01

19  
100  
200  
300  
400  
500  
600  
700  
800  
900  
1000  
1100  
1200  
1300  
1400  
1500  
1600  
1700  
1800  
1900  
2000  
2100  
2200  
2300  
2400  
2500  
2600  
2700  
2800  
2900  
3000  
3100  
3200  
3300  
3400  
3500  
3600  
3700  
3800  
3900  
4000  
4100  
4200  
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6200  
6300  
6400  
6500  
6600  
6700  
6800  
6900  
7000  
7100  
7200  
7300  
7400  
7500  
7600  
7700  
7800  
7900  
8000  
8100  
8200  
8300  
8400  
8500  
8600  
8700  
8800  
8900  
9000  
9100  
9200  
9300  
9400  
9500  
9600  
9700  
9800  
9900  
10000

90

0.09 g

UP

0.05 g

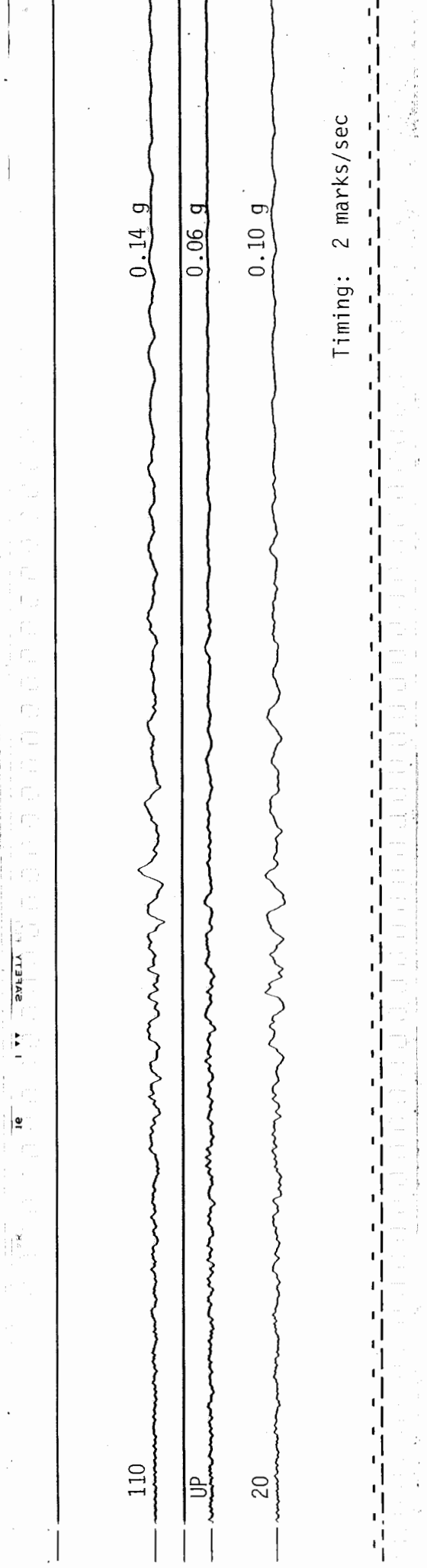
360

0.08 g

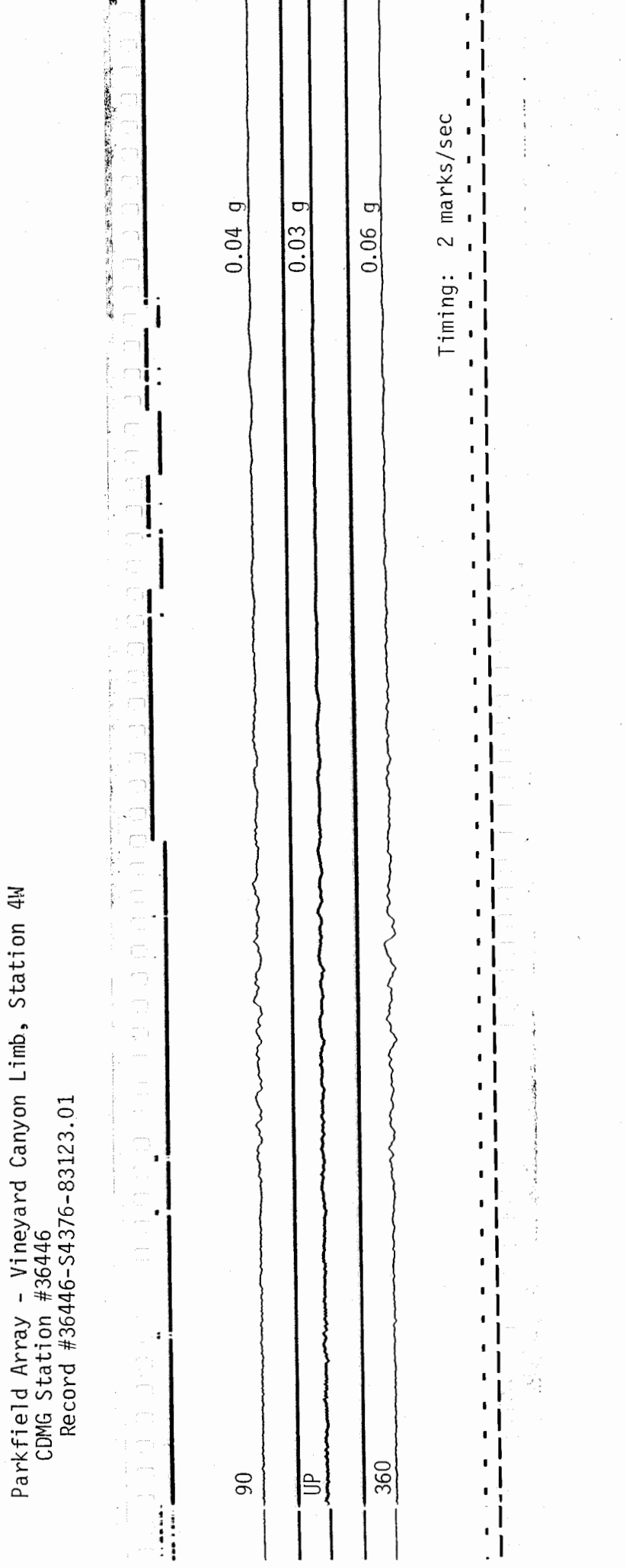
Timing: 2 marks/sec

Parkfield Array - Vineyard Canyon Limb, Station 3W  
CDMG Station #36176  
Record #36176-S1856-83123.01

Coalinga Earthquake of  
2 May 83

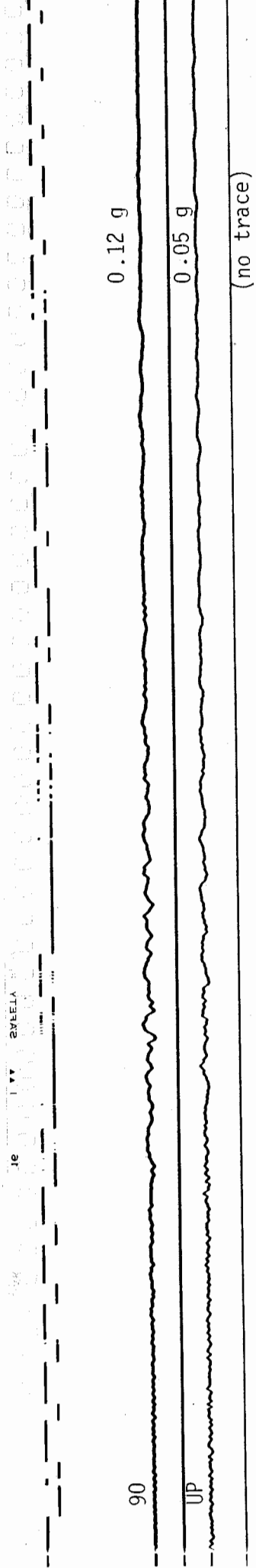


Parkfield Array - Vineyard Canyon Limb, Station 4W  
CDMG Station #36446  
Record #36446-S4376-83123.01

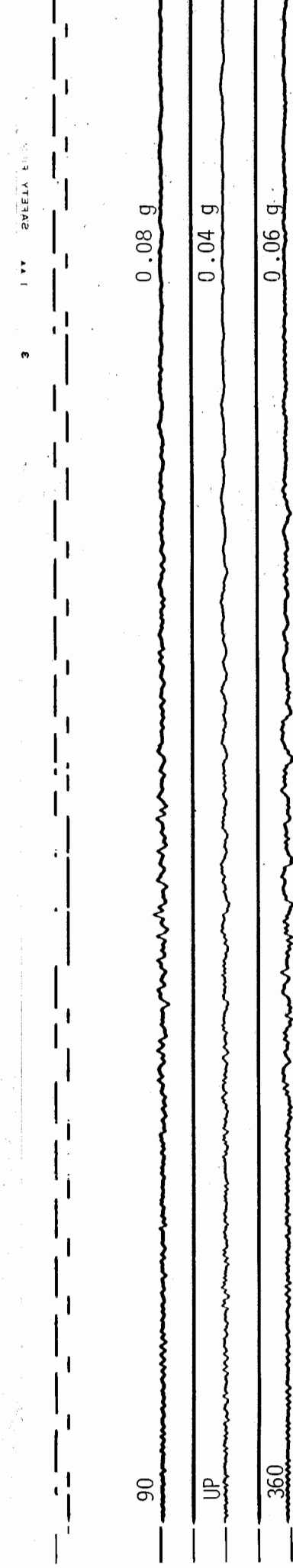


Parkfield Array - Vineyard Canyon Limb, Station 5W  
CDMG Station #36440  
Record #36440-S4832-83124.02

Coalinga Earthquake of  
2 May 83



Parkfield Array - Vineyard Canyon Limb, Station 6W  
CDMG Station #36441  
Record #36441-S4393-83124.01



Coalinga Earthquake of  
2 May 83

Parkfield Array - Gold Hill Limb, Station 3E  
CDMG Station #36439  
Record #36439-S4387-83124.01

0.07 g

0.06 g

0.09 g

Timing: 2 marks/sec

90

UP

360

Parkfield Array - Gold Hill Limb, Station 2E  
CDMG Station #36421  
Record #36421-S2451-83125.01

0.08 g

0.03 g

0.07 g

Timing: 2 marks/sec

90

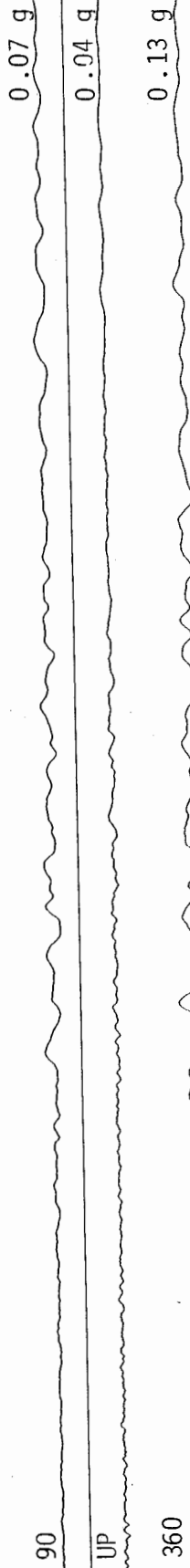
UP

360

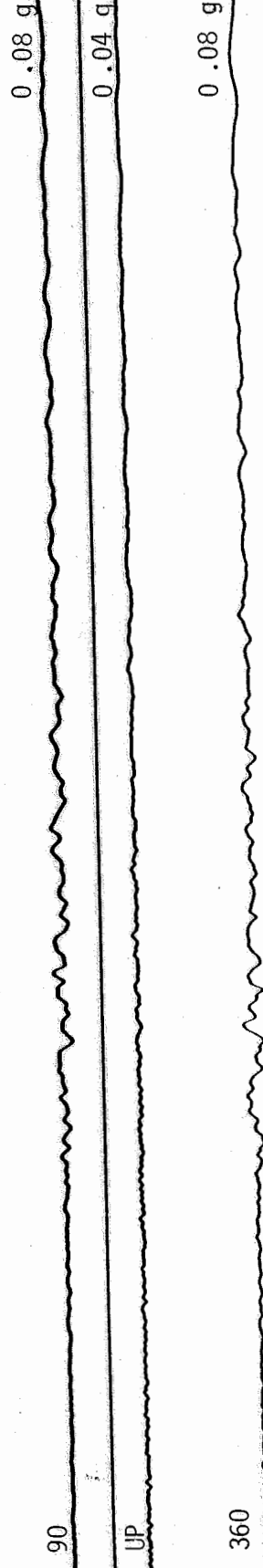
Parkfield Array - Gold Hill Limb, Station 1W  
CDMG Station #36415  
Record #36415-S1812-83125.01

Coalinga Earthquake of  
2 May 83

2 1 ■ ■ 2VBE1A E1TW



Parkfield Array - Gold Hill Limb, Station 2W  
CDMG Station #36416  
Record #36416-S1866-83125.01



Parkfield Array - Gold Hill Limb, Station 3W  
CDMG Station #36420  
Record #36420-S2777-83125.01

Coalinga Earthquake of  
2 May 83

90

0.12 g

UP

0.06 g

360

0.14 g

Timing: 2 marks/sec

Parkfield Array - Gold Hill Limb, Station 4W  
CDMG Station #36433  
Record #36433-S4818-83124.01

90

0.10 g

UP

0.05 g

360

0.06 g

Timing: 2 marks/sec

Parkfield Array - Gold Hill Limb, Station 5W  
CDMG Station #36434  
Record #36434-S4388-83124.01

Coalinga Earthquake of  
2 May 83

90

0.05 g

UP

0.03 g

360

0.08 g

Timing: 2 marks/sec

Parkfield Array - Gold Hill Limb, Station 6W  
CDMG Station #36432  
Record #36432-S4381-83124.01

90

0.07 g

UP

0.04 g

360

0.07 g

Timing: 2 marks/sec

Coalinga Earthquake of  
2 May 83

Parkfield Array - Stone Corral Limb, Station 4E  
CDMG Station #36438  
Record #36438-S4823-83124.01

0.06 g  
0.03 g  
0.07 g

Timing: 2 marks/sec

Parkfield Array - Stone Corral Limb, Station 3E  
CDMG Station #36437  
Record #36437-S2591-83124.01

0.11 g  
0.03 g  
0.15 g

Timing: 2 marks/sec



Parkfield Array - Stone Corral Limb, Station 2E  
CDMG Station #36422  
Record #36422-S2792-83125.01

Coalinga Earthquake of  
2 May 83

100 100 200 300 400 500 600 700 800 900 1000

100 100 200 300 400 500 600 700 800 900 1000

100 100 200 300 400 500 600 700 800 900 1000

90

0.09 g

UP

0.04 g

360

0.06 g

Timing: 2 marks/sec

Parkfield Array - Stone Corral Limb, Station 1E  
CDMG Station #36419  
Record #36419-S2769-83125.04

100 100 200 300 400 500 600 700 800 900 1000

100 100 200 300 400 500 600 700 800 900 1000

100 100 200 300 400 500 600 700 800 900 1000

90

0.13 g

UP

0.07 g

360

0.11 g

Timing: 2 marks/sec

Parkfield Array - Cholame Limb, Station 3E  
CDMG Station #36450  
Record #36450-S4394-83125.01

Coalinga Earthquake of  
2 May 83

90

0.05 g

UP

0.03 g

360

0.04 g

Timing: 2 marks/sec

Parkfield Array - Cholame Limb, Station 2E  
CDMG Station #36230  
Record #36230-S1838-83125.01

90

0.04 g

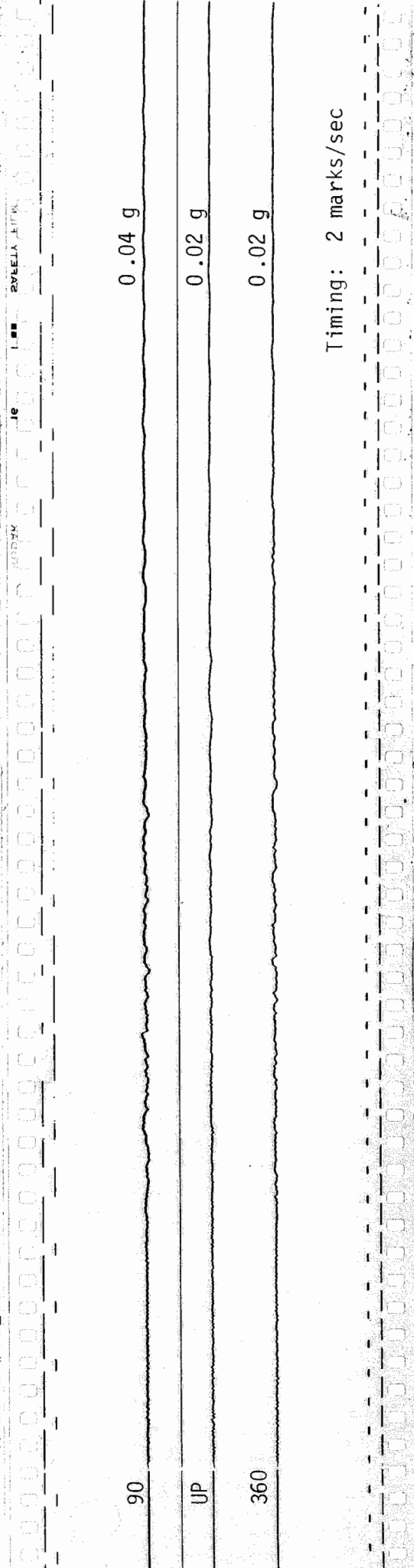
UP

0.02 g

360

0.02 g

Timing: 2 marks/sec



Parkfield Array - Cholame Limb, Station 1E  
CDMG Station #36452  
Record #36452-S4390-83125.01

Coalinga Earthquake of  
2 May 83

90

0.09 g

UP

0.06 g

360

0.09 g

Timing: 2 marks/sec

Parkfield Array - Cholame Limb, Station 2WA  
CDMG Station #36228  
Record #36228-S1840-83123.01

90

0.11 g

UP

0.04 g

360

0.11 g

Timing: 2 marks/sec

Parkfield Array - Cholame Limb, Station 3W  
CDMG Station #36410  
Record #36410-S1878-83124.01

Coaltinga Earthquake of  
2 May 83

KODPK

90

0.08 g

UP

0.04 g

360

0.10 g

Timing: 2 marks/sec

Parkfield Array - Cholame Limb, Station 4W  
CDMG Station #36411  
Record #36411-S4375-83124.01

90

0.13 g

UP

0.04 g

360

0.13 g

Timing: 2 marks/sec

Parkfield Array - Cholame Limb, Station 4AW  
CDMG Station #36412  
Record #36412-S1852-83124.01

Coaltinga Earthquake of  
2 May 83

KODVK

90

0 .07 g

UP

0 .02 g

360

0 .05 g

Timing: 2 marks/sec

Parkfield Array - Cholame Limb, Station 5W  
CDMG Station #36227  
Record #36227-S1836-83124.01

SWEEPER

360

0 .13 g

UP

0 .03 g

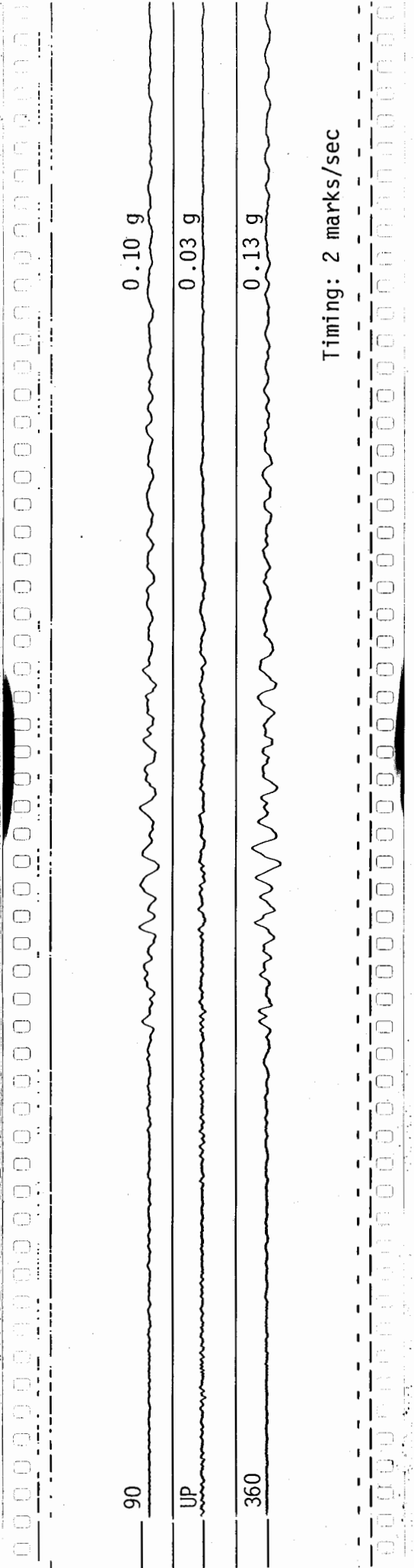
270

0 .14 g

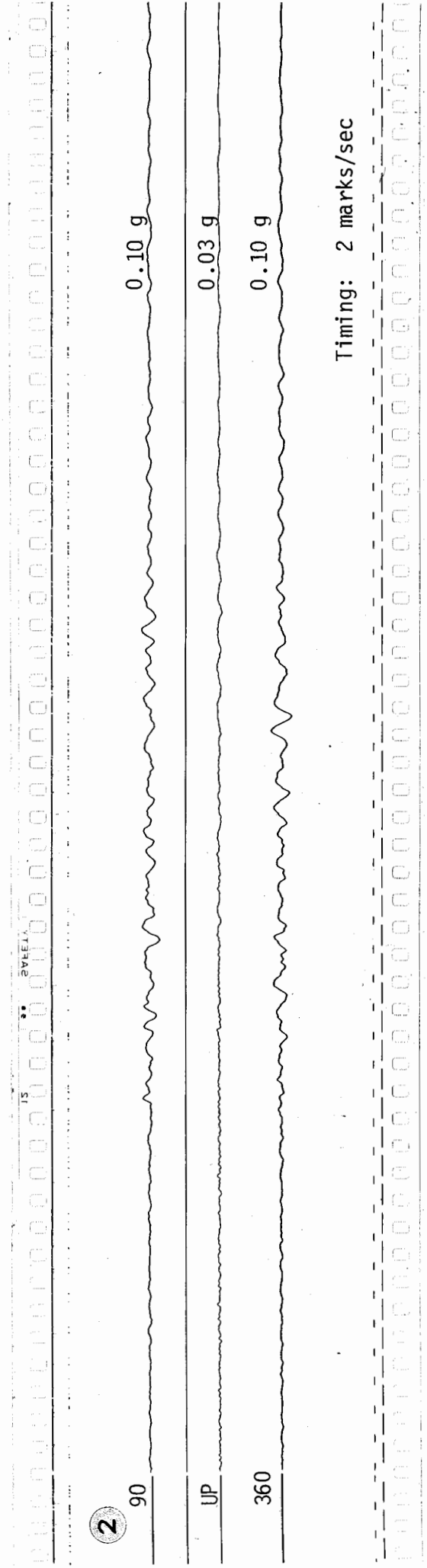
Timing: 2 marks/sec

Coalunga Earthquake of  
2 May 83

Parkfield Array - Cholame Limb, Station 6W  
CDMG Station #36451  
Record #36451-S4826-83124.01



Parkfield Array - Cholame Limb, Station 8W  
CDMG Station #36226  
Record #36226-S1835-83124.02



Parkfield Array - Cholame Limb, Station 12 W  
CDMG Station #36229  
Record #36229-S1842-83124.01

Coalinga Earthquake of  
2 May 83

0 .05 g

0 .02 g

0 .04 g

90

UP

360

Timing: 2 marks/sec

Parkfield Array - Fault Zone Station 16  
CDMG Station # 36457  
Record #36457-S4386-83123.01

Coalinga Earthquake of  
2 May 83

0.15 g

0.08 g

0.19 g

Timing: 2 marks/sec

90

UP

360

Parkfield Array - Fault Zone Station 15  
CDMG Station #36445  
Record #36445-S4382-83123.01

0.13 g

0.09 g

0.20 g

Timing: 2 marks/sec

90

UP

360



Parkfield Array - Fault Zone Station 14  
CDMG Station #36456  
Record #36456-S4384-83123.01

Coalinga Earthquake of  
2 May 83

90

0.28 g

UP

0.10 g

360

0.27 g

Timing: 2 marks/sec

Parkfield Array - Fault Zone Station 12  
CDMG Station #36138  
Record #36138-S1844-83124.01

180

0.12 g

UP

0.07 g

90

0.11 g

Timing: 2 marks/sec

Parkfield Array - Fault Zone Station 11  
CDMG Station #36453  
Record #36453-S4821-83124.01

Coalinga Earthquake of  
2 May 83

90

0.09 g

UP

0.04 g

360

0.08 g

Timing: 2 marks/sec

Parkfield Array - Fault Zone Station 10  
CDMG Station #36444  
Record #36444-S4806-83124.01

90

0.13 g

UP

0.05 g

360

0.08 g

Timing: 2 marks/sec

Parkfield Array - Fault Zone Station 9  
CDMG Station #36443  
Record #36443-S4822-83124.01

Coalinga Earthquake of  
2 May 83

0.05 g

90

UP

0.03 g

0.05 g

360

Timing: 2 marks/sec

Parkfield Array - Fault Zone Station 8  
CDMG Station #36449  
Record #36449-S4383-83124.01

0.12 g

90

UP

0.05 g

0.14 g

360

Timing: 2 marks/sec

Coalinga Earthquake of  
2 May 83

Parkfield Array - Fault Zone Station 7  
CDMG Station #36431  
Record #36431-S4379-83124.01

0.12 g

0.06 g

0.12 g

Timing: 2 marks/sec

90

UP

360

Parkfield Array - Fault Zone Station 6  
CDMG Station #36454  
Record #36454-S4820-83124.01

0.06 g

0.03 g

0.06 g

Timing: 2 marks/sec

90

UP

360

Coalinga Earthquake of  
2 May 83

Parkfield Array - Fault Zone Station 4  
CDMG Station #36414  
Record #36414-S1825-83125.01

18 1 ■ ■ ■ 27561.4

0.12 g

0.05 g

0.07 g

Timing: 2 marks/sec

90

UP

360

Parkfield Array - Fault Zone Station 3  
CDMG Station #36408  
Record #36408-S2771-83125.01

0.17 g

0.05 g

0.14 g

Timing: 2 marks/sec

90

UP

360

Parkfield Array - Fault Zone Station 2  
CDMG Station #36413  
Record #36413-S2517-83124.01

Coaltinga Earthquake of  
2 May 83

IS SVEELA E1FM

90 0.13 g

UP 0.04 g

360 0.12 g

Timing: 2 marks/sec

Parkfield Array - Fault Zone Station 1  
CDMG Station #36407  
Record #36407-S1588-83123.01

90 0.11 g

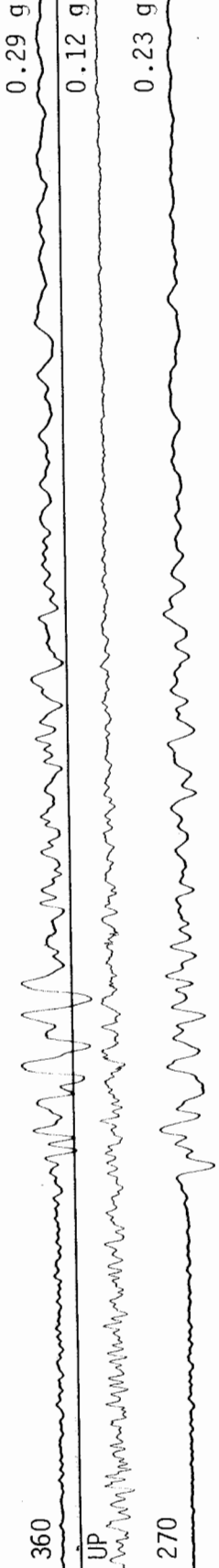
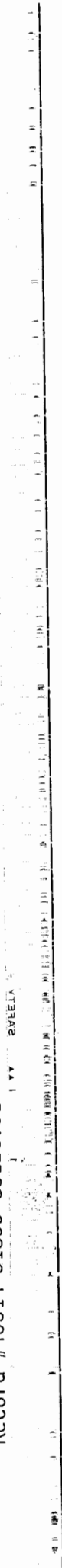
UP 0.04 g

360 0.14 g

Timing: 2 marks/sec

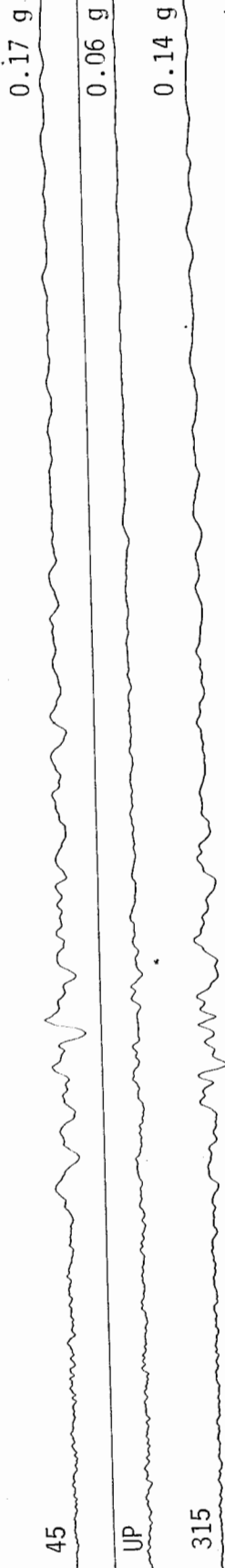
Coaltinga Earthquake of  
2 May 83

Cantua Creek School  
CDMG Station #46314  
Record #46314-S1855-83123.01



Timing: 2 marks/sec

Stack Canyon  
CDMG Station #46175  
Record #46175-S2458-83126.01



Timing: 2 marks/sec

Coalinga Earthquake of  
2 May 83

Priest Valley  
CDMG Station #46174  
Record #46174-S1849-83126.01

2VVELA E1FM

0.10 g

325

0.03 g

UP

0.11 g

235

(Apparent film-speed malfunction)

Mendota  
CDMG Station #56073  
Record #56073-S1576-83123.01

0.03 g

38

0.03 g

UP

0.05 g

308

Timing: 2 marks/sec



Bitterwater Valley  
CDMG Station #46173  
Record #46173-S2495-83126.01

Coalinga Earthquake of  
2 May 83

FOCUS 1.2 SVEELA 811 K

15 0.04 g

UP 0.02 g

285 0.04 g

Timing: 2 marks/sec

San Antonio Dam - Left Crest  
CDMG Station #36258  
Record #36258-S2454-83132.01

FOCUS 1.2 SVEELA 811 K

201 0.10 g

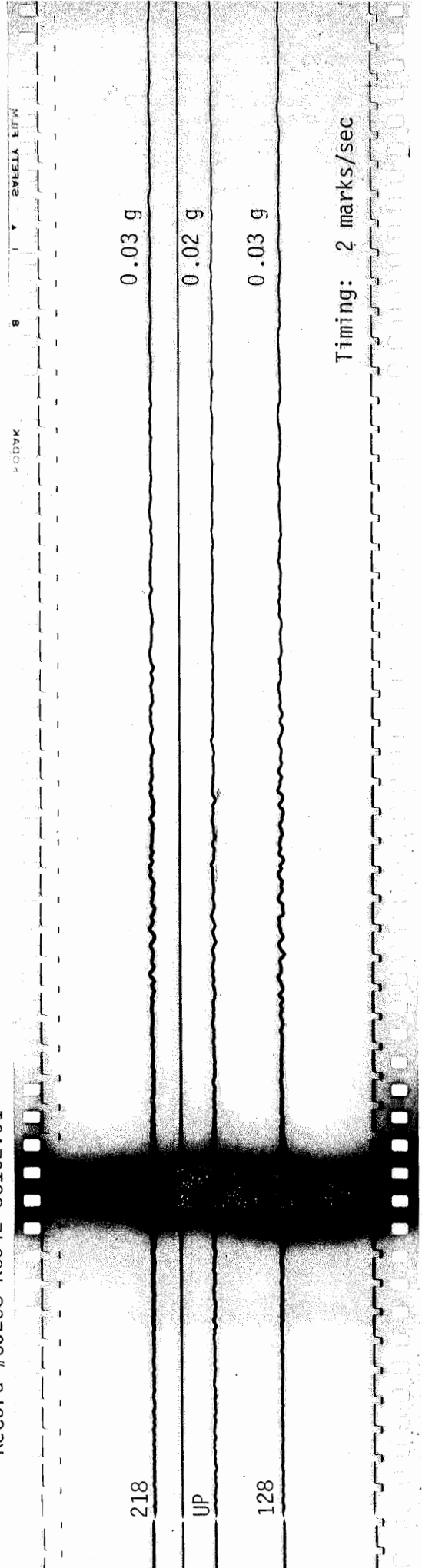
UP 0.04 g

111 0.06 g

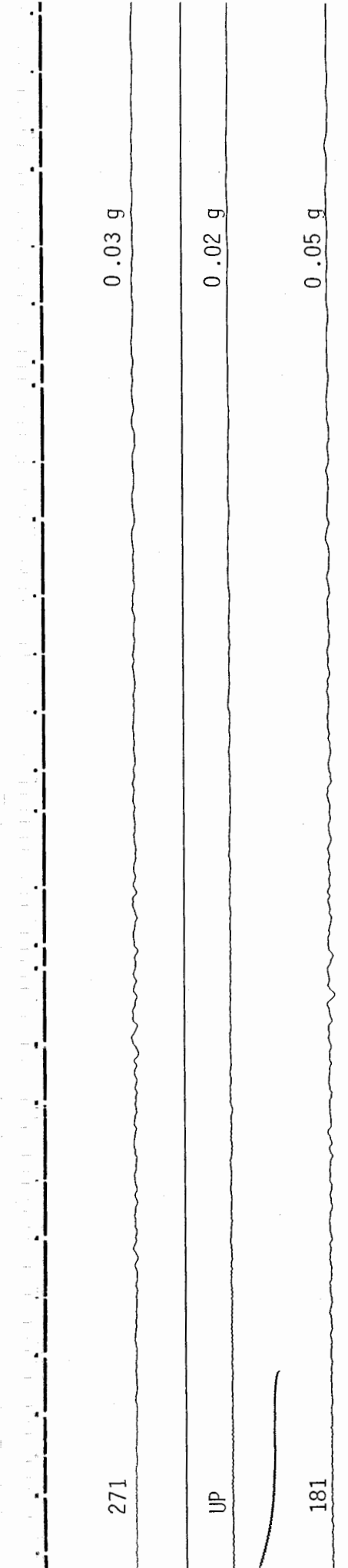
Timing: 2 marks/sec

Coaltinga Earthquake of  
2 May 83

San Antonio Dam - Toe  
CDMG Station #36258  
Record #36258-R0542-83132.01



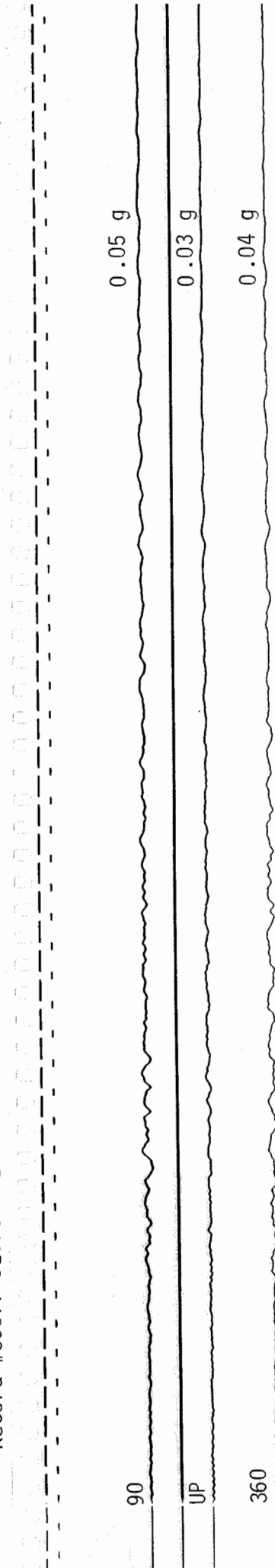
San Benito  
CDMG Station #47288  
Record #47288-C0188-83126.01



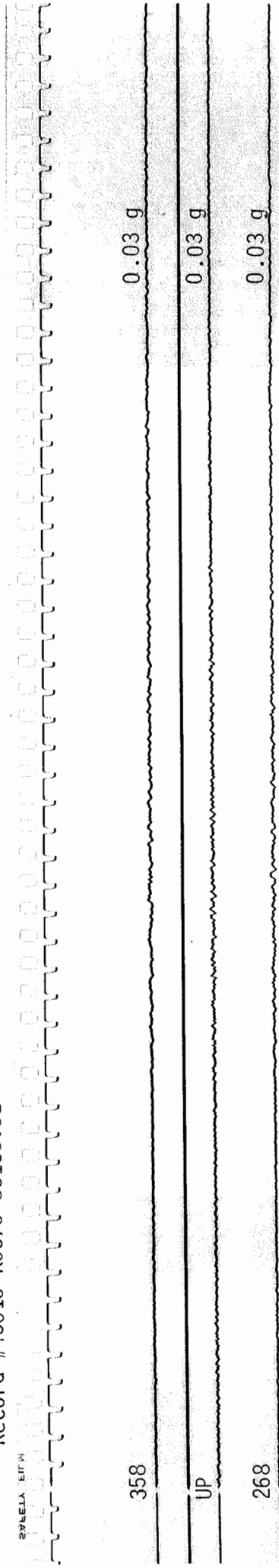
Timing: 2 marks/sec

Coaltinga Earthquake of  
2 May 83

Choice Valley - Twisselman Ranch  
CDMG Station #36077  
Record #36077-S1578-83131.01

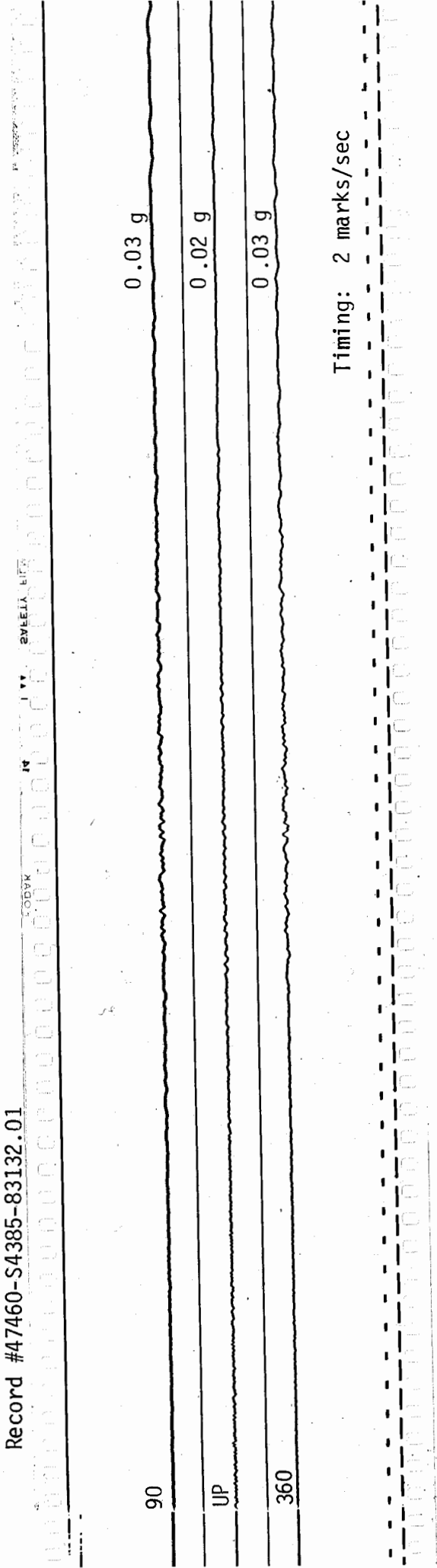


Fresno - State University  
CDMG Station #45010  
Record #45010-R0370-83130.01

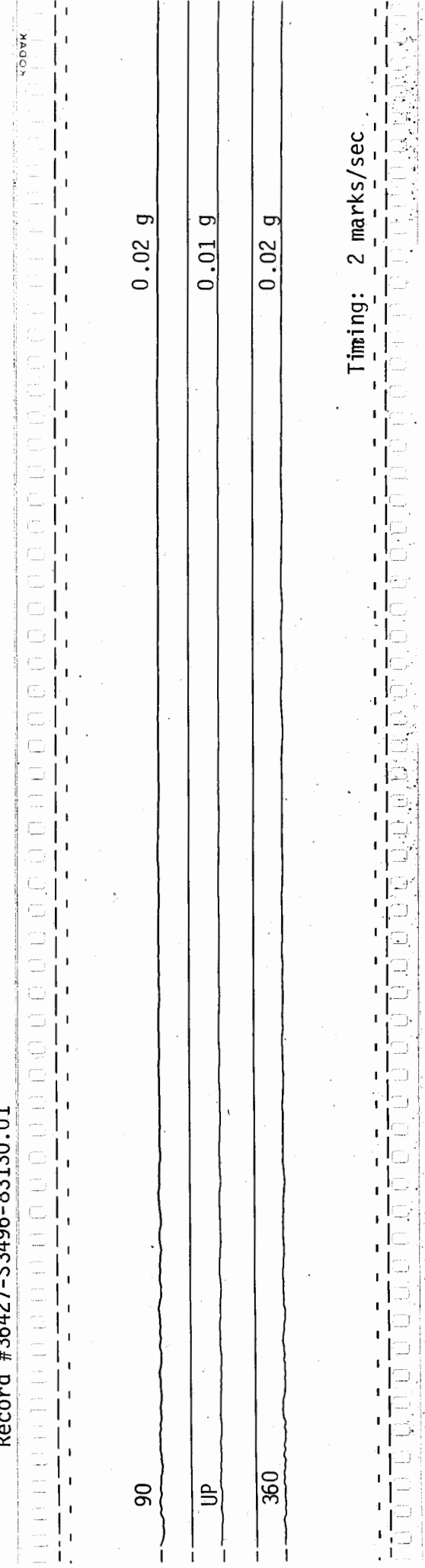


Coaltinga Earthquake of  
2 May 83

Greenfield A  
CDMG Station #47460  
Record #47460-S4385-83132.01



Point Buchon - Los Osos  
CDMG Station #36427  
Record #36427-S3496-83130.01



Coalinga Earthquake of  
2 May 83

Taft High School - Science Building  
CDMG Station #35409  
Record #35409-C0214-83131.01

UP Ground Floor 0.02 g

" " 0.01 g

" " 0.01 g

S Roof-East Wall 0.03 g

S " -Center 0.03 g

S " -West Wall 0.02 g

S 2nd Floor-East Wall 0.02 g

S " " -West Wall 0.02 g

S Ground Floor-East Wall 0.02 g

S " " -West Wall 0.02 g

E Roof 0.05 g

E 2nd Floor 0.02 g

E Ground Floor 0.02 g

Structural Reference Orientation: N=20°

Timing: 2 marks/sec

Taft High School - Tunnel  
CDMG Station #35409  
Record #35409-S3503-83131.01

Coalinga Earthquake of  
2 May 83

S

0.02 g

UP

0.01 g

E

0.02 g

Timing: 2 marks/sec

Structure Reference Orientation: N=20°

## ACKNOWLEDGMENTS

CDMG extends appreciation to individuals and organizations that have permitted installation of seismic strong-motion equipment on their property, particularly in the vicinity of the Parkfield array. Installation of the Parkfield array was recently completed through the efforts of Marvin Huston, Stephen Rider, Vicki DaVeiga, and Harold Bucholz. Field recovery of the Coalinga earthquake records was performed by Albert Guyer, Marvin Huston, Stephen Rider, and Wayne Williams. The records were developed by Jan Farros and scaled by Claudia Hallstrom. Phyllis Young assisted in assembling the report.

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PRELIMINARY SUMMARY OF CDMG STRONG-MOTION RECORDS FROM THE 2 MAY 1983 COALINGA,  
CALIFORNIA, EARTHQUAKE

Report OSMS 83-5.2