

WELL VELOCITY SURVEY

PHILLIP #2

EP 10

NORTHERN TERRITORY

for

303413

PACIFIC OIL & GAS PTY. LTD.

by

VELOCITY DATA PTY. LTD.

Brisbane, Australia

OCTOBER 31ST 1988.

## CONTENTS

	Page
SUMMARY ... ..	1
GENERAL INFORMATION ... ..	1
EQUIPMENT ... ..	2
RECORDING ... ..	3
PROCESSING	
Elevation Data ... ..	3
Recorded Data ... ..	4
Correction for Instrument Delay and Shot Offset ... ..	4
Correction to Datum ... ..	4
Calibration of Sonic Log	
Method ... ..	5
Results ... ..	5
Trace Playouts ... ..	6

### Figures

Figure 1	Well location map
Figure 2	Shot location sketch
Figure 3	Time-depth and velocity curves
Figure 4	Trace playouts

### Tables

Table 1	Time-depth values
---------	-------------------

### Enclosures

1.	Calculation Sheets
2.	Trace Display and First Arrival Plots

**SUMMARY**

Velocity Data Pty. Ltd. conducted a velocity survey for Pacific Oil & Gas Pty. Ltd in the Phillip No.2 well, EP 10 Northern Territory. The date of the survey was June 24th 1988.

The results of the survey, which are considered to be reliable, have been used to calibrate the sonic log. From this a synthetic seismogram has been derived which is the subject of a report under separate cover. Explosives were used as an energy source with shots being fired in the mud pit.

**GENERAL INFORMATION**

Name of Well : PHILLIP #2

Location (Figure 1) : EP 10 Northern Territory

Coordinates : Latitude 022 16' 15"  
: Longitude 135 16' 15"

Date of Survey : June 24th 1988.

Wireline Logging : BPB Instruments.

Weather : Fine

Operational Base : BRISBANE

Operator : J. Larson

Client Representative : Mr.G. Wakelin-King

**EQUIPMENT**

**Downhole Tool**

FM Monoline (48 mm)

**Sensors:**

4 SM6 4.5 Hz - 375 ohm connected in series parallel.

**Preamplifier:**

-48 dB fixed gain

**Time Delay:**

4 milliseconds

**Reference Geophone**

Mark Products L1 (4.5 Hz)

**Recording Instruments**

SIE RS49W digital recording system utilising SIE OPA-10 amplifiers and inch nine track RU-49W tape-unit. Data was recorded in SEG-A format with a one ms sampling rate.

**RECORDING**

Energy Source : Explosive, AN-60  
Shot Location : Mud pit  
Charge Size : 0.25 to 2 (125 gm)sticks  
Average Shot Depth : 0.6 metres  
Average Shot Offset : 25.0 metres  
Recording Geometry : Figure 2

Shots were recorded on digital cassette tape. Printouts of the shots used are included with this report. (Enclosure 2)

The sample rate was 1 ms with 0.5 ms sampling over a 200 ms window encompassing the first arrivals. The scale of the graphic display varies with signal strength and is noted on each playout.

The times were picked from the printouts using the numerical value of the signal strength. (Enclosure 2)

**PROCESSING****Elevation Data**

Elevation of KB : 423.8 metres above sea level  
Elevation of Ground : 421.0 metres above sea level  
Elevation of Seismic Datum : 421.0 metres above sea level  
Depth Surveyed : 1487.0 metres below KB  
Total Depth : 1493.4 metres below KB  
Depth of Casing : 88.0 metres below KB  
Sonic Log Interval : 1487.0 to 85.1 metres below KB

## PROCESSING

### Recorded Data

Number of Shots Used : 28  
 Number of Levels Recorded : 24  
 Data Quality : Fair  
 Noise Level : Moderate  
 Rejected Shots : 6

### Correction for Instrument Delay and Shot Offset

The 'corrected' times shown on the calculation sheet have been obtained via:

- (i) Subtraction of the instrument delay (8 msec) from the recorded arrival times
- (ii) geometric correction for non-verticality of ray paths resulting from shot offset.
- (iii) shot static correction to correct for the depth of shot below ground level at the well head using a correction velocity of 2088 m/sec
- (iv) readdition of the instrument delay (8 msec).

The shot static correction velocity was determined from the surface geophone data.

### Correction to Datum

A datum level of 421.0 metres has been used which in fact is ground level. As no checkshot was taken at datum it is mandatory to include in the calculations a figure to allow for the instrument delay. In normal circumstances a checkshot is taken at datum and such an allowance is not required. The average corrected time for datum was 8msecs this is the effective datum correction.

## PROCESSING

### Calibration of Sonic Log - Method

Sonic times were adjusted to checkshot times using a linear correction of the sonic transit times.

These differences arise as the sonic tool measures the local velocity characteristics of the formation with a high frequency signal, whereas the downhole geophone records the bulk velocity character using a signal of significantly lower frequency.

### Calibration of Sonic Log - Results ( Enclosure 1 )

The discrepancies between shot and sonic interval velocities were of acceptable levels. The largest adjustment was 58.3 us/metre on the interval 1475 to 1487 metres below KB.

In aggregate, the shot and sonic interval times differed by 7 msec over the logged portion of the well.

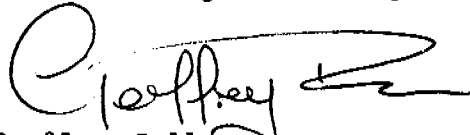
**PROCESSING****Trace Playouts ( Figure 4 )**

Figure 4A is a plot of all traces used. No filter or gain recovery has been applied.

Figure 4B is a plot to scale in depth and time of selected traces. No filter or gain recovery has been applied.

Figure 4C is a plot to scale in depth and time of selected traces with a 5 Hz - 40 Hz filter and a gain recovery function of  $t^2$  applied.

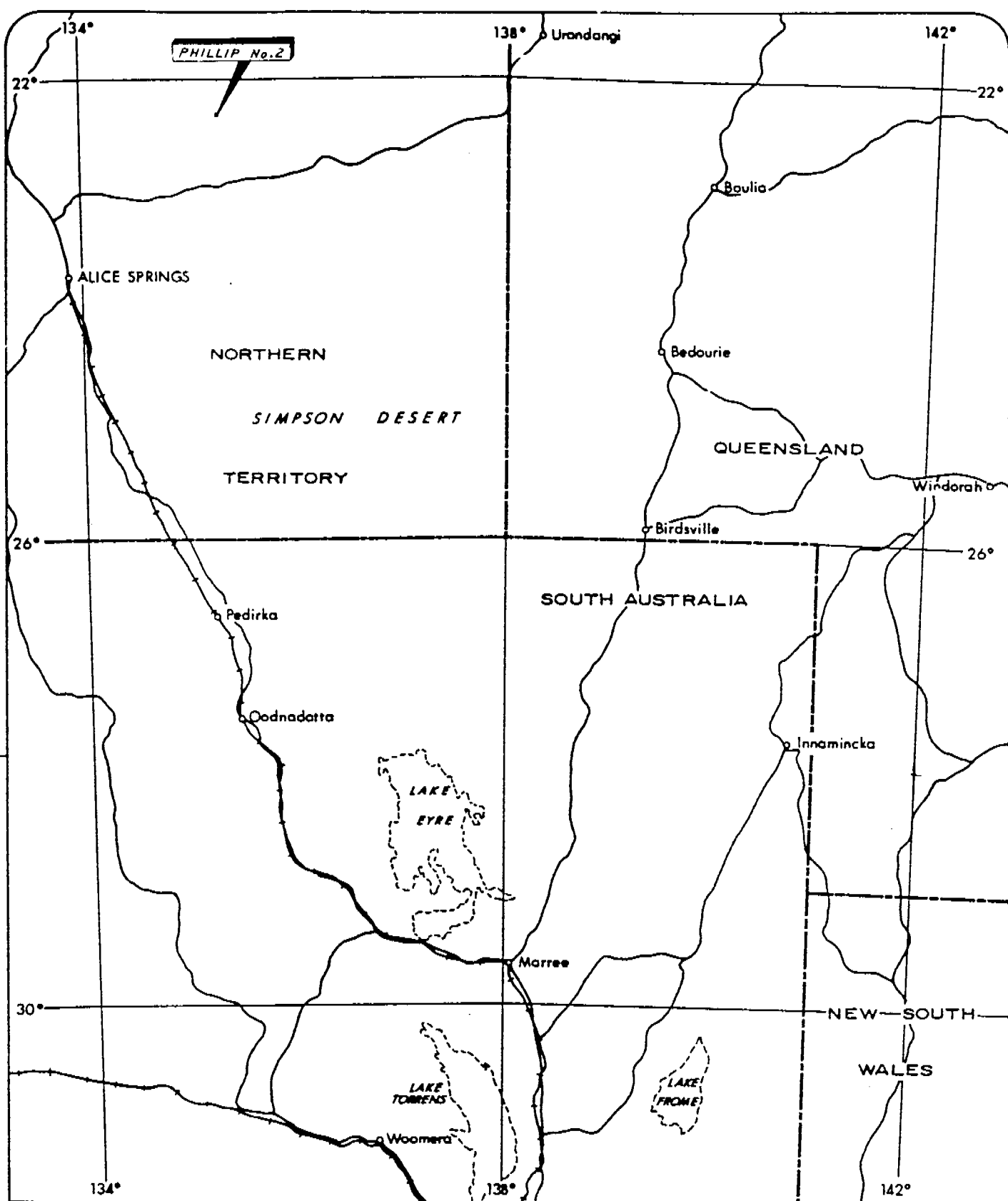
Figure 4D is a plot of selected surface traces. No filter or gain recovery has been applied.



Geoffrey Bell.

**Geophysical Analyst.**





PHILLIP No.2  
 PACIFIC OIL AND GAS LTD.  
 WELL LOCATION MAP

Scale 1:5000000

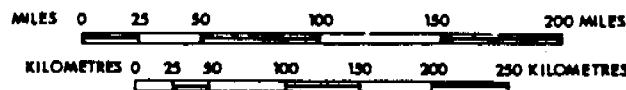
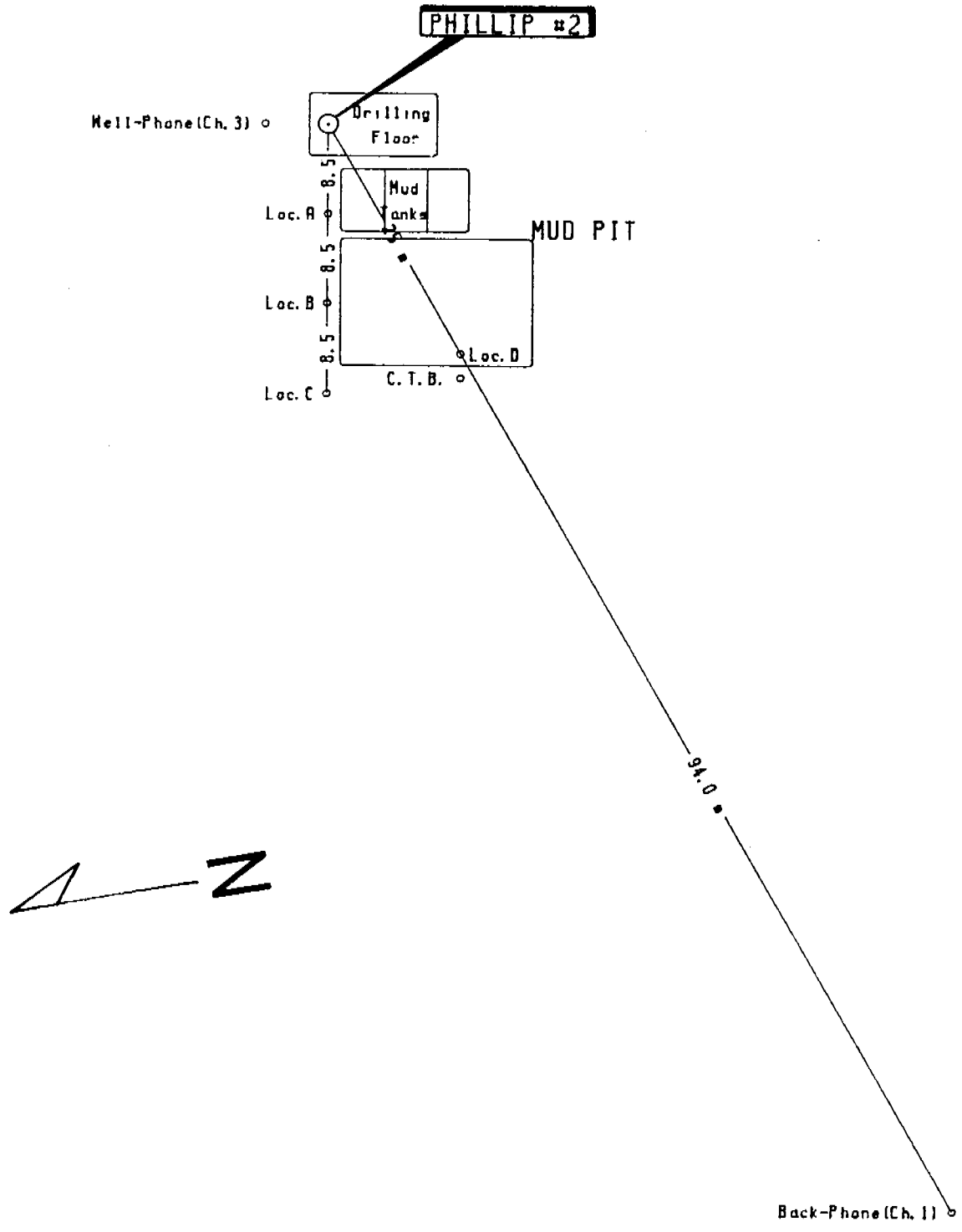


Figure 1



**PHILLIP #2**

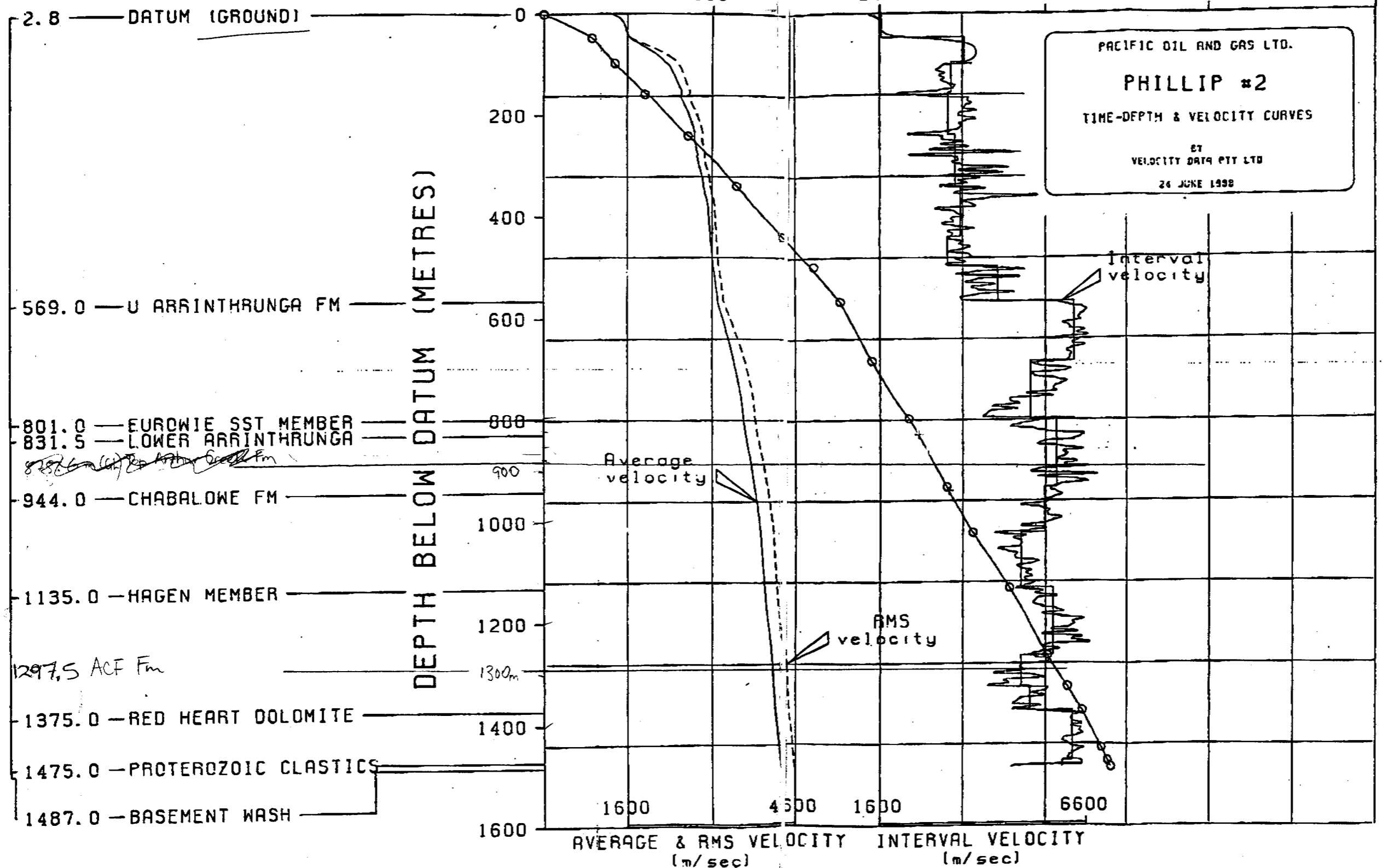
PACIFIC OIL AND GAS LTD.  
 SHOT POINT LOCATION SKETCH

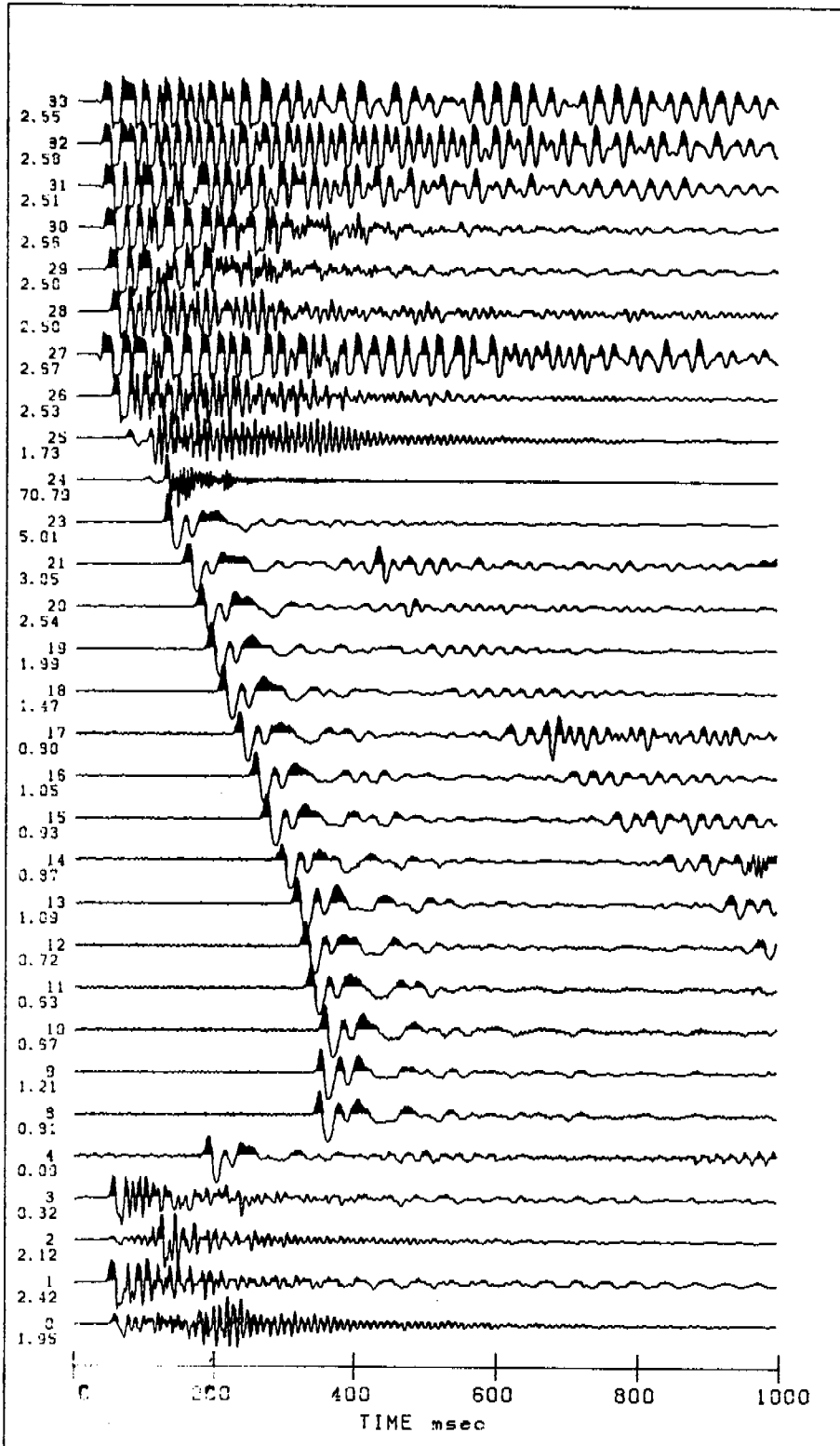


Figure 2

# ONE-WAY TIME (MSEC)

## FIGURE 3





303013

PHILLIP #2

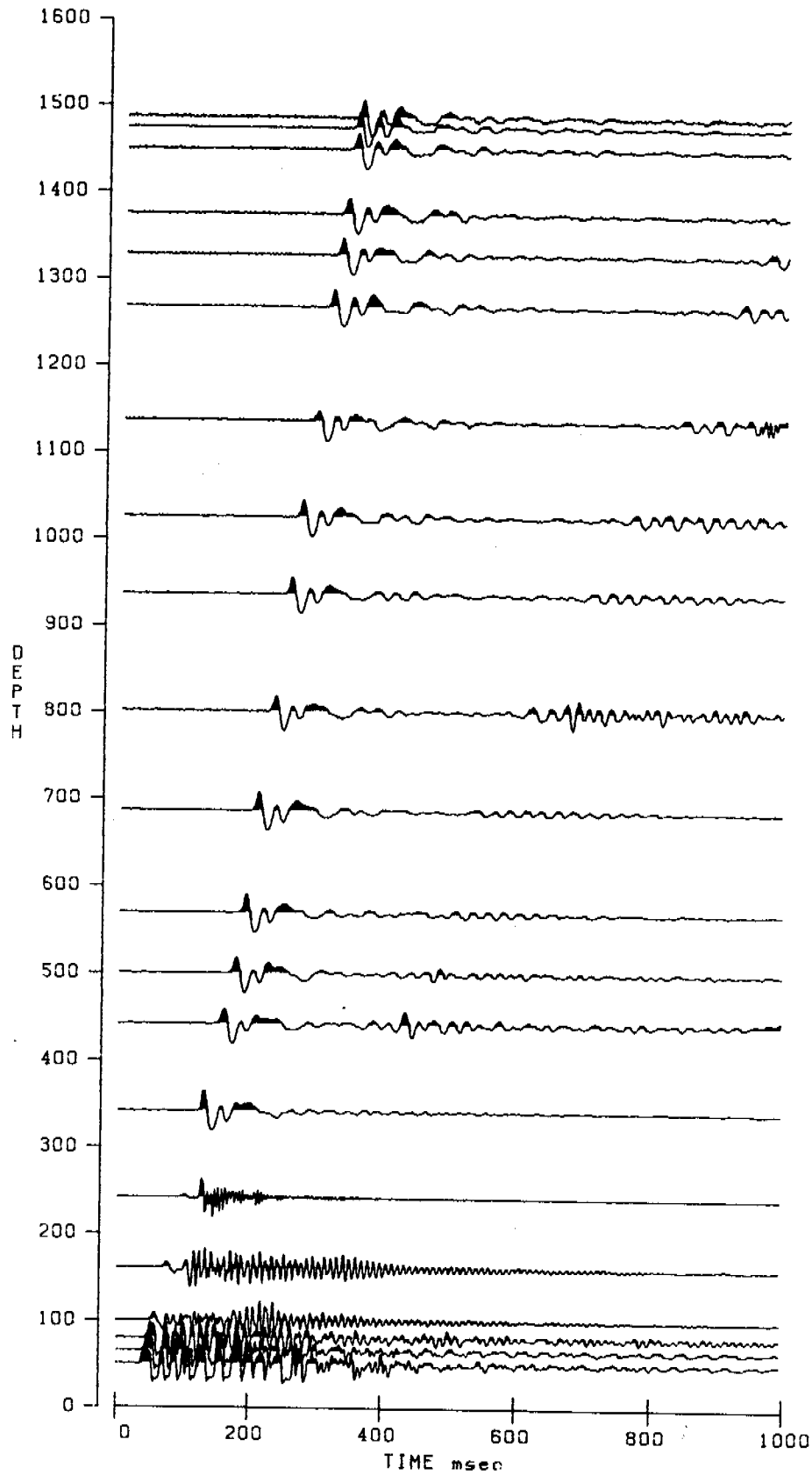
VELOCITY SURVEY TRACE DISPLAY

Filter OUT-OUT

No gain recovery



Figure 4A



PHILLIP #2

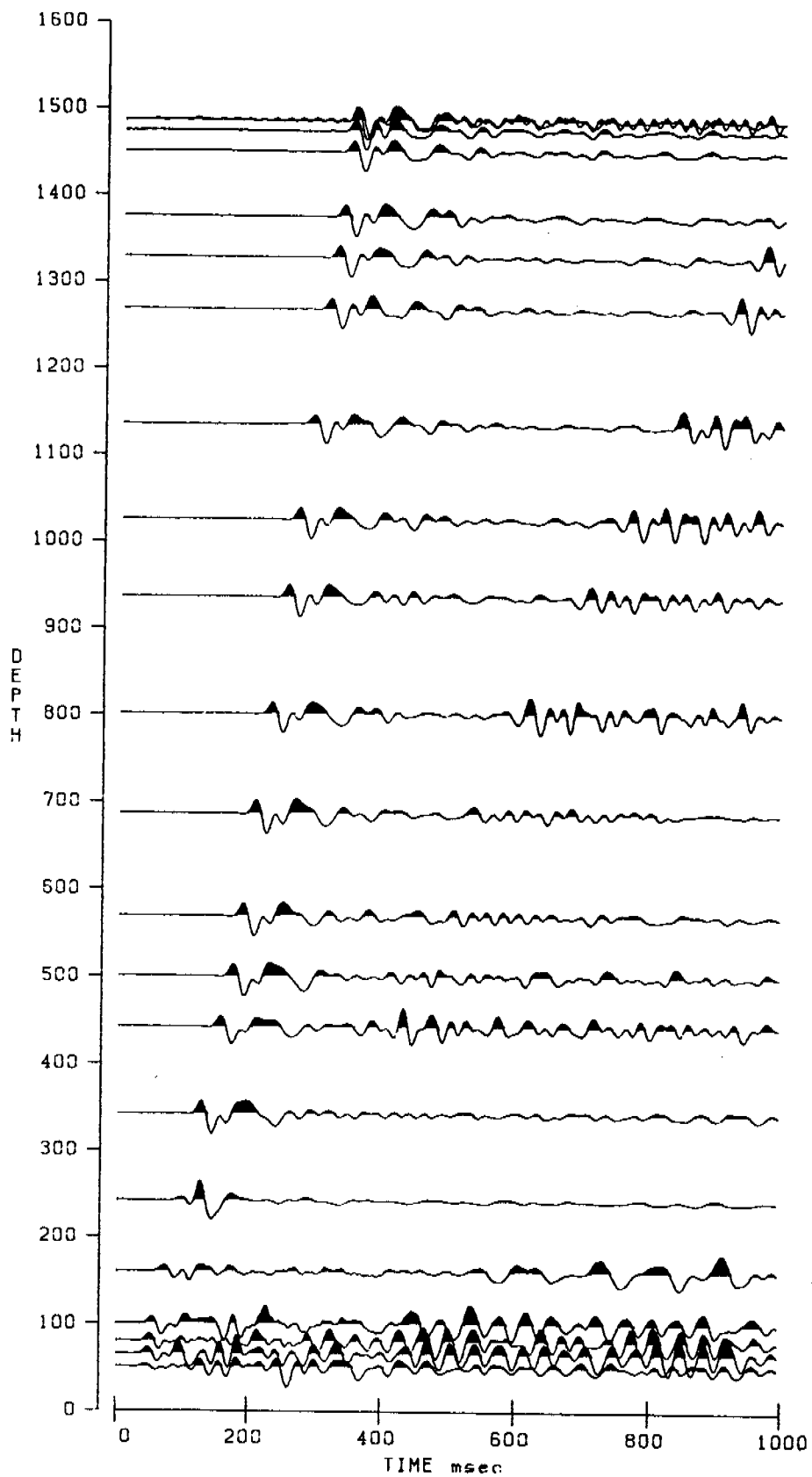
VELOCITY SURVEY TRACE DISPLAY

Filter OUT-OUT

No gain recovery



Figure 4B



PHILLIP #2

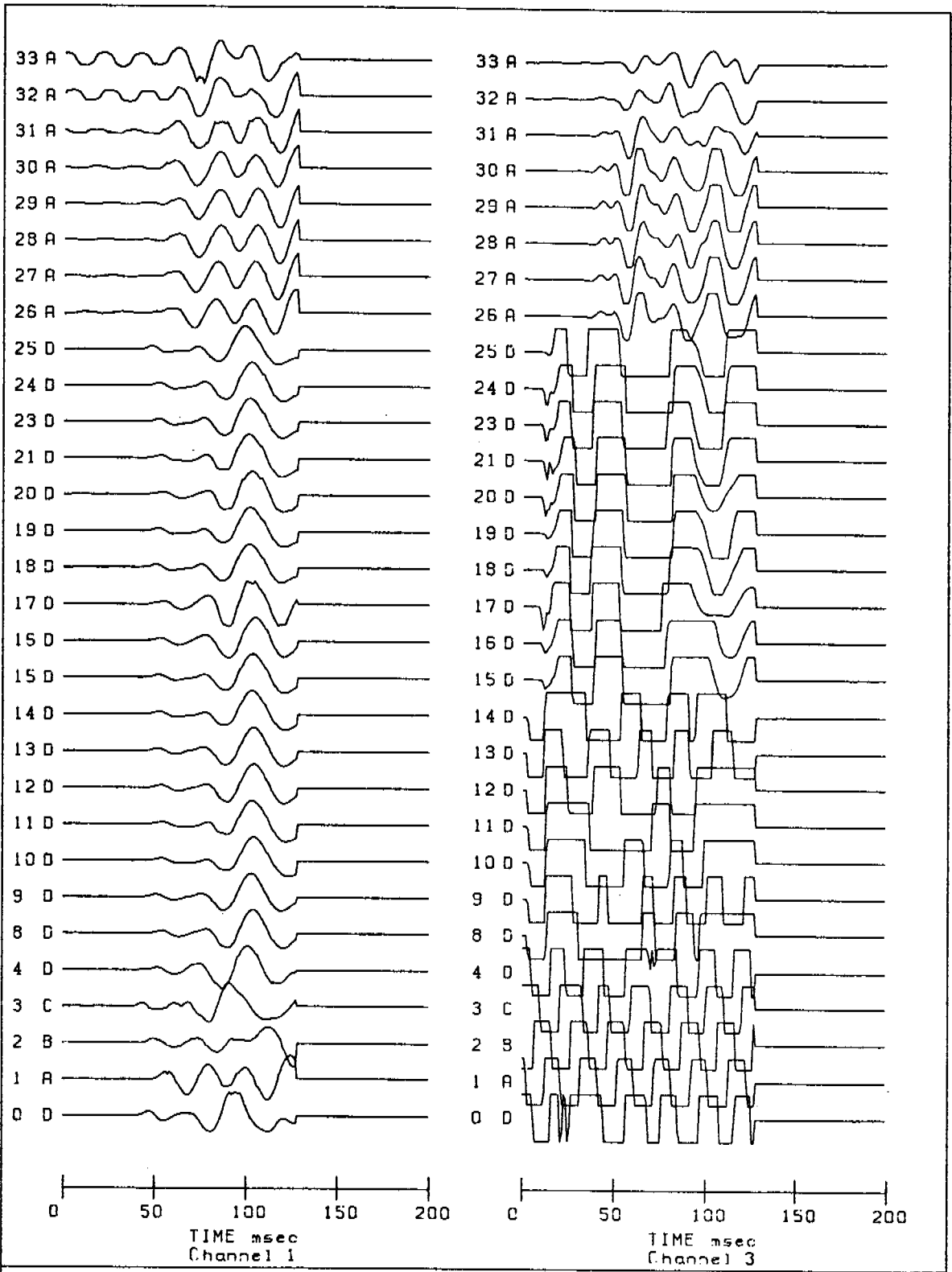
VELOCITY SURVEY TRACE DISPLAY

Filter 5-40

Gain  $T^{2.0}$



Figure 4C



PHILLIP #2

VELOCITY SURVEY TRACE DISPLAY

Auxiliary channels

Filter OUT-OUT



Figure 4D

TABLE 1.

## Time-Depth curve values

Page 1.

Well : PHILLIP #2  
Survey units : METRES

Client : PACIFIC OIL AND GAS LTD.  
Datum : 421.0

Calibrated sonic interval velocities used from 98.0 to 1484.0

Datum Depth	One-way time(ms)	-----VELOCITIES-----			Datum Depth	One-way time(ms)	-----VELOCITIES-----		
		Average	RMS	Interval			Average	RMS	Interva
2.0	5.3	380	380	380	82.0	39.0	2103	2844	4471
4.0	9.9	403	403	428	84.0	39.4	2130	2868	4549
6.0	13.9	431	434	501	86.0	39.9	2157	2892	4588
8.0	17.0	470	480	650	88.0	40.3	2183	2916	4597
10.0	19.2	522	549	930	90.0	40.7	2209	2939	4577
12.0	20.7	580	635	1291	92.0	41.2	2234	2961	4524
14.0	21.9	640	734	1710	94.0	41.6	2257	2980	4428
16.0	22.8	702	841	2175	96.0	42.1	2280	2998	4274
18.0	23.5	765	957	2706	98.0	43.1	2272	3027	4045
20.0	24.1	829	1085	3411	100.0	43.7	2289	3034	3565
22.0	24.6	895	1228	4334	102.0	44.3	2305	3041	3548
24.0	25.0	961	1379	5224	104.0	44.8	2320	3048	3535
26.0	25.3	1028	1533	5973	106.0	45.4	2336	3055	3563
28.0	25.6	1094	1683	6536	108.0	46.0	2350	3060	3455
30.0	25.9	1159	1826	6912	110.0	46.5	2364	3066	3496
32.0	26.2	1223	1960	7121	112.0	47.1	2378	3073	3581
34.0	26.5	1285	2085	7184	114.0	47.7	2391	3078	3467
36.0	26.7	1347	2199	7136	116.0	48.2	2405	3083	3498
38.0	27.0	1406	2302	6976	118.0	48.8	2418	3089	3568
40.0	27.3	1464	2394	6686	120.0	49.4	2431	3095	3547
42.0	27.6	1520	2473	6237	122.0	49.9	2443	3100	3529
44.0	28.0	1572	2537	5612	124.0	50.5	2455	3104	3467
46.0	28.4	1619	2585	4821	126.0	51.1	2467	3109	3514
48.0	28.9	1660	2615	3931	128.0	51.6	2479	3115	3563
50.0	29.5	1693	2630	3285	130.0	52.2	2491	3120	3628
52.0	30.2	1722	2639	2981	132.0	52.7	2503	3126	3606
54.0	30.9	1747	2643	2833	134.0	53.3	2514	3131	3590
56.0	31.6	1771	2646	2770	136.0	53.8	2526	3137	3656
58.0	32.3	1793	2649	2766	138.0	54.4	2537	3143	3721
60.0	33.1	1815	2653	2820	140.0	54.9	2549	3149	3703
62.0	33.7	1838	2659	2952	142.0	55.5	2560	3156	3766
64.0	34.4	1863	2670	3188	144.0	56.0	2572	3163	3812
66.0	34.9	1888	2684	3404	146.0	56.5	2585	3171	3983
68.0	35.5	1915	2700	3560	148.0	57.0	2597	3179	4015
70.0	36.1	1941	2717	3674	150.0	57.5	2609	3187	3949
72.0	36.6	1968	2735	3767	152.0	58.0	2620	3192	3767
74.0	37.1	1994	2754	3860	154.0	58.6	2629	3197	3664
76.0	37.6	2021	2774	3977	156.0	59.1	2638	3200	3455
78.0	38.1	2048	2796	4149	158.0	59.9	2639	3195	2767
80.0	38.6	2075	2819	4342	160.0	60.8	2633	3183	2218



Well : PHILLIP #2  
Survey units : METRES

Client : PACIFIC OIL AND GAS LTD.  
Datum : 421.0

Calibrated sonic interval velocities used from 98.0 to 1484.0

Datum Depth	One-way time(ms)	-----VELOCITIES-----			Datum Depth	One-way time(ms)	-----VELOCITIES-----		
		Average	RMS	Interval			Average	RMS	Interval
162.0	61.6	2631	3174	2459	242.0	88.8	2724	3105	2728
164.0	62.4	2629	3167	2534	244.0	89.5	2727	3105	3126
166.0	63.2	2627	3159	2479	246.0	90.1	2730	3106	3252
168.0	63.9	2631	3157	2978	248.0	90.8	2732	3105	2954
170.0	64.5	2636	3157	3105	250.0	91.4	2735	3106	3224
172.0	65.1	2641	3156	3130	252.0	91.9	2741	3110	3710
174.0	65.8	2645	3156	3107	254.0	92.5	2747	3114	3749
176.0	66.4	2650	3155	3083	256.0	93.0	2754	3120	4045
178.0	67.1	2653	3154	3050	258.0	93.5	2760	3125	3935
180.0	67.7	2657	3153	3068	260.0	94.0	2765	3127	3535
182.0	68.4	2661	3153	3065	262.0	94.6	2768	3128	3264
184.0	69.0	2665	3152	3076	264.0	95.2	2773	3131	3588
186.0	69.7	2669	3151	3050	266.0	95.7	2778	3134	3662
188.0	70.4	2672	3150	3029	268.0	96.4	2780	3134	3104
190.0	71.0	2676	3149	3030	270.0	96.9	2785	3137	3637
192.0	71.7	2679	3148	3048	272.0	97.4	2792	3144	4306
194.0	72.3	2683	3148	3176	274.0	97.9	2799	3150	4282
196.0	72.9	2688	3149	3220	276.0	98.3	2808	3158	4680
198.0	73.6	2691	3148	3097	278.0	98.9	2812	3161	3633
200.0	74.2	2694	3147	3028	280.0	99.5	2815	3162	3212
202.0	74.9	2696	3145	2911	282.0	100.1	2817	3162	3229
204.0	75.6	2698	3143	2907	284.0	100.6	2822	3166	3802
206.0	76.3	2700	3141	2887	286.0	101.1	2828	3170	3936
208.0	77.0	2702	3139	2924	288.0	101.6	2834	3175	4028
210.0	77.6	2706	3139	3149	290.0	102.1	2839	3179	3866
212.0	78.3	2709	3139	3102	292.0	102.7	2844	3182	3694
214.0	78.9	2711	3137	2967	294.0	103.2	2848	3184	3692
216.0	79.6	2714	3137	3083	296.0	103.8	2852	3186	3535
218.0	80.2	2717	3137	3108	298.0	104.4	2855	3187	3337
220.0	80.9	2720	3136	3004	300.0	104.9	2859	3190	3667
222.0	81.6	2721	3134	2893	302.0	105.4	2864	3194	3971
224.0	82.3	2723	3132	2968	304.0	105.9	2870	3199	4161
226.0	83.0	2724	3130	2813	306.0	106.3	2878	3207	4846
228.0	83.7	2724	3127	2750	308.0	106.8	2883	3212	4041
230.0	84.3	2728	3127	3180	310.0	107.4	2887	3214	3675
232.0	85.0	2729	3125	2934	312.0	107.8	2893	3220	4300
234.0	85.8	2728	3121	2560	314.0	108.2	2902	3229	5357
236.0	86.5	2728	3118	2809	316.0	108.7	2908	3235	4338
238.0	87.3	2727	3114	2606	318.0	109.2	2911	3237	3532
240.0	88.1	2724	3108	2376	320.0	109.7	2916	3240	3936

Well : PHILLIP #2  
Survey units : METRES

Client : PACIFIC OIL AND GAS LTD.  
Datum : 421.0

Calibrated sonic interval velocities used from 98.0 to 1484.0

Datum Depth	One-way time(ms)	-----VELOCITIES-----			Datum Depth	One-way time(ms)	-----VELOCITIES-----		
		Average	RMS	Interval			Average	RMS	Interval
322.0	110.2	2921	3245	4226	402.0	132.2	3041	3317	3763
324.0	110.7	2926	3248	3872	404.0	132.7	3044	3320	3987
326.0	111.3	2930	3251	3791	406.0	133.3	3046	3320	3345
328.0	111.8	2932	3252	3416	408.0	133.9	3047	3321	3474
330.0	112.4	2937	3255	3817	410.0	134.5	3049	3321	3470
332.0	113.0	2939	3255	3331	412.0	135.1	3050	3321	3226
334.0	113.6	2941	3256	3459	414.0	135.7	3050	3320	3104
336.0	114.0	2946	3260	4068	416.0	136.3	3052	3320	3333
338.0	114.6	2949	3262	3551	418.0	136.8	3055	3323	4185
340.0	115.2	2951	3261	3223	420.0	137.3	3059	3326	3993
342.0	115.8	2953	3263	3494	422.0	137.9	3059	3325	3175
344.0	116.3	2957	3265	3721	424.0	138.5	3061	3326	3529
346.0	116.8	2962	3270	4376	426.0	139.1	3063	3327	3577
348.0	117.2	2968	3275	4419	428.0	139.7	3064	3326	3162
350.0	117.8	2972	3278	3811	430.0	140.3	3065	3326	3210
352.0	118.3	2974	3279	3466	432.0	140.9	3065	3326	3243
354.0	118.9	2976	3279	3380	434.0	141.6	3066	3325	3218
356.0	119.5	2978	3279	3308	436.0	142.2	3067	3325	3299
358.0	120.1	2980	3280	3313	438.0	142.8	3068	3325	3330
360.0	120.6	2984	3283	4098	440.0	143.4	3069	3325	3306
362.0	121.0	2991	3290	4863	442.0	144.0	3068	3323	2931
364.0	121.5	2995	3294	4214	444.0	144.7	3067	3321	2861
366.0	122.0	3000	3298	4063	446.0	145.4	3067	3320	3020
368.0	122.5	3003	3300	3740	448.0	146.0	3068	3319	3204
370.0	123.1	3006	3301	3617	450.0	146.6	3069	3319	3250
372.0	123.7	3008	3303	3599	452.0	147.2	3070	3319	3331
374.0	124.2	3011	3303	3507	454.0	147.8	3071	3319	3336
376.0	124.8	3014	3306	3766	456.0	148.5	3071	3319	3220
378.0	125.3	3018	3308	3939	458.0	149.1	3072	3318	3152
380.0	125.8	3022	3312	4040	460.0	149.8	3072	3317	3091
382.0	126.4	3023	3312	3347	462.0	150.4	3073	3317	3323
384.0	127.0	3023	3310	2941	464.0	150.9	3074	3317	3381
386.0	127.6	3024	3310	3354	466.0	151.6	3075	3317	3226
388.0	128.2	3027	3312	3798	468.0	152.2	3075	3316	3119
390.0	128.7	3029	3313	3477	470.0	152.9	3075	3315	3032
392.0	129.3	3032	3314	3616	472.0	153.5	3075	3314	3178
394.0	129.9	3033	3314	3321	474.0	154.1	3077	3315	3550
396.0	130.5	3035	3315	3350	476.0	154.6	3078	3316	3390
398.0	131.1	3036	3314	3297	478.0	155.3	3079	3315	3223
400.0	131.7	3038	3315	3431	480.0	155.9	3078	3314	3006

Well : PHILLIP #2

Survey units : METRES

Calibrated sonic interval velocities used from 98.0 to 1484.0

Client : PACIFIC OIL AND GAS LTD.

Datum : 421.0

Datum Depth	One-way time(ms)	-----VELOCITIES-----			Datum Depth	One-way time(ms)	-----VELOCITIES-----		
		Average	RMS	Interval			Average	RMS	Interva
482.0	156.6	3078	3313	3062	562.0	175.7	3200	3425	4185
484.0	157.2	3079	3313	3210	564.0	176.2	3202	3427	4004
486.0	157.8	3080	3313	3351	566.0	176.6	3205	3430	4627
488.0	158.4	3082	3314	3599	568.0	176.9	3211	3438	6234
490.0	158.9	3083	3315	3518	570.0	177.2	3216	3444	5882
492.0	159.5	3085	3315	3490	572.0	177.6	3221	3449	5536
494.0	160.2	3084	3314	2949	574.0	177.9	3226	3456	5847
496.0	160.8	3085	3313	3241	576.0	178.3	3231	3463	6247
498.0	161.2	3088	3317	4500	578.0	178.6	3236	3469	6115
500.0	161.6	3094	3324	5405	580.0	178.9	3242	3476	6051
502.0	162.0	3098	3329	4949	582.0	179.2	3247	3483	6576
504.0	162.4	3103	3334	4959	584.0	179.5	3253	3491	6500
506.0	162.8	3108	3339	5074	586.0	179.8	3258	3498	6605
508.0	163.3	3111	3342	4413	588.0	180.1	3264	3506	6602
510.0	163.7	3115	3345	4232	590.0	180.4	3270	3513	6559
512.0	164.2	3118	3348	4153	592.0	180.7	3275	3521	6640
514.0	164.7	3121	3350	4112	594.0	181.1	3281	3528	6494
516.0	165.2	3123	3352	3880	596.0	181.4	3286	3535	6416
518.0	165.7	3127	3356	4401	598.0	181.7	3292	3542	6517
520.0	166.1	3131	3361	5088	600.0	182.0	3297	3549	6536
522.0	166.5	3135	3365	4860	602.0	182.3	3302	3556	6361
524.0	166.9	3139	3369	4480	604.0	182.6	3308	3563	6315
526.0	167.4	3142	3372	4373	606.0	182.9	3313	3570	6438
528.0	167.9	3145	3374	4127	608.0	183.2	3318	3576	6459
530.0	168.4	3148	3376	3904	610.0	183.5	3323	3583	6400
532.0	168.9	3151	3379	4218	612.0	183.9	3329	3590	6431
534.0	169.3	3154	3382	4445	614.0	184.2	3334	3596	6339
536.0	169.7	3158	3386	4708	616.0	184.5	3339	3603	6176
538.0	170.2	3161	3389	4478	618.0	184.8	3344	3609	6234
540.0	170.6	3164	3392	4303	620.0	185.1	3349	3614	5995
542.0	171.1	3167	3395	4183	622.0	185.5	3353	3620	6047
544.0	171.6	3170	3397	4306	624.0	185.8	3359	3627	6547
546.0	172.1	3173	3400	4303	626.0	186.1	3364	3634	6456
548.0	172.5	3176	3403	4231	628.0	186.4	3369	3640	6393
550.0	173.0	3180	3406	4479	630.0	186.7	3374	3647	6505
552.0	173.4	3184	3411	5039	632.0	187.0	3379	3653	6462
554.0	173.8	3188	3415	4948	634.0	187.3	3384	3659	6363
556.0	174.2	3191	3418	4484	636.0	187.6	3389	3666	6562
558.0	174.7	3194	3421	4347	638.0	188.0	3394	3672	6419
560.0	175.2	3197	3423	4049	640.0	188.3	3399	3678	6348

TABLE 1.

## Time-Depth curve values

Page 5.

Well : PHILLIP #2

Client : PACIFIC OIL AND GAS LTD.

Survey units : METRES

Datum : 421.0

Calibrated sonic interval velocities used from 98.0 to 1484.0

Datum Depth	One-way time(ms)	-----VELOCITIES-----			Datum Depth	One-way time(ms)	-----VELOCITIES-----		
		Average	RMS	Interval			Average	RMS	Interva
642.0	188.6	3404	3684	6302	722.0	201.9	3575	3881	6111
644.0	188.9	3409	3690	6196	724.0	202.3	3579	3885	6189
646.0	189.2	3414	3696	6187	726.0	202.6	3583	3890	6013
648.0	189.6	3418	3701	6127	728.0	202.9	3587	3894	5830
650.0	189.9	3423	3707	6510	730.0	203.3	3591	3898	6020
652.0	190.2	3428	3714	6609	732.0	203.6	3595	3902	5846
654.0	190.5	3433	3720	6539	734.0	204.0	3599	3906	5818
656.0	190.8	3438	3726	6321	736.0	204.3	3603	3911	5977
658.0	191.1	3443	3731	6090	738.0	204.6	3606	3915	5768
660.0	191.4	3448	3737	6264	740.0	205.0	3610	3918	5603
662.0	191.7	3452	3743	6526	742.0	205.3	3614	3922	5932
664.0	192.1	3457	3749	6400	744.0	205.7	3617	3927	6028
666.0	192.4	3462	3754	6151	746.0	206.0	3621	3930	5526
668.0	192.7	3467	3760	6478	748.0	206.4	3624	3933	5310
670.0	193.0	3472	3766	6632	750.0	206.8	3627	3936	5268
672.0	193.3	3476	3771	5851	752.0	207.2	3629	3937	4660
674.0	193.7	3480	3775	5510	754.0	207.6	3632	3940	5360
676.0	194.0	3484	3780	6109	756.0	208.0	3635	3944	5526
678.0	194.4	3488	3785	5749	758.0	208.4	3637	3945	4339
680.0	194.7	3492	3789	5642	760.0	208.9	3638	3945	4124
682.0	195.0	3497	3795	6561	762.0	209.3	3641	3948	5227
684.0	195.3	3502	3801	6816	764.0	209.7	3644	3950	5055
686.0	195.7	3506	3806	6113	766.0	210.1	3646	3952	4769
688.0	196.0	3510	3811	5844	768.0	210.5	3648	3954	4729
690.0	196.3	3514	3815	5796	770.0	210.9	3651	3956	4997
692.0	196.7	3518	3820	5895	772.0	211.3	3653	3958	5151
694.0	197.0	3522	3824	5791	774.0	211.7	3656	3960	4833
696.0	197.4	3526	3828	5698	776.0	212.2	3657	3961	4378
698.0	197.7	3530	3833	5946	778.0	212.6	3659	3962	4307
700.0	198.0	3535	3837	6008	780.0	213.1	3660	3963	4294
702.0	198.4	3539	3842	6017	782.0	213.6	3661	3964	4299
704.0	198.7	3543	3847	6155	784.0	214.0	3663	3965	4371
706.0	199.0	3547	3852	6002	786.0	214.5	3665	3966	4677
708.0	199.4	3551	3856	5659	788.0	214.9	3667	3968	4957
710.0	199.7	3555	3860	5645	790.0	215.3	3669	3970	4697
712.0	200.1	3558	3863	5451	792.0	215.7	3672	3972	4895
714.0	200.5	3561	3866	5231	794.0	216.1	3674	3973	4587
716.0	200.9	3564	3869	5169	796.0	216.6	3674	3973	4023
718.0	201.3	3567	3872	5081	798.0	217.1	3675	3973	4025
720.0	201.6	3571	3876	5781	800.0	217.5	3678	3975	4965

Well : PHILLIP #2  
Survey units : METRES

Client : PACIFIC OIL AND GAS LTD.  
Datum : 421.0

Calibrated sonic interval velocities used from 98.0 to 1484.0

Datum Depth	One-way time(ms)	-----VELOCITIES-----			Datum Depth	One-way time(ms)	-----VELOCITIES-----		
		Average	RMS	Interval			Average	RMS	Interval
802.0	217.9	3681	3979	5884	882.0	231.6	3809	4114	6145
804.0	218.2	3684	3982	5537	884.0	231.9	3812	4117	5972
806.0	218.6	3687	3985	5520	886.0	232.2	3815	4121	5861
808.0	218.9	3690	3989	5698	888.0	232.6	3818	4123	5461
810.0	219.3	3693	3992	5534	890.0	232.9	3821	4126	6013
812.0	219.7	3696	3994	5416	892.0	233.3	3824	4130	6427
814.0	220.1	3699	3997	5191	894.0	233.6	3828	4134	6646
816.0	220.5	3701	3998	4675	896.0	233.9	3831	4138	6427
818.0	220.9	3703	4000	5019	898.0	234.2	3834	4142	5945
820.0	221.2	3706	4004	5675	900.0	234.6	3837	4144	5535
822.0	221.6	3709	4006	5357	902.0	234.9	3839	4146	5449
824.0	222.0	3712	4009	5515	904.0	235.3	3842	4149	5551
826.0	222.3	3715	4012	5674	906.0	235.7	3844	4151	5424
828.0	222.7	3718	4015	5377	908.0	236.0	3848	4154	6032
830.0	223.1	3721	4018	5572	910.0	236.3	3851	4158	6375
832.0	223.3	3725	4023	6957	912.0	236.6	3854	4162	6191
834.0	223.6	3729	4028	6750	914.0	237.0	3857	4165	5928
836.0	224.0	3733	4032	6376	916.0	237.3	3860	4167	5569
838.0	224.3	3736	4036	6268	918.0	237.7	3863	4170	6061
840.0	224.6	3740	4041	6429	920.0	238.0	3866	4174	6284
842.0	224.9	3744	4045	6317	922.0	238.3	3869	4177	6045
844.0	225.3	3747	4048	5714	924.0	238.6	3872	4181	6306
846.0	225.6	3750	4051	5646	926.0	238.9	3876	4184	6497
848.0	226.0	3753	4054	5741	928.0	239.3	3878	4187	5865
850.0	226.3	3756	4057	5705	930.0	239.6	3881	4190	5576
852.0	226.7	3759	4060	5819	932.0	240.0	3884	4192	5745
854.0	227.0	3762	4064	5903	934.0	240.3	3886	4195	5580
856.0	227.3	3766	4067	6048	936.0	240.7	3889	4198	5952
858.0	227.6	3769	4071	6296	938.0	241.0	3892	4201	6136
860.0	228.0	3773	4075	6273	940.0	241.3	3895	4204	5867
862.0	228.3	3776	4078	5897	942.0	241.7	3897	4206	5577
864.0	228.6	3779	4082	5924	944.0	242.0	3900	4209	5807
866.0	229.0	3782	4085	6133	946.0	242.4	3902	4211	5446
868.0	229.3	3786	4089	6425	948.0	242.8	3905	4213	5226
870.0	229.6	3789	4093	6188	950.0	243.1	3907	4216	5836
872.0	229.9	3792	4096	5873	952.0	243.5	3910	4218	5683
874.0	230.3	3796	4100	6157	954.0	243.8	3912	4221	5736
876.0	230.6	3799	4103	5954	956.0	244.2	3915	4223	5886
878.0	230.9	3802	4107	5989	958.0	244.5	3918	4226	5882
880.0	231.2	3806	4111	6365	960.0	244.9	3921	4229	5729

Well : PHILLIP #2  
Survey units : METRES

Client : PACIFIC OIL AND GAS LTD.  
Datum : 421.0

Calibrated sonic interval velocities used from 98.0 to 1484.0

Datum Depth	One-way time(ms)	-----VELOCITIES-----			Datum Depth	One-way time(ms)	-----VELOCITIES-----		
		Average	RMS	Interval			Average	RMS	Interval
962.0	245.2	3923	4231	5571	1042.0	260.2	4004	4303	4959
964.0	245.6	3925	4233	5592	1044.0	260.6	4006	4304	4822
966.0	245.9	3928	4236	5683	1046.0	261.0	4007	4305	5006
968.0	246.3	3930	4238	5604	1048.0	261.4	4009	4307	5280
970.0	246.6	3933	4240	5703	1050.0	261.8	4011	4308	5225
972.0	247.0	3935	4243	5798	1052.0	262.2	4012	4309	4880
974.0	247.3	3938	4245	5589	1054.0	262.6	4014	4310	4838
976.0	247.7	3940	4248	5650	1056.0	263.1	4014	4310	4502
978.0	248.1	3943	4250	5663	1058.0	263.5	4016	4312	4923
980.0	248.4	3945	4252	5347	1060.0	263.8	4018	4313	5162
982.0	248.8	3947	4254	5416	1062.0	264.2	4019	4314	5063
984.0	249.1	3950	4256	5779	1064.0	264.6	4021	4315	5139
986.0	249.5	3952	4259	5762	1066.0	265.0	4022	4317	5010
988.0	249.9	3954	4261	5504	1068.0	265.4	4024	4318	5134
990.0	250.2	3956	4263	5246	1070.0	265.8	4025	4319	5048
992.0	250.6	3958	4264	5300	1072.0	266.2	4027	4320	5162
994.0	251.0	3960	4266	5356	1074.0	266.6	4029	4322	5025
996.0	251.3	3963	4268	5713	1076.0	267.0	4030	4322	4834
998.0	251.7	3965	4270	5475	1078.0	267.4	4031	4324	5054
1000.0	252.1	3967	4273	5604	1080.0	267.8	4033	4325	5352
1002.0	252.4	3969	4275	5403	1082.0	268.2	4035	4327	5238
1004.0	252.8	3972	4277	5626	1084.0	268.6	4036	4328	5160
1006.0	253.1	3974	4279	5608	1086.0	268.9	4038	4330	5370
1008.0	253.5	3976	4280	5137	1088.0	269.3	4040	4331	5247
1010.0	253.9	3978	4282	5039	1090.0	269.7	4041	4332	4825
1012.0	254.3	3980	4283	5383	1092.0	270.1	4043	4333	4949
1014.0	254.7	3982	4285	5260	1094.0	270.5	4044	4334	5044
1016.0	255.0	3984	4287	5389	1096.0	270.9	4046	4335	5058
1018.0	255.4	3985	4288	5175	1098.0	271.3	4047	4336	5258
1020.0	255.8	3988	4290	5501	1100.0	271.7	4049	4337	4965
1022.0	256.2	3990	4292	5397	1102.0	272.1	4050	4338	4700
1024.0	256.6	3991	4293	4782	1104.0	272.5	4051	4339	4909
1026.0	257.0	3992	4293	4428	1106.0	272.9	4052	4340	4995
1028.0	257.4	3993	4294	4851	1108.0	273.3	4054	4341	4942
1030.0	257.8	3995	4296	5273	1110.0	273.7	4055	4342	4997
1032.0	258.2	3997	4297	5176	1112.0	274.1	4056	4343	5085
1034.0	258.6	3998	4298	4924	1114.0	274.5	4058	4344	5122
1036.0	259.0	3999	4299	4829	1116.0	274.9	4059	4345	5060
1038.0	259.4	4001	4301	5111	1118.0	275.3	4061	4347	5053
1040.0	259.8	4003	4302	5282	1120.0	275.7	4062	4347	4936

Well : PHILLIP #2  
Survey units : METRES

Client : PACIFIC OIL AND GAS LTD.  
Datum : 421.0

Calibrated sonic interval velocities used from 98.0 to 1484.0

Datum Depth	One-way time(ms)	-----VELOCITIES-----			Datum Depth	One-way time(ms)	-----VELOCITIES-----		
		Average	RMS	Interval			Average	RMS	Interval
1122.0	276.1	4063	4348	4970	1202.0	290.5	4138	4418	6327
1124.0	276.5	4065	4350	5113	1204.0	290.8	4140	4420	5939
1126.0	276.9	4066	4350	4747	1206.0	291.1	4143	4423	6340
1128.0	277.4	4067	4350	4479	1208.0	291.4	4145	4425	6311
1130.0	277.8	4068	4352	5073	1210.0	291.8	4147	4428	6090
1132.0	278.2	4070	4353	5171	1212.0	292.1	4149	4430	5956
1134.0	278.5	4071	4354	5157	1214.0	292.5	4151	4431	5525
1136.0	278.9	4073	4355	5152	1216.0	292.8	4153	4433	5841
1138.0	279.3	4075	4357	5604	1218.0	293.1	4155	4435	6123
1140.0	279.7	4076	4359	5381	1220.0	293.5	4157	4437	5744
1142.0	280.0	4078	4360	5523	1222.0	293.8	4159	4439	5655
1144.0	280.4	4080	4362	5498	1224.0	294.2	4161	4441	5840
1146.0	280.8	4082	4363	5237	1226.0	294.5	4162	4442	5410
1148.0	281.1	4083	4365	5420	1228.0	294.9	4164	4443	5491
1150.0	281.5	4085	4367	5641	1230.0	295.3	4166	4445	5578
1152.0	281.8	4088	4369	5734	1232.0	295.6	4167	4446	5481
1154.0	282.2	4089	4370	5349	1234.0	296.0	4169	4448	5686
1156.0	282.6	4091	4372	5351	1236.0	296.3	4171	4450	5898
1158.0	282.9	4093	4373	5503	1238.0	296.7	4173	4452	5906
1160.0	283.3	4095	4375	5594	1240.0	297.0	4175	4454	6330
1162.0	283.7	4097	4377	5682	1242.0	297.3	4178	4457	6288
1164.0	284.0	4098	4379	5564	1244.0	297.6	4180	4459	6044
1166.0	284.4	4100	4380	5295	1246.0	298.0	4182	4461	5855
1168.0	284.8	4102	4382	5462	1248.0	298.3	4184	4463	6164
1170.0	285.1	4104	4383	5540	1250.0	298.6	4186	4465	5685
1172.0	285.5	4106	4385	5737	1252.0	299.0	4187	4466	5690
1174.0	285.8	4108	4387	5825	1254.0	299.3	4189	4468	5953
1176.0	286.2	4109	4389	5596	1256.0	299.7	4191	4470	6050
1178.0	286.5	4111	4391	5552	1258.0	300.0	4194	4472	6114
1180.0	286.9	4114	4393	6029	1260.0	300.3	4195	4474	5840
1182.0	287.2	4116	4395	6078	1262.0	300.7	4197	4476	5937
1184.0	287.5	4118	4397	5601	1264.0	301.0	4199	4478	5926
1186.0	287.9	4120	4399	5735	1266.0	301.4	4201	4479	5475
1188.0	288.2	4122	4401	6328	1268.0	301.8	4202	4480	4999
1190.0	288.5	4124	4404	6347	1270.0	302.1	4203	4481	5272
1192.0	288.8	4127	4406	6262	1272.0	302.5	4205	4482	5203
1194.0	289.2	4129	4409	6275	1274.0	302.9	4206	4484	5603
1196.0	289.5	4131	4411	6148	1276.0	303.3	4208	4485	5360
1198.0	289.8	4133	4413	5877	1278.0	303.7	4209	4485	4933
1200.0	290.1	4136	4416	6295	1280.0	304.0	4210	4486	5267

Well : PHILLIP #2

Client : PACIFIC OIL AND GAS LTD.

Survey units : METRES

Datum : 421.0

Calibrated sonic interval velocities used from 98.0 to 1484.0

Datum Depth	One-way time(ms)	-----VELOCITIES-----			Datum Depth	One-way time(ms)	-----VELOCITIES-----		
		Average	RMS	Interval			Average	RMS	Interva
1282.0	304.4	4211	4487	5257	1362.0	320.1	4255	4520	4950
1284.0	304.8	4212	4488	5151	1364.0	320.5	4256	4521	5133
1286.0	305.2	4214	4489	5221	1366.0	320.9	4257	4522	5345
1288.0	305.6	4215	4490	5335	1368.0	321.3	4258	4522	4901
1290.0	306.0	4216	4491	4933	1370.0	321.7	4258	4522	4625
1292.0	306.4	4217	4492	4875	1372.0	322.1	4259	4523	5073
1294.0	306.8	4218	4493	5403	1374.0	322.5	4261	4524	5639
1296.0	307.2	4219	4493	4906	1376.0	322.8	4262	4526	5515
1298.0	307.6	4220	4493	4444	1378.0	323.2	4264	4527	5470
1300.0	308.1	4220	4493	4551	1380.0	323.5	4265	4529	6005
1302.0	308.4	4221	4494	5115	1382.0	323.8	4268	4531	6899
1304.0	308.8	4223	4496	5499	1384.0	324.1	4270	4534	6555
1306.0	309.2	4224	4496	4967	1386.0	324.4	4272	4536	6544
1308.0	309.7	4224	4496	4518	1388.0	324.7	4274	4539	7017
1310.0	310.1	4225	4497	4984	1390.0	325.0	4277	4541	6685
1312.0	310.4	4226	4498	5213	1392.0	325.4	4278	4543	5989
1314.0	310.9	4227	4498	4891	1394.0	325.7	4280	4545	6197
1316.0	311.3	4228	4499	4650	1396.0	326.0	4282	4547	6412
1318.0	311.7	4228	4499	4621	1398.0	326.3	4284	4549	6597
1320.0	312.1	4229	4499	4774	1400.0	326.6	4287	4552	6596
1322.0	312.5	4230	4500	4837	1402.0	327.0	4288	4552	5173
1324.0	313.0	4231	4500	4831	1404.0	327.4	4288	4553	4759
1326.0	313.3	4232	4501	5212	1406.0	327.7	4290	4555	6520
1328.0	313.7	4233	4502	5504	1408.0	328.0	4293	4557	6698
1330.0	314.1	4235	4504	5511	1410.0	328.3	4295	4560	6604
1332.0	314.4	4236	4505	5610	1412.0	328.6	4297	4562	6731
1334.0	314.8	4238	4506	5605	1414.0	328.9	4299	4564	6703
1336.0	315.1	4239	4508	5612	1416.0	329.2	4301	4567	6588
1338.0	315.5	4241	4509	5572	1418.0	329.5	4303	4569	6672
1340.0	315.9	4242	4510	5517	1420.0	329.8	4305	4572	6708
1342.0	316.2	4244	4512	5573	1422.0	330.1	4308	4574	6594
1344.0	316.6	4245	4513	5590	1424.0	330.4	4310	4576	6490
1346.0	316.9	4247	4514	5540	1426.0	330.7	4312	4578	6349
1348.0	317.3	4248	4516	5397	1428.0	331.1	4313	4580	6154
1350.0	317.7	4250	4517	5346	1430.0	331.4	4315	4582	6123
1352.0	318.1	4251	4518	5210	1432.0	331.7	4317	4583	6101
1354.0	318.5	4252	4518	4955	1434.0	332.0	4319	4585	6150
1356.0	318.9	4252	4519	4845	1436.0	332.4	4321	4587	6186
1358.0	319.3	4253	4519	4749	1438.0	332.7	4322	4589	6271
1360.0	319.7	4254	4519	4810	1440.0	333.0	4324	4591	6228



Well : PHILLIP #2  
 Survey units : METRES

Client : PACIFIC OIL AND GAS LTD.  
 Datum : 421.0

Calibrated sonic interval velocities used from 98.0 to 1484.0

Datum Depth	One-way time(ms)	-----VELOCITIES-----			Datum Depth	One-way time(ms)	-----VELOCITIES-----		
		Average	RMS	Interval			Average	RMS	Interval
1442.0	333.3	4326	4592	6157	1464.0	336.9	4346	4613	6173
1444.0	333.7	4328	4594	6221	1466.0	337.2	4348	4614	6148
1446.0	334.0	4330	4596	6016	1468.0	337.5	4349	4616	6161
1448.0	334.3	4331	4598	5977	1470.0	337.8	4351	4618	6144
1450.0	334.6	4333	4600	6524	1472.0	338.2	4353	4619	5887
1452.0	334.9	4335	4602	6347	1474.0	338.5	4354	4621	5835
1454.0	335.3	4337	4604	6386	1476.0	338.8	4356	4622	6166
1456.0	335.6	4339	4606	6371	1478.0	339.2	4358	4624	6120
1458.0	335.9	4341	4608	6317	1480.0	339.5	4359	4626	5993
1460.0	336.2	4343	4609	6129	1482.0	339.8	4361	4627	5952
1462.0	336.5	4344	4611	6074	1484.0	340.2	4362	4628	5374

308413

Company : PACIFIC OIL AND GAS LTD.  
 Well : PHILLIP #2  
 Elevations : Datum : 421.0 Ground : 421.0 Kelly : 423.8

Latitude :  
 Longitude :

Survey date : 24-JUN-88  
 Survey units : METRES  
 Times in milliseconds.

Shot data : Location	Elevation	Offset
A	421.0	8.5
B	421.0	17.0
C	421.0	25.5
D	421.0	25.0

Rig identification : ROCKDRILL #20  
 Energy source : AN-60  
 Logger : BPB INSTRUMENTS  
 Near surface velocity  
 for shot statics: 2088  
 Instrument delay: 8.0 ms

SHOT CALCULATIONS

Shot No	Geophone depth		Shot Locn	Shot Depth	TIMES				Check shot interval		Velocities		
	Kelly	Datum			Record	Corr.	Avg.	Below datum	Distance	Time	Average	RMS	Interval
DATUM (GROUND)													
	2.8	0.0					8.0	0.0					
33	10.0	7.2	A	0.3	33.0	23.9	N/U		47.2	28.7			1644.6
32	22.0	19.2	A	0.3	34.0	31.9	N/U						
DULCIE SST (26.0)													
31	35.0	32.2	A	0.3	35.0	34.2	N/U						
30	50.0	47.2	A	0.3	37.0	36.7		36.7	28.7			1644.6	1644.6
29	65.0	62.2	A	0.3	42.0	41.8	N/U		50.0	13.7			3649.6
28	80.0	77.2	A	0.3	46.0	45.9	N/U						
1	100.0	97.2	A	0.5	50.0	50.1							
2	100.0	97.2	B	0.5	51.0	50.6							
3	100.0	97.2	C	0.5	52.0	50.8							
26	100.0	97.2	A	0.3	50.0	50.0		50.4	42.4			2292.5	2476.8
25	160.0	157.2	D	0.6	69.0	68.5		68.5	60.5	60.0	18.1	2598.3	2754.4
24	242.0	239.2	D	0.6	94.0	93.8		93.8	85.8	82.0	25.3	2787.9	2906.4
23	342.0	339.2	D	0.6	123.0	123.0		123.0	115.0	100.0	29.2	2949.6	3046.4
21	442.0	439.2	D	0.6	151.0	151.1		151.1	143.1	100.0	28.1	3069.2	3153.5
20	500.0	497.2	D	0.6	169.0	169.1		169.1	161.1	58.0	18.0	3086.3	3161.3
										69.0	15.5		4451.6
U ARRINTHRUNGA FM													
4	569.0	566.2	D	0.6	185.0	185.1							
19	569.0	566.2	D	0.6	184.0	184.1		184.6	176.6			3206.1	3294.8

308413

Company : PACIFIC OIL AND GAS LTD.  
 Well : PHILLIP #2  
 Elevations : Datum : 421.0 Ground : 421.0 Kelly : 423.8  
 Shot data : Location Elevation Offset  
                   A       421.0     8.5  
                   B       421.0    17.0  
                   C       421.0    25.5  
                   D       421.0    25.0

Latitude :  
 Longitude :  
 Rig identification : ROCKDRILL #20  
 Energy source : AN-60  
 Logger : BPB INSTRUMENTS  
 Near surface velocity  
 for shot statics: 2088  
 Instrument delay: 8.0 ms

Survey date : 24-JUN-88  
 Survey units : METRES  
 Times in milliseconds.

SHOT CALCULATIONS

Shot No	Geophone depth		Shot Locn	Shot Depth	TIMES				Check shot interval		Velocities		
	Kelly	Datum			Record	Corr.	Avg.	Below datum	Distance	Time	Average	RMS	Interval
19	569.0	566.2	D	0.6	184.0	184.1	184.6	176.6	117.0	18.6	3206.1	3294.8	6290.3
18	686.0	683.2	D	0.6	203.0	203.2	203.2	195.2	115.0	22.0	3500.0	3686.7	5227.3
EUROWIE SST MEMBER													
17	801.0	798.2	D	0.6	225.0	225.2	225.2	217.2	135.0	23.0	3675.0	3870.8	5869.6
16	936.0	933.2	D	0.6	248.0	248.2	248.2	240.2	89.0	16.0	3885.1	4104.5	5562.5
15	1025.0	1022.2	D	0.6	264.0	264.2	264.2	256.2	110.0	22.0	3989.9	4210.4	5000.0
HAGEN MEMBER													
14	1135.0	1132.2	D	0.6	286.0	286.2	286.2	278.2	133.0	23.0	4069.7	4278.1	5782.6
13	1268.0	1265.2	D	0.6	309.0	309.2	309.2	301.2	60.0	12.0	4200.5	4411.1	5000.0
12	1328.0	1325.2	D	0.6	321.0	321.2	321.2	313.2	47.0	9.0	4231.2	4435.1	5222.2
RED HEART DOLOMITE													
11	1375.0	1372.2	D	0.6	330.0	330.2	330.2	322.2	75.0	12.0	4258.8	4459.0	6250.0
8	1450.0	1447.2	D	0.6	342.0	342.2	342.2	334.2	25.0	4.0	4330.3	4535.6	6250.0
PROTEROZOIC CLASTICS													
9	1475.0	1472.2	D	0.6	346.0	346.2	346.2	338.2	12.0	2.0	4353.0	4559.6	6000.0
BASEMENT WASH													
10	1487.0	1484.2	D	0.6	348.0	348.2	348.2	340.2			4362.7	4569.4	

Company : PACIFIC OIL AND GAS LTD.  
 Well : PHILLIP #2  
 Elevations : Datum : 421.0 Ground : 421.0 Kelly : 423.8

Latitude :  
 Longitude :

Survey date : 24-JUN-88  
 Survey units : METRES  
 Times in milliseconds.

## SONIC DRIFT

Geophone depth		Check shot times		Check shot interval		Sonic Int. time	Interval sonic drift		Cumulative drift msec
Kelly ----	Datum	Average -	Below datum	Distance --	Time		usec/m	--- msec	
DATUM (GROUND)									
2.8	0.0	8.0	0.0						
				47.2	28.7				
DULCIE SST (26.0)									
50.0	47.2	36.7	28.7						
100.0	97.2	50.4	42.4	50.0	13.7				
160.0	157.2	68.5	60.5	60.0	18.1	15.3	46.67	2.8	2.8
242.0	239.2	93.8	85.8	82.0	25.3	21.5	46.34	3.8	6.6
342.0	339.2	123.0	115.0	100.0	29.2	26.9	23.00	2.3	8.9
442.0	439.2	151.1	143.1	100.0	28.1	26.9	12.00	1.2	10.1
500.0	497.2	169.1	161.1	58.0	18.0	16.6	24.14	1.4	11.5
				69.0	15.5	17.3	-26.09	-1.8	9.7
U ARRINTHRUNGA FM									
569.0	566.2	184.6	176.6						
686.0	683.2	203.2	195.2	117.0	18.6	19.2	-5.13	-0.6	9.1
				115.0	22.0	20.3	14.78	1.7	10.8
EUROWIE SST MEMBER									
801.0	798.2	225.2	217.2						
936.0	933.2	248.2	240.2	135.0	23.0	25.2	-16.30	-2.2	8.6
1025.0	1022.2	264.2	256.2	89.0	16.0	16.3	-3.37	-0.3	8.3
				110.0	22.0	22.5	-4.55	-0.5	7.8
HAGEN MEMBER									
1135.0	1132.2	286.2	278.2						
1268.0	1265.2	309.2	301.2	133.0	23.0	24.1	-8.27	-1.1	6.7
1328.0	1325.2	321.2	313.2	60.0	12.0	10.2	30.00	1.8	8.5
				47.0	9.0	7.8	25.53	1.2	9.7
RED HEART DOLOMITE									
1375.0	1372.2	330.2	322.2						

Company : PACIFIC OIL AND GAS LTD.  
 Well : PHILLIP #2  
 Elevations : Datum : 421.0 Ground : 421.0 Kelly : 423.8

Latitude :  
 Longitude :

Survey date : 24-JUN-88  
 Survey units : METRES  
 Times in milliseconds.

SONIC DRIFT

Geophone depth Kelly ---- Datum	Check shot times		Check shot interval		Sonic Int. time	Interval sonic drift		Cumulative drift msec	
	Average	Below datum	Distance --	Time		usec/m	--- msec		
RED HEART DOLOMITE									
1375.0	1372.2	330.2	322.2	75.0	12.0	12.9	-12.00	-0.9	8.8
1450.0	1447.2	342.2	334.2	25.0	4.0	5.1	-44.00	-1.1	7.7
PROTEROZOIC CLASTICS									
1475.0	1472.2	346.2	338.2	12.0	2.0	2.7	-58.33	-0.7	7.0
BASEMENT WASH									
1487.0	1484.2	348.2	340.2						

Company : PACIFIC OIL AND GAS LTD.  
 Well : PHILLIP #2  
 Elevations : Datum : 421.0 Ground : 421.0 Kelly : 423.8

Latitude :  
 Longitude :

Survey date : 24-JUN-88  
 Survey units : METRES  
 Times in milliseconds.

## SONIC CALIBRATION

Geophone depth		Interval Distance	Original sonic times		Adjusted sonic times		----- Velocities -----		
Kelly ----	Datum		Interval --	Cumulative	Interval --	Calibrated	Average --	RMS --	Interval
DATUM (GROUND)									
2.8	0.0								
		47.2							1644.6
50.0	47.2							1644.6	1644.6
		50.0							3649.6
100.0	97.2							2292.5	2476.8
		60.0	15.3		18.1				3314.9
160.0	157.2			15.3		60.5		2598.3	2754.4
		82.0	21.5	36.8	25.3				3241.1
242.0	239.2			36.8		85.8		2787.9	2906.4
		100.0	26.9	63.7	29.2				3424.7
342.0	339.2			63.7		115.0		2949.6	3046.4
		100.0	26.9	90.6	28.1				3558.7
442.0	439.2			90.6		143.1		3069.2	3153.5
		58.0	16.6	107.2	18.0				3222.2
500.0	497.2			107.2		161.1		3086.3	3161.3
		69.0	17.3		15.5				4451.6
U ARRINTHRUNGA FM									
569.0	566.2			124.5		176.6		3206.1	3294.8
		117.0	19.2	143.7	18.6				6290.3
686.0	683.2			143.7		195.2		3500.0	3686.7
		115.0	20.3		22.0				5227.3
EUROWIE SST MEMBER									
801.0	798.2			164.0		217.2		3675.0	3870.8
		30.5	6.2		5.7				5348.1
LOWER ARRINTHRUNGA									
831.5	828.7			170.2		222.9		3717.8	3915.5
		104.5	19.0	189.2	17.3				6041.5
936.0	933.2			189.2		240.2		3885.1	4105.6
		8.0	1.4		1.4				5826.5
CHABALOWE FM									
944.0	941.2			190.6		241.6		3896.1	4117.4
		81.0	14.9	205.5	14.6				5537.7
1025.0	1022.2			205.5		256.2		3989.9	4211.4
		110.0	22.5		22.0				5000.0
HAGEN MEMBER									
1135.0	1132.2			228.0		278.2		4069.7	4279.0
		133.0	24.1	252.1	23.0				5782.6
1268.0	1265.2			252.1		301.2		4200.5	4412.0
		60.0	10.2	262.3	12.0				5000.0
1328.0	1325.2			262.3		313.2		4231.2	4435.9
		47.0	7.8		9.0				5222.2
RED HEART DOLOMITE									
1375.0	1372.2			270.1		322.2		4258.8	4459.8

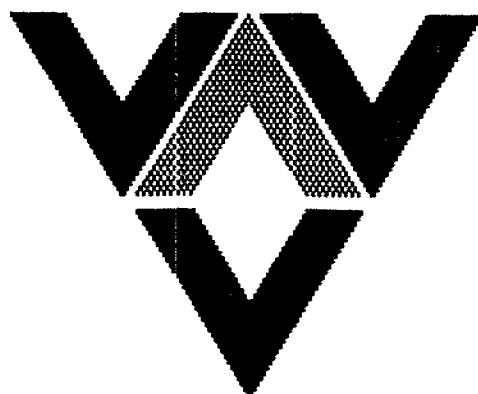
Company : PACIFIC OIL AND GAS LTD.  
 Well : PHILLIP #2  
 Elevations : Datum : 421.0 Ground : 421.0 Kelly : 423.8

Latitude :  
 Longitude :

Survey date : 24-JUN-88  
 Survey units : METRES  
 Times in milliseconds.

SONIC CALIBRATION

Geophone depth		Interval Distance	Original sonic times		Adjusted sonic times		----- Velocities -----		
Kelly ----	Datum		Interval --	Cumulative	Interval --	Calibrated	Average --	RMS --	Interval
RED HEART DOLOMITE									
1375.0	1372.2	75.0		270.1		322.2	4258.8	4459.8	6250.0
1450.0	1447.2		12.9	283.0	12.0	334.2	4330.3	4536.3	
		25.0	5.1			4.0			6250.0
PROTEROZOIC CLASTICS									
1475.0	1472.2	12.0		288.1		338.2	4353.0	4560.3	6000.0
			2.7		2.0				
BASEMENT WASH									
1487.0	1484.2			290.8		340.2	4362.7	4570.1	



308413

Velocity Data Pty Ltd

WELL VELOCITY SURVEY

---

CLIENT : PACIFIC OIL AND GAS LTD.  
WELL IDENTIFICATION : PHILLIP #2  
SURVEY DATE : 24-JUN-88  
SURVEY TIME : 09:30:00  
SURVEY UNITS : METRES  
AUTHORITY TO PROSPECT : EP-10

WELL LATITUDE : 022 16 15 S  
WELL LONGITUDE : 135 16 15 E

KELLY ELEVATION : 423.8  
GROUND ELEVATION : 421.0

WEATHER : FINE

ENERGY SOURCE : AN-60

CLIENT REP : G. WAKELIN-KING  
OBSERVER : J. LARSEN  
SHOOTER :

RIG IDENTIFICATION : ROCKDRILL #20  
CASING DEPTH : 683.0  
LOGGING UNIT : BPB INSTRUMENTS

RECORDING INSTRUMENTS : SIE RS-49W  
SYSTEM DELAY TIME 8 MSEC.

---



TRACE DISPLAY.

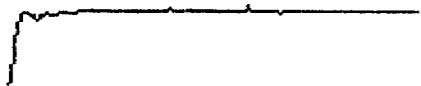
SHOT 0 Time Level : 100.0 Shot location : D  
Shot depth : 0.6 Charge size : 0.25  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

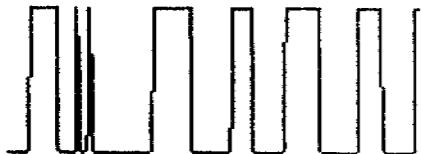
AUX. CHANNEL 1 Max. 605mV



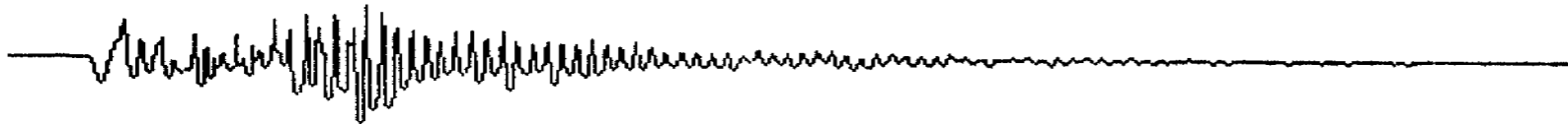
AUX. CHANNEL 2 Max. 610mV



AUX. CHANNEL 3 Max. 610mV

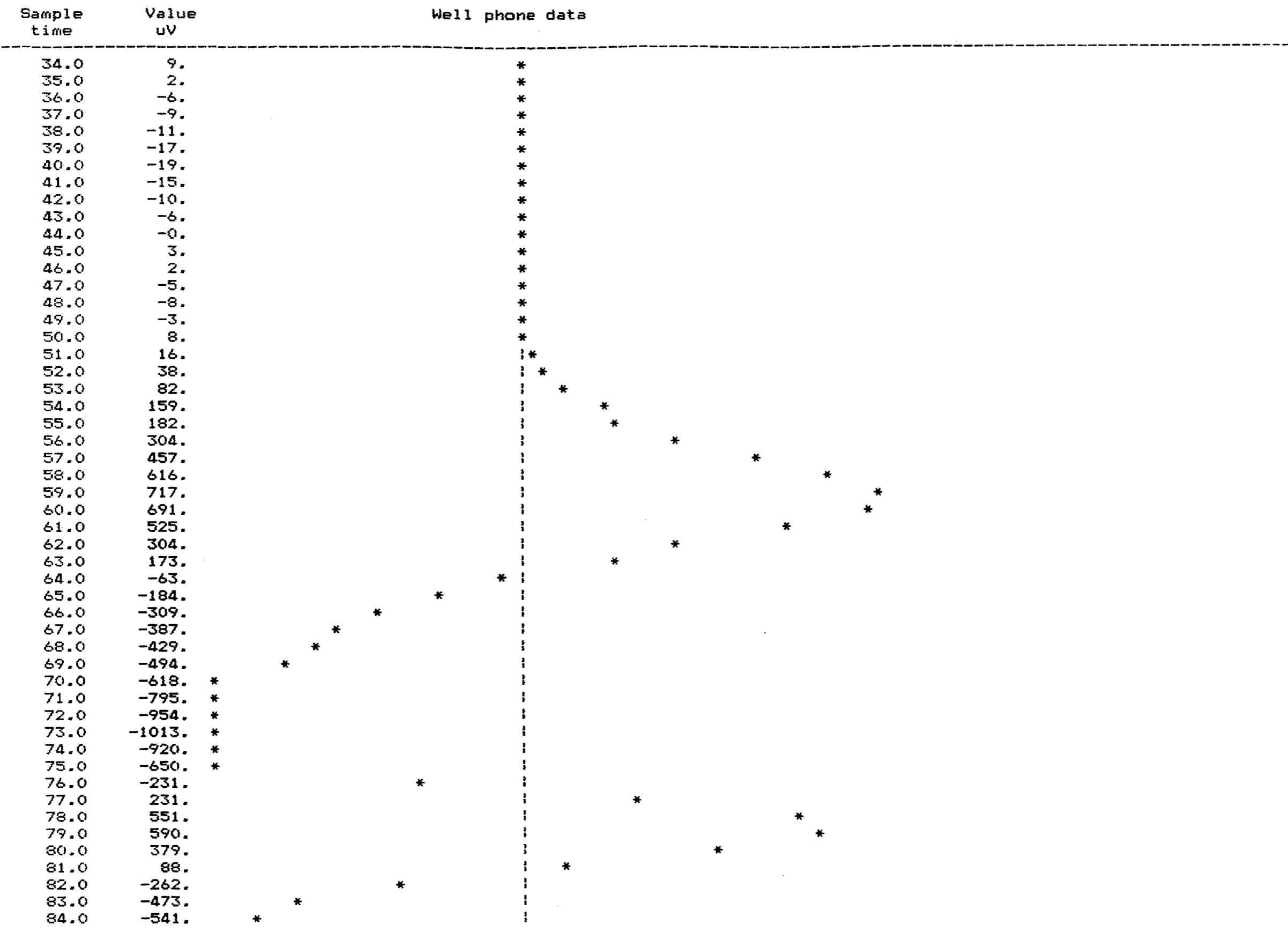


WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 1.948

FIRST ARRIVAL PLOT - Shot 0 Level 100.0



TRACE DISPLAY.

SHOT 1 Time Level : 100.0 Shot location : A  
Shot depth : 0.5 Charge size : 0.25  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

AUX. CHANNEL 1 Max. 610mV



AUX. CHANNEL 2 Max. 610mV



AUX. CHANNEL 3 Max. 610mV



WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 2.424

FIRST ARRIVAL PLOT - Shot 1 Level 100.0

Sample time	Value uV	Well phone data
34.0	2.	*
35.0	-8.	*
36.0	-9.	*
37.0	-7.	*
38.0	-2.	*
39.0	-1.	*
40.0	3.	*
41.0	1.	*
42.0	-2.	*
43.0	0.	*
44.0	21.	*
45.0	42.	*
46.0	37.	*
47.0	32.	*
48.0	151.	*
49.0	327.	*
50.0	693.	*
51.0	1091.	*
52.0	1439.	*
53.0	1722.	*
54.0	1886.	*
55.0	1871.	*
56.0	1753.	*
57.0	1673.	*
58.0	1585.	*
59.0	1169.	*
60.0	127.	*
61.0	-1317.	*
62.0	-2339.	*
63.0	-2424.	*
64.0	-2042.	*
65.0	-1910.	*
66.0	-2016.	*
67.0	-2032.	*
68.0	-1948.	*
69.0	-1883.	*
70.0	-1697.	*
71.0	-1213.	*
72.0	-644.	*
73.0	-535.	*
74.0	-915.	*
75.0	-891.	*
76.0	161.	*
77.0	1348.	*
78.0	1611.	*
79.0	753.	*
80.0	-668.	*
81.0	-1818.	*
82.0	-1938.	*
83.0	-1219.	*
84.0	-756.	*

TRACE DISPLAY.

SHOT 2 Time Level : 100.0 Shot location : B  
Shot depth : 0.5 Charge size : 0.25  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

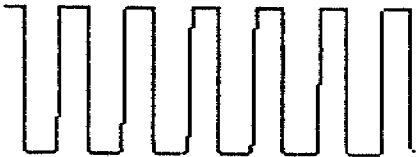
AUX. CHANNEL 1 Max. 610mV



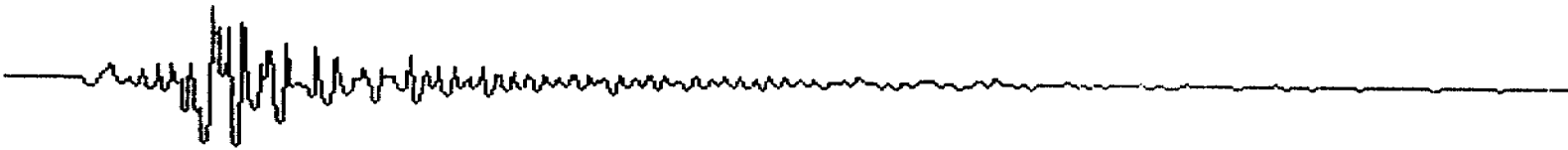
AUX. CHANNEL 2 Max. 605mV



AUX. CHANNEL 3 Max. 610mV

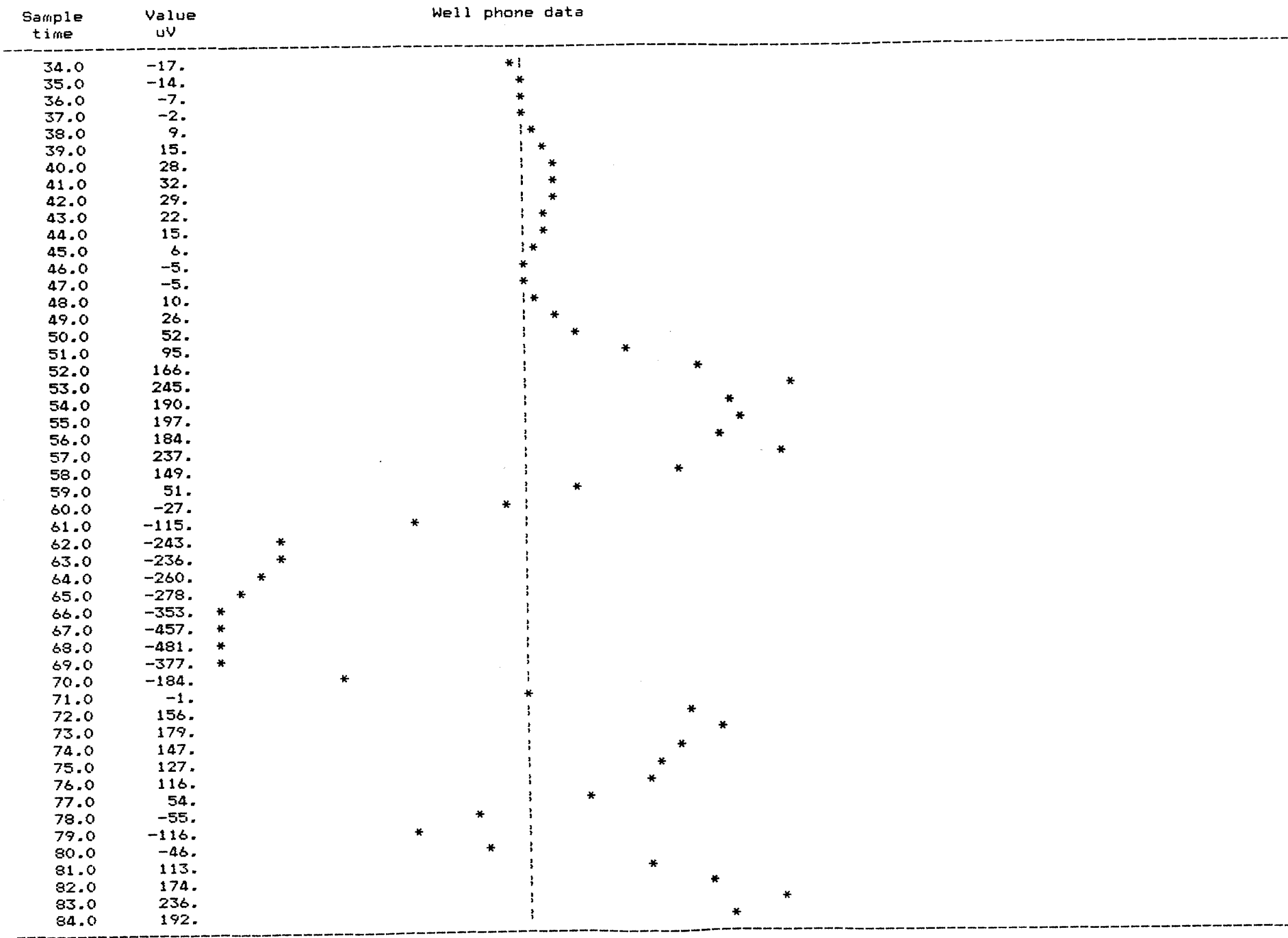


WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 2.120

FIRST ARRIVAL PLOT - Shot 2 Level 100.0



TRACE DISPLAY.

SHOT 3 Time Level : 100.0 Shot location : C  
Shot depth : 0.5 Charge size : 0.25  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

AUX. CHANNEL 1 Max. 610mV



AUX. CHANNEL 2 Max. 605mV



AUX. CHANNEL 3 Max. 610mV



WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 0.320

FIRST ARRIVAL PLOT - Shot 3 Level 100.0

Sample time	Value uV	Well phone data
36.0	-0.	*
37.0	3.	*
38.0	0.	*
39.0	0.	*
40.0	4.	!*
41.0	5.	!*
42.0	-1.	*
43.0	-5.	*
44.0	-5.	*
45.0	-1.	*
46.0	-1.	*
47.0	0.	*
48.0	3.	!*
49.0	10.	!*
50.0	12.	!*
51.0	28.	!*
52.0	58.	!*
53.0	100.	!*
54.0	152.	!*
55.0	214.	!*
56.0	260.	!*
57.0	171.	!*
58.0	243.	!*
59.0	174.	!*
60.0	62.	!*
61.0	-65.	!*
62.0	-153.	!*
63.0	-184.	!*
64.0	-199.	!*
65.0	-231.	!*
66.0	-195.	!*
67.0	-244.	!*
68.0	-296.	!*
69.0	-320.	!*
70.0	-281.	!*
71.0	-174.	!*
72.0	-51.	!*
73.0	129.	!*
74.0	247.	!*
75.0	192.	!*
76.0	187.	!*
77.0	180.	!*
78.0	-44.	!*
79.0	-177.	!*
80.0	-234.	!*
81.0	-190.	!*
82.0	-103.	!*
83.0	87.	!*
84.0	193.	!*
85.0	184.	!*
86.0	75.	!*



TRACE DISPLAY.

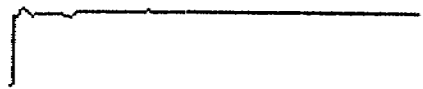
SHOT 4 Time Level : 569.0 Shot location : D  
Shot depth : 0.6 Charge size : 1.0  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

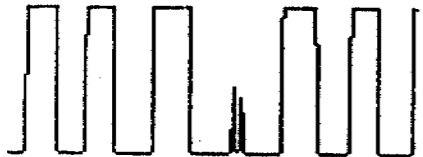
AUX. CHANNEL 1 Max. 605mV



AUX. CHANNEL 2 Max. 610mV



AUX. CHANNEL 3 Max. 610mV

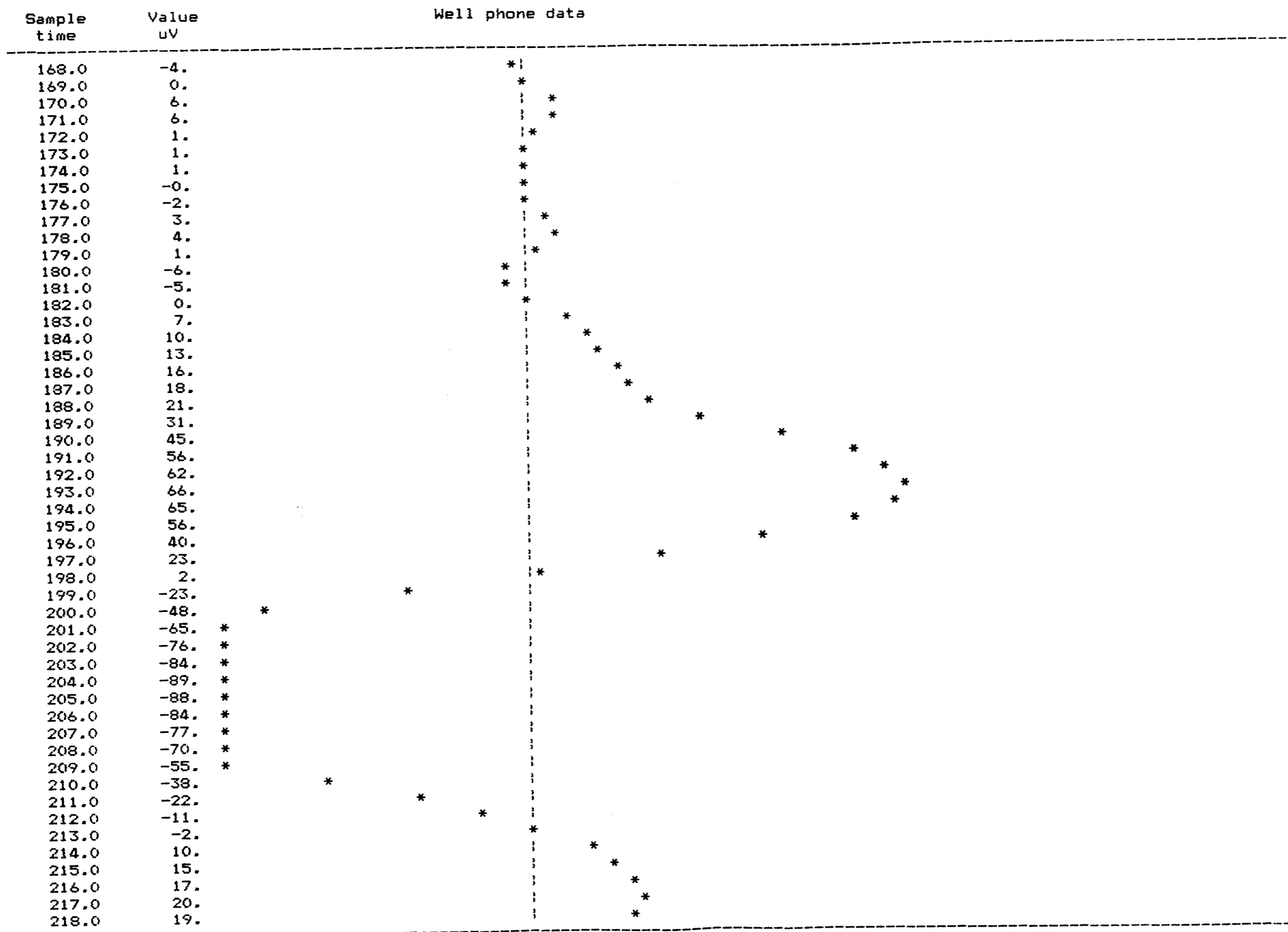


WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 0.088

FIRST ARRIVAL PLOT - Shot 4 Level 569.0

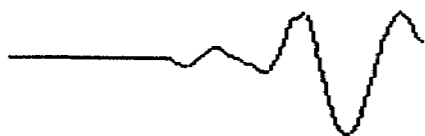


TRACE DISPLAY.

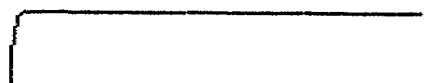
SHOT 8 Time Level : 1450.0 Shot location : D  
Shot depth : 0.6 Charge size : 2.0  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

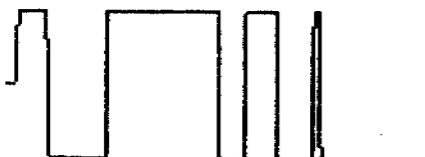
AUX. CHANNEL 1 Max. 610mV



AUX. CHANNEL 2 Max. 610mV



AUX. CHANNEL 3 Max. 610mV

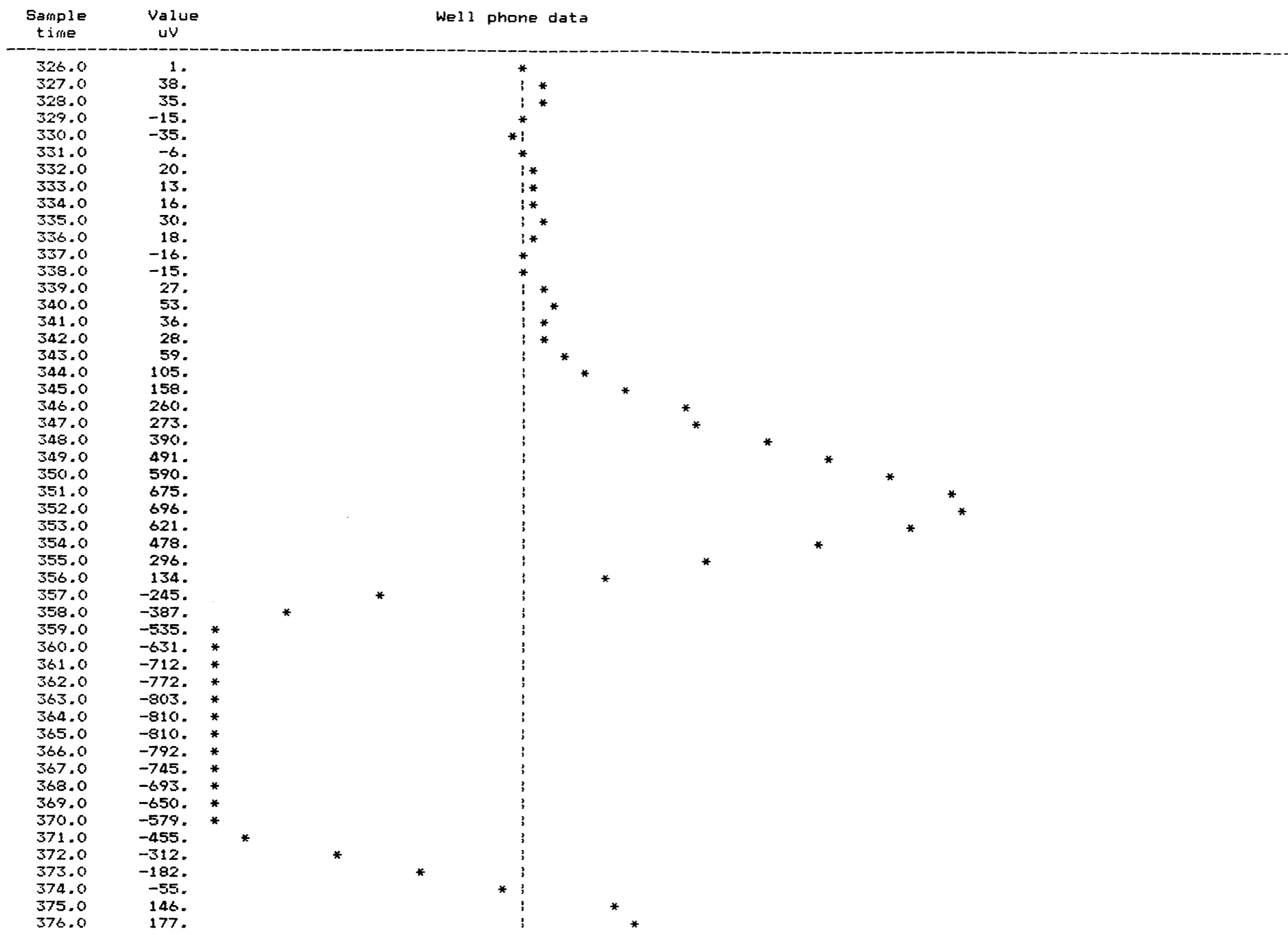


WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 0.810

FIRST ARRIVAL PLOT - Shot 8 Level 1450.0



TRACE DISPLAY.

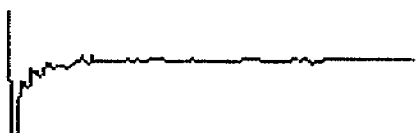
SHOT 9 Time Level : 1475.0 Shot location : D  
Shot depth : 0.6 Charge size : 2.0  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

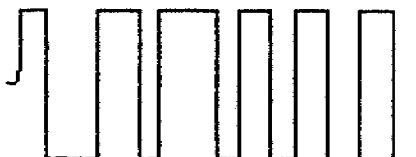
AUX. CHANNEL 1 Max. 610mV



AUX. CHANNEL 2 Max. 610mV



AUX. CHANNEL 3 Max. 610mV

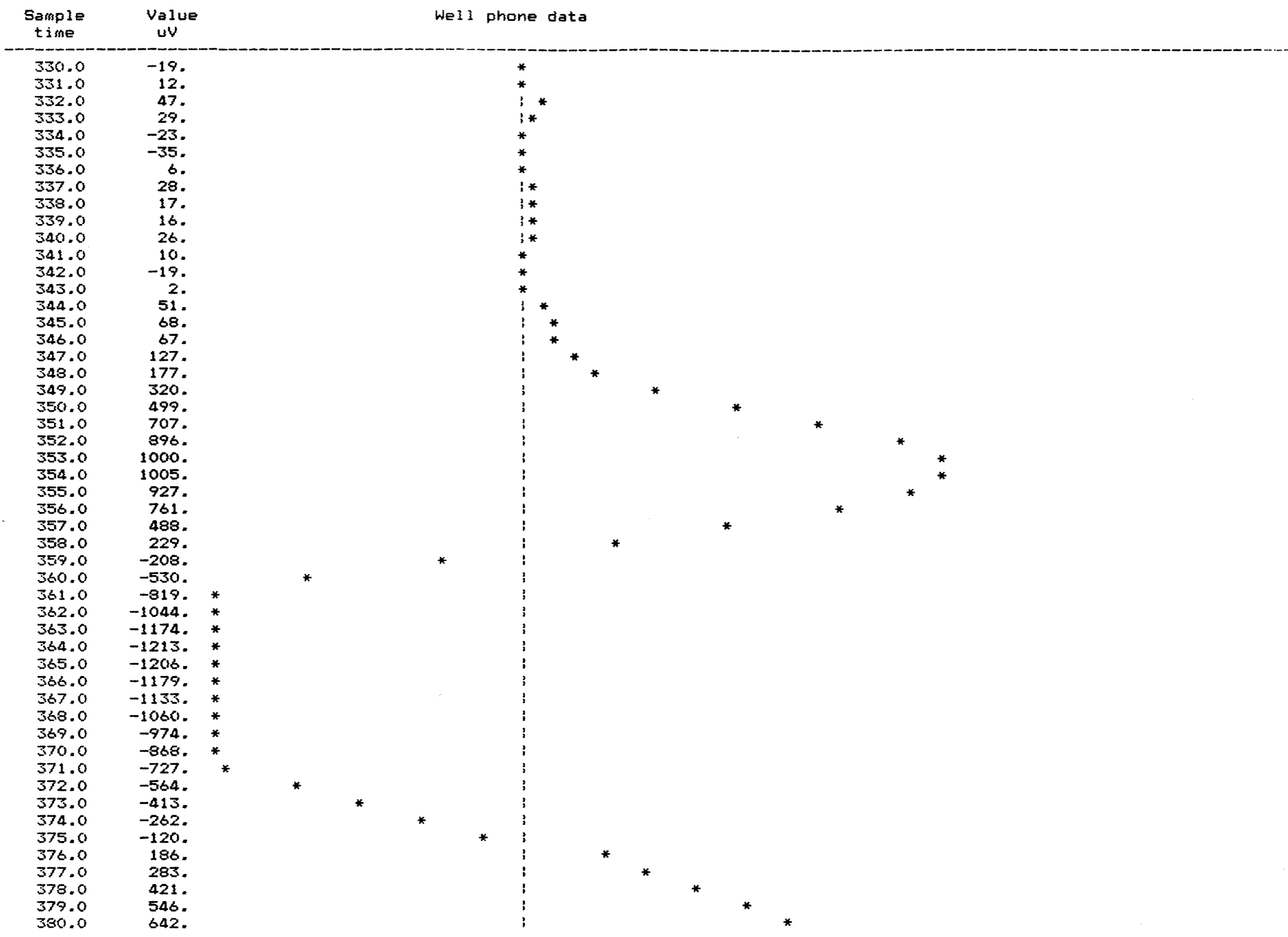


WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 1.206

FIRST ARRIVAL PLOT - Shot 9 Level 1475.0

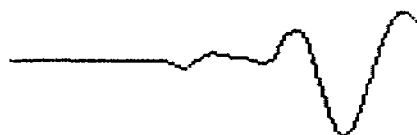


TRACE DISPLAY.

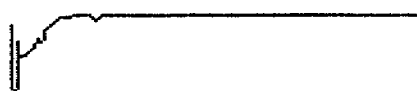
SHOT 10 Time Level : 1487.0 Shot location : D  
Shot depth : 0.6 Charge size : 2.0  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

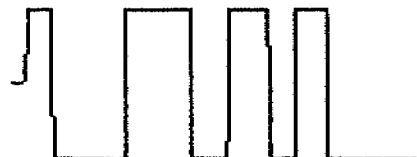
AUX. CHANNEL 1 Max. 610mV



AUX. CHANNEL 2 Max. 605mV



AUX. CHANNEL 3 Max. 610mV

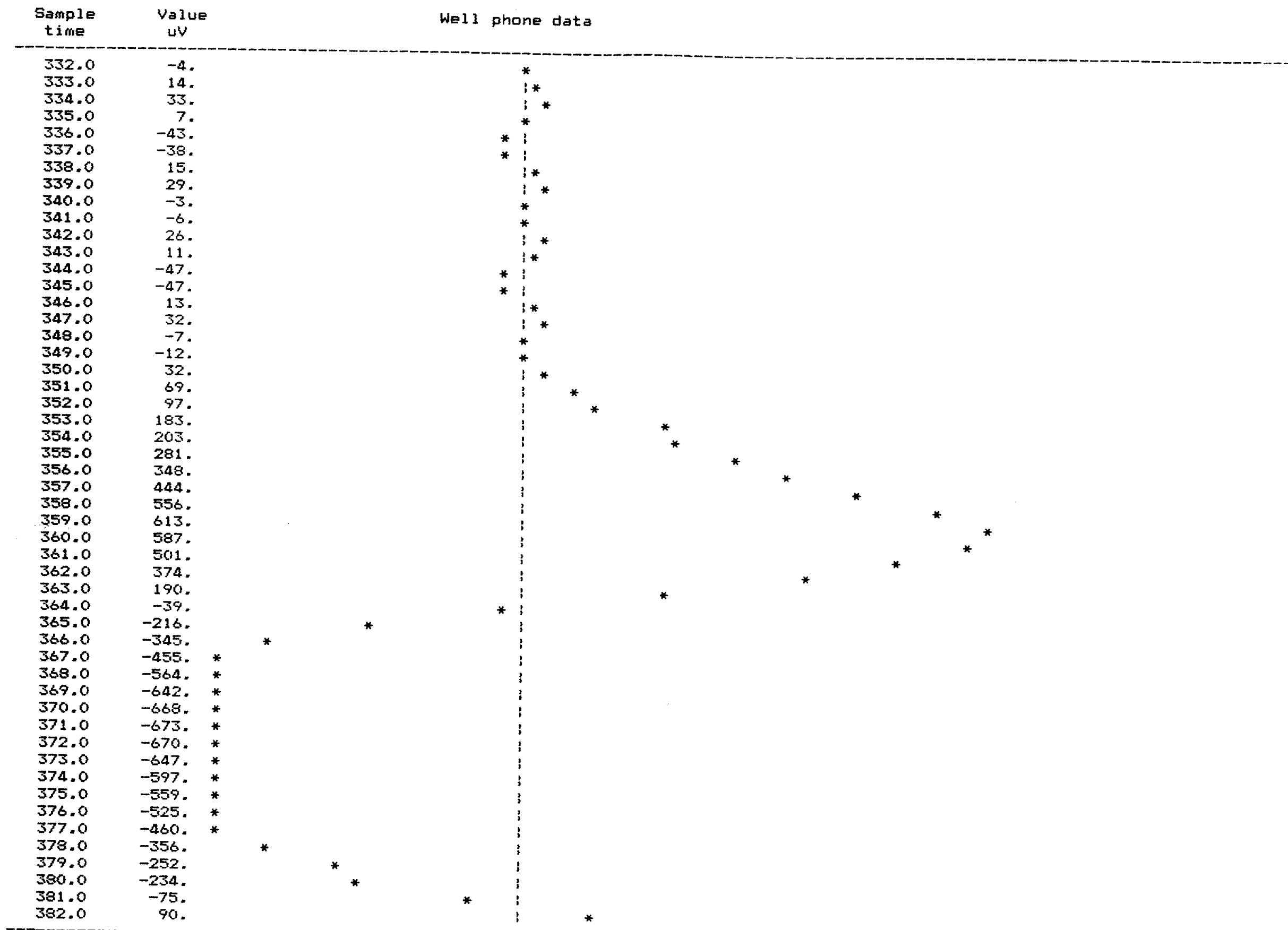


WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 0.673

FIRST ARRIVAL PLOT - Shot 10 Level 1487.0





TRACE DISPLAY.

SHOT 11 Time Level : 1375.0 Shot location : D  
Shot depth : 0.6 Charge size : 2.0  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

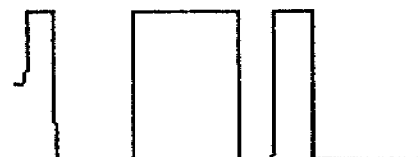
AUX. CHANNEL 1 Max. 610mV



AUX. CHANNEL 2 Max. 610mV



AUX. CHANNEL 3 Max. 610mV

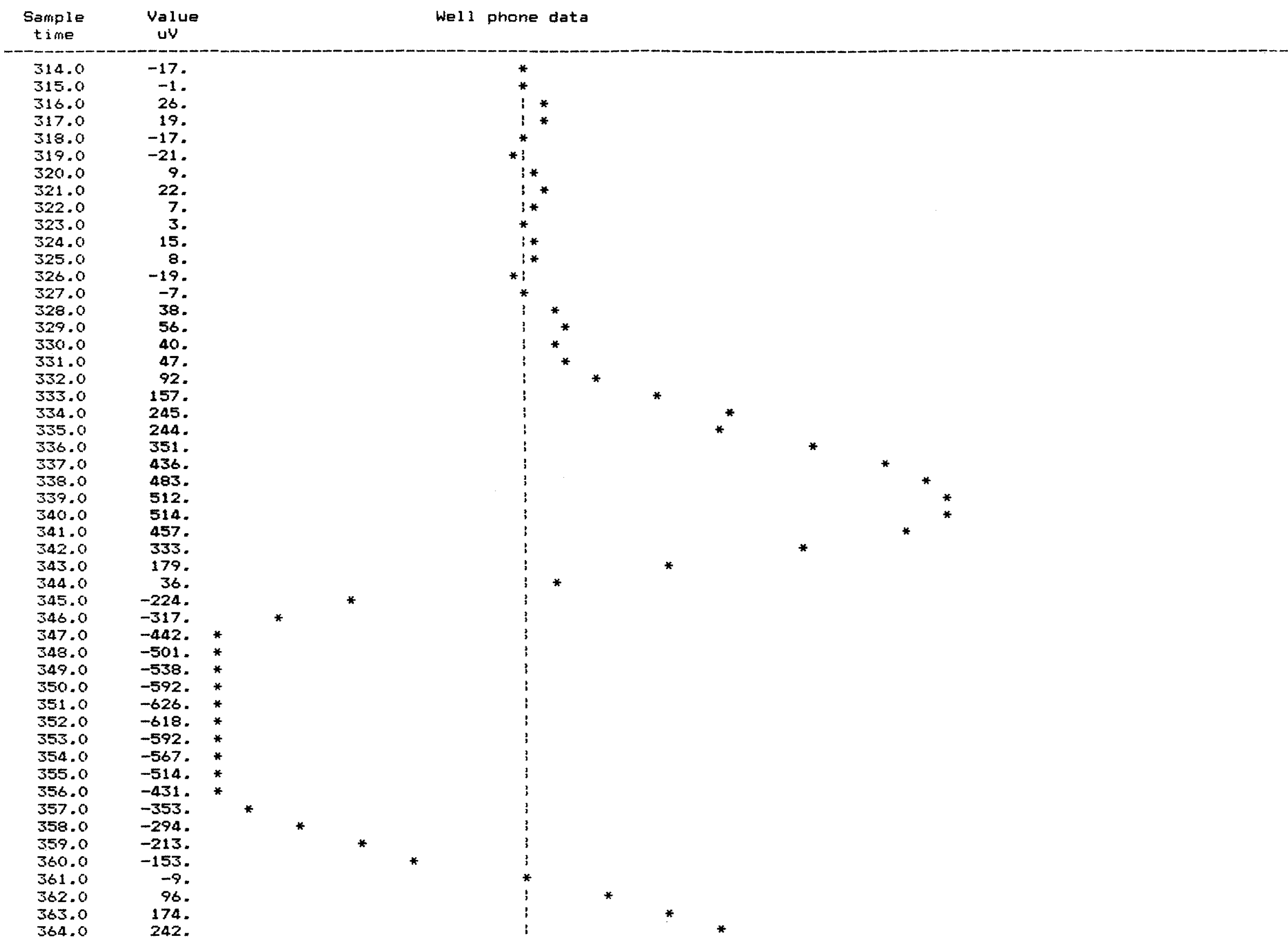


WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 0.626

FIRST ARRIVAL PLOT - Shot 11 Level 1375.0

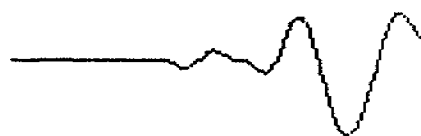


TRACE DISPLAY.

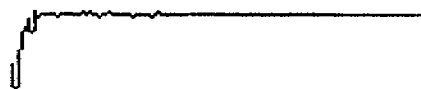
SHOT 12 Time Level : 1328.0 Shot location : D  
Shot depth : 0.6 Charge size : 2.0  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

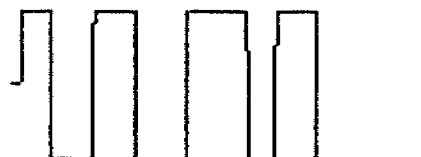
AUX. CHANNEL 1 Max. 610mV



AUX. CHANNEL 2 Max. 610mV



AUX. CHANNEL 3 Max. 610mV



WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 0.720

FIRST ARRIVAL PLOT - Shot 12 Level 1328.0

Sample time	Value uV	Well phone data
304.0	9.	*
305.0	10.	*
306.0	-13.	*
307.0	-20.	*
308.0	8.	*
309.0	28.	*
310.0	8.	*
311.0	-24.	*
312.0	-30.	*
313.0	-22.	*
314.0	-18.	*
315.0	-6.	*
316.0	21.	*
317.0	28.	*
318.0	-10.	*
319.0	-40.	*
320.0	-15.	*
321.0	31.	*
322.0	46.	*
323.0	54.	*
324.0	112.	*
325.0	215.	*
326.0	205.	*
327.0	301.	*
328.0	431.	*
329.0	556.	*
330.0	626.	*
331.0	634.	*
332.0	597.	*
333.0	514.	*
334.0	374.	*
335.0	197.	*
336.0	49.	*
337.0	-192.	*
338.0	-291.	*
339.0	-452.	*
340.0	-564.	*
341.0	-621.	*
342.0	-668.	*
343.0	-704.	*
344.0	-714.	*
345.0	-712.	*
346.0	-722.	*
347.0	-720.	*
348.0	-662.	*
349.0	-569.	*
350.0	-483.	*
351.0	-403.	*
352.0	-304.	*
353.0	-190.	*
354.0	-110.	*

TRACE DISPLAY.

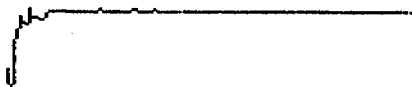
SHOT 13 Time Level : 1268.0 Shot location : D  
Shot depth : 0.6 Charge size : 2.0  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

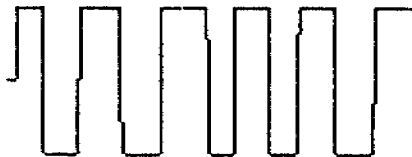
AUX. CHANNEL 1 Max. 610mV



AUX. CHANNEL 2 Max. 610mV



AUX. CHANNEL 3 Max. 610mV

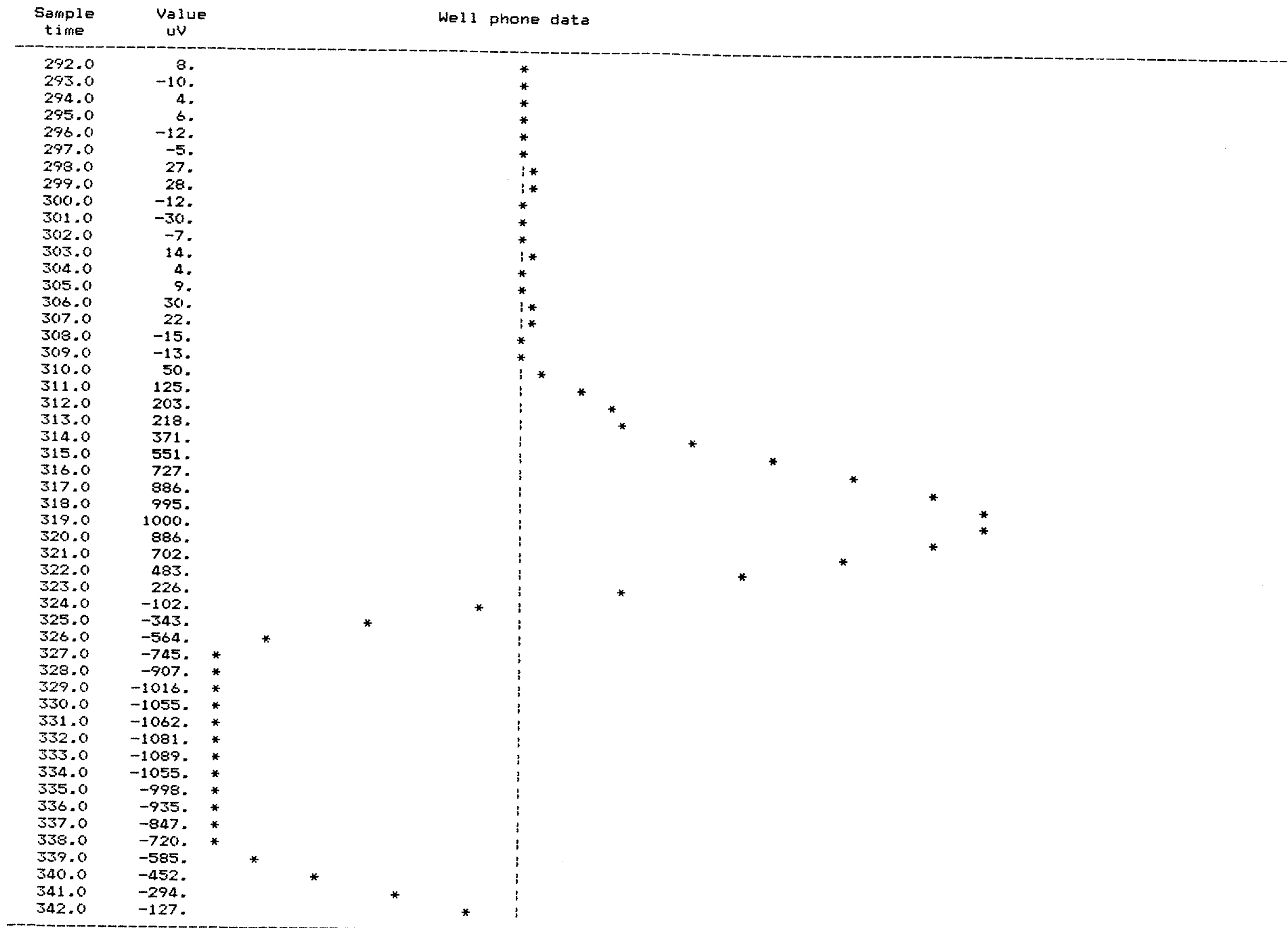


WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 1.089

FIRST ARRIVAL PLOT - Shot 13 Level 1268.0



TRACE DISPLAY.

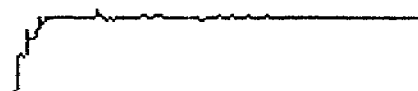
SHOT 14 Time Level : 1135.0 Shot location : D  
Shot depth : 0.6 Charge size : 1.0  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

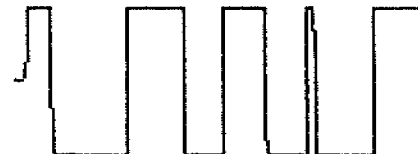
AUX. CHANNEL 1 Max. 610mV



AUX. CHANNEL 2 Max. 610mV



AUX. CHANNEL 3 Max. 610mV

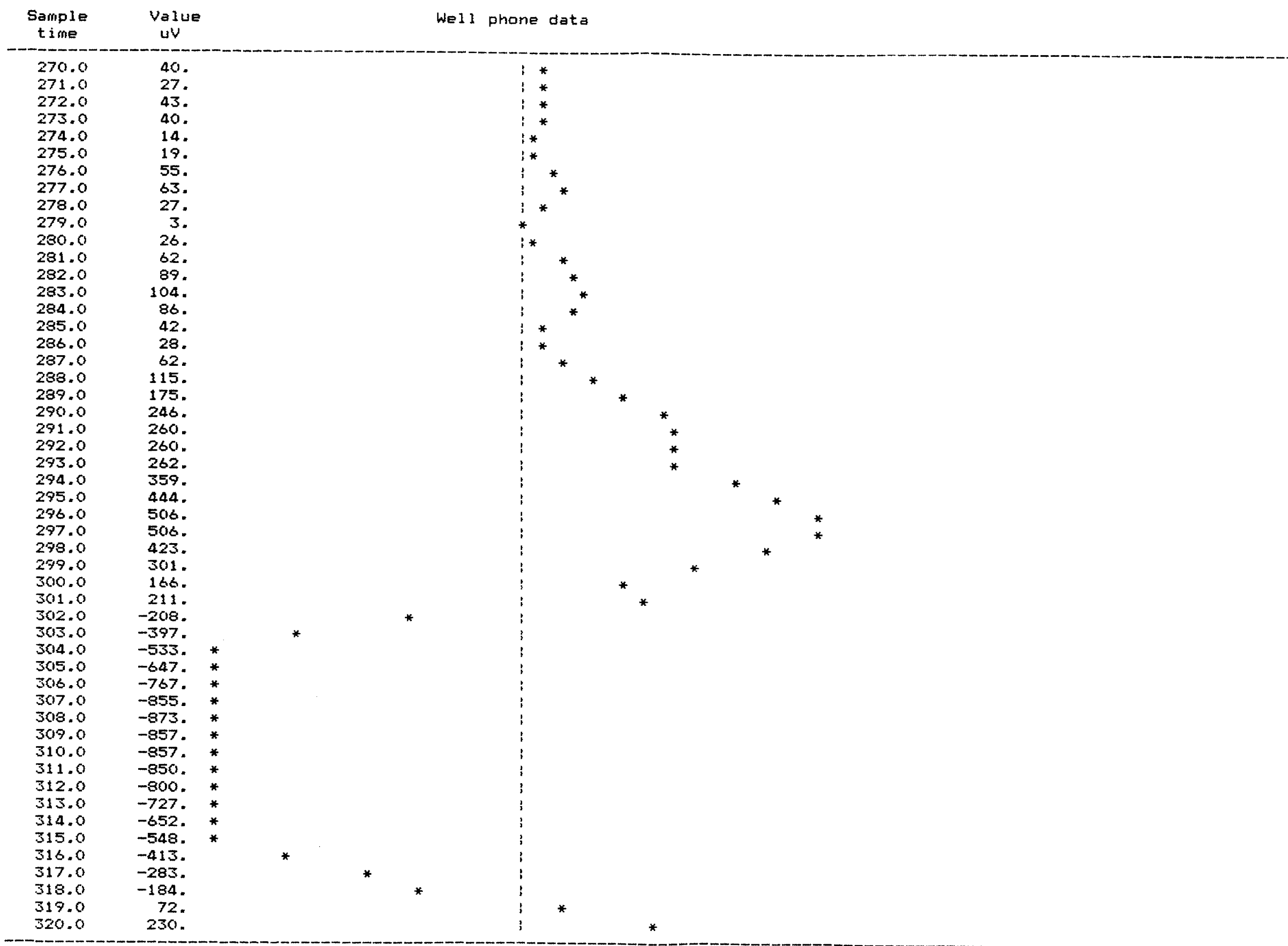


WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 0.857

FIRST ARRIVAL PLOT - Shot 14 Level 1135.0





TRACE DISPLAY.

SHOT 15 Time Level : 1025.0 Shot location : D  
Shot depth : 0.6 Charge size : 1.0  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

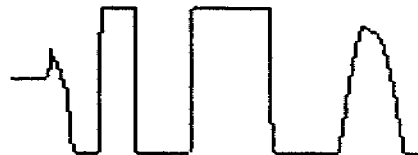
AUX. CHANNEL 1 Max. 610mV



AUX. CHANNEL 2 Max. 610mV



AUX. CHANNEL 3 Max. 610mV

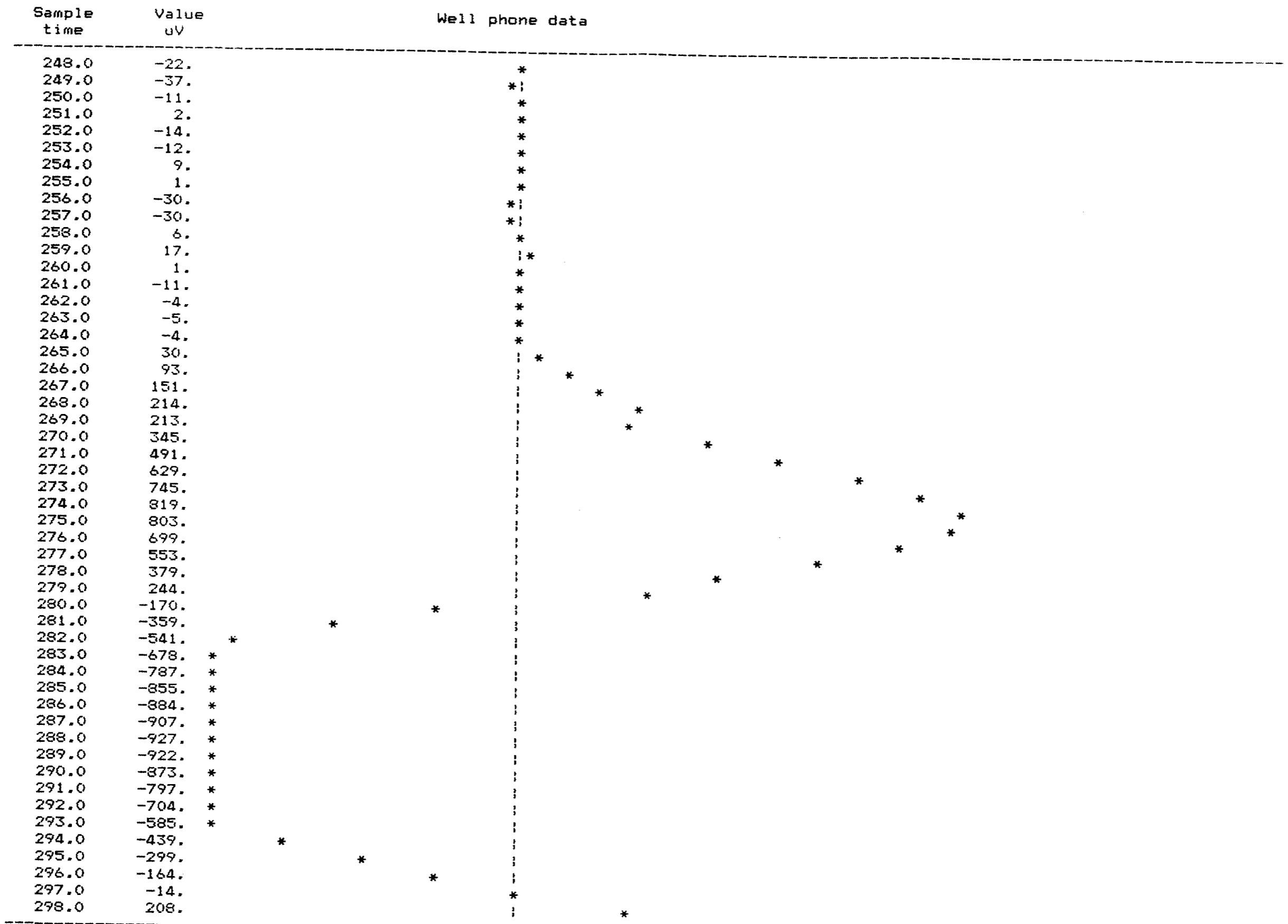


WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 0.922

FIRST ARRIVAL PLOT - Shot 15 Level 1025.0



TRACE DISPLAY.

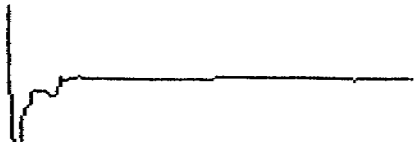
SHOT 16 Time Level : 936.0 Shot location : D  
Shot depth : 0.6 Charge size : 1.0  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

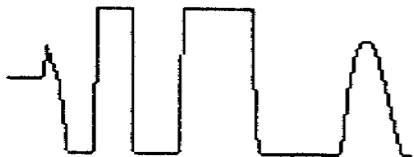
AUX. CHANNEL 1 Max. 610mV



AUX. CHANNEL 2 Max. 610mV



AUX. CHANNEL 3 Max. 610mV

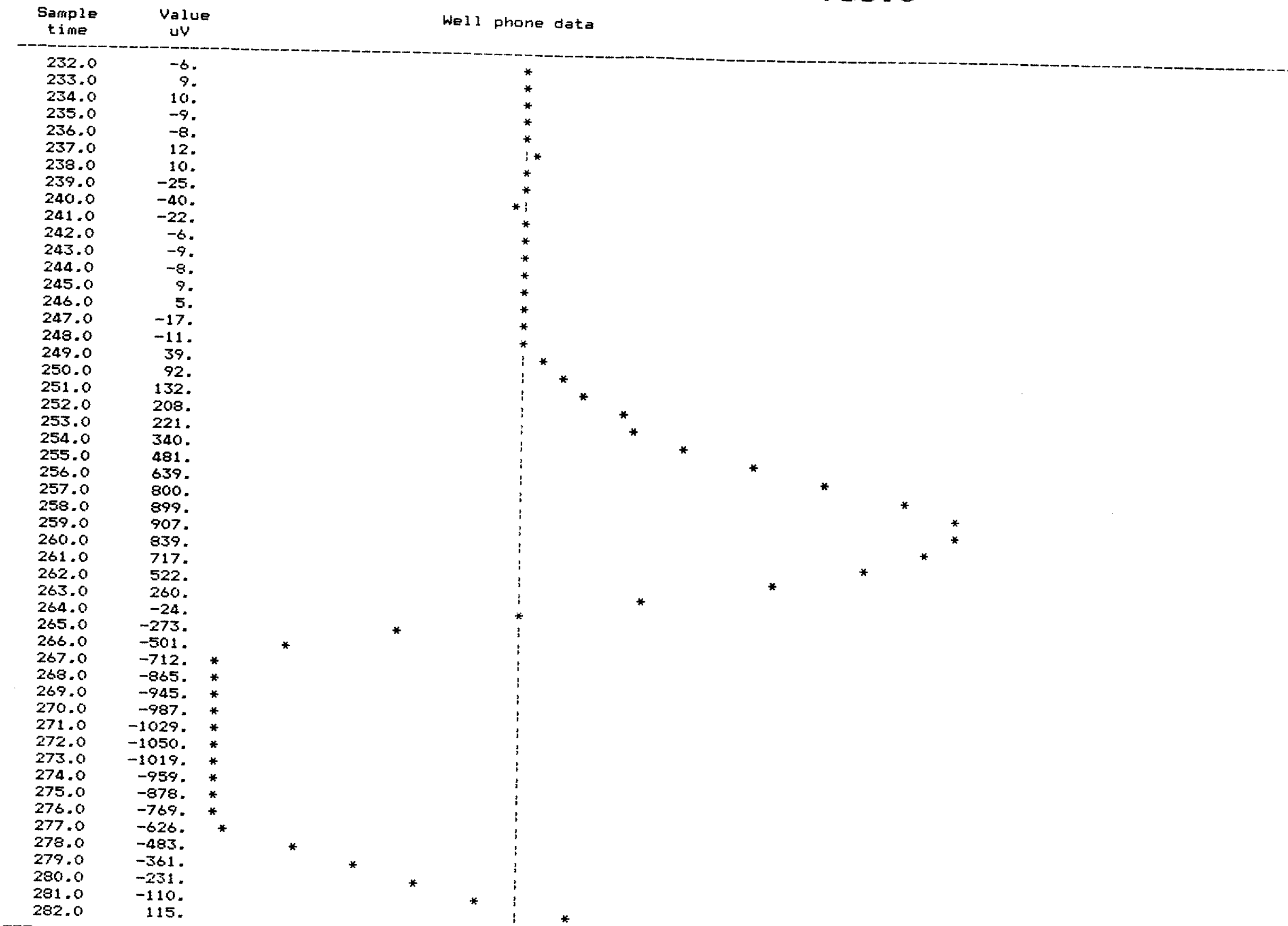


WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 1.029

FIRST ARRIVAL PLOT - Shot 16 Level 936.0



TRACE DISPLAY.

SHOT 17 Time Level : 801.0 Shot location : D  
Shot depth : 0.6 Charge size : 1.0  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

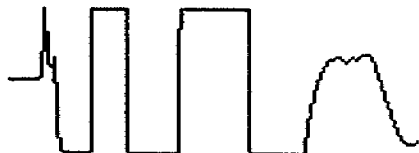
AUX. CHANNEL 1 Max. 605mV



AUX. CHANNEL 2 Max. 610mV



AUX. CHANNEL 3 Max. 610mV

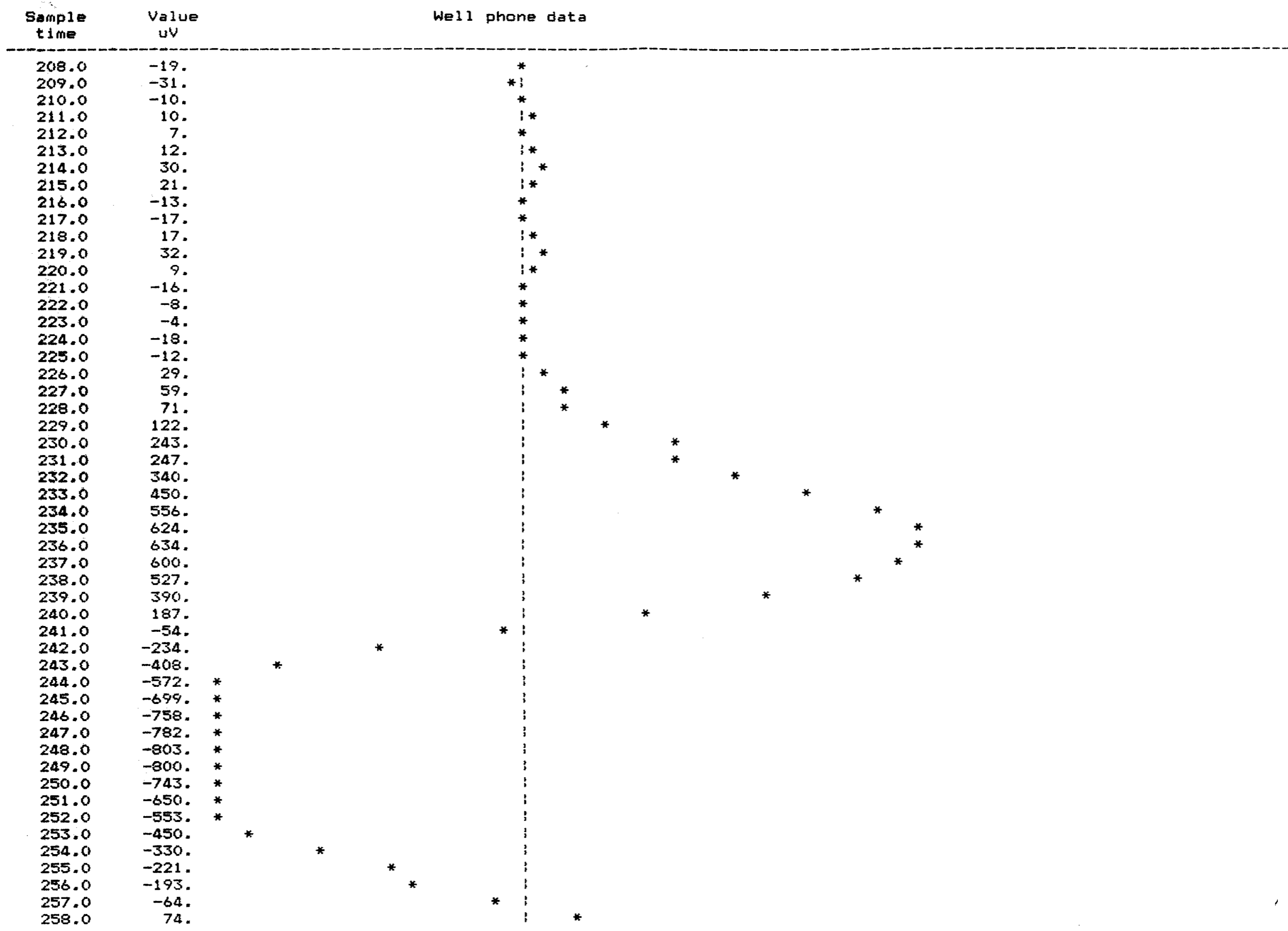


WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 0.800

FIRST ARRIVAL PLOT - Shot 17 Level 801.0



TRACE DISPLAY.

SHOT 18 Time Level : 686.0 Shot location : D  
Shot depth : 0.6 Charge size : 1.0  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

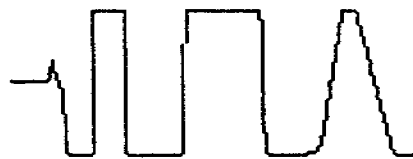
AUX. CHANNEL 1 Max. 610mV



AUX. CHANNEL 2 Max. 610mV



AUX. CHANNEL 3 Max. 610mV



WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 1.457

FIRST ARRIVAL PLOT - Shot 18 Level 686.0

Sample time	Value uV	Well phone data
186.0	37.	*
187.0	23.	*
188.0	-9.	*
189.0	-14.	*
190.0	-9.	*
191.0	-18.	*
192.0	-20.	*
193.0	9.	*
194.0	21.	*
195.0	-4.	*
196.0	-33.	*
197.0	-23.	*
198.0	2.	*
199.0	6.	*
200.0	1.	*
201.0	17.	*
202.0	35.	*
203.0	46.	*
204.0	102.	*
205.0	255.	*
206.0	309.	*
207.0	499.	*
208.0	738.	*
209.0	1010.	*
210.0	1247.	*
211.0	1382.	*
212.0	1401.	*
213.0	1309.	*
214.0	1094.	*
215.0	758.	*
216.0	361.	*
217.0	-36.	*
218.0	-377.	*
219.0	-686.	*
220.0	-945.	*
221.0	-1143.	*
222.0	-1293.	*
223.0	-1408.	*
224.0	-1466.	*
225.0	-1457.	*
226.0	-1418.	*
227.0	-1367.	*
228.0	-1283.	*
229.0	-1130.	*
230.0	-930.	*
231.0	-717.	*
232.0	-491.	*
233.0	-255.	*
234.0	-47.	*
235.0	211.	*
236.0	252.	*



TRACE DISPLAY.

SHOT 19 Time Level : 569.0 Shot location : D  
Shot depth : 0.6 Charge size : 1.0  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

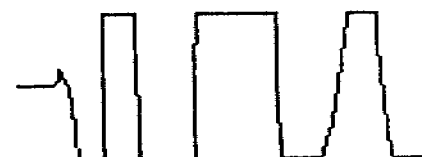
AUX. CHANNEL 1 Max. 605mV



AUX. CHANNEL 2 Max. 610mV



AUX. CHANNEL 3 Max. 610mV



WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 1.990

FIRST ARRIVAL PLOT - Shot 19 Level 569.0

Sample time	Value uV	Well phone data
168.0	-10.	*
169.0	-6.	*
170.0	-16.	*
171.0	-22.	*
172.0	-3.	*
173.0	13.	*
174.0	-6.	*
175.0	-32.	*
176.0	-24.	*
177.0	-3.	*
178.0	3.	*
179.0	4.	*
180.0	17.	*
181.0	18.	*
182.0	-4.	*
183.0	-7.	*
184.0	42.	!*
185.0	107.	!*
186.0	162.	!*
187.0	256.	!*
188.0	281.	!*
189.0	488.	!*
190.0	763.	!*
191.0	1104.	!*
192.0	1468.	!*
193.0	1756.	!*
194.0	1886.	!*
195.0	1842.	!*
196.0	1642.	!*
197.0	1286.	!*
198.0	792.	!*
199.0	231.	!*
200.0	-312.	!*
201.0	-795.	!*
202.0	-1206.	!* *
203.0	-1517.	!* *
204.0	-1725.	!* *
205.0	-1866.	!* *
206.0	-1956.	!* *
207.0	-1990.	!* *
208.0	-1956.	!* *
209.0	-1891.	!* *
210.0	-1811.	!* *
211.0	-1666.	!* *
212.0	-1434.	!* *
213.0	-1154.	!* *
214.0	-868.	!* *
215.0	-579.	!* *
216.0	-278.	!* *
217.0	27.	!* *
218.0	236.	!* *

TRACE DISPLAY.

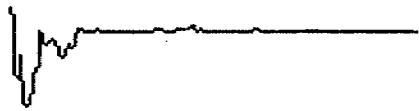
SHOT 20 Time Level : 500.0 Shot location : D  
Shot depth : 0.6 Charge size : 1.0  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

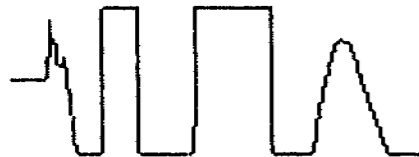
AUX. CHANNEL 1 Max. 610mV



AUX. CHANNEL 2 Max. 610mV



AUX. CHANNEL 3 Max. 610mV



WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 2.536

FIRST ARRIVAL PLOT - Shot 20 Level 500.0

Sample time	Value uV	Well phone data
152.0	38.	}*
153.0	17.	*
154.0	-29.	*
155.0	-41.	*
156.0	-19.	*
157.0	-11.	*
158.0	-28.	*
159.0	-30.	*
160.0	-15.	*
161.0	-15.	*
162.0	-28.	*
163.0	-14.	*
164.0	16.	*
165.0	23.	*
166.0	8.	*
167.0	-2.	*
168.0	10.	*
169.0	20.	*
170.0	59.	}*
171.0	162.	}*
172.0	190.	}*
173.0	312.	}*
174.0	470.	}*
175.0	702.	}*
176.0	992.	}*
177.0	1302.	}*
178.0	1598.	}*
179.0	1855.	}*
180.0	2011.	}*
181.0	1996.	}*
182.0	1795.	}*
183.0	1442.	}*
184.0	949.	}*
185.0	343.	}*
186.0	-309.	*
187.0	-917.	* *
188.0	-1439.	* *
189.0	-1873.	* *
190.0	-2199.	* *
191.0	-2409.	* *
192.0	-2517.	* *
193.0	-2536.	* *
194.0	-2460.	* *
195.0	-2281.	* *
196.0	-2037.	* *
197.0	-1761.	* *
198.0	-1454.	* *
199.0	-1109.	* *
200.0	-761.	* *
201.0	-447.	* *
202.0	-177.	* *

TRACE DISPLAY.

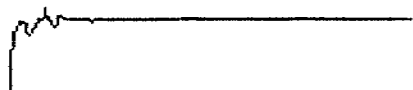
SHOT 21 Time Level : 442.0 Shot location : D  
Shot depth : 0.6 Charge size : 1.0  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

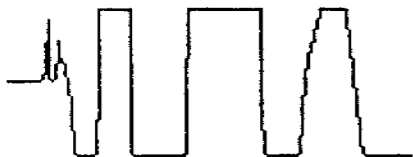
AUX. CHANNEL 1 Max. 605mV



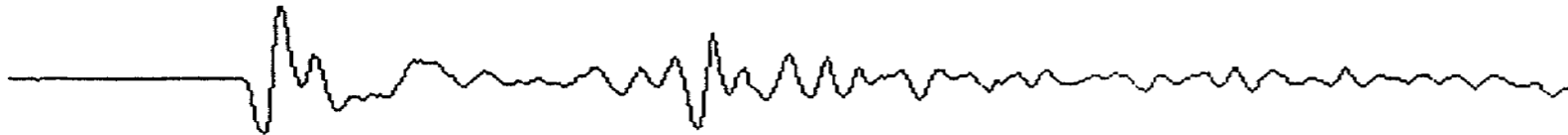
AUX. CHANNEL 2 Max. 610mV



AUX. CHANNEL 3 Max. 610mV

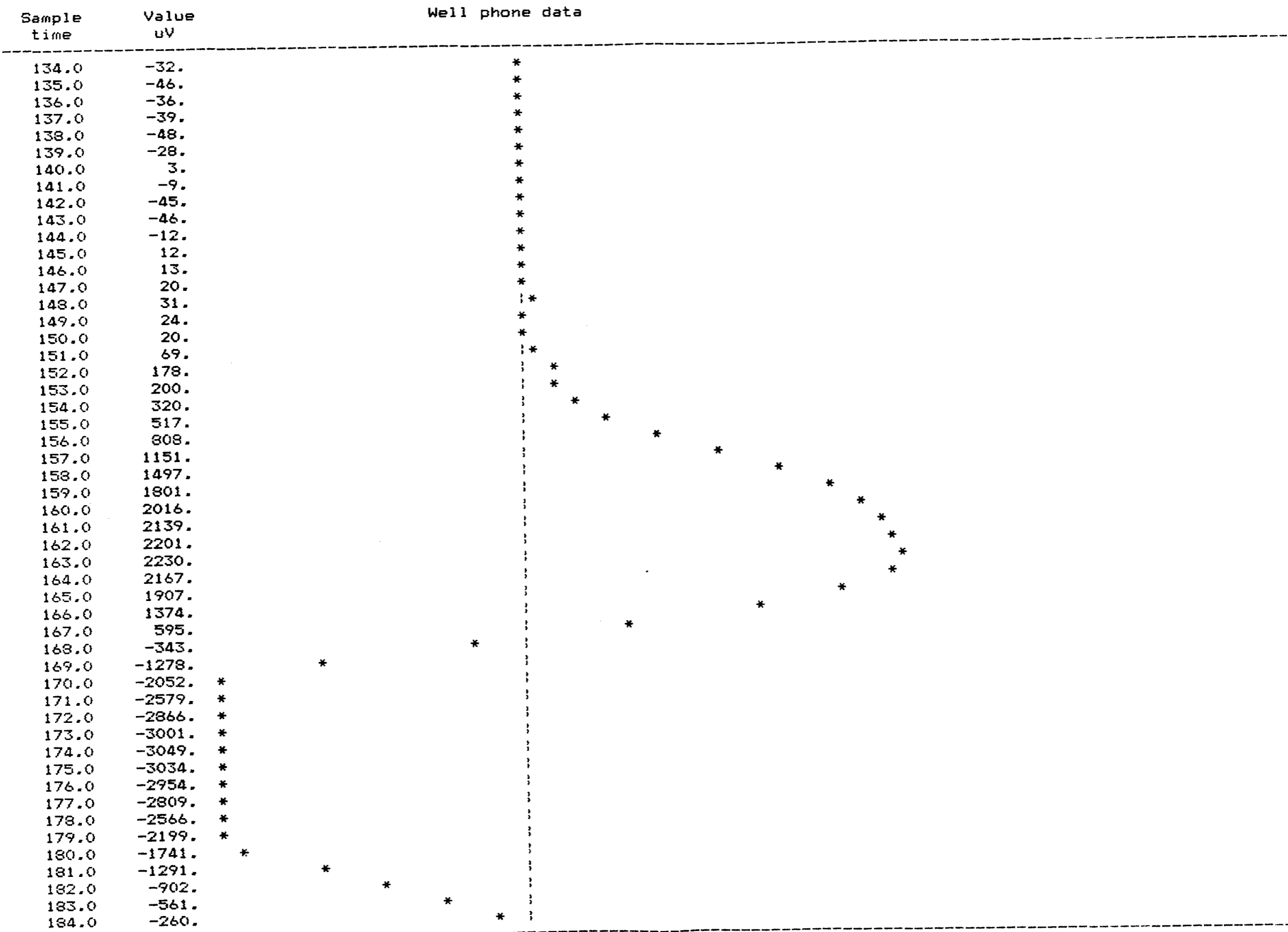


WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 3.034

FIRST ARRIVAL PLOT - Shot 21 Level 442.0



TRACE DISPLAY.

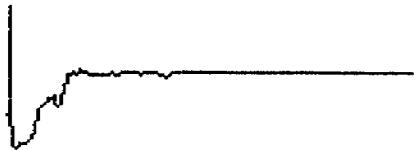
SHOT 23 Time Level : 342.0 Shot location : D  
Shot depth : 0.6 Charge size : 1.0  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

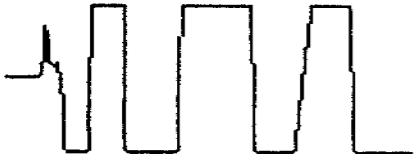
AUX. CHANNEL 1 Max. 610mV



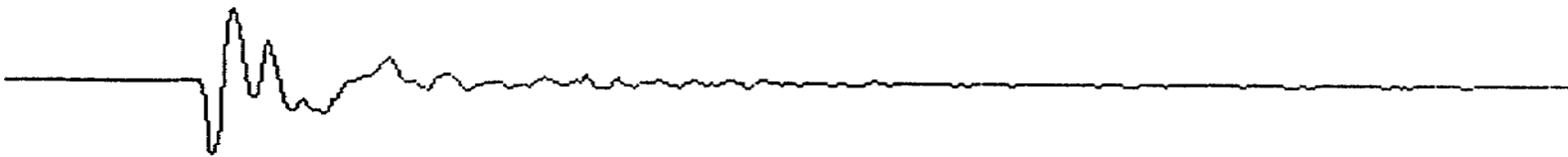
AUX. CHANNEL 2 Max. 610mV



AUX. CHANNEL 3 Max. 610mV



WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 5.005

FIRST ARRIVAL PLOT - Shot 23 Level 342.0

Sample time	Value uV	Well phone data
106.0	10.	*
107.0	-14.	*
108.0	-20.	*
109.0	-30.	*
110.0	-60.	*
111.0	-79.	*
112.0	-55.	*
113.0	-18.	*
114.0	-13.	*
115.0	-23.	*
116.0	-18.	*
117.0	0.	*
118.0	10.	*
119.0	18.	*
120.0	42.	*
121.0	58.	*
122.0	53.	*
123.0	74.	*
124.0	184.	*
125.0	268.	*
126.0	533.	*
127.0	987.	*
128.0	1700.	*
129.0	2684.	*
130.0	3867.	*
131.0	5005.	*
132.0	4655.	*
133.0	4520.	*
134.0	5007.	*
135.0	3829.	*
136.0	2344.	*
137.0	696.	*
138.0	-917.	*
139.0	-2297.	*
140.0	-3357.	*
141.0	-4097.	*
142.0	-4570.	*
143.0	-4832.	*
144.0	-4935.	*
145.0	-4917.	*
146.0	-4825.	*
147.0	-4662.	*
148.0	-4412.	*
149.0	-4049.	*
150.0	-3547.	*
151.0	-2891.	*
152.0	-2120.	*
153.0	-1319.	*
154.0	-567.	*
155.0	160.	*
156.0	662.	*



TRACE DISPLAY.

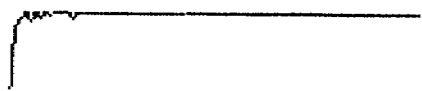
SHOT 24 Time Level : 242.0 Shot location : D  
Shot depth : 0.6 Charge size : 1.0  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

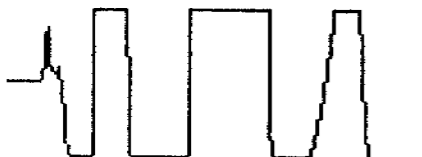
AUX. CHANNEL 1 Max. 610mV



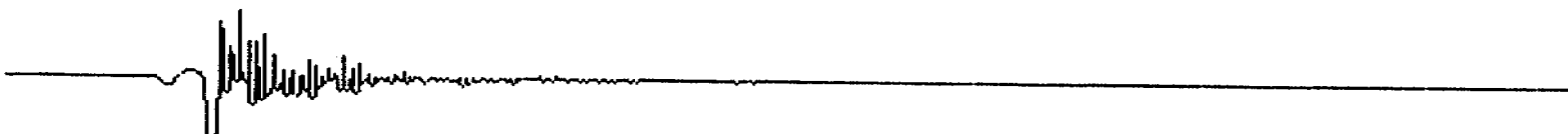
AUX. CHANNEL 2 Max. 610mV



AUX. CHANNEL 3 Max. 610mV



WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 70.795

FIRST ARRIVAL PLOT - Shot 24 Level 242.0

Sample time	Value uV	Well phone data
80.0	-45.	*
81.0	-90.	*
82.0	-126.	*
83.0	-114.	*
84.0	-71.	*
85.0	-46.	*
86.0	-38.	*
87.0	-8.	*
88.0	40.	*
89.0	67.	*
90.0	80.	*
91.0	151.	*
92.0	216.	*
93.0	382.	*
94.0	501.	*
95.0	590.	*
96.0	884.	.*
97.0	1640.	.*
98.0	2881.	.*
99.0	4475.	.*
100.0	5128.	.*
101.0	6208.	.*
102.0	6748.	.*
103.0	7153.	.*
104.0	7354.	.*
105.0	6748.	.*
106.0	4655.	.*
107.0	2689.	.*
108.0	-374.	.*
109.0	-2346.	.*
110.0	-3732.	.*
111.0	-4587.	.*
112.0	-5938.	.*
113.0	-6813.	.*
114.0	-6948.	.*
115.0	-6748.	.*
116.0	-6883.	.*
117.0	-7489.	.*
118.0	-260.	.*
119.0	-7824.	.*
120.0	-6748.	.*
121.0	-5598.	.*
122.0	-4655.	.*
123.0	-4160.	.*
124.0	-1878.	.*
125.0	2387.	.*
126.0	9850.	.*
127.0	23471.	.*
128.0	42421.	.*
129.0	59429.	.*
130.0	65592.	.*

TRACE DISPLAY.

SHOT 25 Time Level : 160.0 Shot location : D  
Shot depth : 0.6 Charge size : 1.0  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

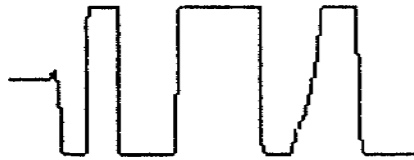
AUX. CHANNEL 1 Max. 610mV



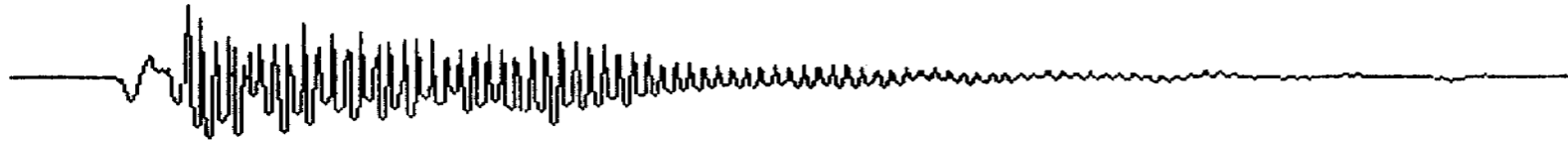
AUX. CHANNEL 2 Max. 610mV



AUX. CHANNEL 3 Max. 610mV

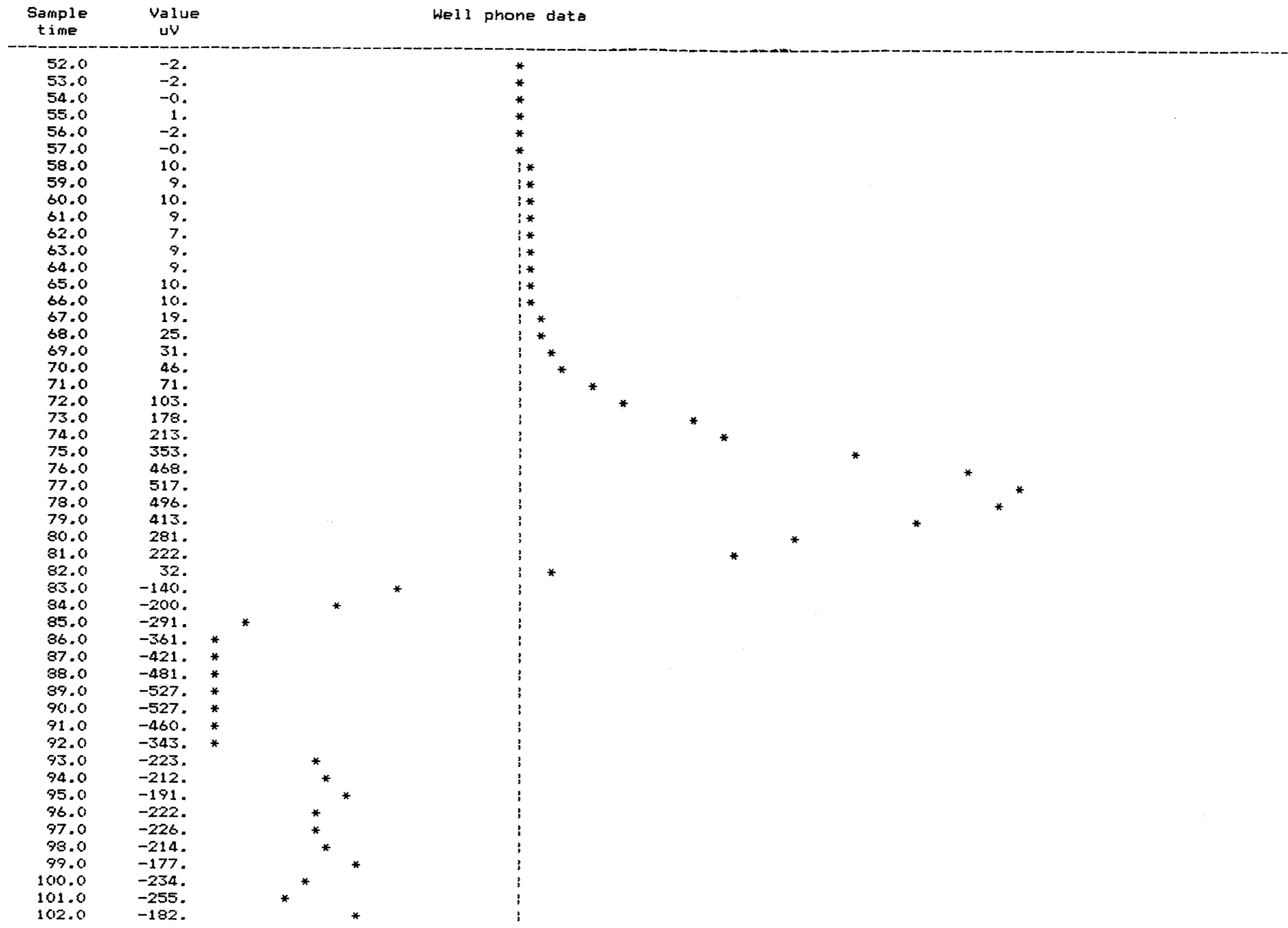


WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 1.688

FIRST ARRIVAL PLOT - Shot 25 Level 160.0



TRACE DISPLAY.

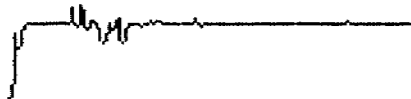
SHOT 26 Time Level : 100.0 Shot location : A  
Shot depth : 0.3 Charge size : 0.25  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

AUX. CHANNEL 1 Max. 610mV



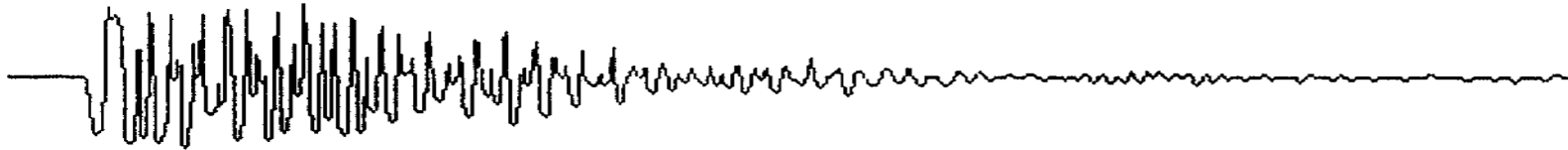
AUX. CHANNEL 2 Max. 610mV



AUX. CHANNEL 3 Max. 610mV

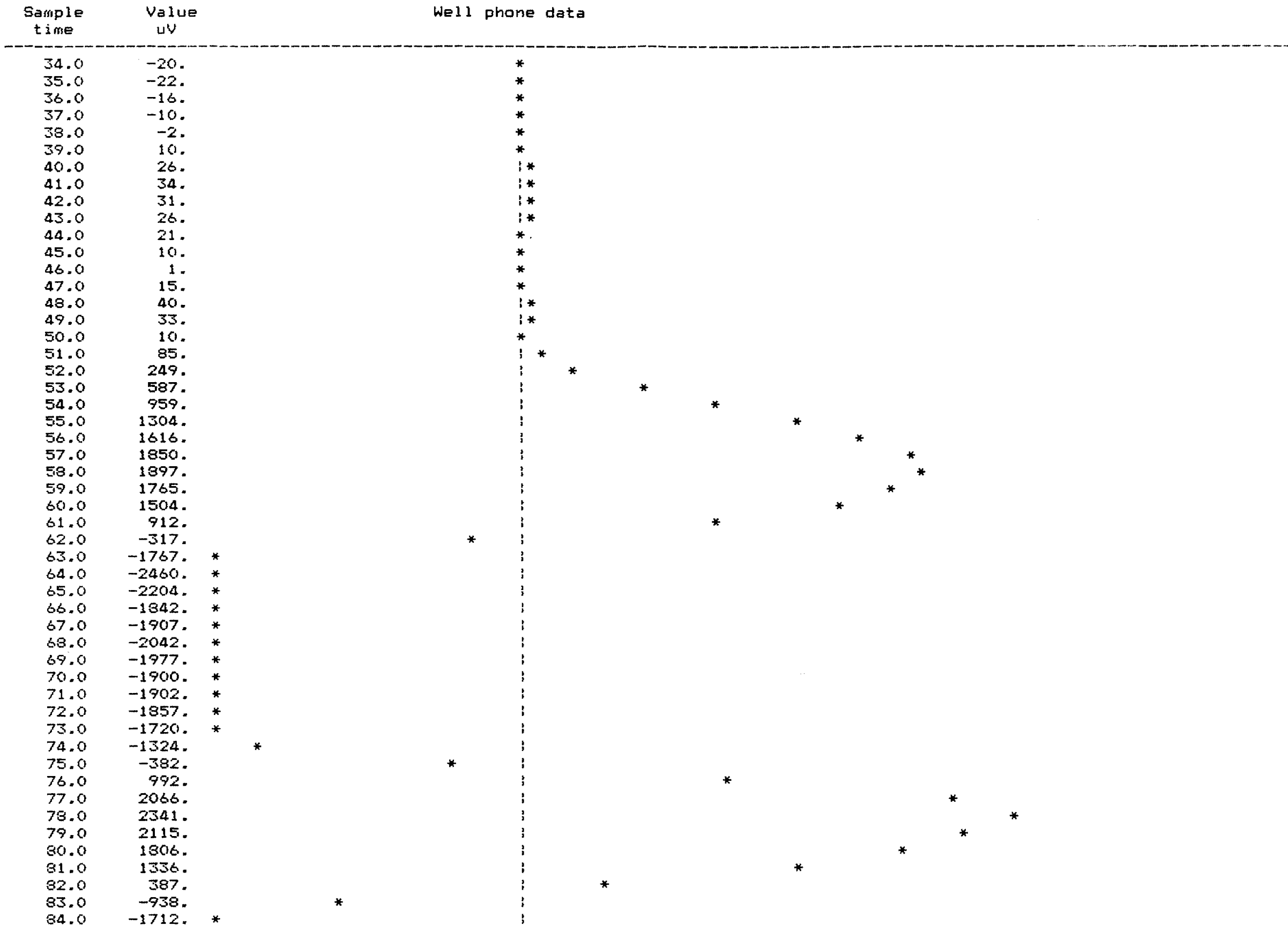


WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 2.341

FIRST ARRIVAL PLOT - Shot 26 Level 100.0



TRACE DISPLAY.

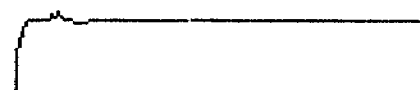
SHOT 27 Time Level : 35.0 Shot location : A  
Shot depth : 0.3 Charge size : 0.25  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

AUX. CHANNEL 1 Max. 605mV



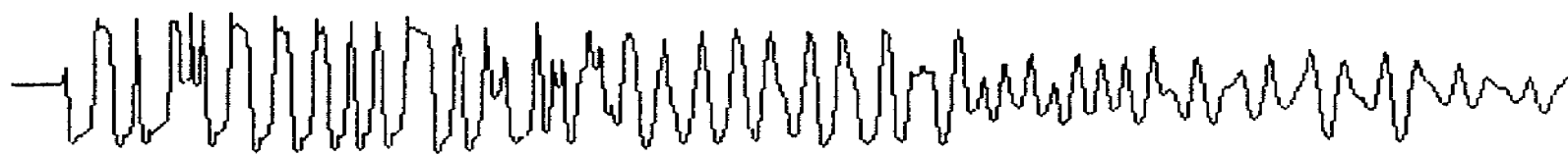
AUX. CHANNEL 2 Max. 610mV



AUX. CHANNEL 3 Max. 610mV

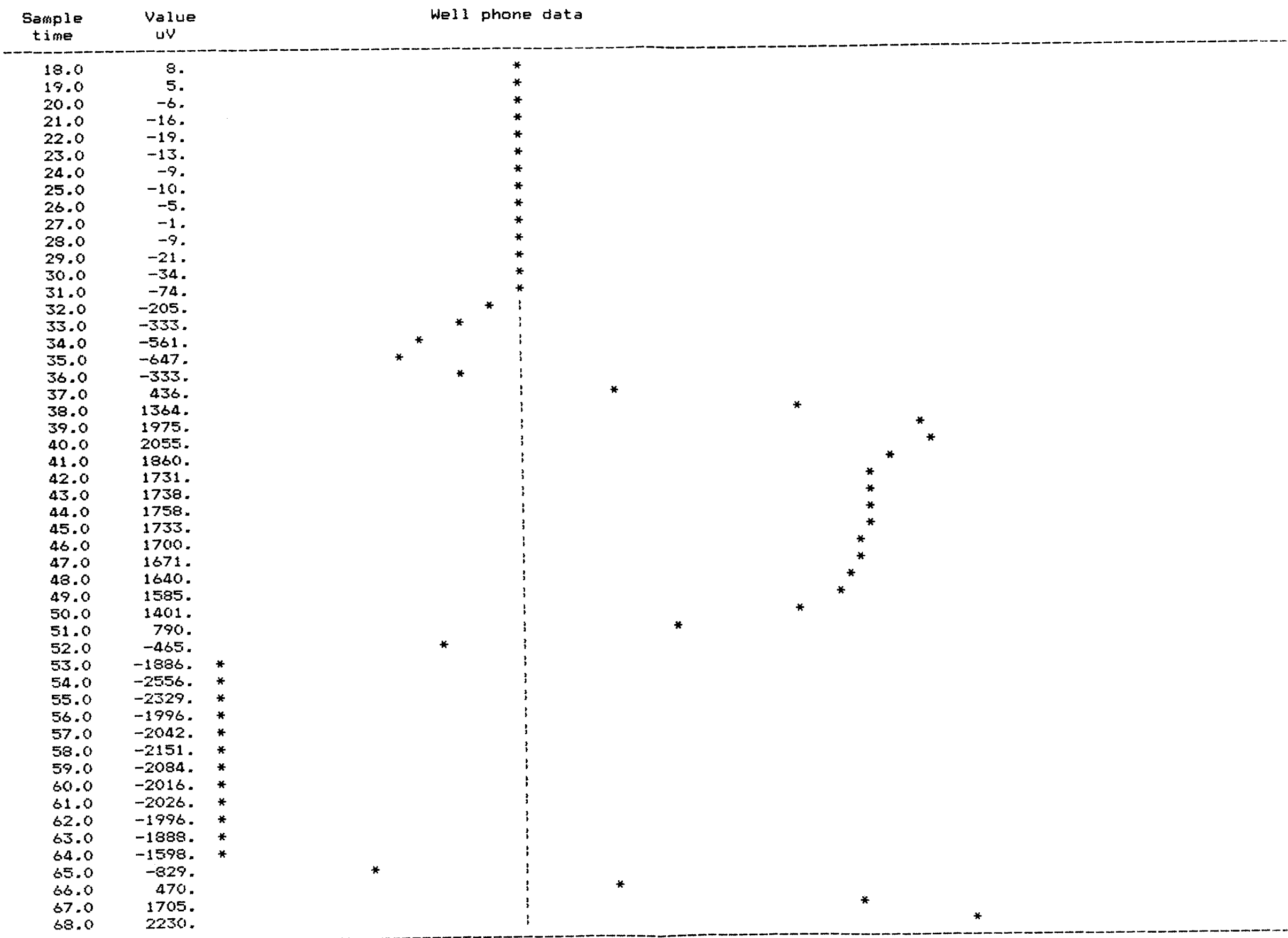


WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 2.569

FIRST ARRIVAL PLOT - Shot 27 Level 35.0





TRACE DISPLAY.

SHOT 28 Time Level : 80.0 Shot location : A  
Shot depth : 0.3 Charge size : CAP  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

AUX. CHANNEL 1 Max. 610mV



AUX. CHANNEL 2 Max. 610mV



AUX. CHANNEL 3 Max. 610mV

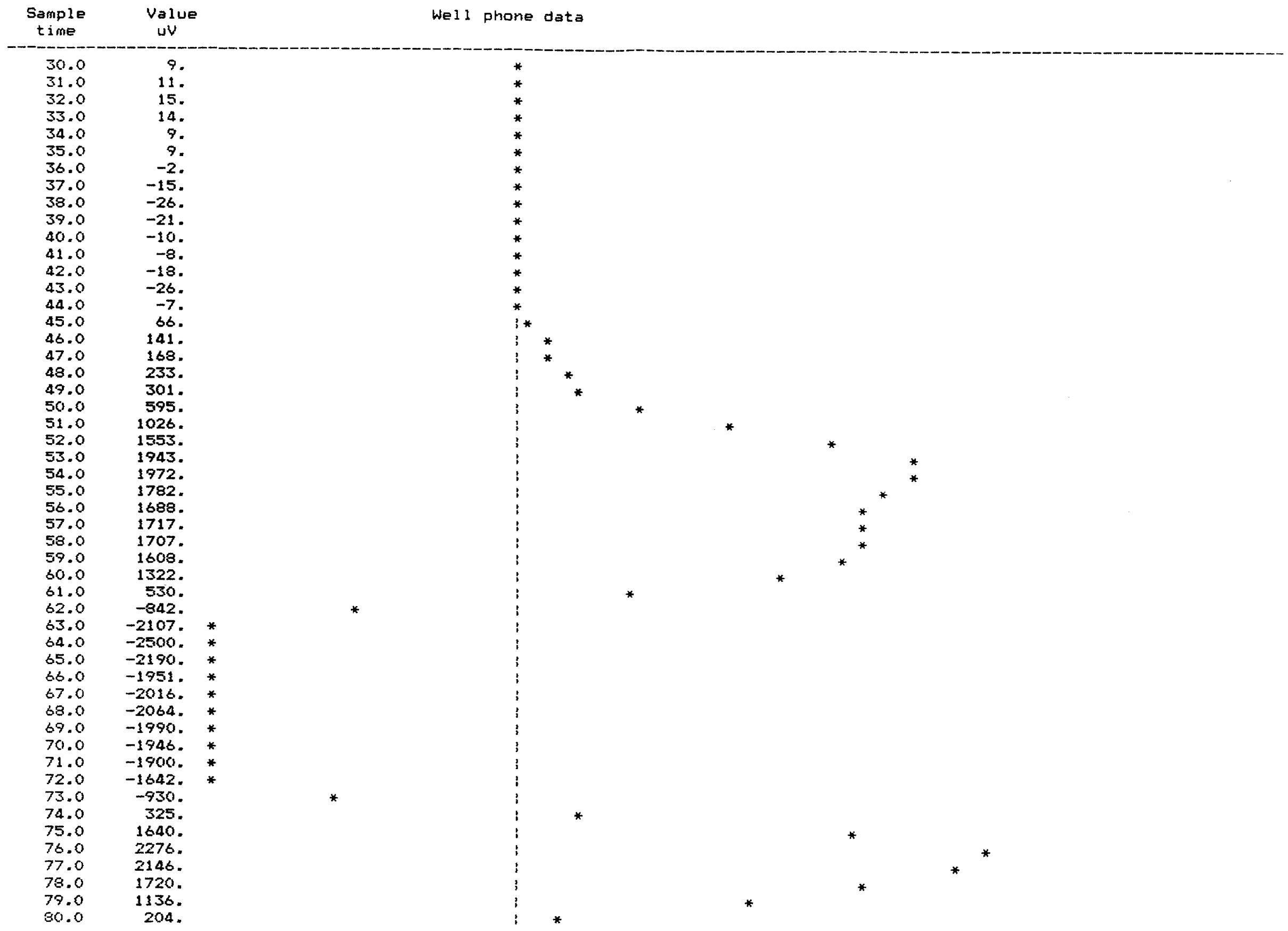


WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 2.367

FIRST ARRIVAL PLOT - Shot 28 Level 80.0



TRACE DISPLAY.

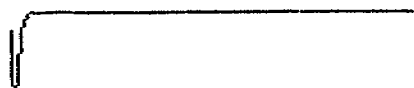
SHOT 29 Time Level : 65.0 Shot location : A  
Shot depth : 0.3 Charge size : 0.25  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

AUX. CHANNEL 1 Max. 610mV



AUX. CHANNEL 2 Max. 605mV



AUX. CHANNEL 3 Max. 610mV



WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 2.502

FIRST ARRIVAL PLOT - Shot 29 Level 65.0

Sample time	Value uV	Well phone data
26.0	-16.	*
27.0	-13.	*
28.0	-8.	*
29.0	-3.	*
30.0	7.	*
31.0	20.	*
32.0	32.	*
33.0	29.	*
34.0	20.	*
35.0	15.	*
36.0	11.	*
37.0	-1.	*
38.0	-21.	*
39.0	-47.	*
40.0	-59.	*
41.0	-24.	*
42.0	94.	*
43.0	248.	* *
44.0	244.	* *
45.0	450.	* *
46.0	949.	* *
47.0	1611.	* *
48.0	2021.	* *
49.0	1985.	* *
50.0	1780.	* *
51.0	1710.	* *
52.0	1746.	* *
53.0	1741.	* *
54.0	1697.	* *
55.0	1663.	* *
56.0	1621.	* *
57.0	1476.	* *
58.0	974.	* *
59.0	-221.	* *
60.0	-1628.	* *
61.0	-2502.	* *
62.0	-2392.	* *
63.0	-2008.	* *
64.0	-1998.	* *
65.0	-2144.	* *
66.0	-2100.	* *
67.0	-2008.	* *
68.0	-2003.	* *
69.0	-1977.	* *
70.0	-1821.	* *
71.0	-1392.	* *
72.0	-429.	* *
73.0	935.	* *
74.0	1980.	* *
75.0	2211.	* *
76.0	1938.	* *

TRACE DISPLAY.

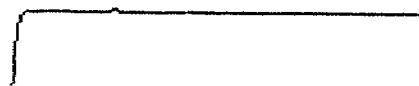
SHOT 30 Time Level : 50.0 Shot location : A  
Shot depth : 0.3 Charge size : 0.25  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

AUX. CHANNEL 1 Max. 610mV



AUX. CHANNEL 2 Max. 610mV



AUX. CHANNEL 3 Max. 610mV



WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 2.664

FIRST ARRIVAL PLOT - Shot 30 Level 50.0

Sample time	Value uV	Well phone data
20.0	-8.	*
21.0	-0.	*
22.0	4.	*
23.0	6.	*
24.0	14.	*
25.0	20.	*
26.0	18.	*
27.0	11.	*
28.0	11.	*
29.0	9.	*
30.0	5.	*
31.0	-4.	*
32.0	-10.	*
33.0	-17.	*
34.0	-39.	*
35.0	-90.	*
36.0	-172.	*
37.0	-171.	*
38.0	-200.	*
39.0	106.	*
40.0	434.	*
41.0	889.	*
42.0	1319.	*
43.0	1678.	*
44.0	1902.	*
45.0	1915.	*
46.0	1792.	*
47.0	1712.	*
48.0	1717.	*
49.0	1717.	*
50.0	1678.	*
51.0	1645.	*
52.0	1618.	*
53.0	1561.	*
54.0	1353.	*
55.0	707.	*
56.0	-572.	*
57.0	-1967.	*
58.0	-2561.	*
59.0	-2286.	*
60.0	-1977.	*
61.0	-2057.	*
62.0	-2170.	*
63.0	-2084.	*
64.0	-2006.	*
65.0	-2003.	*
66.0	-1900.	*
67.0	-1517.	*
68.0	-644.	*
69.0	683.	*
70.0	1830.	*

TRACE DISPLAY.

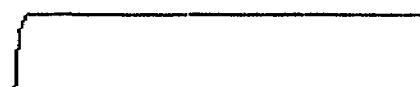
SHOT 31 Time Level : 35.0 Shot location : A  
Shot depth : 0.3 Charge size : CAP  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

AUX. CHANNEL 1 Max. 610mV



AUX. CHANNEL 2 Max. 610mV



AUX. CHANNEL 3 Max. 610mV



WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 2.421

FIRST ARRIVAL PLOT - Shot 31 Level 35.0

Sample time	Value uV	Well phone data
18.0	9.	*
19.0	7.	*
20.0	-0.	*
21.0	-9.	*
22.0	-7.	*
23.0	1.	*
24.0	-1.	*
25.0	-12.	*
26.0	-20.	*
27.0	-25.	*
28.0	-33.	*
29.0	-44.	*
30.0	-45.	*
31.0	-30.	*
32.0	-22.	*
33.0	-58.	*
34.0	-159.	*
35.0	-213.	*
36.0	-273.	*
37.0	-177.	*
38.0	159.	*
39.0	481.	*
40.0	987.	*
41.0	1575.	*
42.0	1967.	*
43.0	1961.	*
44.0	1767.	*
45.0	1688.	*
46.0	1720.	*
47.0	1717.	*
48.0	1676.	*
49.0	1647.	*
50.0	1616.	*
51.0	1524.	*
52.0	1182.	*
53.0	268.	*
54.0	-1174.	*
55.0	-2334.	*
56.0	-2515.	*
57.0	-2120.	*
58.0	-1961.	*
59.0	-2100.	*
60.0	-2127.	*
61.0	-2030.	*
62.0	-1998.	*
63.0	-1970.	*
64.0	-1772.	*
65.0	-1221.	*
66.0	-223.	*
67.0	1244.	*
68.0	2120.	*



TRACE DISPLAY.

SHOT 32 Time Level : 22.0 Shot location : A  
Shot depth : 0.3 Charge size : CAP  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

AUX. CHANNEL 1 Max. 610mV



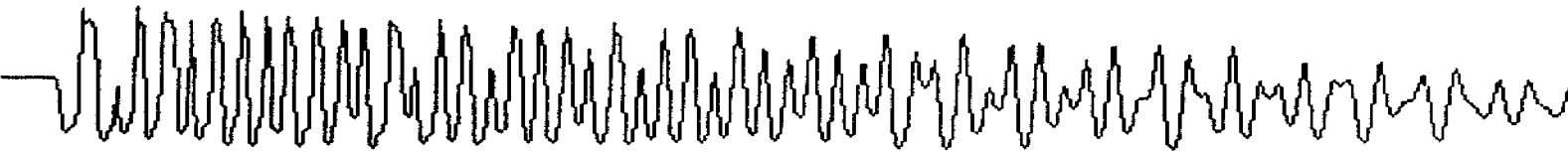
AUX. CHANNEL 2 Max. 605mV



AUX. CHANNEL 3 Max. 610mV

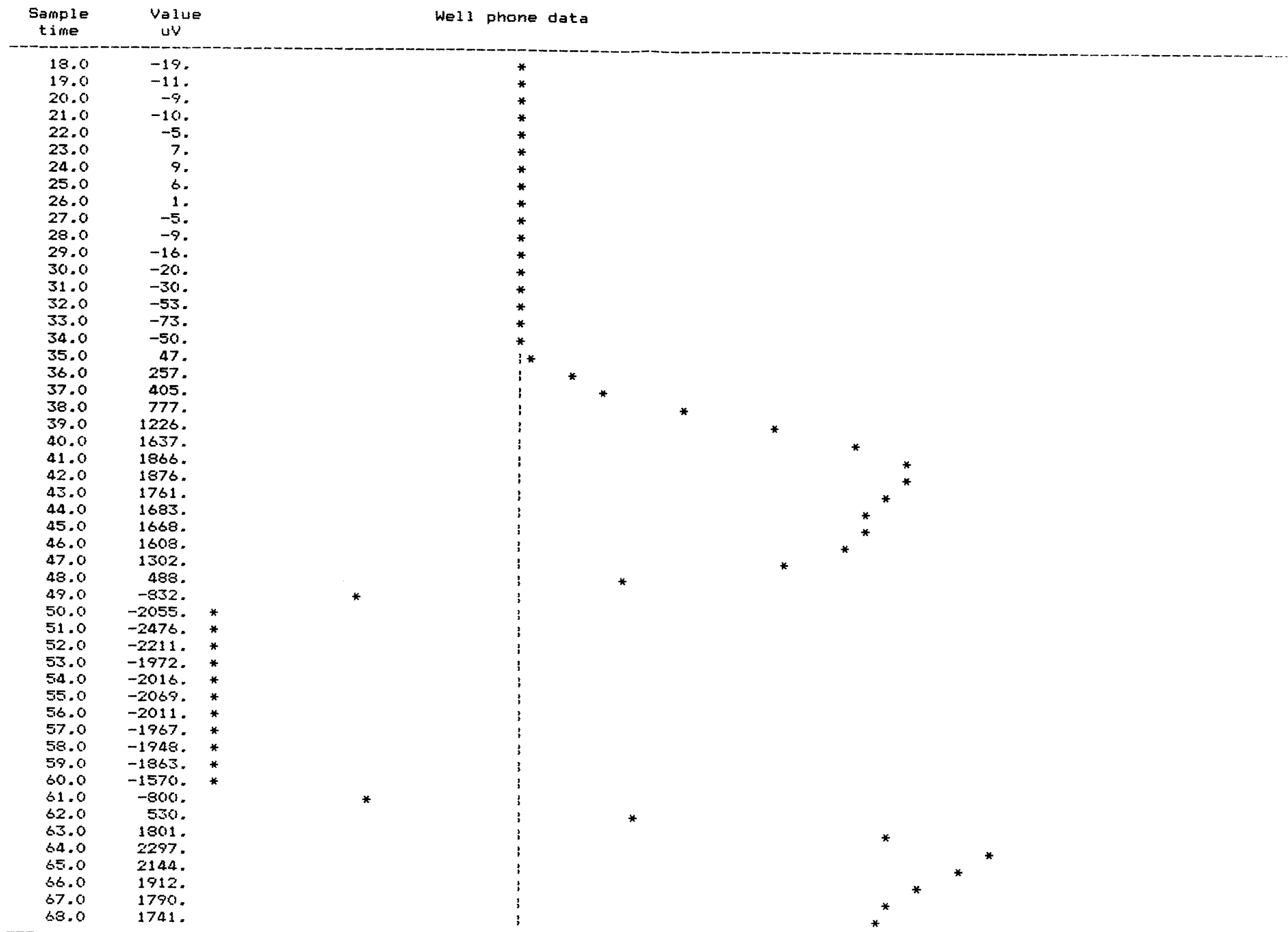


WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 2.576

FIRST ARRIVAL PLOT - Shot 32 Level 22.0



TRACE DISPLAY.

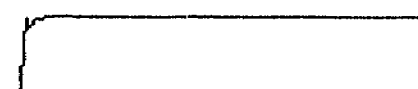
SHOT 33 Time Level : 10.0 Shot location : A  
Shot depth : 0.3 Charge size : CAP  
No. surface samples : 128 Down hole sample nos : 869 0 0  
Sample rates : 1000 1000 usec Delay : 0

---

AUX. CHANNEL 1 Max. 610mV



AUX. CHANNEL 2 Max. 605mV



AUX. CHANNEL 3 Max. 610mV



WELL PHONE CHANNEL - floating point amplifier



Data maximum (mV) : down hole channel - 2.551

FIRST ARRIVAL PLOT - Shot 33 Level 10.0

Sample time	Value uV	Well phone data
16.0	28.	*
17.0	-32.	*
18.0	-73.	*
19.0	-68.	*
20.0	-33.	*
21.0	5.	*
22.0	22.	*
23.0	19.	*
24.0	-7.	*
25.0	-41.	*
26.0	-51.	*
27.0	-8.	*
28.0	59.	*
29.0	93.	*
30.0	65.	*
31.0	-2.	*
32.0	-81.	*
33.0	-143.	*
34.0	-156.	*
35.0	-70.	*
36.0	162.	*
37.0	361.	*
38.0	743.	*
39.0	1216.	*
40.0	1655.	*
41.0	1888.	*
42.0	1868.	*
43.0	1741.	*
44.0	1676.	*
45.0	1681.	*
46.0	1671.	*
47.0	1598.	*
48.0	1348.	*
49.0	647.	*
50.0	-624.	*
51.0	-1936.	*
52.0	-2500.	*
53.0	-2279.	*
54.0	-1982.	*
55.0	-1996.	*
56.0	-2079.	*
57.0	-2042.	*
58.0	-1990.	*
59.0	-1972.	*
60.0	-1931.	*
61.0	-1821.	*
62.0	-1481.	*
63.0	-608.	*
64.0	751.	*
65.0	1917.	*
66.0	2294.	*

ENCLOSURE

Velocity Data



OPEN FILE

ONSHORE

ONSHORE

SYNTHETIC SEISMOGRAMS

PHILLIP #2

EP 10

NORTHERN TERRITORY

303414

for

PACIFIC OIL & GAS PTY. LTD.

Velocity Data Pty. Ltd.  
Brisbane, Australia.  
31st October, 1988.

303414

SYNTHETIC SEISMOGRAMS

PHILLIP #2

EP 10

NORTHERN TERRITORY

for

303414

Pacific Oil & Gas Pty Limited

by

VELOCITY DATA PTY. LTD.

Brisbane, Australia

October 31st 1988.





2.

CHECKSHOT DATA

Recorded by : Velocity Data Pty. Ltd.  
Date : June 24th 1988.  
Energy source : AN-60  
Shot location : Mud Pit  
Charge Size : .25 to 2 (125 grm) sticks  
Average Shot Depth : 0.6 metres  
Average Shot Offset : 25.0 metres  
Number of Shots Used : 29  
Number of Levels Recorded : 24

SONIC DATA

Recorded by : BPB Instruments  
Date : June 23rd 1988  
Top logged interval : 85.1 metres below K.B.  
Bottom logged interval : 1487.0 metres below K.B.  
Logging units : micro-secs/foot

DENSITY DATA

Recorded by : BPB Instruments Pty Ltd  
Date : June 23rd 1988.  
Top logged interval : 677.3 metres below K.B.  
Bottom logged interval : 1487.0 metres below K.B.  
Logging units : gm/cc  
Comments : no log available above 677.3 m.

Calibration of Sonic Log - Method

Sonic times were adjusted to checkshot times using a linear correction of the sonic transit times.

These differences arise as the sonic tool measures the local velocity characteristics of the formation with a high frequency signal, whereas the downhole geophone records the bulk velocity character using a signal of significantly lower frequency.

Calibration of Sonic Log - Results

The discrepancies between shot and sonic interval velocities were within acceptable tolerance. The largest adjustment was 58.33 micro-secs/metre on the interval 1475 to 1487 metres below KB.

In aggregate, the shot and sonic interval times differed by 7.0 ms over the logged portion of the well.

#### CALIBRATION OF DENSITY DATA

The density data is calibrated using the adjusted and integrated sonic times.

#### REFLECTION COEFFICIENT GENERATION

As the density log was incomplete the synthetic has been duplicated. Reflection coefficients were generated from

- i) the sonic data only
- ii) a combination of sonic and sonic/density data where the log intervals overlapped.

Each display is clearly annotated as to the source of the coefficients

#### MULTIPLES

The primary response of the reflection coefficient series has been generated. The process was then repeated and a synthetic containing primaries and all multiples developed. This coupled with the sonic density combinations resulted in four displays.

#### WAVELETS

Three wavelets were convolved with the reflection coefficient series to produce the seismograms:

- 1) 5/40 Bandpass, Zero phase, Normal Polarity.
- 2) 5/60 Bandpass, Zero phase, Normal Polarity.
- 3) 5/80 Bandpass, Zero phase, Normal Polarity.

#### SEISMOGRAM DISPLAYS

The final displays show the contributing logs in schematic form with respect to time. The seismogram is displayed for each wavelet, against two-way time below datum. A correction of 75.56 ms was used as a sub datum two-way time for the start of the sonic.



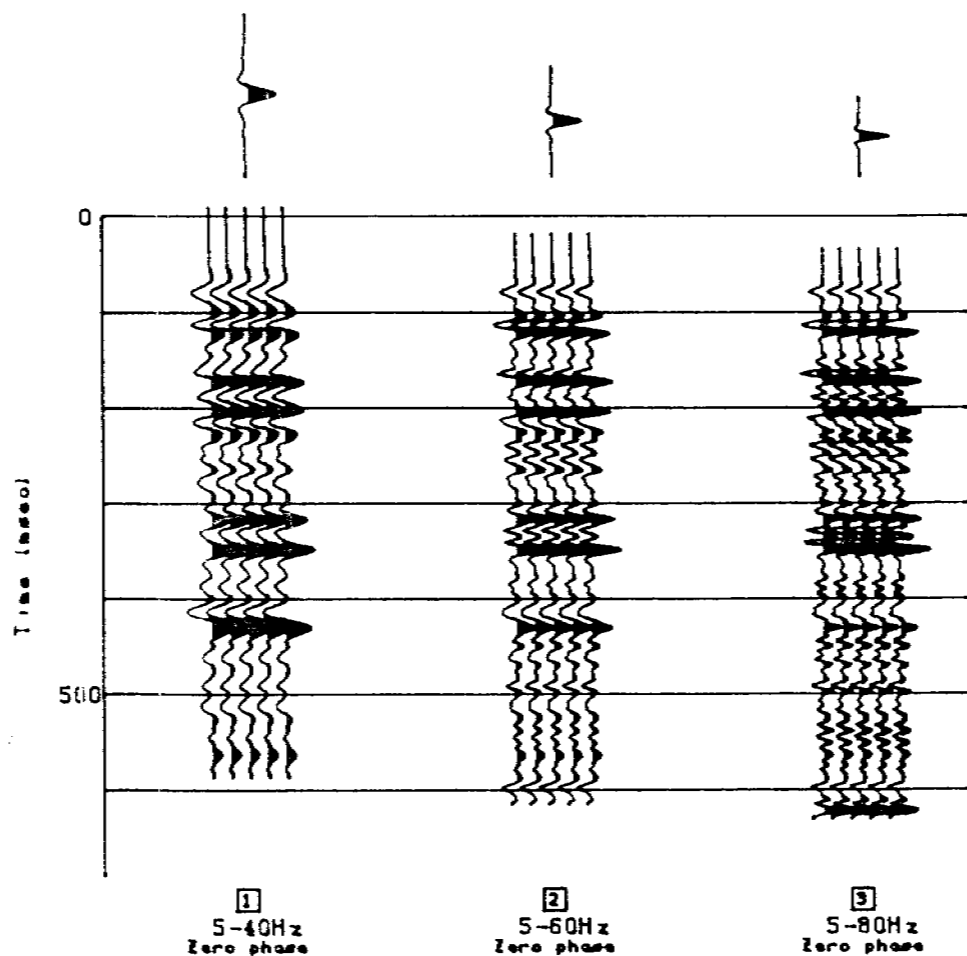
Geoffrey Bell.

Geophysical Analyst.

Sonic log  
130 450

Density log  
2.5 3.5

Refl. coeffs  
-0.9 0.9



## SYNTHETIC SEISMOGRAM

PHILIP #2

308.14

COMPANY - PACIFIC OIL AND GAS LTD.  
AREA - EP 10 NORTHERN TERRITORY

- 1 Primaries only
- 2 Primaries only
- 3 Primaries only

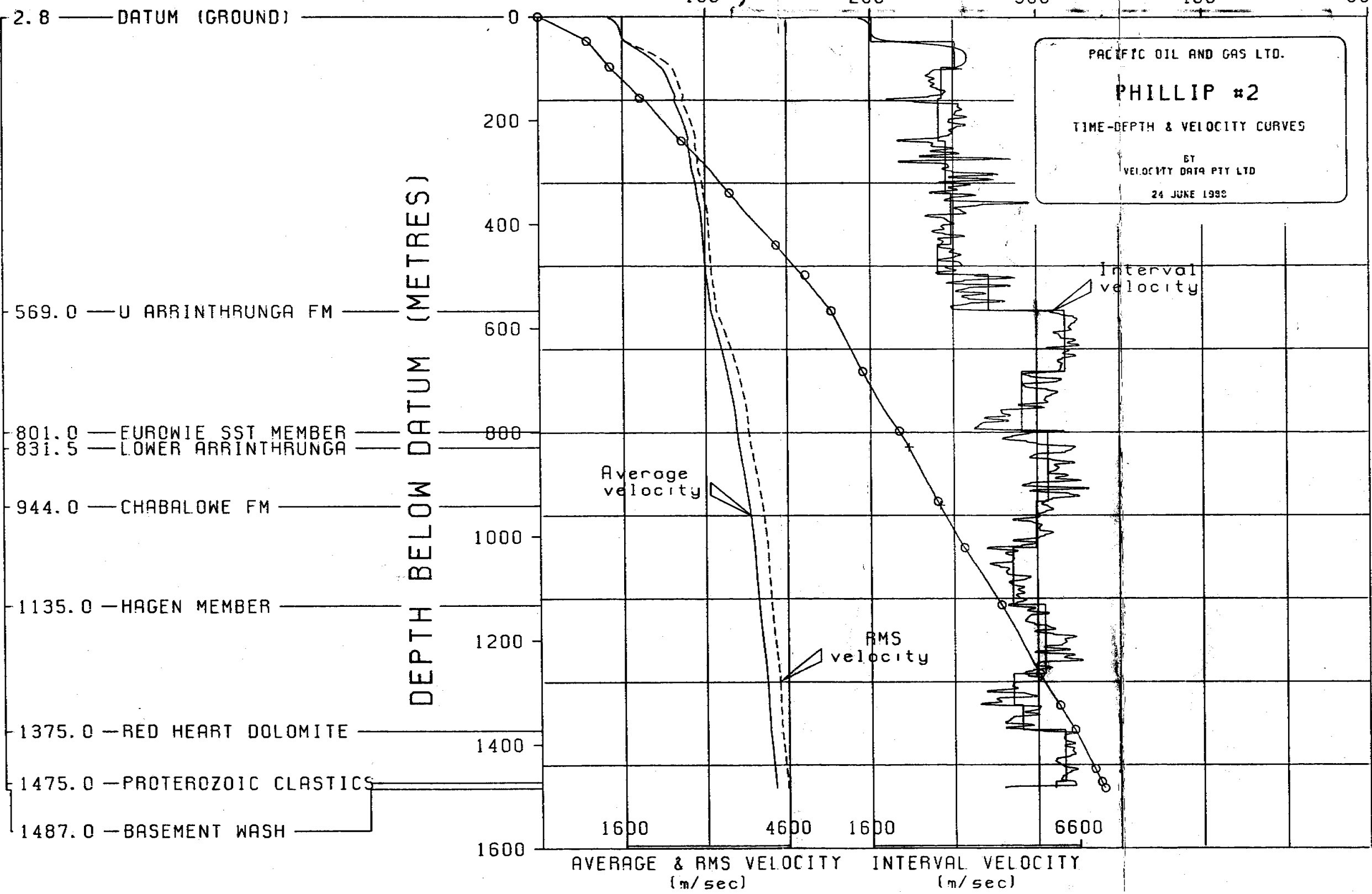
Reflection coeffs. calculated  
from SONIC / SONIC & DENSITY data.



ONE-WAY TIME (MSEC)

FIGURE 3

+ SONIC POINT  
O CHECK SHOT



PACIFIC OIL AND GAS LTD.  
**PHILLIP #2**  
TIME-DEPTH & VELOCITY CURVES  
BY  
VELOCITY DATA PTY LTD  
24 JUNE 1988

2.8 — DATUM (GROUND)

569.0 — U ARRINTHRUNGA FM

801.0 — EUROWIE SST MEMBER  
831.5 — LOWER ARRINTHRUNGA

944.0 — CHABALOWE FM

1135.0 — HAGEN MEMBER

1375.0 — RED HEART DOLOMITE

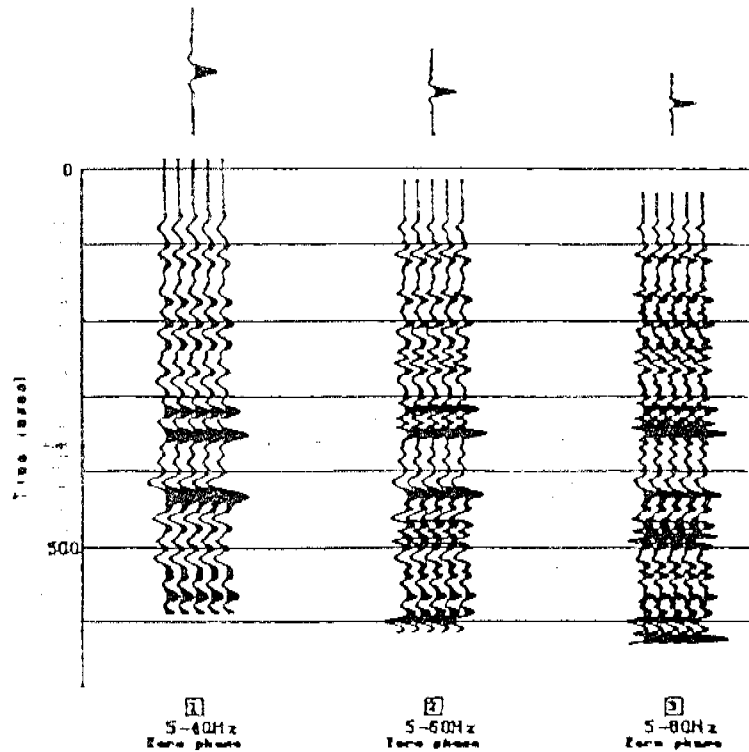
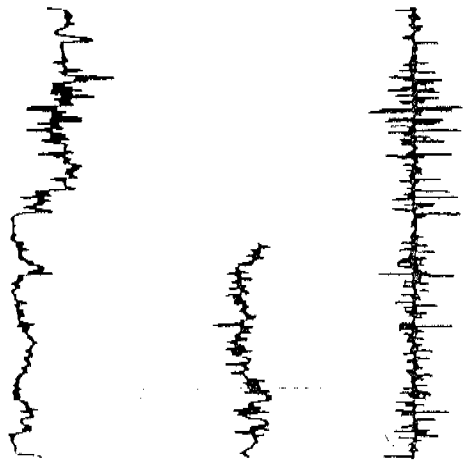
1475.0 — PROTEROZOIC CLASTICS

1487.0 — BASEMENT WASH

DEPTH BELOW DATUM (METRES)

AVERAGE & RMS VELOCITY (m/sec)      INTERVAL VELOCITY (m/sec)

Sonic log 150 450  
 Density log 2.5 3.5  
 Refl. coeffs -0.3 0.3



# SYNTHETIC SEISMOGRAM

PHILIP #2

303414

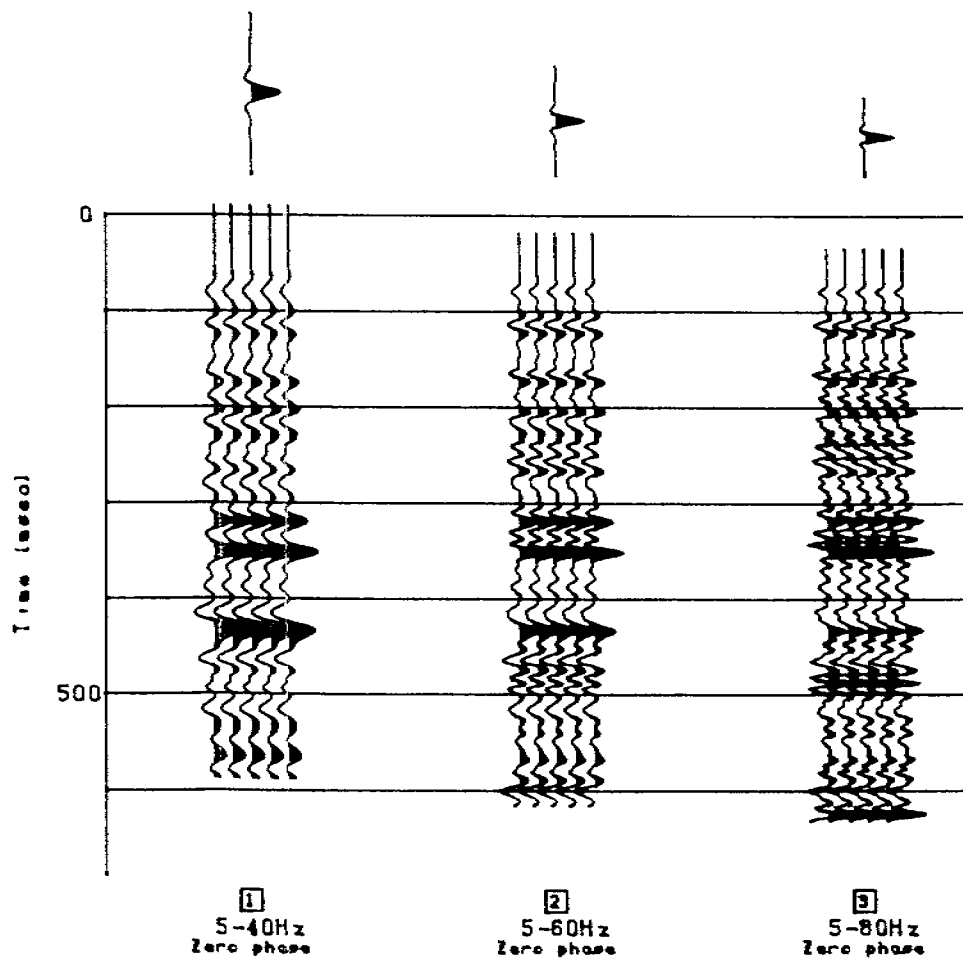
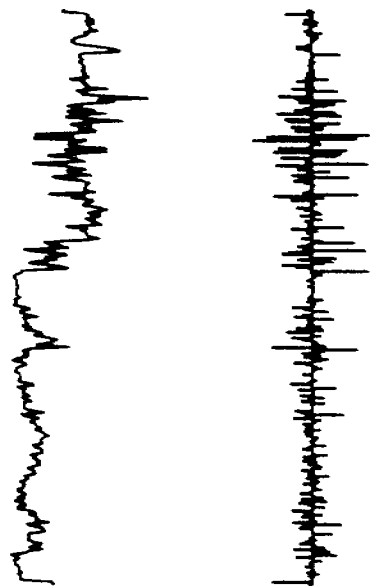
COMPANY - PACIFIC OIL AND GAS LTD.  
 AREA - EP 10 NORTHERN TERRITORY

- 1 Primaries & all multiple
- 2 Primaries & all multiple
- 3 Primaries & all multiple

Reflection coeffs. calculated  
 from SONIC / SONIC & DENSITY data.



Sonic log      Refl. coeffs  
 130      450      -0.9      0.9



# SYNTHETIC SEISMOGRAM

PHILLIP #2

305074

COMPANY - PACIFIC OIL AND GAS LTD.  
 AREA - EP 10 NORTHERN TERRITORY

- ① Primaries & all multiple
- ② Primaries & all multiple
- ③ Primaries & all multiple

Reflection coeffs. calculated  
 from SONIC data only.

