

Schlumberger In-House DST Interpretation Prepared For

COBRA OIL & GAS CORPORATION

WELL: Gainer Unit #1
FIELD: WILDCAT
COUNTY: Lea, NM
TEST NUMBER: ONE
TEST DATE: 29-DEC-1997

FORMATION: Devonian
TEST TYPE: CONVENTIONAL
TEST INTERVAL: 12,106 - 12,221
SWS S.O. NUMBER: 78816
REPORT PREPARED BY: HARVIN L. BROUGHTON

SUMMARY OF RESULTS

K = 812 md
SKIN = 1800
RADIUS OF INV = 3870 ft
Pi = 4480 psia
THICKNESS (h) = 11 ft
RESERVOIR Homogeneous
BOUNDARY Infinite
WELL Storage & Skin

BHT = 197 degf
INITIAL HYDROSTATIC 6182
IFP (15 min) 649 - 748
ISI (45min) 4465
FFP (120 min) 745 - 1414
FSI (240 min) 4481
FINAL HYDROSTATIC 6181
CUSHION 1500 ft. Water

SAMPLE CHAMBER, PRESSURE = 525 GOR = 346 GLR = 283

VOLUME	FLUID TYPE	PROPERTIES
1.95 cu ft	GAS	
900 cc	OIL	54.2 API@60degf
200 cc	MUD	.151@60F, 54,000 ppm
		ppm

PIPE RECOVERY

VOLUME	FLUID TYPE	PROPERTIES
1547 ft	OIL	51.6 API@60degf
784 ft	Water Cushion	1.134@60, 6000 ppm
1264 ft	O&G Cut Mud	53.4API,.146@60F

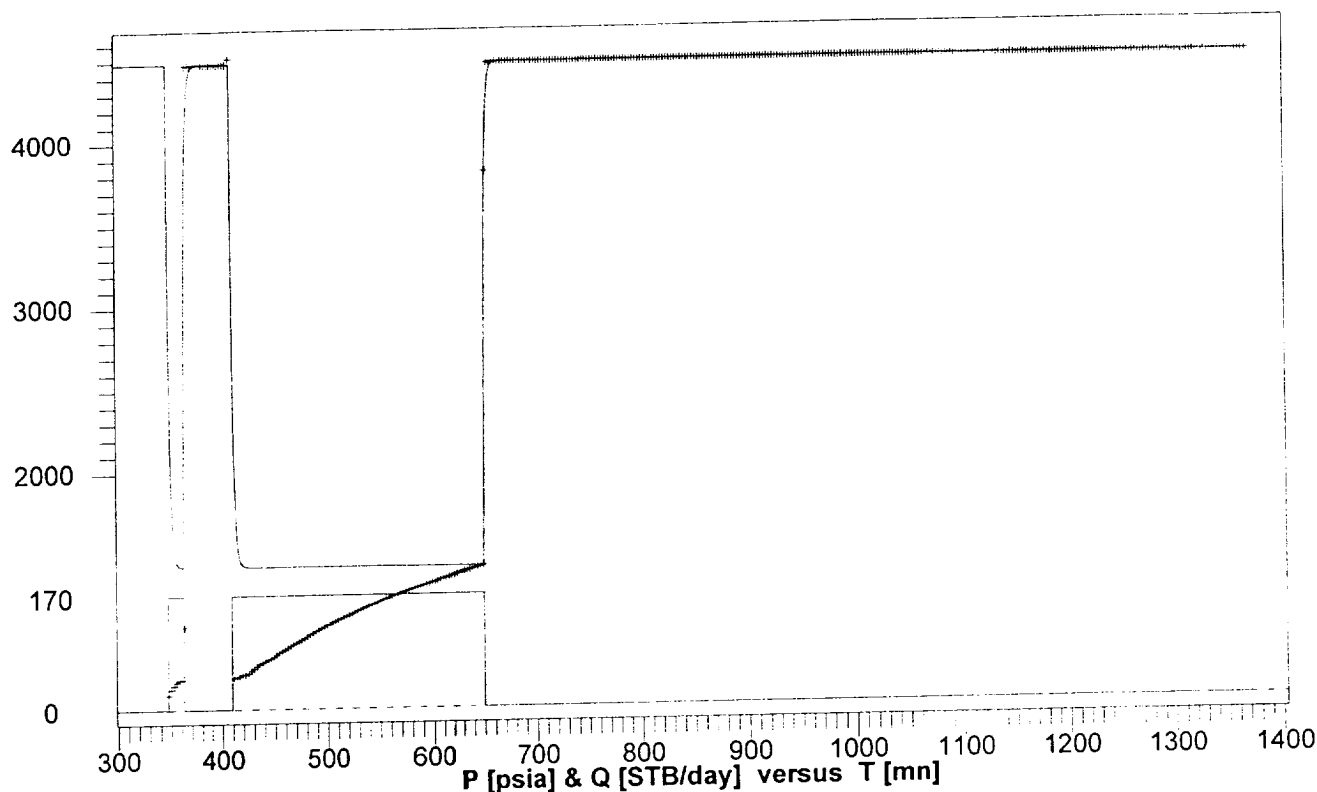
COMMENTS: DST #1 of the Devonian formation flowed oil & associated gas into the drillstring at an average rate of 170 BOPD. The data best fits the model of a well in a homogeneous reservoir with good permeability and extremely high skin at the time and conditions of the test. It is possible that a portion of the Skin is due to partial penetration of the productive interval, as only a small portion of the porous section was penetrated. There also appears to be an anomolous response in the late time of the derrivative plot. This is possibly due to one or more sealing boundaries within the investigating radius of this test.

- SAPHIR -	Main Results		1GAIN#1
Company	Cobra Oil & Gas Corp	Formation interval	12,106 - 12,221
Field		Perforated interval	Open Hole
Well	Gainer Unit #1	SWS S. O. Numbe	078816
Test	DST #1	SWS Location	Hobbs, NM
Date	29-DEC-1997	Tester	B. Grayshaw
Gauge	Elect./SLSR-833	Report Done By	Harvin L. Broughton
Depth	12,124		

TEST TYPE	Standard	FLUID TYPE	Oil
Porosity Phi (%)	10	Volume Factor B	1.16263
Well Radius rw	0.328 ft	Total Compr. ct	1E-5 psi-1
Pay Zone h	11 ft	Viscosity	0.54239 cp

Flow Period #	5	RESERVOIR	Homogeneous
Rate	0 STB/day	BOUNDARY	Infinite
Rate Change	170 STB/day	WELL	Storage & Skin
P at dt=0	1422.29 psia	Storage C	8.3E-5 STB/psi
Pi	4480.22 psia	Skin factor	1800
Time Match	975 (mn)-1	kh	8930 md.ft
Pressure Match	0.59 (psia)-1	k	812 md
		Mobility k/mu	1500

- SAPHIR -	Simulation	1GAIN#1
Company	Cobra Oil & Gas Corp	Test DST #1
Field		Date 29-DEC-1997
Well	Gainer Unit #1	Gauge Elect./SLSR-833



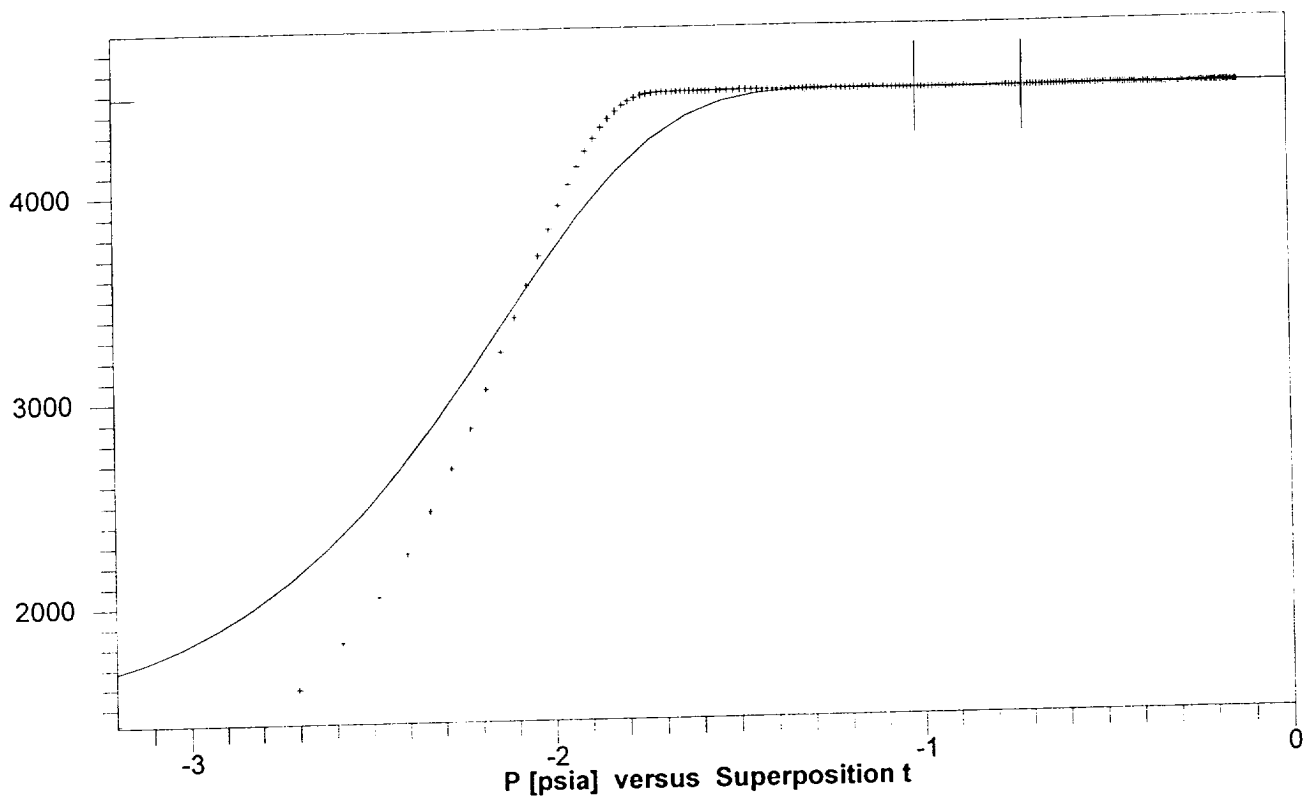
Flow Period # 5
Rate 0 STB/day
Rate Change 170 STB/day
P at dt=0 1422.29 psia
Pi 4480.22 psia

Time Match 975 (mn)-1
Pressure Match 0.59 (psia)-1

RESERVOIR Homogeneous
BOUNDARY Infinite
WELL Storage & Skin
Storage C 8.3E-5 STB/psi
Skin factor 1800

kh 8930 md.ft
k 812 md
Mobility k/mu 1500

- SAPHIR -	Semi-Log		1GAIN#1	
Company	Cobra Oil & Gas Corp	Test	DST #1	
Field		Date	29-DEC-1997	
Well	Gainer Unit #1	Gauge	Elect./SLSR-833	



Flow Period # 5
 Rate 0 STB/day
 Rate Change 170 STB/day
 P at dt=0 1422.29 psia
 Pi 4480.22 psia

RESERVOIR Homogeneous
 BOUNDARY Infinite
 WELL Storage & Skin
 Storage C 8.3E-5 STB/psi
 Skin factor 1800

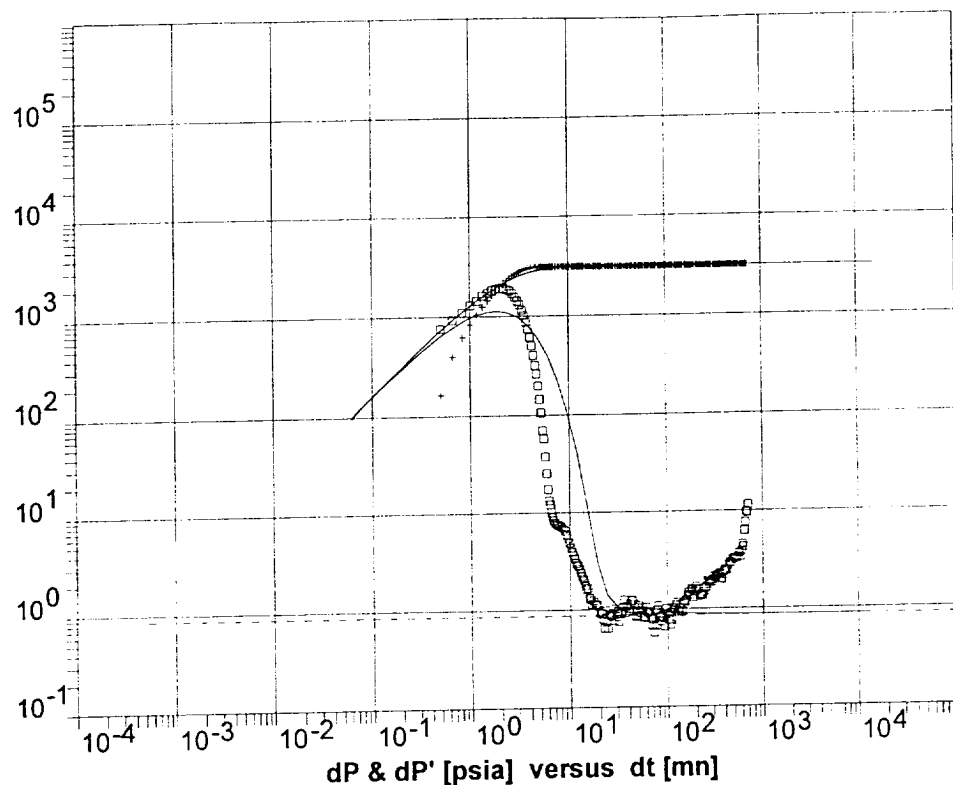
STRAIGHT LINE
 From 27.3 mn
 To 60.5 mn
 Slope 2.39 psia
 Intercept 4480.56 psia
 value at dt=1hr 4478.85 psia

kh 8930 md.ft
 k 812 md
 Mobility k/mu 1500

-> p* 4480.56 psia
 -> PMatch 0.48 (psia)-1
 -> k.h 7290 md.ft
 -> k 663 md
 -> Skin 1460

Time Match 975 (mn)-1
 Pressure Match 0.59 (psia)-1

- SAPHIR -	Log-Log	1GAIN#1
Company	Cobra Oil & Gas Corp	Test DST #1
Field		Date 29-DEC-1997
Well	Gainer Unit #1	Gauge Elect./SLSR-833



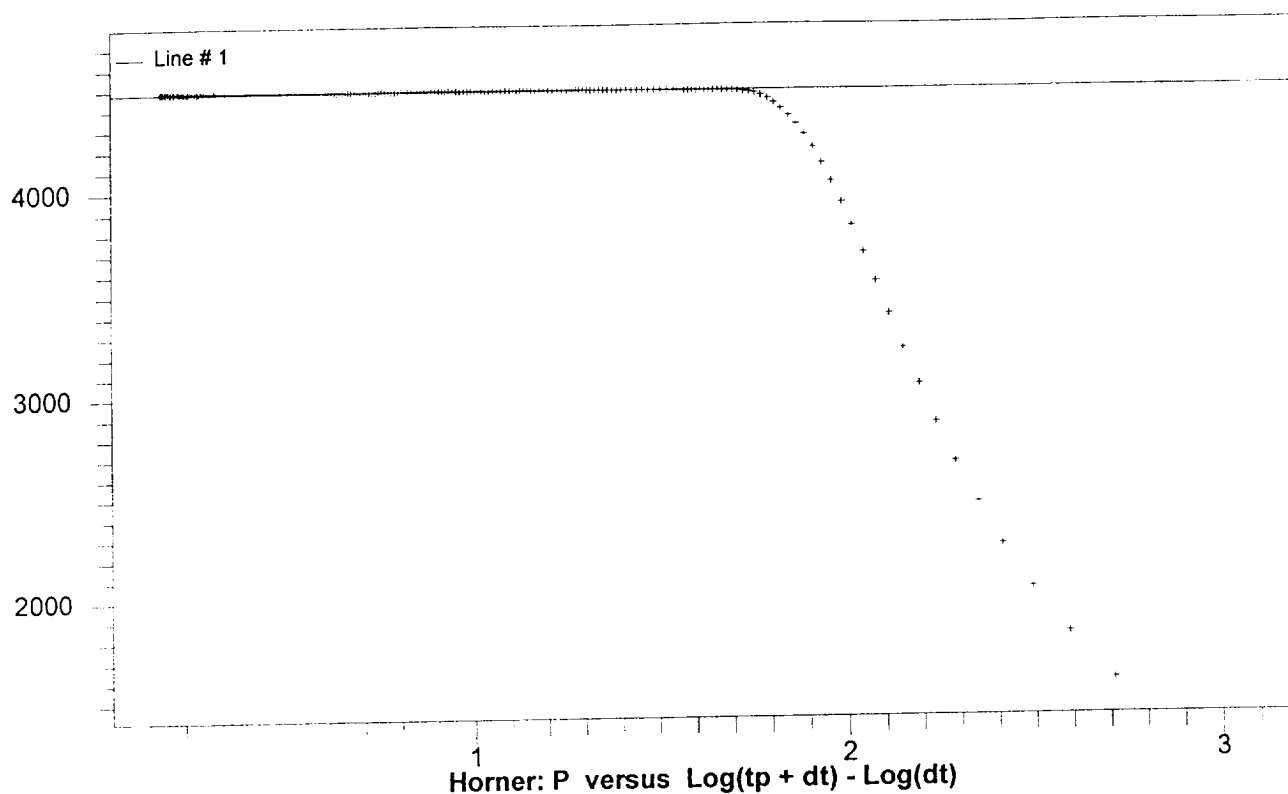
Flow Period # 5
Rate 0 STB/day
Rate Change 170 STB/day
P at dt=0 1422.29 psia
Smoothing 0.2
Pi 4480.22 psia

Time Match 975 (mn)-1
Pressure Match 0.59 (psia)-1

RESERVOIR Homogeneous
BOUNDARY Infinite
WELL Storage & Skin
Storage C 8.3E-5 STB/psi
Skin factor 1800

kh 8930 md.ft
k 812 md
Mobility k/mu 1500
Investig. R 3870 ft

- SAPHIR -	Flexible	1GAIN#1
Company	Cobra Oil & Gas Corp	Test DST #1
Field		Date 29-DEC-1997
Well	Gainer Unit #1	Gauge Elect./SLSR-833



Flow Period # 5
 Rate 0 STB/day
 Rate Change 170 STB/day
 P at dt=0 1422.29 psia
 Pi 4480.22 psia

Flexible line # 1
 P vs $\text{Log}(dt)$, BU
 Slope -1.91617
 Intercept 4480.2
 kh 9090 md.ft
 k 827 md
 Skin factor 1830

- SAPHIR -	History Listings		1GAIN#1
Company	Cobra Oil & Gas Corp	Formation interval	12,106 - 12,221
Field		Perforated interval	Open Hole
Well	Gainer Unit #1	SWS S. O. Numbe	078816
Test	DST #1	SWS Location	Hobbs, NM
Date	29-DEC-1997	Tester	B. Grayshaw
Gauge	Elect./SLSR-833	Report Done By	Harvin L. Broughton
Depth	12,124		

Date	Time	FP #	Rate STB/day	Duration mn
29/12/97	08:56:00	1	0.00	347.120
	14:43:07	2	170.000	15.0000
	14:58:07	3	0.00	47.1702
	15:45:17	4	170.000	240.330
	19:45:37	5	0.00	718.506

- SAPHIR -	History Listings		1GAIN#1
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Test	DST #1	SWS Location	Hobbs, NM
Date	29-DEC-1997	Tester	B. Grayshaw
Gauge	Elect./SLSR-833	Report Done By	Harvin L. Broughton
Depth	12,124		

Date	Time	Pressure psia	Date	Time	Pressure psia	Date	Time	Pressure psia
29/12/97	14:42:56	649.290	29/12/97	16:52:16	980.350	29/12/97	19:02:07	1336.64
	14:47:07	697.020		16:56:26	996.890		19:06:16	1345.30
	14:51:16	727.030		17:00:37	1011.66		19:10:26	1353.66
	14:55:26	738.700		17:04:57	1029.88		19:14:37	1361.87
	14:59:37	2544.51		17:09:07	1044.78		19:18:46	1370.50
	15:03:46	4473.23		17:13:16	1058.89		19:23:07	1379.01
	15:07:57	4475.15		17:17:27	1072.43		19:27:16	1387.59
	15:12:07	4475.62		17:21:37	1085.25		19:31:27	1395.45
	15:16:16	4475.80		17:25:46	1098.14		19:35:37	1403.50
	15:20:26	4476.02		17:29:56	1110.66		19:39:46	1411.11
	15:24:37	4476.00		17:34:07	1122.63		19:44:07	1419.46
	15:28:46	4475.93		17:38:16	1134.51		19:48:16	3924.28
	15:32:56	4475.91		17:42:27	1147.00		19:52:26	4474.00
	15:37:07	4475.99		17:46:37	1158.48		19:56:37	4476.98
	15:41:16	4476.06		17:50:57	1171.04		20:00:46	4477.66
	15:45:27	745.150		17:55:07	1182.53		20:04:57	4477.92
	15:49:37	756.490		17:59:16	1193.72		20:09:07	4478.10
	15:53:46	764.060		18:03:26	1204.63		20:13:16	4478.17
	15:57:56	768.630		18:07:37	1215.08		20:17:27	4478.30
	16:02:07	788.210		18:11:56	1225.47		20:21:37	4478.46
	16:06:27	807.670		18:16:07	1235.69		20:25:56	4478.50
	16:10:37	828.960		18:20:16	1245.28		20:30:07	4478.59
	16:14:46	842.840		18:24:27	1255.04		20:34:16	4478.68
	16:18:57	856.670		18:28:37	1264.05		20:38:26	4478.80
	16:23:07	871.030		18:32:46	1273.44		20:42:37	4478.76
	16:27:16	887.870		18:37:07	1282.97		20:46:46	4478.75
	16:31:26	904.900		18:41:16	1292.11		20:51:07	4478.85
	16:35:37	920.720		18:45:26	1301.35		20:55:16	4478.95
	16:39:46	937.080		18:49:37	1309.96		20:59:26	4478.98
	16:43:57	951.830		18:53:46	1318.70		21:03:37	4478.98
	16:48:07	966.560		18:57:57	1327.40		21:07:46	4479.05

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Field		Perforated interval	Open Hole	
Well	Gainer Unit #1	SWS S. O. Numbe	078816	
Test	DST #1	SWS Location	Hobbs, NM	
Date	29-DEC-1997	Tester	B. Grayshaw	
Gauge	Elect./SLSR-833	Report Done By	Harvin L. Broughton	
Depth	12,124			

Date	Time	Pressure psia	Date	Time	Pressure psia	Date	Time	Pressure psia
29/12/97	21:12:07	4479.02	29/12/97	23:21:56	4479.69	30/12/97	01:31:37	4480.07
	21:16:16	4479.06		23:26:07	4479.69		01:35:46	4480.08
	21:20:27	4479.12		23:30:16	4479.69		01:39:57	4480.01
	21:24:37	4479.13		23:34:26	4479.75		01:44:07	4480.09
	21:28:46	4479.17		23:38:37	4479.75		01:48:26	4480.06
	21:32:56	4479.13		23:42:46	4479.81		01:52:37	4480.07
	21:37:07	4479.21		23:46:57	4479.81		01:56:46	4480.14
	21:41:16	4479.22		23:51:16	4479.88		02:00:57	4480.08
	21:45:26	4479.23		23:55:26	4479.88		02:05:07	4480.13
	21:49:37	4479.26		23:59:37	4479.88		02:09:16	4480.17
	21:53:46	4479.28	30/12/97	00:03:46	4479.91		02:13:26	4480.15
	21:58:07	4479.34		00:07:56	4479.89		02:17:37	4480.21
	22:02:16	4479.29		00:12:07	4479.91		02:21:46	4480.17
	22:06:27	4479.31		00:16:16	4479.88		02:25:56	4480.21
	22:10:37	4479.31		00:20:27	4479.91		02:30:07	4480.21
	22:14:46	4479.38		00:24:37	4479.91		02:34:16	4480.22
	22:19:07	4479.47		00:28:46	4479.91		02:38:27	4480.25
	22:23:16	4479.44		00:32:56	4479.92		02:42:37	4480.28
	22:27:27	4479.50		00:37:07	4479.95		02:46:46	4480.25
	22:31:37	4479.46		00:41:16	4479.96		02:50:56	4480.16
	22:35:46	4479.50		00:45:26	4479.91		02:55:16	4480.26
	22:39:57	4479.50		00:49:37	4479.92		02:59:27	4480.23
	22:44:16	4479.52		00:53:46	4479.98		03:03:37	4480.29
	22:48:26	4479.57		00:57:56	4480.00		03:07:46	4480.31
	22:52:37	4479.57		01:02:16	4479.97		03:11:56	4480.28
	22:56:46	4479.57		01:06:26	4480.04		03:16:07	4480.32
	23:00:56	4479.59		01:10:37	4480.02		03:20:16	4480.32
	23:05:16	4479.64		01:14:46	4480.02		03:24:27	4480.37
	23:09:27	4479.62		01:18:56	4480.03		03:28:37	4480.35
	23:13:37	4479.66		01:23:16	4480.09		03:32:46	4480.34
	23:17:46	4479.67		01:27:26	4480.03		03:36:57	4480.34

- SAPHIR -	History Listings			1GAIN#1
Company	Cobra Oil & Gas Corp	Formation interval	12,106 - 12,221	
Field		Perforated interval	Open Hole	
Well	Gainer Unit #1	SWS S. O. Numbe	078816	
Test	DST #1	SWS Location	Hobbs, NM	
Date	29-DEC-1997	Tester	B. Grayshaw	
Gauge	Elect./SLSR-833	Report Done By	Harvin L. Broughton	
Depth	12,124			

Date	Time	Pressure psia	Date	Time	Pressure psia
30/12/97	03:41:07	4480.29	30/12/97	05:50:56	4480.59
	03:45:27	4480.35		05:55:07	4480.64
	03:49:37	4480.37		05:59:16	4480.61
	03:53:46	4480.40		06:03:26	4480.60
	03:57:56	4480.38		06:07:37	4480.60
	04:02:07	4480.34		06:11:46	4480.60
	04:06:26	4480.39		06:15:57	4480.59
	04:10:37	4480.42		06:20:07	4480.59
	04:14:46	4480.44		06:24:27	4480.60
	04:18:56	4480.40		06:28:37	4480.63
	04:23:07	4480.43		06:32:46	4480.63
	04:27:16	4480.41		06:36:57	4480.65
	04:31:37	4480.43		06:41:07	4480.69
	04:35:46	4480.50		06:45:27	4480.67
	04:39:57	4480.48		06:49:37	4480.64
	04:44:07	4480.47		06:53:46	4480.66
	04:48:16	4480.47		06:57:56	4480.64
	04:52:27	4480.52		07:02:07	4480.70
	04:56:37	4480.48		07:06:16	4480.65
	05:00:46	4480.50		07:10:37	4480.68
	05:04:56	4480.57		07:14:46	4480.70
	05:09:07	4480.55		07:18:56	4480.67
	05:13:26	4480.54		07:23:07	4480.66
	05:17:37	4480.56		07:27:16	4480.73
	05:21:46	4480.54		07:31:37	4480.75
	05:25:56	4480.59		07:35:46	4480.71
	05:30:07	4480.61		07:39:57	4480.73
	05:34:16	4480.53		07:44:07	4480.74
	05:38:27	4480.57			
	05:42:37	4480.59			
	05:46:46	4480.61			