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MASTER

**INVESTIGATION AND EVALUATION OF
GEOPRESSURED-GEOTHERMAL WELLS**

**Final Report, Beulah Simon No. 2 Well,
Vermilion Parish, Louisiana**

Volume II: Analytical Data

**By
R. J. Dobson
J. H. Hartsock
R. L. McCoy
J. A. Rodgers**

**July 1980
Date Published**

Work Performed Under Contract No. AC08-77ET28460

**Gruy Federal, Inc.
Houston, Texas**

**U. S. DEPARTMENT OF ENERGY
Geothermal Energy**

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GEOPRESSURED-GEOTHERMAL WELLS**

**FINAL REPORT
BEULAH SIMON NO. 2 WELL
VERMILION PARISH, LOUISIANA**

Volume II: Analytical Data

**R. J. Dobson
J. H. Hartsock
R. L. McCoy
J. A. Rodgers**

**Gruy Federal, Inc.
2500 Tanglewilde, Suite 150
Houston, Texas 77063**

Date Published--July 1980

**Prepared for the
U.S. Department of Energy
Division of Geothermal Energy
Under Contract No. DE-AC08-77ET28460**

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COMPANY: GRIV FEDERAL, INC.

FIELD: COSSINAIDE, VERMILLION

LEASE & WELL #: REILLY SIMON # 2

PERFORATIONS: 14,670' - 14,770'

END OF TUBING: 14,128'

PUM DEPTH: 14,350'

HEAVY-PACKARD GAUGE #: 443

STATUS OF WELL: FLOWING

DATE: 11-17-79 through 12-30-79

Ground Level "0" plus 25'

DATE & TIME	SURFACE PRESSURE (PSIG)	BOTTOM HOLE PRESSURE (PSIA)	REMARKS
11-17-79			
08:00:00			Reservoir Data, Inc. Personnel arrived on location.
09:30:00			Started r/fc-up.
11:45:00			Flanged up.
13:30:00			Started to open well.
13:34:00			Well open.
13:35:00	4,805	5845	Temperature 84.0°
13:40:00			Heavy-Packard gauge will not fall while well is flowing.
13:45:00			Shut-in well, and picked up weight.
15:53:00			Temperature 140.0° at 60'. 1620 F at 1,000'. Heavy-Packard gauge at 14,722'. Temperature 266°.
16:00:00		13,002.12	Pulled out of well.
18:00:00			Shut swab valve.ried off lubricator.
23:00:00			Removed temperature tool and removed Heavy-Packard gauge. Ready to return back into well.
23:30:00			
11-18-79			
02:00:00		6,608.25	Pressured up lubricator. Started back into well.
04:00:00			At depth of 14,350' weight indicator. Temperature 266°.
04:30:00		12,739.88	
05:00:00		12,744.44	
05:30:00		12,748.72	
06:00:00		12,752.66	
06:30:00		12,756.28	
07:00:00		12,759.56	
07:30:00		12,762.67	
08:00:00		12,765.62	
08:30:00		12,768.24	
09:00:00		12,770.70	

Reservoir Data Inc. 2100 Mt. Allison • Houston, Texas 77052 • (713) 661-9230

WELL LOG NO. 11-17-79

DATE & TIME	SURFACE PRESSURE (PSIG)	BOTTOM HOLE PRESSURE (PSIA)	REMARKS
11-18-79			
09:30:00		12,773.11	Continued to monitor pressures.
10:00:00		12,775.42	
10:30:00		12,777.51	
11:00:00		12,779.49	
11:30:00		12,781.54	
12:00:00		12,783.21	
12:30:00		12,785.06	
13:00:00		12,786.73	
13:30:00		12,788.24	
14:00:00		12,789.77	
14:30:00		12,791.23	
15:00:00		12,782.54	
15:30:00		12,793.91	
16:00:00		12,795.17	
16:30:00		12,796.43	
17:00:00		12,797.47	
17:30:00		12,798.60	
18:00:00		12,799.68	Changed out 9825A.
18:30:00		12,800.67	
19:00:00		12,801.62	
19:30:00		12,802.58	
20:00:00		12,803.48	
20:30:00		12,804.39	
21:00:00		12,805.22	
21:30:00		12,806.02	
22:00:00		12,806.80	
22:30:00		12,807.52	
23:00:00		12,808.17	
23:30:00		12,808.92	
11-19-79			
00:00:00		12,809.65	
00:30:00		12,810.31	
01:00:00		12,810.78	
01:30:00		12,811.38	
02:00:00		12,812.01	
02:30:00		12,812.59	
03:00:00		12,813.13	
03:30:00		12,813.75	
04:00:00		12,814.27	
04:30:00		12,814.77	
05:00:00		12,815.28	
05:30:00		12,815.74	
06:00:00		12,816.10	
06:30:00		12,816.69

DATE & TIME	SURFACE PRESSURE (PSIG)	BOTTOM HOLE PRESSURE (PSIA)	REMARKS
11-19-79			
07:00:00		12,817.07	Continued to monitor pressures.
07:30:00		12,817.53	
08:00:00		12,817.87	
08:30:00		12,818.29	
09:00:00		12,818.68	
09:30:00		12,819.09	
10:00:00		12,814.42	No pressure recorded due to power surge. Resulting in 20 minutes of lost data.
10:30:00			
11:00:00		12,820.14	
11:30:00		12,820.46	
12:00:00		12,820.80	
12:30:00		12,821.13	
13:00:00		12,821.47	
13:30:00		12,821.68	
14:00:00		12,821.93	
14:30:00		12,822.29	
15:00:00		12,822.53	
15:30:00		12,822.88	
16:00:00		12,823.04	
16:30:00		12,823.35	
17:00:00		12,823.61	
17:30:00		12,823.92	
18:00:00		12,824.18	
18:30:00		12,824.37	
19:00:00		12,824.59	
19:30:00		12,824.89	
20:00:00		12,825.07	
20:30:00		12,825.37	
21:00:00		12,825.51	
21:30:00		12,825.76	
22:00:00		12,825.71	
22:30:00		12,826.13	
23:00:00		12,826.34	
23:30:00		12,826.56	
11-20-79			
00:00:00		12,826.74	
00:30:00		12,826.98	
01:00:00		12,827.17	
01:30:00		12,827.32	
02:00:00		12,827.53	
02:30:00		12,827.67	
03:00:00		12,827.89	
03:30:00		12,828.05	
04:00:00		12,828.17	

Reservoir Data Inc.

2310 McAllister • Houston, Texas 77092 • (713) 681-9259

AFFILIATE OF AMERICAN OIL FIELD SERVICES COMPANY

DATE & TIME	SURFACE PRESSURE (PSIG)	BOTTOM HOLE PRESSURE (PSIA)	REMARKS
11-20-79			
04:30:00		12,828.45	Continued to monitor pressures.
05:00:00		12,828.64	
05:30:00		12,828.83	
06:00:00		12,828.90	
06:30:00		12,829.12	
07:00:00		12,829.22	
07:30:00		12,829.45	
08:00:00		12,829.58	
08:30:00		12,829.75	
09:00:00		12,829.87	
09:30:00		12,830.09	
10:00:00		12,830.24	
10:30:00		12,830.13	
11:00:00		12,830.28	
11:30:00		12,830.47	
12:00:00		12,830.54	
12:30:00		12,830.71	
13:00:00		12,830.74	
13:30:00		12,830.89	
14:00:00		12,831.02	
14:30:00		12,831.20	
15:00:00		12,831.34	
15:30:00		12,831.52	
16:00:00		12,831.61	
16:30:00		12,831.75	
17:00:00		12,831.88	
17:30:00		12,832.03	
18:00:00		12,832.11	
18:30:00		12,832.25	
19:00:00		12,832.36	
19:30:00		12,832.43	
20:00:00		12,832.66	
20:30:00		12,832.68	
21:00:00		12,832.76	
21:30:00		12,832.89	
22:00:00		12,833.06	
22:30:00		12,833.03	
23:00:00		12,833.23	
23:30:00		12,833.35	
11-21-79			
00:00:00		12,833.49	
00:30:00		12,833.57	
01:00:00		12,833.66	
01:30:00		12,833.73	

Reservoir Data Inc. 2310 McAllister • Houston, Texas 77092 • (713) 683-9259

AFFILIATE OF MUTTON & CURRIE COMPANY
Petroleum Engineers

DATE & TIME	SURFACE PRESSURE (PSIG)	BOTTOM HOLE PRESSURE (PSIA)	REMARKS
11-21-79			
02:00:00		12,833.88	Continued to monitor pressures.
02:30:00		12,834.08	
03:00:00		12,834.17	
03:30:00		12,834.21	
04:00:00		12,834.32	
04:30:00		12,834.39	
05:00:00		12,834.53	
05:30:00		12,834.65	
06:00:00		12,834.76	
06:30:00		12,834.87	
07:00:00		12,834.91	
07:30:00		12,835.00	
08:00:00		12,835.09	
08:30:00		12,835.16	
09:00:00		12,835.28	
09:30:00		12,835.36	
10:00:00		12,835.44	
10:30:00		12,835.50	
11:00:00		12,835.63	
11:30:00		12,835.68	
12:00:00		12,835.73	
12:30:00		12,835.79	
13:00:00		12,835.90	
13:30:00		12,836.02	
14:00:00		12,836.12	
14:30:00		12,836.18	
15:00:00		12,836.26	
15:30:00		12,836.35	
16:00:00		12,836.40	
16:30:00		12,836.49	
17:00:00		12,836.51	
17:30:00		12,836.70	
18:00:00		12,836.69	
18:30:00		12,836.81	
19:00:00			Lost signal. Raised tool 500' and re-gained signal. Went back to 14,350'.
21:00:00		12,837.51	
21:30:00		12,837.56	
22:00:00		12,837.54	
22:30:00			Lost signal. Pulled out of well.
11-22-79			
20:00:00		12,836.64	
20:30:00		12,836.65

<u>DATE & TIME</u>	<u>BOTTOM HOLE PRESSURE (PSIA)</u>	<u>REMARKS</u>
11-22-79		
21:00:00	12,836.73	
21:30:00	12,836.81	
22:00:00	12,836.82	
22:30:00	12,836.79	
23:00:00	12,836.87	
23:30:00	12,836.90	
11-23-79		
00:00:00	12,836.94	
00:30:00	12,837.04	
01:00:00	12,837.08	
01:30:00	12,837.07	
02:00:00	12,837.06	
02:30:00	12,837.07	
03:00:00	12,837.15	
03:30:00	12,837.23	
04:00:00	12,837.17	
04:30:00	12,837.31	
05:00:00	12,837.29	
05:30:00	12,837.37	
06:00:00	12,837.39	
06:30:00	12,837.41	
07:00:00	12,837.56	
07:30:00	12,837.67	
08:00:00	12,837.66	
08:30:00	12,838.06	
09:00:00	12,822.24	
09:30:00	12,827.51	
11:00:00	12,832.76	
11:30:00	12,833.44	
12:00:00	12,833.95	
12:30:00	12,834.41	
13:00:00	12,834.72	
13:30:00	12,835.06	
14:00:00	12,835.34	
14:30:00	12,835.51	
15:00:00	12,835.77	
15:30:00	12,835.97	
16:00:00	12,836.14	
16:30:00	12,836.26	
17:00:00	12,836.39	
17:30:00	12,836.54	
18:00:00	12,836.68	
18:30:00	12,836.72	
19:00:00	12,836.85	Lost signal. Pulled out of well.

DATE & TIME	SURFACE PRESSURE (PSIG)	BOTTOM HOLE PRESSURE (PSIA)	REMARKS
11-28-79			
20:20:00	5748.98		
20:30:00	5758.33		
21:00:00	5758.08		Opened well.
21:30:00	5589.03		Well producing 10,950
22:00:00	5497.27		barrels per day.
22:30:00	5479.02		
23:00:00	5480.89		
23:30:00	5477.54		
11-29-79			
00:00:00	5470.56		
00:30:00	5463.53		
01:00:00	5456.34		
01:30:00	5448.19		
02:00:00	5443.83		
02:30:00	5436.03		
03:00:00	5429.17		
03:30:00	5421.68		
04:00:00	5415.31		
04:30:00	5413.02		
05:00:00	5406.79		
05:30:00	5400.17		
06:00:00	5393.48		
06:30:00	5387.16		
07:00:00	5381.16		
07:30:00	5374.80		
08:00:00	5369.82		
08:30:00	5364.76		
09:00:00	5360.58		
09:30:00	5356.81		
10:00:00			Temporary loss of data.
11:00:00	5342.60		
12:00:00	5330.80		
13:00:00	5322.20		
14:00:00	5313.34		
15:00:00	5305.99		
16:00:00	5302.41		
17:00:00	5291.86		
18:00:00	5282.32		
19:00:00	5275.15		
20:00:00	5266.79		
21:00:00	5259.53		
22:00:00	5252.59		
23:00:00	5246.41		

Reservoir Data Inc.

2310 McAllister • Houston, Texas 77052 • (713) 683-9299

AFFILIATE OF THE RESERVOIR DATA COMPANY
Reservoir Data Company

DATE & TIME	SURFACE PRESSURE (PSIG)	BOTTOM HOLE PRESSURE (PSIA)	REMARKS
11-30-79			
00:00:00	5239.33		
01:00:00	5232.40		
02:00:00	5225.39		
03:00:00	5219.35		
04:00:00	5212.72		
05:00:00	5206.47		
06:00:00	5200.85		
07:00:00	5194.90		
08:00:00	5289.15		
09:00:00	5287.38		
10:00:00	5285.37		
11:00:00	5279.48		
12:00:00	5274.25		
13:00:00	5268.60		
14:00:00	5264.30		
15:00:00	5260.16		
16:00:00	5261.35		
17:00:00	5254.80		
18:00:00	5243.01		
19:00:00			No reading.
20:00:00	5235.60		
21:00:00	5231.49		
22:00:00	5227.11		
23:00:00	5222.67		
12-1-80			
00:00:00	5217.95		
01:00:00	5213.22		
02:00:00	5209.34		
03:00:00	5204.61		
04:00:00	5100.02		
05:00:00	5096.41		
06:00:00	5093.32		
07:00:00	5089.25		
08:00:00	5086.49		
09:00:00	5086.23		
10:00:00	5087.31		
11:00:00	5079.75		
12:00:00	5075.12		
13:00:00	5073.48		
14:00:00	5070.51		
15:00:00	5067.90		
16:00:00	5066.46		
17:00:00	5059.75		
18:00:00	5054.25		

Reservoir Data Inc.

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AFFILIATE OF INTERNATIONAL COMPANY
Petroleum Engineers

DATE & TIME	SURFACE PRESSURE (PSIG)	BOTTOM HOLE PRESSURE (PSIA)	REMARKS
12-1-79			
19:00:00	5049.52		
20:00:00	5044.93		
21:00:00	5040.93		
22:00:00	5037.01		
23:00:00	5033.49		
12-2-79			
00:00:00	5030.68		
01:00:00	5027.43		
02:00:00	5023.67		
03:00:00	5019.79		
04:00:00	5016.76		
05:00:00	5012.34		
06:00:00	5009.71		
07:00:00	5007.41		
08:00:00	5005.82		
09:00:00	5005.04		
10:00:00	5006.00		
11:00:00	4999.86		
12:00:00	4998.18		
13:00:00	5004.64		
14:00:00	5021.23		
15:00:00	4988.89		
16:00:00	4981.21		
17:00:00	4974.51		
18:00:00	4969.36		
19:00:00	4965.45		
20:00:00	4961.06		
12-3-79			
00:00:00			Temporary loss of data.
01:00:00	4948.43		
02:00:00	4944.47		
03:00:00	4941.39		
04:00:00	4937.53		
05:00:00	4934.35		
06:00:00	4931.66		
07:00:00	4928.51		
08:00:00	4925.19		
09:00:00	4922.77		
10:00:00	4919.19		
11:00:00	4917.65		
12:00:00	4915.27		
13:00:00	4913.87		
14:00:00	4913.54		

DATE & TIME	SURFACE PRESSURE (PSIG)	BOTTOM HOLE PRESSURE (PSIA)	REMARKS
12-3-80			
15:00:00	4913.54		
16:00:00	4912.75		
17:00:00	4906.80		
18:00:00	4901.74		
19:00:00	4897.84		
20:00:00	4892.53		
21:00:00	4889.02		
22:00:00	4886.71		
23:00:00	4883.66		
12-4-79			
00:00:00			No reading
01:00:00	4872.01		
02:00:00	4873.81		
03:00:00	4871.24		
04:00:00	4868.36		
05:00:00	4866.21		
06:00:00	4863.74		
07:00:00	4861.09		
08:00:00	4858.68		
09:00:00	4858.03		
10:00:00	4857.10		
11:00:00	4855.09		
12:00:00	4853.30		
13:00:00	4854.58		
14:00:00	4852.76		
15:00:00	4852.49		
16:00:00	4852.54		
17:00:00	4844.52		
18:00:00	4838.10		
19:00:00	4834.86		
20:00:00	4831.71		
21:00:00	4828.67		
22:00:00	4825.66		
23:00:00	4822.00		
12-5-79			
00:00:00	4820.12		
01:00:00	4817.71		
02:00:00	4815.47		
03:00:00	4812.86		
04:00:00	4810.31		
05:00:00	4807.98		
06:00:00	4806.25		
07:00:00	4804.20		
08:00:00	4802.77		

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AGENTS OF MICHIGAN GENERAL COMPANY
Petroleum Engineers

DATE & TIME	SURFACE PRESSURE (PSIG)	BOTTOM HOLE PRESSURE (PSIA)	REMARKS
12-5-79			
09:00:00	4801.66		
10:00:00	4802.13		
11:00:00	4802.52		
12:00:00			No reading.
14:00:00	4797.69		
15:00:00	4795.10		
16:00:00	4794.40		
17:00:00	4790.11		
18:00:00	4786.06		
19:00:00	4784.59		
20:00:00	4782.31		
21:00:00	4780.76		
22:00:00	4782.82		
23:00:00	4780.35		
12-6-79			
00:00:00	4778.27		
01:00:00	4775.73		
02:00:00	4773.31		
03:00:00	4770.77		
04:00:00	4768.89		
05:00:00	4767.05		
06:00:00	4764.84		
07:00:00	4763.10		
08:00:00	4761.75		
09:00:00	4759.59		
10:00:00	4758.17		
11:00:00	4756.42		
12:00:00	4755.47		
13:00:00	4751.62		
14:00:00	4752.35		
15:00:00	4749.30		
16:00:00	4751.11		
17:00:00	4745.57		
18:00:00	4741.20		
19:00:00	4738.10		
21:00:00	4732.01		
22:00:00	4724.52		
23:00:00	4721.91		
12-7-79			
00:00:00	4718.90		
01:00:00	4717.02		
02:00:00	4714.80		
03:00:00	4712.88		
04:00:00	4710.87		

Reservoir Data Inc. 2110 McAllister • Houston, Texas 77092 • (713) 683-9259

AFFILIATE OF AMERICAN PETROLEUM COMPANY
Petroleum Engineers

DATE & TIME	SURFACE PRESSURE (PSIG)	BOTTOM HOLE PRESSURE (PSIA)	REMARKS
12-7-79			
05:00:00	4708.29		
06:00:00	4706.09		
07:00:00			False reading.
08:00:00	4704.68		
09:00:00	4705.50		
10:00:00	4706.65		
11:00:00	4703.91		
12:00:00	4702.53		
13:00:00	4718.16		
14:00:00	4715.94		
15:00:00	4711.74		
16:00:00	4718.67		
17:00:00	4709.49		
18:00:00	4702.19		
19:00:00	4698.82		
20:00:00	4695.97		
21:00:00	4693.71		
22:00:00	4691.18		
23:00:00			No reading.
12-8-79			
02:00:00	4785.04		
03:00:00	4783.35		
04:00:00	4781.34		
05:00:00	4779.82		
06:00:00	4777.74		
07:00:00	4776.31		
08:00:00	4773.39		
09:00:00	4774.45		
10:00:00	4775.79		
11:00:00	4776.51		
12:00:00	4772.41		
13:00:00	4771.20		
14:00:00	4769.97		
15:00:00	4768.52		
16:00:00			No reading.
17:00:00	4766.46		
18:00:00	4750.90		
19:00:00	4756.97		
21:00:00	5422.01

COMPANY: GRUY FEDERALSUPERVISOR: PAUL LANGSTONFIELD: COSSINADELEASE & WELL #: BEULAH-SIMON # 2PERFORATIONS: 14,694' - 14,744'END OF TUBING: 14,223'RUN DEPTH: 14,350'HEWLETT PACKARD GAUGE #: 486STATUS OF WELL: Flowing approximately 10,950
barrels per day since 11-28-79
at 21:00:00 hours.

<u>DATE & TIME</u>	<u>SURFACE PRESSURE (PSIG)</u>	<u>BOTTOM HOLE PRESSURE (PSIA)</u>	<u>REMARKS</u>
12-7-79 17:00:00			Reservoir Data, Inc. personnel arrived on on location. Dropped off equipment and talked with Gruy Personnel.
12-8-79 08:30:00			Returned to location on the following morning and started rig-up.
17:00:00			Opened well to lub- ricator to test equipment under pres- sure.
21:00:00	5422.01		Shut-in Well. Started down into well.
22:30:00	5453.81		On bottom of well at 14,722' (Center Perfs).
22:45:00		12,012.03	Tool stable.
22:50:00	5458.61	12,013.46	
22:55:00		12,015.39	
23:00:00	5460.28	12,017.40	
23:10:00	5461.92	12,021.49	
23:20:00	5463.51	12,025.47	
23:30:00	5465.23	12,029.23	
23:40:00	5466.78	12,032.99	
23:50:00	5468.42	12,036.63	
12-9-79 00:00:00	5470.21	12,040.28	
00:30:00	5474.36	12,050.50	
01:00:00	5479.22	12,060.20	
01:30:00	5483.75	12,069.43	
02:00:00	5488.46	12,078.17	
02:30:00	5492.95	12,086.53	
03:00:00	5497.24	12,094.58	
03:30:00	5501.16	12,102.25	
04:00:00	5505.49	12,109.58	
04:30:00	5509.47	12,116.64	

Reservoir Data Inc.

2310 McAllister • Houston, Texas 77002 • (713) 683-9250

AFFILIATE OF AMERICAN OIL COMPANY
Petroleum Engineers

DATE & TIME	SURFACE PRESSURE (PSIG)	BOTTOM HOLE PRESSURE (PSIA)	REMARKS
12-9-79			
05:00:00	5512.54	12,123.40	
05:30:00	5516.75	12,129.96	
06:00:00	5517.46	12,136.32	
06:30:00	5523.43	12,142.43	
07:00:00	5527.09	12,148.37	
07:30:00	5534.66	12,154.07	
08:00:00	5539.89	12,159.60	
08:30:00	5547.70	12,164.99	
09:00:00	5549.70	12,170.15	
09:30:00		12,175.09	No reading.
10:00:00	5552.79	12,180.05	
10:30:00	5557.10	12,184.87	
11:00:00	5562.28	12,189.51	
11:30:00	5567.69	12,194.08	
12:00:00	5572.26	12,198.44	
12:30:00	5575.94	12,202.69	
13:00:00	5579.60	12,206.86	
13:30:00	5580.46	12,210.89	
14:00:00	5582.26	12,214.91	
14:30:00	5584.96	12,218.77	
15:00:00	5587.19	12,222.57	
15:30:00	5589.14	12,226.24	
16:00:00	5591.09	12,229.88	
16:30:00	5592.80	12,233.39	
17:00:00	5594.39	12,236.86	
17:30:00	5593.73	12,240.26	
18:00:00	5594.83	12,243.56	
18:30:00	5596.05	12,246.75	
19:00:00	5597.85	12,250.00	
19:30:00	5599.91	12,253.11	
20:00:00	5601.00	12,256.22	
20:30:00	5602.32	12,259.21	
21:00:00	5604.06	12,262.12	
21:30:00	5606.12	12,265.03	
22:00:00	5607.65	12,267.87	
22:30:00	5609.38	12,270.71	
23:00:00	5610.59	12,273.43	
23:30:00	5612.00	12,276.15	
12-10-79			
00:00:00	5613.55	12,278.84	
01:00:00	5616.67	12,283.98	
02:00:00	5620.00	12,289.04	
03:00:00	5620.82	12,293.89	
04:00:00	5625.32	12,298.64	

Reservoir Data Inc. 2310 McAllister • Houston, Texas 77092 • (713) 683-9259

ASSOCIATE OF THE AMERICAN PETROLEUM INSTITUTE
Petroleum Engineers

DATE & TIME	SURFACE PRESSURE (PSIG)	BOTTOM HOLE PRESSURE (PSIA)	REMARKS
12-10-79			
05:00:00	5629.49	12,303.25	
06:00:00	5632.70	12,307.78	
07:00:00	5636.48	12,312.15	
08:00:00	5645.62	12,316.51	
09:00:00	5658.35	12,320.64	
10:00:00	5653.99	12,324.69	
11:00:00	5659.83	12,328.75	
12:00:00	5662.86	12,332.64	
13:00:00	5665.76	12,336.43	
14:00:00	5669.99	12,340.22	
15:00:00	5672.78	12,343.90	
16:00:00	5674.30	12,347.53	
17:00:00	5675.49	12,351.03	
18:00:00	5676.17	12,354.58	
19:00:00	5677.38	12,357.99	
20:00:00	5678.85	12,361.30	
21:00:00	5680.84	12,364.64	
22:00:00	5683.97	12,368.01	
23:00:00	5687.23	12,371.30	
12-11-79			
00:00:00	5689.07	12,374.51	
01:00:00	5690.66	12,377.71	
02:00:00	5693.92	12,380.85	
03:00:00	5696.78	12,383.98	
04:00:00	5697.71	12,387.09	
05:00:00	5699.89	12,390.10	
06:00:00	5702.90	12,393.12	
07:00:00	5705.33	12,396.15	
08:00:00	5709.13	12,399.15	
09:00:00	5711.49	12,401.97	
10:00:00	5717.32	12,404.84	
11:00:00	5721.90	12,407.53	
12:00:00	5725.45	12,410.35	
13:00:00	5728.99	12,413.05	
14:00:00	5730.18	12,415.68	
15:00:00	5734.17	12,418.28	
16:00:00	5734.04	12,420.80	
17:00:00	5734.94	12,423.28	
18:00:00	5735.90	•	• No reading.
19:00:00	5736.85	12,428.27	
20:00:00	5738.71	12,430.63	
21:00:00	5740.52	12,433.12	
22:00:00	5742.24	12,435.37	
23:00:00	5743.62	12,437.73	

DATE & TIME	SURFACE PRESSURE (PSIG)	BOTTOM HOLE PRESSURE (PSIA)	REMARKS
12-12-79			
00:00:00	5745.32	12,440.00	
01:00:00	5747.33	12,442.36	
02:00:00	5749.58	12,444.55	
03:00:00	5751.64	12,446.82	
04:00:00	5753.67	12,449.05	
05:00:00	5755.51	12,451.20	
06:00:00	5757.58	12,453.31	
07:00:00	5759.27	12,455.50	
08:00:00	5760.96	12,457.58	
09:00:00			Lost signal.
10:00:00	5765.35		
11:00:00	5767.41		
12:00:00	5770.14		
13:00:00	5772.24		
14:00:00	5774.55		
15:00:00	5776.39		
16:00:00	5777.37		
17:00:00	5778.04		
18:00:00	5778.84		
19:00:00	5780.19		
20:00:00	5781.43		
21:00:00	5782.64		
22:00:00	5784.28		
23:00:00	5785.89		
12-13-79			
00:00:00	5787.45		
01:00:00	5788.86		
02:00:00	5790.28		
03:00:00	5790.44		
04:00:00	5790.35		
05:00:00	5792.00		
06:00:00	5792.80		
07:00:00	5793.94		
08:00:00	5794.46		
09:00:00	5794.40		
10:00:00	5795.15		
11:00:00	5795.93		
12:00:00	5797.37		
13:00:00	5798.59		
14:00:00	5800.42		
15:00:00	5801.64		
16:00:00	5802.14		
17:00:00	5802.92		
18:00:00	5803.80		

DATE & TIME	SURFACE PRESSURE (PSIG)	BOTTOM HOLE PRESSURE (PSIA)	REMARKS
12-13-79			
19:00:00	5804.93		
20:00:00	5811.19		
21:00:00	5809.51		
22:00:00	5809.12		
12-14-79			
03:00:00	5814.24		
04:00:00	5816.17		
05:00:00	5816.77		
06:00:00	5817.94	12,535.31	
07:00:00	5819.16	12,535.74	
08:00:00	5820.26	12,538.20	
09:00:00	5822.15	12,539.61	
10:00:00	5823.21	12,541.02	
11:00:00	5825.34	12,542.47	
12:00:00	5827.47	12,543.88	
13:00:00	5827.68	12,545.23	
14:00:00	5828.88	12,546.58	
15:00:00	5830.01	12,547.99	
16:00:00	5831.54	12,549.32	
17:00:00	5832.54	12,550.65	
18:00:00	5833.31	12,551.90	
19:00:00	5834.01	12,553.24	
20:00:00	5834.73	12,554.48	
21:00:00	5835.66	12,555.83	
22:00:00	5836.40	12,557.08	
23:00:00	5837.21	12,558.40	
12-15-79			
00:00:00	5838.18	12,559.68	
01:00:00	5838.76	12,560.97	
02:00:00	5839.88	12,562.20	
03:00:00	5840.57	12,563.44	
04:00:00	5841.59	12,564.69	
05:00:00	5842.77	12,565.91	
06:00:00	5843.56	12,567.13	
07:00:00	5844.49	12,568.36	
08:00:00	5845.80	12,569.57	
09:00:00	5847.12	12,570.79	
10:00:00	5848.81	12,571.96	
11:00:00	5850.59	12,573.14	
12:00:00		12,574.32	
13:00:00	5853.89	12,575.50	Shut down to change generator.
14:00:00	5854.95	12,576.60	
15:00:00	5855.61	12,577.76	
16:00:00	5856.58	12,578.94	

DATE & TIME	SURFACE PRESSURE (PSIG)	BOTTOM HOLE PRESSURE (PSIA)	REMARKS
12-15-79			
17:00:00	5857.76	12,580.09	
18:00:00	5858.88	12,581.18	
19:00:00	5859.38	12,582.35	
20:00:00	5860.56	12,583.42	
21:00:00	5861.55	12,584.55	
22:00:00	5862.10	12,585.70	
23:00:00	5862.96	12,586.82	
12-16-79			
00:00:00	5864.14	12,587.88	
01:00:00	5864.95	12,588.95	
02:00:00	5865.95	12,590.04	
03:00:00	5866.95	12,591.17	
04:00:00	5867.92	12,592.24	
05:00:00	5868.81	12,593.32	
06:00:00	5869.81	12,594.38	
07:00:00	5870.88	12,595.44	
08:00:00	5871.91		
09:00:00	5873.29		
10:00:00	5874.14		
11:00:00	5877.52		
12:00:00	5883.58		
13:00:00	5884.43		
14:00:00	5884.07		
15:00:00	5884.47		
16:00:00	5884.91		
17:00:00	5884.16		
18:00:00	5883.74		
19:00:00	5884.11		
20:00:00	5884.27		
21:00:00	5884.86		
22:00:00	5885.02		
23:00:00	5885.34		
12-17-79			
00:00:00	5886.10		
01:00:00	5884.85		
02:00:00	5884.43		
03:00:00	5884.41		
04:00:00	5884.53		
05:00:00	5884.61		
06:00:00	5885.04		
07:00:00	5885.53		
08:00:00	5886.07		
09:00:00	5887.25		
10:00:00	5889.14		
11:00:00	5890.36		

Reservoir Data Inc.

2310 McAllister • Houston, Texas 77092 • (713) 683-9259

AFFILIATE OF MILTON M. COCKE COMPANY
Petroleum Engineers

DATE & TIME	SURFACE PRESSURE (PSIG)	BOTTOM HOLE PRESSURE (PSIA)	REMARKS
12-17-79			
12:00:00	5889.85		
13:00:00	5892.61		
14:00:00	5892.94		
15:00:00	5893.31		
16:00:00	5894.84		
17:00:00	5895.26		
18:00:00	5894.81		
19:00:00	5895.03		
20:00:00	5895.34		
21:00:00	5895.68		
22:00:00	5896.12		
23:00:00	5896.66		
12-18-79			
00:00:00	5896.91		
01:00:00	5897.41		
02:00:00	5897.86		
03:00:00	5898.32		
04:00:00	5898.94		
05:00:00	5899.56		
06:00:00	5900.16		
07:00:00	5900.69		
08:00:00	5901.86		
09:00:00	5904.61		
10:00:00	5908.19		
11:00:00	5911.68		
12:00:00	5917.60		
13:00:00	5916.94		
14:00:00	5917.08		
15:00:00	5916.65		
16:00:00	5916.63		
17:00:00	5917.44		
18:00:00	5915.16		
19:00:00	5914.31		
20:00:00	5914.54		
21:00:00	5914.58		
22:00:00	5914.68		
23:00:00	5915.18		
12-19-79			
00:00:00	5915.21		
01:00:00	5915.81		
02:00:00	5916.49		
03:00:00	5917.37		
04:00:00	5917.76		
05:00:00	5918.27		

Reservoir Data Inc. 2310 McAllister • Houston, Texas 77092 • (713) 683-9259

AFFILIATE OF MILTON M. COOK COMPANY
Petroleum Engineers

DATE & TIME	SURFACE PRESSURE (PSIG)	BOTTOM HOLE PRESSURE (PSIA)	REMARKS
12-19-79			
06:00:00	5918.83		
07:00:00	5919.40		
08:00:00	5920.63		
09:00:00	5925.32		
10:00:00	5930.23		
11:00:00	5932.56		
12:00:00	5934.52		
13:00:00	5936.64		
14:00:00	5936.78		
15:00:00	5936.91		
16:00:00	5936.99		
17:00:00	5936.40		
18:00:00	5935.20		
19:00:00	5934.57		
20:00:00	5934.56		
21:00:00	5934.79		
22:00:00	5935.07		
23:00:00	5935.77		
12-20-79			
00:00:00	5936.44		
01:00:00	5937.08		
02:00:00	5938.17		
03:00:00	5939.29		
04:00:00	5939.96		
05:00:00	5940.04		
06:00:00	5940.68		
07:00:00	5941.43		
08:00:00	5942.46		
09:00:00	5943.85		
10:00:00	5946.98		
11:00:00	5947.67		
12:00:00	5953.05		
13:00:00	5952.35		
14:00:00	5952.63		
15:00:00	5952.62		
16:00:00	5952.38		
17:00:00	5952.00		
18:00:00	5951.38		
19:00:00	5950.91		
20:00:00	5950.77		
21:00:00	5950.99		
22:00:00	5951.29		
23:00:00	5951.87		
12-21-79			
00:00:00	5952.61		

Reservoir Data Inc.

2310 McAllister • Houston, Texas 77092 • (713) 683-9259

AFFILIATE OF WILKINSON COMPANY
Petroleum Engineers

DATE & TIME	SURFACE PRESSURE (PSIG)	BOTTOM HOLE PRESSURE (PSIA)	REMARKS
12-21-79			
01:00:00	5952.92		
02:00:00	5953.16		
03:00:00	5953.51		
04:00:00	5953.83		
05:00:00	5954.05		
06:00:00	5954.50		
07:00:00	5955.04		
08:00:00	5955.59		
09:00:00	5958.41		
10:00:00	5961.49		
11:00:00	5965.79		
12:00:00	5964.35		
13:00:00	5965.83		
14:00:00	5966.89		
15:00:00	5965.65		
16:00:00	5966.69		
17:00:00	5965.75		
18:00:00	5965.38		
19:00:00	5965.54		
20:00:00	5965.84		
21:00:00	5966.19		
22:00:00	5966.48		
23:00:00	5966.96		
12-22-79			
00:00:00	5967.48		
01:00:00	5967.40		
02:00:00	5967.46		
03:00:00	5967.87		
04:00:00	5968.87		
05:00:00	5969.29		
06:00:00	5969.79		
07:00:00	5970.20		
08:00:00	5970.56		
09:00:00	5970.82		
10:00:00	5974.15		
11:00:00	5974.85		
12:00:00	5976.15		
13:00:00	5974.99		
14:00:00	5975.54		
15:00:00	5979.26		
16:00:00	5978.14		
17:00:00	5977.51		
18:00:00	5977.08		
19:00:00	5977.35		
20:00:00	5977.58		

DATE & TIME	SURFACE PRESSURE (PSIG)	BOTTOM HOLE PRESSURE (PSIA)	Page 22 REMARKS
12-22-79			
21:00:00	5978.10		
22:00:00	5978.18		
23:00:00	5978.33		
12-23-79			
00:00:00	5978.84		
01:00:00	5979.36		
02:00:00	5979.62		
03:00:00	5980.18		
04:00:00	5980.63		
05:00:00	5981.21		
06:00:00	5981.95		
07:00:00	5982.19		
08:00:00	5982.62		
09:00:00	5983.74		
10:00:00	5985.52		
11:00:00	5988.28		
12:00:00	5987.29		
13:00:00	5988.46		
14:00:00	5988.28		
15:00:00	5988.64		
16:00:00	5988.21		
17:00:00	5987.98		
18:00:00	5988.28		
19:00:00	5988.26		
20:00:00	5988.86		
21:00:00	5988.43		
22:00:00	5984.29		
23:00:00	5984.51		
12-24-79			
00:00:00	5985.01		
01:00:00	5985.48		
02:00:00	5985.81		
03:00:00	5986.16		
04:00:00	5986.56		
05:00:00	5986.77		
06:00:00	5986.59		
07:00:00	5986.55		
08:00:00	5987.59		
09:00:00	5987.74		
10:00:00	5987.20		
11:00:00	5990.43		
12:00:00	5992.67		
13:00:00	5993.65		
14:00:00	5993.09		
15:00:00	5993.82		

Reservoir Data Inc.

2310 McAllister • Houston, Texas 77092 • (713) 683-9299

APPROVED BY AMERICAN OIL FIELD COMPANY
Petroleum Engineers

DATE & TIME	SURFACE PRESSURE (PSIG)	BOTTOM HOLE PRESSURE (PSIA)	REMARKS
12-24-79			
16:00:00	5993.69		
17:00:00	5993.12		
18:00:00	5991.51		
19:00:00	5990.94		
20:00:00	5990.72		
21:00:00	5990.54		
22:00:00	5990.06		
23:00:00	5991.26		
12-25-79			
00:00:00	5990.94		
01:00:00	5991.24		
02:00:00	5991.06		
03:00:00	5990.85		
04:00:00	5990.86		
05:00:00	5990.70		
06:00:00	5990.70		
07:00:00	5990.77		
08:00:00	5992.68		
09:00:00	5995.29		
10:00:00	5998.09		
11:00:00	6000.41		
12:00:00	6001.73		
13:00:00	6002.45		
14:00:00	6003.18		
15:00:00	6003.91		
16:00:00	6004.07		
17:00:00	6003.72		
18:00:00	6000.84		
19:00:00	5999.39		
20:00:00	5999.19		
21:00:00	5998.66		
22:00:00	5998.58		
23:00:00	5998.32		
12-26-79			
00:00:00	5998.29		
01:00:00	5998.12		
02:00:00	5997.82		
03:00:00	5997.05		
04:00:00	5996.71		
05:00:00	5996.59		
06:00:00	5996.88		
07:00:00	5996.96		
08:00:00	5997.21		
09:00:00	6000.79		
10:00:00	6008.60		

Reservoir Data Inc.

2310 McAllister • Houston, Texas 77092 • (713) 683-9299

AFFILIATE OF AMERICAN ENERGY CORPORATION
Petroleum Engineers

DATE & TIME	SURFACE PRESSURE (PSIG)	BOTTOM HOLE PRESSURE (PSIA)	REMARKS
12-26-79			
11:00:00	6014.54		
12:00:00	6016.99		
13:00:00	6018.75		
14:00:00	6019.59		
15:00:00	6018.31		
16:00:00	6017.73		
17:00:00	6015.00		
18:00:00	6009.82		
19:00:00	6008.00		
20:00:00	6007.26		
21:00:00	6007.02		
22:00:00	6006.94		
23:00:00	6006.49		
12-27-79			
00:00:00	6006.64		
01:00:00	6005.16		
02:00:00	6005.20		
03:00:00	6005.10		
04:00:00	6004.85		
05:00:00	6004.76		
06:00:00	6004.92		
07:00:00	6005.21		
08:00:00	6005.55		
09:00:00	6008.77		
10:00:00	6013.48		
11:00:00	6017.87		
12:00:00	6021.33		
13:00:00	6019.25		
14:00:00	6019.46		
15:00:00	6023.38		
16:00:00	6021.64		
17:00:00	6018.59		
18:00:00	6016.41		
19:00:00	6015.93		
20:00:00	6015.47		
21:00:00	6014.78		
22:00:00	6014.30		
23:00:00	6014.06		
12-28-79			
00:00:00	6013.57		
01:00:00	6013.56		
02:00:00	6013.23		
03:00:00	6013.59		
04:00:00	6014.10		
05:00:00	6014.39		

Reservoir Data Inc.

2310 McAllister • Houston, Texas 77092 • (713) 683-9259

AFFILIATE OF AMERICAN ENERGY COMPANY
Reservoir Engineers

<u>DATE & TIME</u>	<u>SURFACE PRESSURE (PSIG)</u>	<u>BOTTOM HOLE PRESSURE (PSIA)</u>	<u>REMARKS</u>
12-28-79			
06:00:00	6014.22		
07:00:00	6014.48		
08:00:00	6014.68		
09:00:00	6016.61		
10:00:00	6017.87		
11:00:00	6019.55		
12:00:00	6021.03		
13:00:00	6020.88		
14:00:00	6022.54		
15:00:00	6022.23		
16:00:00	6022.40		
17:00:00	6022.49		
18:00:00	6021.31		
19:00:00	6020.99		
20:00:00	6021.27		
21:00:00	6021.01		
22:00:00	6020.55		
23:00:00	6020.37		
12-29-79			
00:00:00	6020.26		
01:00:00	6020.20		
02:00:00	6020.32		
03:00:00	6019.86		
04:00:00	6020.05		
05:00:00	6020.20		
06:00:00	6020.42		
07:00:00	6020.51		
08:00:00	6020.66		Prepared to test B.O.P.'s
08:30:00			Rigged up to pump grease into top B.O.P.
09:00:00			Started pumping grease into B.O.P.
10:00:00			Bled off lubrica- tor and clamped line.
10:30:00			Started pulling wire back through grease head and pumping diesel to flush grease head and lubricator.
13:00:00			Put lubricator back on.
13:30:00			Pulled tool string up into lubricator.
14:30:00			Started rigging up to run sampler.
17:00:00			Shut down for the night.

Reservoir Data Inc.

2310 McAllister • Houston, Texas 77092 • (713) 683-9259

AFFILIATE OF MILTON ALLEN COMPANY
Petroleum Engineers

DATE & TIME	SURFACE PRESSURE (PSIG)	BOTTOM HOLE PRESSURE (PSIA)	REMARKS
12-30-79			
06:30:00			Arrived on location and started rigging up air to open pneumatic valves to flow well.
07:45:00			Flowing well on 1/8" choke.
08:00:00			Sample taken at flow line.
08:10:00			Sample taken at flow line.
09:15:00			Sample taken at flow line.
11:00:00	6057		Shut-in well.
11:10:00			Started into well.
11:40:00			At depth of 14,600' to get sample.
11:50:00	6055		Started out of well.
20:15:00			In lubricator.
20:30:00			Took sampler off.
20:45:00			Cut off rope socket and replaced flow tubes.
22:15:00			Finished for the night.
12-31-79			
07:00:00			Arrived on location.
07:10:00			Opened well on 1/8" choke.
07:15:00			Started rig-up.
07:50:00			Ready to proceed into well.
08:15:00			Shut-in well.
08:20:00			Pressured up lubricator.
08:30:00	6057		Started into well.
09:30:00			Found the line to be bad so started out of well.
			Started hanging in flow tubes at 1,260'.
11:15:00			Cut line.
12:30:00			Rigged down. Left location.

COMPANY: GRUY FEDERAL
 FIELD: COSSINADE
 LEASE & WELL #: BEULAH-
 SIMON # 2

Reservoir
 Data
 Inc.

TIME/PRESSURE
 LIST

Time origin of
 data tape is
 12:08 21:00:00

Track 0

File 0

12:08 21:00:00
 Pres 3209.38

12:08 21:10:00
 Pres 6312.44

12:08 21:20:00
 Pres 6655.84

12:08 21:30:00
 Pres 7332.73

12:08 21:40:00
 Pres 8082.52

12:08 21:50:00
 Pres 8866.38

12:08 22:00:00
 Pres 9668.03

12:08 22:10:00
 Pres 10447.98

12:08 22:20:00
 Pres 11285.73

12:08 22:30:00
 Pres 9062.88

12:08 22:40:00
 Pres 12011.95

12:08 22:41:00
 Pres 12011.81

12:08 22:42:00
 Pres 12011.74

12:08 22:43:00
 Pres 12011.92

12:08 22:44:00
 Pres 12011.88

12:08 22:45:00
 Pres 12012.03

12:08 22:46:00
 Pres 12012.27

12:08 22:47:00
 Pres 12012.53

12:08 22:48:00
 Pres 12012.83

12:08 22:49:00
 Pres 12013.17

12:08 22:50:00
 Pres 12013.46

12:08 22:51:00
 Pres 12013.81

12:08 22:52:00
 Pres 12014.19

12:08 22:53:00
 Pres 12014.57

12:08 22:54:00
 Pres 12015.01

12:08 22:55:00
 Pres 12015.39

12:08 22:56:00
 Pres 12015.78

12:08 22:57:00
 Pres 12016.13

12:08 22:58:00
 Pres 12016.53

12:08 22:59:00
 Pres 12016.99

12:08 23:00:00
 Pres 12017.40

12:08 23:01:00
 Pres 12017.81

12:08 23:02:00
 Pres 12018.22

12:08 23:03:00
 Pres 12018.58

12:08 23:04:00
 Pres 12019.06

12:08 23:05:00
 Pres 12019.46

12:08 23:06:00
 Pres 12019.86

12:08 23:07:00
 Pres 12020.63

12:08 23:08:00
 Pres 12020.73

12:08 23:09:00
 Pres 12021.08

12:08 23:10:00
 Pres 12021.49

12:08 23:11:00
 Pres 12021.89

12:08 23:12:00
 Pres 12022.26

12:08 23:13:00
 Pres 12022.65

12:08 23:14:00
 Pres 12023.08

12:08 23:15:00
 Pres 12023.48

12:08 23:16:00
 Pres 12023.82

12:08 23:17:00
 Pres 12024.21

12:08 23:18:00
 Pres 12024.59

12:08 23:19:00
 Pres 12025.01

12:08 23:20:00
 Pres 12025.47

12:08 23:21:00
 Pres 12025.80

12:08 23:22:00
 Pres 12026.18

12:08 23:23:00
 Pres 12026.63

12:08 23:24:00
 Pres 12026.96

12:08 23:25:00
 Pres 12027.39

12:08 23:26:00
 Pres 12027.76

12:08 23:27:00
 Pres 12028.08

12:08 23:28:00
 Pres 12028.53

12:08 23:29:00
 Pres 12028.84

12:08 23:30:00
 Pres 12029.23

12:08 23:31:00
 Pres 12029.60

12:08 23:32:00
 Pres 12030.06

12:08 23:33:00
 Pres 12030.40

Reservoir Data Inc.

2310 McAllister • Houston, Texas 77052 • (713) 883-9254

AFFILIATE OF HILTON M. COOK COMPANY
 Petroleum Engineers

12:08 23:34:00
Pres 12030.80

12:08 23:35:00
Pres 12031.20

12:08 23:36:00
Pres 12031.50

12:08 23:37:00
Pres 12031.92

12:08 23:38:00
Pres 12032.23

12:08 23:39:00
Pres 12032.68

12:08 23:40:00
Pres 12032.99

12:08 23:41:00
Pres 12033.37

12:08 23:42:00
Pres 12033.74

12:08 23:43:00
Pres 12034.11

12:08 23:44:00
Pres 12034.46

12:08 23:45:00
Pres 12034.81

12:08 23:46:00
Pres 12035.21

12:08 23:47:00
Pres 12035.56

12:08 23:48:00
Pres 12035.98

12:08 23:49:00
Pres 12036.33

12:08 23:50:00
Pres 12036.63

12:08 23:51:00
Pres 12037.07

12:08 23:52:00
Pres 12037.41

12:08 23:53:00
Pres 12037.79

12:08 23:54:00
Pres 12038.12

12:08 23:55:00
Pres 12038.50

12:08 23:56:00
Pres 12038.83

12:08 23:57:00
Pres 12039.20

12:08 23:58:00
Pres 12039.58

12:08 23:59:00
Pres 12039.88

12:09 00:00:00
Pres 12040.28

12:09 00:01:00
Pres 12039.54

12:09 00:02:00
Pres 12040.85

12:09 00:03:00
Pres 12041.32

12:09 00:04:00
Pres 12041.69

12:09 00:05:00
Pres 12042.03

12:09 00:06:00
Pres 12042.32

12:09 00:07:00
Pres 12042.74

12:09 00:08:00
Pres 12043.03

12:09 00:09:00
Pres 12043.44

12:09 00:10:00
Pres 12043.79

12:09 00:11:00
Pres 12044.09

12:09 00:12:00
Pres 12044.49

12:09 00:13:00
Pres 12044.74

12:09 00:14:00
Pres 12045.09

12:09 00:15:00
Pres 12045.51

12:09 00:16:00
Pres 12045.78

12:09 00:17:00
Pres 12046.12

12:09 00:18:00
Pres 12046.47

12:09 00:19:00
Pres 12046.87

12:09 00:20:00
Pres 12047.18

12:09 00:21:00
Pres 12047.48

12:09 00:22:00
Pres 12047.89

12:09 00:23:00
Pres 12048.14

12:09 00:24:00
Pres 12048.50

12:09 00:25:00
Pres 12048.83

12:09 00:26:00
Pres 12049.16

12:09 00:27:00
Pres 12049.55

12:09 00:28:00
Pres 12049.90

12:09 00:29:00
Pres 12050.19

File 1

12:09 00:30:00
Pres 12050.50

12:09 00:31:00
Pres 12050.83

12:09 00:32:00
Pres 12051.25

12:09 00:33:00
Pres 12051.51

12:09 00:34:00
Pres 12051.90

12:09 00:35:00
Pres 12052.19

12:09 00:36:00
Pres 12052.50

12:09 00:37:00
Pres 12052.84

12:09 00:38:00
Pres 12053.16

12:09 00:39:00
Pres 12053.49

12:09 00:40:00
Pres 12053.82

12:09 00:41:00
Pres 12054.13

12:09 00:42:00
Pres 12054.48

12:09 00:43:00
Pres 12054.83

12:09 00:44:00
Pres 12055.16

Reservoir Data Inc.

2310 McAllister • Houston, Texas 77092 • (713) 663-9255

AFFILIATE OF MILLION M. LUKES COMPANY
Houston, Texas

12:09 00:45:00
Pres 12055.51

12:09 00:46:00
Pres 12055.78

12:09 00:47:00
Pres 12056.15

12:09 00:48:00
Pres 12056.44

12:09 00:49:00
Pres 12056.76

12:09 00:50:00
Pres 12057.13

12:09 00:51:00
Pres 12057.40

12:09 00:52:00
Pres 12057.72

12:09 00:53:00
Pres 12058.05

12:09 00:54:00
Pres 12058.34

12:09 00:55:00
Pres 12058.63

12:09 00:56:00
Pres 12059.00

12:09 00:57:00
Pres 12059.26

12:09 00:58:00
Pres 12059.62

12:09 00:59:00
Pres 12059.94

12:09 01:00:00
Pres 12060.20

12:09 01:01:00
Pres 12060.51

12:09 01:02:00
Pres 12060.80

12:09 01:03:00
Pres 12061.19

12:09 01:04:00
Pres 12061.53

12:09 01:05:00
Pres 12061.85

12:09 01:06:00
Pres 12062.07

12:09 01:07:00
Pres 12062.38

12:09 01:08:00
Pres 12062.74

12:09 01:09:00
Pres 12063.04

12:09 01:10:00
Pres 12063.34

12:09 01:11:00
Pres 12063.69

12:09 01:12:00
Pres 12063.98

12:09 01:13:00
Pres 12064.25

12:09 01:14:00
Pres 12064.63

12:09 01:15:00
Pres 12064.88

12:09 01:16:00
Pres 12065.20

12:09 01:17:00
Pres 12065.55

12:09 01:18:00
Pres 12065.83

12:09 01:19:00
Pres 12066.15

12:09 01:20:00
Pres 12066.46

12:09 01:21:00
Pres 12066.68

12:09 01:22:00
Pres 12067.05

12:09 01:23:00
Pres 12067.35

12:09 01:24:00
Pres 12067.65

12:09 01:25:00
Pres 12067.94

12:09 01:26:00
Pres 12068.24

12:09 01:27:00
Pres 12068.56

12:09 01:28:00
Pres 12068.84

12:09 01:29:00
Pres 12069.16

12:09 01:30:00
Pres 12069.43

12:09 01:31:00
Pres 12069.76

12:09 01:32:00
Pres 12070.07

12:09 01:33:00
Pres 12070.37

12:09 01:34:00
Pres 12070.61

12:09 01:35:00
Pres 12070.88

12:09 01:36:00
Pres 12071.20

12:09 01:37:00
Pres 12071.53

12:09 01:38:00
Pres 12071.85

12:09 01:39:00
Pres 12072.12

12:09 01:40:00
Pres 12072.43

12:09 01:41:00
Pres 12072.70

12:09 01:42:00
Pres 12072.99

12:09 01:43:00
Pres 12073.25

12:09 01:44:00
Pres 12073.54

12:09 01:45:00
Pres 12073.85

12:09 01:46:00
Pres 12074.16

12:09 01:47:00
Pres 12074.45

12:09 01:48:00
Pres 12074.74

12:09 01:49:00
Pres 12075.06

12:09 01:50:00
Pres 12075.31

12:09 01:51:00
Pres 12075.63

12:09 01:52:00
Pres 12075.93

12:09 01:53:00
Pres 12076.19

12:09 01:54:00
Pres 12076.44

12:09 01:55:00
Pres 12076.72

12:09 01:56:00
Pres 12077.01

Reservoir Data Inc.

2310 McAllister • Houston, Texas 77002 • (713) 683-9259

AFFILIATE OF MILLER & COOK, COMPANY
Petroleum Engineers

12:09 01:57:00
Pres 12077.39

12:09 01:58:00
Pres 12077.61

12:09 01:59:00
Pres 12077.89

12:09 02:00:00
Pres 12078.17

12:09 02:01:00
Pres 12078.49

12:09 02:02:00
Pres 12078.80

12:09 02:03:00
Pres 12079.08

12:09 02:04:00
Pres 12079.36

12:09 02:05:00
Pres 12079.66

12:09 02:06:00
Pres 12079.89

12:09 02:07:00
Pres 12080.61

12:09 02:08:00
Pres 12080.44

12:09 02:09:00
Pres 12080.80

12:09 02:10:00
Pres 12081.07

12:09 02:11:00
Pres 12081.27

12:09 02:12:00
Pres 12081.58

12:09 02:13:00
Pres 12081.84

12:09 02:14:00
Pres 12082.12

12:09 02:15:00
Pres 12082.47

12:09 02:16:00
Pres 12082.72

12:09 02:17:00
Pres 12082.98

12:09 02:18:00
Pres 12083.26

12:09 02:19:00
Pres 12083.54

12:09 02:20:00
Pres 12083.82

12:09 02:21:00
Pres 12084.07

12:09 02:22:00
Pres 12084.39

12:09 02:23:00
Pres 12084.64

12:09 02:24:00
Pres 12084.94

12:09 02:25:00
Pres 12085.23

12:09 02:26:00
Pres 12085.47

12:09 02:27:00
Pres 12085.70

12:09 02:28:00
Pres 12085.99

12:09 02:29:00
Pres 12086.24

File 2

12:09 02:30:00
Pres 12086.53

12:09 02:31:00
Pres 12086.79

12:09 02:32:00
Pres 12087.07

12:09 02:33:00
Pres 12087.34

12:09 02:34:00
Pres 12087.65

12:09 02:35:00
Pres 12087.89

12:09 02:36:00
Pres 12088.19

12:09 02:37:00
Pres 12088.47

12:09 02:38:00
Pres 12088.73

12:09 02:39:00
Pres 12089.02

12:09 02:40:00
Pres 12089.26

12:09 02:41:00
Pres 12089.55

12:09 02:42:00
Pres 12089.82

12:09 02:43:00
Pres 12090.10

12:09 02:44:00
Pres 12090.33

12:09 02:45:00
Pres 12090.58

12:09 02:46:00
Pres 12090.84

12:09 02:47:00
Pres 12091.12

12:09 02:48:00
Pres 12091.44

12:09 02:49:00
Pres 12091.63

12:09 02:50:00
Pres 12091.91

12:09 02:51:00
Pres 12092.15

12:09 02:52:00
Pres 12092.42

12:09 02:53:00
Pres 12092.73

12:09 02:54:00
Pres 12093.02

12:09 02:55:00
Pres 12093.26

12:09 02:56:00
Pres 12093.55

12:09 02:57:00
Pres 12093.80

12:09 02:58:00
Pres 12094.05

12:09 02:59:00
Pres 12094.31

12:09 03:00:00
Pres 12094.58

12:09 03:01:00
Pres 12094.83

12:09 03:02:00
Pres 12095.12

12:09 03:03:00
Pres 12095.29

12:09 03:04:00
Pres 12095.61

12:09 03:05:00
Pres 12095.89

12:09 03:06:00
Pres 12096.15

12:09 03:07:00
Pres 12096.36

Reservoir Data Inc.

2310 McAllister • Houston, Texas 77092 • (713) 683-9259

AFFILIATE OF ARLTUN M. COOKS COMPANY
Petroleum Engineers

12:09 03:08:00
Pres 12096.59

12:09 03:09:00
Pres 12096.93

12:09 03:10:00
Pres 12097.16

12:09 03:11:00
Pres 12097.42

12:09 03:12:00
Pres 12097.69

12:09 03:13:00
Pres 12097.92

12:09 03:14:00
Pres 12098.20

12:09 03:15:00
Pres 12098.43

12:09 03:16:00
Pres 12098.70

12:09 03:17:00
Pres 12098.95

12:09 03:18:00
Pres 12099.20

12:09 03:19:00
Pres 12099.42

12:09 03:20:00
Pres 12099.66

12:09 03:21:00
Pres 12099.96

12:09 03:22:00
Pres 12100.20

12:09 03:23:00
Pres 12100.47

12:09 03:24:00
Pres 12100.71

12:09 03:25:00
Pres 12101.08

12:09 03:26:00
Pres 12101.21

12:09 03:27:00
Pres 12101.48

12:09 03:28:00
Pres 12101.73

12:09 03:29:00
Pres 12101.97

12:09 03:30:00
Pres 12102.25

12:09 03:31:00
Pres 12102.45

12:09 03:32:00
Pres 12102.70

12:09 03:33:00
Pres 12102.96

12:09 03:34:00
Pres 12103.21

12:09 03:35:00
Pres 12103.46

12:09 03:36:00
Pres 12103.67

12:09 03:37:00
Pres 12103.97

12:09 03:38:00
Pres 12104.19

12:09 03:39:00
Pres 12104.43

12:09 03:40:00
Pres 12104.75

12:09 03:41:00
Pres 12104.98

12:09 03:42:00
Pres 12105.22

12:09 03:43:00
Pres 12105.45

12:09 03:44:00
Pres 12105.73

12:09 03:45:00
Pres 12105.90

12:09 03:46:00
Pres 12106.20

12:09 03:47:00
Pres 12106.46

12:09 03:48:00
Pres 12106.70

12:09 03:49:00
Pres 12106.86

12:09 03:50:00
Pres 12107.17

12:09 03:51:00
Pres 12107.42

12:09 03:52:00
Pres 12107.59

12:09 03:53:00
Pres 12107.83

12:09 03:54:00
Pres 12108.13

12:09 03:55:00
Pres 12108.35

12:09 03:56:00
Pres 12108.53

12:09 03:57:00
Pres 12108.82

12:09 03:58:00
Pres 12109.02

12:09 03:59:00
Pres 12109.27

12:09 04:00:00
Pres 12109.58

12:09 04:01:00
Pres 12109.81

12:09 04:02:00
Pres 12110.05

12:09 04:03:00
Pres 12110.28

12:09 04:04:00
Pres 12110.52

12:09 04:05:00
Pres 12110.75

12:09 04:06:00
Pres 12110.99

12:09 04:07:00
Pres 12111.22

12:09 04:08:00
Pres 12111.49

12:09 04:09:00
Pres 12111.70

12:09 04:10:00
Pres 12111.98

12:09 04:11:00
Pres 12112.20

12:09 04:12:00
Pres 12112.41

12:09 04:13:00
Pres 12112.68

12:09 04:14:00
Pres 12112.86

12:09 04:15:00
Pres 12113.15

12:09 04:16:00
Pres 12113.34

12:09 04:17:00
Pres 12113.63

12:09 04:18:00
Pres 12113.86

12:09 04:19:00
Pres 12114.11

Reservoir Data Inc.

2310 McAllister • Houston, Texas 77092 • (713) 663-9250

AFFILIATE OF MILTON M. COOKS COMPANY
Petroleum Engineers

12:09 04:20:00 Pres 12114.33	12:09:04:43:00 Pres 12119.61	12:09:05:07:00 Pres 12124.95
12:09 04:21:00 Pres 12114.51	12:09:04:44:00 Pres 12119.82	12:09:05:08:00 Pres 12125.23
12:09 04:22:00 Pres 12114.79	12:09:04:45:00 Pres 12120.00	12:09:05:09:00 Pres 12125.43
12:09 04:23:00 Pres 12115.01	12:09:04:46:00 Pres 12120.31	12:09:05:10:00 Pres 12125.59
12:09 04:24:00 Pres 12115.26	12:09:04:47:00 Pres 12120.53	12:09:05:11:00 Pres 12125.90
12:09 04:25:00 Pres 12115.43	12:09:04:48:00 Pres 12120.68	12:09:05:12:00 Pres 12126.09
12:09 04:26:00 Pres 12115.68	12:09:04:49:00 Pres 12120.98	12:09:05:13:00 Pres 12126.33
12:09 04:27:00 Pres 12115.93	12:09:04:50:00 Pres 12121.22	12:09:05:14:00 Pres 12127.22
12:09 04:28:00 Pres 12116.19	12:09:04:51:00 Pres 12121.42	12:09:05:15:00 Pres 12126.78
12:09 04:29:00 Pres 12116.39	12:09:04:52:00 Pres 12121.65	12:09:05:16:00 Pres 12126.94
File 3	12:09:04:53:00 Pres 12121.86	12:09:05:17:00 Pres 12127.13
12:09 04:30:00 Pres 12116.64	12:09:04:54:00 Pres 12122.12	12:09:05:18:00 Pres 12127.39
12:09:04:31:00 Pres 12116.81	12:09:04:55:00 Pres 12122.35	12:09:05:19:00 Pres 12127.61
12:09:04:32:00 Pres 12117.04	12:09:04:56:00 Pres 12122.58	12:09:05:20:00 Pres 12127.77
12:09:04:33:00 Pres 12117.31	12:09:04:57:00 Pres 12122.71	12:09:05:21:00 Pres 12128.02
12:09:04:34:00 Pres 12117.56	12:09:04:58:00 Pres 12122.94	12:09:05:22:00 Pres 12128.29
12:09:04:35:00 Pres 12117.73	12:09:04:59:00 Pres 12123.18	12:09:05:23:00 Pres 12128.43
12:09:04:36:00 Pres 12117.95	12:09:05:00:00 Pres 12123.40	12:09:05:24:00 Pres 12128.64
12:09:04:37:00 Pres 12118.27	12:09:05:01:00 Pres 12123.62	12:09:05:25:00 Pres 12128.93
12:09:04:38:00 Pres 12118.42	12:09:05:02:00 Pres 12123.86	12:09:05:26:00 Pres 12129.16
12:09:04:39:00 Pres 12118.69	12:09:05:03:00 Pres 12124.06	12:09:05:27:00 Pres 12129.33
12:09:04:40:00 Pres 12118.96	12:09:05:04:00 Pres 12124.35	12:09:05:28:00 Pres 12129.52
12:09:04:41:00 Pres 12119.16	12:09:05:05:00 Pres 12124.57	12:09:05:29:00 Pres 12129.77
12:09:04:42:00 Pres 12119.40	12:09:05:06:00 Pres 12124.70	12:09:05:30:00 Pres 12129.96

Reservoir Data Inc. 2310 McAllister • Houston, Texas 77002 • (713) 683-9259

AFFILIATE OF MILLON M. COOKS COMPANY
Petroleum Engineers

12:09 05:38:00
Pres 12131.68

12:09 05:39:00
Pres 12131.95

12:09 05:40:00
Pres 12132.11

12:09 05:41:00
Pres 12132.37

12:09 05:42:00
Pres 12132.58

12:09 05:43:00
Pres 12132.81

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12:09 05:47:00
Pres 12133.55

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Pres 12133.81

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Pres 12134.04

12:09 05:50:00
Pres 12134.19

12:09 05:51:00
Pres 12134.45

12:09 05:52:00
Pres 12134.67

12:09 05:53:00
Pres 12134.88

12:09 05:54:00
Pres 12135.01

12:09 05:55:00
Pres 12135.27

12:09 05:56:00
Pres 12135.46

12:09 05:57:00
Pres 12135.64

12:09 05:58:00
Pres 12135.89

12:09 05:59:00
Pres 12136.06

12:09 06:00:00
Pres 12136.32

12:09 06:01:00
Pres 12136.55

12:09 06:02:00
Pres 12136.76

12:09 06:03:00
Pres 12136.96

12:09 06:04:00
Pres 12137.16

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Pres 12137.57

12:09 06:07:00
Pres 12137.77

12:09 06:08:00
Pres 12137.98

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Pres 12138.11

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Pres 12138.32

12:09 06:11:00
Pres 12138.51

12:09 06:12:00
Pres 12138.72

12:09 06:13:00
Pres 12138.95

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Pres 12140.36

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Pres 12140.62

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Pres 12140.81

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Pres 12141.01

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Pres 12141.21

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Pres 12141.44

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Pres 12141.60

12:09 06:27:00
Pres 12141.84

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Pres 12142.01

12:09 06:29:00
Pres 12142.25

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Pres 12142.63

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Pres 12144.63

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Pres 12144.80

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Pres 12144.97

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Pres 12145.21

12:09 06:45:00
Pres 12145.36

12:09 06:46:00
Pres 12145.59

12:09 06:47:00
Pres 12145.81

12:09 06:48:00
Pres 12145.97

12:09 06:49:00
Pres 12146.16

Reservoir Data Inc.

2310 McAllister • Houston, Texas 77052 • (713) 683-8259

AFFILIATE OF MILTON M. COOK COMPANY
Petroleum Engineers

12:09 06:50:00
Pres 12146.38

12:09 06:51:00
Pres 12146.55

12:09 06:52:00
Pres 12146.80

12:09 06:53:00
Pres 12146.94

12:09 06:54:00
Pres 12147.15

12:09 06:55:00
Pres 12147.32

12:09 06:56:00
Pres 12147.60

12:09 06:57:00
Pres 12147.80

12:09 06:58:00
Pres 12147.94

12:09 06:59:00
Pres 12148.16

12:09 07:00:00
Pres 12148.37

12:09 07:01:00
Pres 12148.50

12:09 07:02:00
Pres 12148.74

12:09 07:03:00
Pres 12148.90

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Pres 12149.08

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Pres 12149.34

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Pres 12149.48

12:09 07:07:00
Pres 12149.64

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Pres 12150.44

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Pres 12150.68

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Pres 12150.81

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Pres 12151.04

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Pres 12151.22

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Pres 12151.42

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Pres 12154.45

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Pres 12154.64

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Pres 12154.77

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Pres 12155.03

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Pres 12155.23

12:09 07:37:00
Pres 12155.38

File 5

12:09 07:38:00
Pres 12155.54

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Pres 12155.71

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Pres 12155.92

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Pres 12156.13

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Pres 12156.32

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Pres 12156.46

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Pres 12156.67

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Pres 12156.84

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Pres 12158.68

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Pres 12158.83

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Pres 12159.03

12:09:07:58:00
Pres 12159.25

12:09:07:59:00
Pres 12159.45

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Pres 12159.60

Reservoir Data Inc. 2310 McAllister • Houston, Texas 77092 • (713) 683-9259

AN IRVING-CLOUD COMPANY
Petroleum Engineers

12:09:08:01:00
Pres 12159.79

12:09:08:02:00
Pres 12160.00

12:09:08:03:00
Pres 12160.11

12:09:08:04:00
Pres 12160.29

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Pres 12160.54

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Pres 12160.66

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Pres 12160.85

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Pres 12161.73

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Pres 12161.89

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Pres 12163.92

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Pres 12164.09

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Pres 12171.75

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Pres 12171.95

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Pres 12172.13

Reservoir Data Inc.

2310 McAllister • Houston, Texas 77002 • (713) 683-8259

AFFILIATE OF MILTON A. COLLIS COMPANY
Petroleum Engineers

12:09:09:13:00
Pres 12172.25

12:09:09:14:00
Pres 12172.46

12:09:09:15:00
Pres 12172.58

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Pres 12172.76

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File 6

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Pres 12176.48

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Pres 12176.64

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Pres 12176.79

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Pres 12177.16

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Pres 12183.57

12:09:10:23:00
Pres 12183.68

Reservoir Data Inc. 2310 McAllister • Houston, Texas 77092 • (713) 683-8259

OFFICERS OF THE FURNACE COMPANY
Petroleum Engineers

12:09 10:24:00
Pres 12183.84

12:09 10:25:00
Pres 12184.05

12:09 10:26:00
Pres 12184.18

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Pres 12194.35

12:09 11:33:00
Pres 12194.52

12:09 11:34:00
Pres 12194.62

12:09 11:35:00
Pres 12194.77

Reservoir Data Inc.

2310 McAllister • Houston, Texas 77092 • (713) 683-8259

AFFILIATE OF AMERSON CORP COMPANY
Petroleum Engineers

12:09 11:36:00 Pres 12194.97	12:09 12:00:00 Pres 12196.44	File 8
12:09 11:37:00 Pres 12195.08	12:09 12:01:00 Pres 12198.55	12:09 12:24:00 Pres 12201.84
12:09 11:38:00 Pres 12195.22	12:09 12:02:00 Pres 12198.69	12:09 12:25:00 Pres 12202.02
12:09 11:39:00 Pres 12195.37	12:09 12:03:00 Pres 12198.83	12:09 12:26:00 Pres 12202.12
12:09 11:40:00 Pres 12195.50	12:09 12:04:00 Pres 12199.03	12:09 12:27:00 Pres 12202.25
12:09 11:41:00 Pres 12195.68	12:09 12:05:00 Pres 12199.16	12:09 12:28:00 Pres 12202.42
12:09 11:42:00 Pres 12195.79	12:09 12:06:00 Pres 12199.30	12:09 12:29:00 Pres 12202.54
12:09 11:43:00 Pres 12195.96	12:09 12:07:00 Pres 12199.43	12:09 12:30:00 Pres 12202.69
12:09 11:44:00 Pres 12196.10	12:09 12:08:00 Pres 12199.56	12:09 12:31:00 Pres 12202.96
12:09 11:45:00 Pres 12196.25	12:09 12:09:00 Pres 12199.71	12:09 12:32:00 Pres 12202.98
12:09 11:46:00 Pres 12196.37	12:09 12:10:00 Pres 12199.82	12:09 12:33:00 Pres 12203.09
12:09 11:47:00 Pres 12196.55	12:09 12:11:00 Pres 12200.03	12:09 12:34:00 Pres 12203.23
12:09 11:48:00 Pres 12196.66	12:09 12:12:00 Pres 12200.16	12:09 12:35:00 Pres 12203.38
12:09 11:49:00 Pres 12196.81	12:09 12:13:00 Pres 12200.28	12:09 12:36:00 Pres 12203.50
12:09 11:50:00 Pres 12197.02	12:09 12:14:00 Pres 12200.43	12:09 12:37:00 Pres 12203.69
12:09 11:51:00 Pres 12197.10	12:09 12:15:00 Pres 12200.57	12:09 12:38:00 Pres 12203.81
12:09 11:52:00 Pres 12197.25	12:09 12:16:00 Pres 12200.73	12:09 12:39:00 Pres 12203.91
12:09 11:53:00 Pres 12197.40	12:09 12:17:00 Pres 12200.88	12:09 12:40:00 Pres 12204.11
12:09 11:54:00 Pres 12197.52	12:09 12:18:00 Pres 12201.30	12:09 12:41:00 Pres 12204.22
12:09 11:55:00 Pres 12197.67	12:09 12:19:00 Pres 12201.16	12:09 12:42:00 Pres 12204.39
12:09 11:56:00 Pres 12197.86	12:09 12:20:00 Pres 12201.31	12:09 12:43:00 Pres 12204.50
12:09 11:57:00 Pres 12198.00	12:09 12:21:00 Pres 12201.41	12:09 12:44:00 Pres 12204.66
12:09 11:58:00 Pres 12198.10	12:09 12:22:00 Pres 12201.55	12:09 12:45:00 Pres 12204.81
12:09 11:59:00 Pres 12198.27	12:09 12:23:00 Pres 12201.71	12:09 12:46:00 Pres 12204.92

12:09 12:47:00
Pres 12205.05

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Pres 12205.21

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Pres 12205.49

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Pres 12208.51

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Pres 12214.24

12:09 13:56:00
Pres 12214.33

12:09 13:57:00
Pres 12214.51

12:09 13:58:00
Pres 12214.64

Reservoir Data Inc.

2310 McAllister • Houston, Texas 77052 • (713) 683-9259

AFFILIATE OF HAMILTON & COOKS COMPANY
Petroleum Engineers

12:09 13:59:00
Pres 12214.72

12:09 14:00:00
Pres 12214.91

12:09 14:01:00
Pres 12214.98

12:09 14:02:00
Pres 12215.11

12:09 14:03:00
Pres 12215.32

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Pres 12215.38

12:09 14:05:00
Pres 12215.57

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Pres 12215.68

12:09 14:07:00
Pres 12215.81

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Pres 12215.93

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Pres 12216.06

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Pres 12216.17

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Pres 12216.33

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Pres 12216.45

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Pres 12216.55

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Pres 12216.71

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Pres 12216.83

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Pres 12217.02

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Pres 12217.62

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Pres 12217.64

12:09 14:23:00
Pres 12217.88

File 9

12:09 14:24:00
Pres 12218.03

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Pres 12218.15

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Pres 12218.26

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Pres 12218.39

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Pres 12218.47

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Pres 12218.88

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Pres 12219.07

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Pres 12219.16

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Pres 12219.29

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Pres 12219.36

12:09 14:36:00
Pres 12219.54

12:09 14:37:00
Pres 12219.67

12:09 14:38:00
Pres 12219.80

12:09 14:39:00
Pres 12219.92

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Pres 12220.02

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Pres 12220.21

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Pres 12220.31

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Pres 12220.43

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Pres 12221.66

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Pres 12221.80

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Pres 12221.92

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Pres 12222.07

12:09 14:57:00
Pres 12222.13

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Pres 12222.26

12:09 14:59:00
Pres 12222.43

12:09 15:00:00
Pres 12222.57

12:09 15:01:00
Pres 12222.66

12:09 15:02:00
Pres 12222.76

12:09 15:03:00
Pres 12222.92

12:09 15:04:00
Pres 12223.05

12:09 15:05:00
Pres 12223.20

12:09 15:06:00
Pres 12223.31

12:09 15:07:00
Pres 12223.41

12:09 15:08:00
Pres 12223.54

12:09 15:09:00
Pres 12223.66

Reservoir Data Inc.

2310 McAllister • Houston, Texas 77052 • (713) 683-9259

AFFILIATE OF MILTON M. COOK COMPANY
Petroleum Engineers

12:09 15:10:00
Pres 12223.79

12:09 15:11:00
Pres 12223.88

12:09 15:12:00
Pres 12224.04

12:09 15:13:00
Pres 12224.15

12:09 15:14:00
Pres 12224.30

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Pres 12224.40

12:09 15:16:00
Pres 12224.53

12:09 15:17:00
Pres 12224.63

12:09 15:18:00
Pres 12224.76

12:09 15:19:00
Pres 12224.91

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Pres 12225.03

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Pres 12225.13

12:09 15:22:00
Pres 12225.26

12:09 15:23:00
Pres 12225.38

12:09 15:24:00
Pres 12225.54

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Pres 12225.63

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Pres 12225.77

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Pres 12225.85

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Pres 12225.98

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Pres 12226.15

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Pres 12226.24

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Pres 12226.37

12:09 15:32:00
Pres 12226.46

12:09 15:33:00
Pres 12226.62

12:09 15:34:00
Pres 12226.74

12:09 15:35:00
Pres 12226.80

12:09 15:36:00
Pres 12226.93

12:09 15:37:00
Pres 12227.08

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Pres 12227.21

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Pres 12227.41

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Pres 12227.48

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Pres 12227.57

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Pres 12227.68

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Pres 12227.79

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Pres 12228.85

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Pres 12229.01

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Pres 12229.15

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Pres 12229.38

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Pres 12229.62

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Pres 12229.74

12:09 16:00:00
Pres 12229.88

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Pres 12229.97

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Pres 12230.10

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Pres 12230.22

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Pres 12230.34

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Pres 12230.70

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Pres 12230.79

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Pres 12230.92

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Pres 12231.08

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Pres 12231.91

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Pres 12231.99

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Pres 12232.10

12:09 16:20:00
Pres 12232.21

12:09 16:21:00
Pres 12232.31

Reservoir Data Inc.

2310 McAllister • Houston, Texas 77092 • (713) 663-9259

AFFILIATE OF MILTON M. COOK COMPANY
Petroleum Engineers

12:09 16:22:00
Pres 12232.40

12:09 16:23:00
Pres 12232.55

File 10

12:09 16:24:00
Pres 12232.66

12:09 16:25:00
Pres 12232.79

12:09 16:26:00
Pres 12232.92

12:09 16:27:00
Pres 12232.99

12:09 16:28:00
Pres 12233.17

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Pres 12233.31

12:09 16:30:00
Pres 12233.39

12:09 16:31:00
Pres 12233.52

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Pres 12233.59

12:09 16:33:00
Pres 12233.73

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Pres 12233.86

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Pres 12233.99

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Pres 12234.09

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Pres 12234.21

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Pres 12234.98

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Pres 12235.68

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Pres 12235.79

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Pres 12236.03

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Pres 12236.75

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Pres 12236.86

12:09 17:10:00
Pres 12237.99

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Pres 12242.45

12:09 18:00:00
Pres 12243.56

12:09 18:10:00
Pres 12244.64

12:09 18:20:00
Pres 12245.73

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Pres 12246.75

12:09 18:40:00
Pres 12247.87

12:09 18:50:00
Pres 12248.92

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Pres 12250.00

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Pres 12251.07

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Pres 12252.07

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Pres 12253.11

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Pres 12254.14

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Pres 12255.16

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Pres 12256.22

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Pres 12257.16

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Pres 12258.23

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Pres 12259.21

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Pres 12260.18

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Pres 12261.19

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Pres 12262.12

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Pres 12263.12

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Pres 12264.10

12:09 21:30:00
Pres 12265.03

12:09 21:40:00
Pres 12266.02

12:09 21:50:00
Pres 12266.93

12:09 22:00:00
Pres 12267.87

12:09 22:10:00
Pres 12268.85

12:09 22:20:00
Pres 12269.78

Reservoir Data Inc. 2310 McAllister • Houston, Texas 77092 • (713) 683-9259

MEMBER OF HILTON & TOLSON COMPANY
Petroleum Engineers

12:09 22:30:00
Pres 12270.71

12:09 22:40:00
Pres 12271.65

12:09 22:50:00
Pres 12272.54

12:09 23:00:00
Pres 12273.43

12:09 23:10:00
Pres 12274.36

12:09 23:20:00
Pres 12275.29

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Pres 12276.15

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Pres 12277.07

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Pres 12277.93

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Pres 12278.84

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Pres 12280.51

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Pres 12281.43

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Pres 12282.33

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Pres 12283.17

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Pres 12283.98

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Pres 12284.86

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Pres 12285.69

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Pres 12286.56

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Pres 12287.36

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Pres 12289.04

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Pres 12289.87

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Pres 12290.65

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Pres 12290.55

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Pres 12292.28

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Pres 12293.07

12:10 03:00:00
Pres 12293.89

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Pres 12294.71

12:10 03:20:00
Pres 12295.47

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Pres 12296.27

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Pres 12297.08

12:10 03:50:00
Pres 12297.89

12:10 04:00:00
Pres 12298.64

12:10 04:10:00
Pres 12299.44

12:10 04:20:00
Pres 12300.20

12:10 04:30:00
Pres 12300.96

12:10 04:40:00
Pres 12301.78

12:10 04:50:00
Pres 12302.53

12:10 05:00:00
Pres 12303.25

12:10 05:10:00
Pres 12304.06

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Pres 12304.81

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Pres 12307.03

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Pres 12309.24

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Pres 12310.00

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Pres 12310.71

12:10 06:50:00
Pres 12311.46

File 11

12:10 07:00:00
Pres 12312.15

12:10 07:10:00
Pres 12312.91

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Pres 12313.59

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Pres 12314.28

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Pres 12315.04

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Pres 12318.56

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Pres 12319.25

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Pres 12319.95

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Pres 12320.64

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Pres 12321.34

12:10 09:20:00
Pres 12322.04

12:10 09:30:00
Pres 12322.66

12:10 09:40:00
Pres 12323.39

12:10 09:50:00
Pres 12324.04

12:10 10:00:00
Pres 12324.69

12:10 10:10:00
Pres 12325.35

Reservoir Data Inc.

2310 McAllister • Houston, Texas 77092 • (713) 683-9259

AFFILIATE OF MILTON M. COOKI COMPANY
Petroleum Engineers

12:10 10:20:00
Pres 12326.04

12:10 10:30:00
Pres 12326.73

12:10 10:40:00
Pres 12327.43

12:10 10:50:00
Pres 12328.05

12:10 11:00:00
Pres 12328.75

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Pres 12329.90

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Pres 12330.69

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Pres 12331.28

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Pres 12331.99

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Pres 12340.82

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Pres 12341.46

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Pres 12342.02

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Pres 12343.28

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Pres 12343.90

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Pres 12346.32

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Pres 12346.85

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Pres 12348.12

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Pres 12348.68

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Pres 12349.26

12:10 16:40:00
Pres 12349.86

12:10 16:50:00
Pres 12350.46

12:10 17:00:00
Pres 12351.03

12:10 17:10:00
Pres 12351.65

12:10 17:20:00
Pres 12352.17

12:10 17:30:00
Pres 12352.80

12:10 17:40:00
Pres 12353.39

12:10 17:50:00
Pres 12353.95

12:10 18:00:00
Pres 12354.58

12:10 18:10:00
Pres 12355.09

12:10 18:20:00
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12:10 18:30:00
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12:10 18:40:00
Pres 12356.86

12:10 18:50:00
Pres 12357.39

12:10 19:00:00
Pres 12357.99

12:10 19:10:00
Pres 12358.60

12:10 19:20:00
Pres 12359.14

12:10 19:30:00
Pres 12359.72

12:10 19:40:00
Pres 12360.15

12:10 19:50:00
Pres 12360.75

12:10 20:00:00
Pres 12361.30

12:10 20:10:00
Pres 12361.93

12:10 20:20:00
Pres 12362.41

12:10 20:30:00
Pres 12363.05

12:10 20:40:00
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12:10 20:50:00
Pres 12364.10

12:10 21:00:00
Pres 12364.64

12:10 21:10:00
Pres 12365.25

12:10 21:20:00
Pres 12365.79

12:10 21:30:00
Pres 12366.36

12:10 21:40:00
Pres 12366.90

12:10 21:50:00
Pres 12367.44

12:10 22:00:00
Pres 12368.01

12:10 22:10:00
Pres 12368.55

Reservoir Data Inc.

2310 McAllister • Houston, Texas 77092 • (713) 683-9259

AFFILIATE OF MILTON H. COOKI CO., INC.
Petroleum Engineers

12:10 22:20:00
Pres 12369.05

12:10 22:30:00
Pres 12369.64

12:10 22:40:00
Pres 12370.21

12:10 22:50:00
Pres 12370.71

12:10 23:00:00
Pres 12371.30

12:10 23:10:00
Pres 12371.70

12:10 23:20:00
Pres 12372.31

12:10 23:30:00
Pres 12372.89

12:10 23:40:00
Pres 12373.43

12:10 23:50:00
Pres 12373.94

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Pres 12374.51

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Pres 12375.09

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Pres 12375.62

12:11 00:30:00
Pres 12376.08

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Pres 12376.63

12:11 00:50:00
Pres 12377.14

12:11 01:00:00
Pres 12377.71

12:11 01:10:00
Pres 12378.24

12:11 01:20:00
Pres 12378.72

12:11 01:30:00
Pres 12379.22

12:11 01:40:00
Pres 12379.81

12:11 01:50:00
Pres 12380.35

12:11 02:00:00
Pres 12380.85

12:11 02:10:00
Pres 12381.34

12:11 02:20:00
Pres 12381.90

12:11 02:30:00
Pres 12382.41

12:11 02:40:00
Pres 12382.91

12:11 02:50:00
Pres 12383.43

File 12

12:11:03:00:00
Pres 12383.98

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Pres 12384.47

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Pres 12385.00

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Pres 12385.51

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Pres 12385.98

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Pres 12386.53

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Pres 12387.09

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Pres 12388.05

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Pres 12388.58

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Pres 12389.56

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Pres 12391.58

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Pres 12392.11

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Pres 12392.63

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Pres 12393.12

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Pres 12393.63

12:11:06:20:00
Pres 12394.10

12:11:06:30:00
Pres 12394.63

12:11:06:40:00
Pres 12395.15

12:11:06:50:00
Pres 12395.62

12:11:07:00:00
Pres 12396.15

12:11:07:10:00
Pres 12396.59

12:11:07:20:00
Pres 12397.16

12:11:07:30:00
Pres 12397.60

12:11:07:40:00
Pres 12398.07

12:11:07:50:00
Pres 12398.64

12:11:08:00:00
Pres 12399.15

12:11:08:10:00
Pres 12399.57

12:11:08:20:00
Pres 12400.09

12:11:08:30:00
Pres 12400.58

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Pres 12401.07

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Pres 12401.47

12:11:09:00:00
Pres 12401.97

12:11:09:10:00
Pres 12402.50

12:11:09:20:00
Pres 12402.94

12:11:09:30:00
Pres 12403.46

12:11:09:40:00
Pres 12403.87

12:11:09:50:00
Pres 12404.37

12:11:10:00:00
Pres 12404.84

Reservoir Data Inc.

2310 McAllister • Houston, Texas 77052 • (713) 683-9259

AFFILIATE OF AMERICAN CYCLES COMPANY
Pneumatic Engineers

12:11:10:10:00
Pres 12405.29

12:11:10:20:00
Pres 12405.68

12:11:10:30:00
Pres 12406.14

12:11:10:40:00
Pres 12406.53

12:11:10:50:00
Pres 12407.01

12:11:11:00:00
Pres 12407.53

12:11:11:10:00
Pres 12407.96

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Pres 12408.50

12:11:11:30:00
Pres 12408.99

12:11:11:40:00
Pres 12409.39

12:11:11:50:00
Pres 12409.87

12:11:12:00:00
Pres 12410.35

12:11:12:10:00
Pres 12410.80

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Pres 12411.27

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Pres 12411.70

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Pres 12412.17

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Pres 12412.41

12:11:13:00:00
Pres 12413.05

12:11:13:10:00
Pres 12413.44

12:11:13:20:00
Pres 12413.89

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Pres 12414.34

12:11:13:40:00
Pres 12414.80

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Pres 12415.22

12:11:14:00:00
Pres 12415.68

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Pres 12416.10

12:11:14:20:00
Pres 12416.55

12:11:14:30:00
Pres 12416.96

12:11:14:40:00
Pres 12417.42

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Pres 12417.85

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Pres 12418.28

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Pres 12418.63

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Pres 12419.13

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Pres 12419.54

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Pres 12419.95

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Pres 12420.38

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Pres 12420.80

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Pres 12421.23

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Pres 12421.64

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Pres 12422.08

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Pres 12422.54

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Pres 12422.94

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Pres 12423.28

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Pres 12423.67

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Pres 12424.11

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Pres 12424.54

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Pres 12426.17

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Pres 12426.57

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Pres 12427.06

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Pres 12427.41

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Pres 12427.84

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Pres 12428.27

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Pres 12428.68

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Pres 12429.08

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Pres 12429.43

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Pres 12429.84

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Pres 12430.19

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Pres 12430.63

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Pres 12431.04

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Pres 12431.43

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Pres 12431.84

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Pres 12432.29

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Pres 12432.71

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Pres 12433.48

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Pres 12433.86

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Pres 12434.28

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Pres 12434.65

12:11:21:50:00
Pres 12434.99

12:11:22:00:00
Pres 12435.37

12:11:22:10:00
Pres 12435.74

12:11:22:20:00
Pres 12436.20

12:11:22:30:00
Pres 12436.56

Reservoir Data Inc. 2310 McAllister • Houston, Texas 77052 • (713) 683-8259

AFFILIATE OF MILTON H. COURL COMPANY
Petroleum Engineers

12:11:22:40:00
Pres 12437.01

12:11:22:50:00
Pres 12437.37

12:11:23:00:00
Pres 12437.73

12:11:23:10:00
Pres 12438.11

12:11:23:20:00
Pres 12438.53

12:11:23:30:00
Pres 12438.89

12:11:23:40:00
Pres 12439.23

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Pres 12439.66

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Pres 12440.00

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Pres 12440.44

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Pres 12440.77

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Pres 12441.20

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Pres 12441.53

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Pres 12441.99

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Pres 12442.36

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Pres 12442.73

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Pres 12443.08

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Pres 12443.43

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Pres 12443.88

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Pres 12444.18

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Pres 12444.55

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Pres 12444.97

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Pres 12445.35

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Pres 12445.66

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Pres 12446.07

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Pres 12446.45

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Pres 12446.82

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Pres 12447.21

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Pres 12447.59

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Pres 12447.96

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Pres 12450.85

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Pres 12451.20

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Pres 12451.56

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Pres 12451.92

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Pres 12452.28

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Pres 12452.64

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Pres 12452.99

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Pres 12453.31

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Pres 12455.82

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Pres 12456.19

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Pres 12456.56

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Pres 12456.83

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Pres 12457.26

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Pres 12457.58

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Pres 12457.90

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Pres 12458.29

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Pres 12458.64

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Pres 12458.99

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Pres 12459.34

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Pres 12535.17

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Pres 12535.31

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Pres 12535.55

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Pres 12535.83

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Pres 12536.06

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Pres 12536.32

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Pres 12536.50

12:14:07:00:00
Pres 12536.74

Reservoir Data Inc.

2310 McAllister • Houston, Texas 77092 • (713) 683-9259

AN IRVING-CLOUD COMPANY
Petroleum Engineers

12:14:07:10:00
Pres 12536.99

12:14:07:20:00
Pres 12537.23

12:14:07:30:00
Pres 12537.43

12:14:07:40:00
Pres 12537.73

12:14:07:50:00
Pres 12537.95

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Pres 12538.20

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Pres 12538.41

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Pres 12538.63

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Pres 12538.92

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Pres 12539.17

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Pres 12539.80

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Pres 12540.10

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Pres 12541.02

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Pres 12541.53

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Pres 12541.71

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Pres 12542.04

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Pres 12542.72

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Pres 12542.94

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Pres 12543.19

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Pres 12546.81

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Pres 12547.33

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Pres 12547.49

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Pres 12547.75

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Pres 12547.99

Page 22

12:14:15:10:00
Pres 12548.16

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Pres 12548.44

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Pres 12548.64

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Pres 12548.85

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Pres 12552.81

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Pres 12553.04

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Pres 12553.24

Reservoir Data Inc. 2310 McAllister • Houston, Texas 77092 • (713) 683-9259

AFFILIATE OF MILLON & COURIE COMPANY
Petroleum Engineers

12:14:19:10:00
Pres 12553.51

12:14:19:20:00
Pres 12553.64

12:14:19:30:00
Pres 12553.85

12:14:19:40:00
Pres 12554.08

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Pres 12554.30

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Pres 12554.48

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Pres 12554.71

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Pres 12560.72

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Pres 12560.97

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Pres 12561.18

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Pres 12561.32

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Pres 12561.56

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Pres 12561.79

File 15

12:15:01:50:00
Pres 12561.98

12:15:02:00:00
Pres 12562.20

12:15:02:10:00
Pres 12562.38

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Pres 12562.62

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Pres 12562.84

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Pres 12563.08

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Pres 12563.26

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Pres 12567.99

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Pres 12568.18

Reservoir Data Inc. 2310 McAllister • Houston, Texas 77092 • (713) 683-9259

AFFILIATE OF MILTON M. COLES COMPANY
Petroleum Engineers

12:15:07:00:00
Pres 12568.36

12:15:07:10:00
Pres 12568.53

12:15:07:20:00
Pres 12568.78

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Pres 12568.98

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Pres 12572.78

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Pres 12572.94

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Pres 12577.58

Page 24

12:15 15:00:00
Pres 12577.76

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Pres 12577.95

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Pres 12578.17

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Pres 12578.40

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Pres 12578.57

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Pres 12578.72

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Pres 12578.94

12:15 16:10:00
Pres 12579.12

12:15 16:20:00
Pres 12579.34

12:15 16:30:00
Pres 12579.51

12:15 16:40:00
Pres 12579.70

12:15 16:50:00
Pres 12579.89

12:15 17:00:00
Pres 12580.09

12:15 17:10:00
Pres 12580.23

12:15 17:20:00
Pres 12580.47

12:15 17:30:00
Pres 12580.64

12:15 17:40:00
Pres 12580.79

12:15 17:50:00
Pres 12581.04

12:15 18:00:00
Pres 12581.18

12:15 18:10:00
Pres 12581.40

12:15 18:20:00
Pres 12581.63

12:15 18:30:00
Pres 12581.78

12:15 18:40:00
Pres 12581.96

12:15 18:50:00
Pres 12582.15

Reservoir Data Inc.

2310 McAllister • Houston, Texas 77092 • (713) 683-9259

AFFILIATE OF MILTON M. COULKE COMPANY
Petroleum Engineers

12:15 19:00:00
Pres 12582.35

12:15 19:10:00
Pres 12582.49

12:15 19:20:00
Pres 12582.71

12:15 19:30:00
Pres 12582.91

12:15 19:40:00
Pres 12583.05

12:15 19:50:00
Pres 12583.28

12:15 20:00:00
Pres 12583.42

12:15 20:10:00
Pres 12583.58

12:15 20:20:00
Pres 12583.81

12:15 20:30:00
Pres 12583.98

12:15 20:40:00
Pres 12584.18

12:15 20:50:00
Pres 12584.33

12:15 21:00:00
Pres 12584.55

12:15 21:10:00
Pres 12584.74

12:15 21:20:00
Pres 12584.95

12:15 21:30:00
Pres 12585.07

12:15 21:40:00
Pres 12585.26

12:15 21:50:00
Pres 12585.46

12:15 22:00:00
Pres 12585.70

12:15 22:10:00
Pres 12585.86

12:15 22:20:00
Pres 12586.06

12:15 22:30:00
Pres 12586.20

12:15 22:40:00
Pres 12586.38

12:15 22:50:00
Pres 12586.61

12:15 23:00:00
Pres 12586.82

12:15 23:10:00
Pres 12586.99

12:15 23:20:00
Pres 12587.14

12:15 23:30:00
Pres 12587.36

12:15 23:40:00
Pres 12587.52

12:15 23:50:00
Pres 12587.65

12:16 00:00:00
Pres 12587.88

12:16 00:10:00
Pres 12588.06

12:16 00:20:00
Pres 12588.24

12:16 00:30:00
Pres 12588.41

12:16 00:40:00
Pres 12588.61

12:16 00:50:00
Pres 12588.81

12:16 01:00:00
Pres 12588.95

12:16 01:10:00
Pres 12589.10

12:16 01:20:00
Pres 12589.37

12:16 01:30:00
Pres 12589.57

12:16 01:40:00
Pres 12589.66

12:16 01:50:00
Pres 12589.85

12:16 02:00:00
Pres 12590.04

12:16 02:10:00
Pres 12590.21

12:16 02:20:00
Pres 12590.41

12:16 02:30:00
Pres 12590.63

12:16 02:40:00
Pres 12590.80

12:16 02:50:00
Pres 12590.95

12:16 03:00:00
Pres 12591.17

12:16 03:10:00
Pres 12591.30

12:16 03:20:00
Pres 12591.51

12:16 03:30:00
Pres 12591.68

12:16 03:40:00
Pres 12591.86

12:16 03:50:00
Pres 12592.05

12:16 04:00:00
Pres 12592.24

12:16 04:10:00
Pres 12592.44

12:16 04:20:00
Pres 12592.59

12:16 04:30:00
Pres 12592.83

12:16 04:40:00
Pres 12593.03

12:16 04:50:00
Pres 12593.19

12:16 05:00:00
Pres 12593.32

12:16 05:10:00
Pres 12593.52

12:16 05:20:00
Pres 12593.70

12:16 05:30:00
Pres 12593.93

12:16 05:40:00
Pres 12594.05

12:16 05:50:00
Pres 12594.26

12:16 06:00:00
Pres 12594.38

12:16 06:10:00
Pres 12594.59

12:16 06:20:00
Pres 12594.77

12:16 06:30:00
Pres 12594.93

12:16 06:40:00
Pres 12595.08

12:16 06:50:00
Pres 12595.27

Reservoir Data Inc.

2310 McAllister • Houston, Texas 77092 • (713) 683-9259

AFFILIATE OF HILTON M. COOKS COMPANY
Petroleum Engineers

12:16 07:00:00
Pres 12595.44

12:16 07:10:00
Pres 12595.62

12:16 07:20:00
Pres 12595.79

12:16 07:30:00
Pres 12595.96

12:16 07:40:00
Pres 12596.11

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LIST COMPLETE

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINIAD
COUNTY or PARISH VERMILION STATE LOUISIANA PERF 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET # 14,235 PACKER # NONE CASING SIZE 5 1/2 SET # 14,261 T.D. ORIFICE METER (1st 3 X .500 (1555.40)

		WELLHEAD DATA				MANIFOLD DATA					GAS MEASURING DATA				FLUID DATA						
DATE	TIME	CN K/E SIZE	TUBING PRESS.	ANNULUS	W.H. TEMP.	MANF. TEMP.	MANF. PRESS.	READING	CALC SAND	CORS. COUP	ORIFICE READING			VOLUME CF/D	FLUID METER 1	+	FLUID METER 2	+	BBLs PER DAY	CHLORIDES PPM OR SP. G.	GAS WATER RATIO
									DIFF.	PRESS.	TEMP.										
11/17				CORROSION COUPON	SERIAL # 4844, WT. 8.8080																
				CORROSION COUPON	SERIAL # 4845, WT. 8.9909																
11/17	0815		SITP 5991	SICP 6200																	
11/17	0830	16POS		OPEN WELL ON 16/54 POS	CHOKE THRU SAND LOOP THRU SEPARATOR BY-PASS TO FIT, HALIBURTON TURBINE IN PIT LINE																
11/17	0845	16POS	FTP 5200												91201	27			2592		
11/17	0900	16POS	5530												91235	34			3264		
11/17	0915	16POS	5789	MUD TO SURFACE											91274	39			3744		
11/17	0930	16POS	5849												91359	85			8160		
11/17	0945	16POS	5860	TRACE OF SAND-HALIBURTON TURBINE READING HIGH BECAUSE OF GAS											91453	94			9024		
11/17	1000	16POS	5869	BREAKING THROUGH											91550	97			9312		
11/17	1015	16POS	5870												91656	106			10176		
11/17	1030	16POS	5877												91753	97			9312		
11/17	1100	16POS	5880												91955	202			9696		
11/17	1115	16POS	5886	5650		158	25	NORMAL	TURN WELL THRU SEPARATOR						92055	100			9600		
11/17	1130	16POS	5887	5650		150	250	NORMAL							92110	55			5280

GEOTHERMAL FIELD TEST DATA

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINIADÉ
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET 14,235 PACKER NONE CASING SIZE 5 1/2 SET 14,261 T.D. ORIFICE METER (1st 3 X .500

		WELLHEAD DATA				MANIFOLD DATA					GAS MEASURING DATA				FLUID DATA						
DATE	TIME	CH/KE SIZE	TUBING PRESS	ANNULUS TEMP	MANF TEMP	MANF PRESS	READING	CALC SAND	CORS COUP	ORIFICE READING			VOLUME CF/D	FLUID METER 1	+	FLUID METER 2	+	BBLs PER DAY	CHLORIDES PPM OR SP. G.	GAS WATER RATIO	
										DIFF	PRESS	TEMP									
11/17	1140	16POS	5896	SEE REMARKS																	
11/17	1145	16POS	5896	5675	151	151	250	NORMAL						55.1		0					
11/17	1200	16POS	5889	5680	152	152	250	NORMAL			10	250	117	82,000	94.6	39.5	0		3792		
11/17	1300	16POS	5895	5680	157	157	250	NORMAL			10	250	117	82,000	256.7	162.1	0		3890.4	21	
11/17	1342			SHUT WELL IN TO RUN BOTTOM HOLE TEMPERATURE								CORRECTED		*73,278	CU.FT.				*3820.4		*19.2
11/17	1800			OPEN WELL ON 16/64 POS. CHOKE TO DISPOSAL WELL -										BOTTOM HOLE TEMPERATURE = 226°							
11/17	1815	16POS	5842	5620	126	126	250	NORMAL			8	250	77	73,000	400.9		0				
11/17	1830	16POS	5855	5620	140	140	250	NORMAL			8	250	98	73,000	441.6	40.7	0		3907.2	18.7	
11/17	1900	16POS	5870	5620	148	148	250	NORMAL			10	250	101	82,000	521.9	80.3	0		3854.4	21.3	
11/17	1930	16POS	5881	5620	154	154	250	NORMAL			10	250	108	82,000	602.9	81	0		3888	21.1	
11/17	1930	16POS		OPEN ADJ. CHOKE TO 8/64 ADJ. + 16/64 POS.								CORRECTED		*73,929	CU.FT.				*3801.5		*19.4
11/17	1945	16POS 8ADJ	5100	5450	160	160	300	NORMAL			30	300	119	151,000	660.3		0				
11/17	2000	16POS 8ADJ	5145	5470	172	172	300	NORMAL			30	300	126	151,000	735.3	75	0		7200	20.9	
11/17	2030	16POS 8ADJ	5237	5500	185	185	300	NORMAL			30	300	138	151,000	876.7	141.4	0		6787.2	22.2	
11/17	2034			OPEN ADJ. CHOKE TO 12/64 ADJ. + 16/64 POS.								CORRECTED		*136,056	CU.FT.				*6603.9		*20.6

GEOTHERMAL FIELD TEST DATA

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINAIDE
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET # 14,235 PACKER # NONE CASING SIZE 5 1/2 SET # 14,261 T.D. ORIFICE METER (1st) 3 x .500

DATE	TIME	COOLER DATA				PUMP DATA			DISPOSAL WELL		FILTERS		REMARKS
		INLET		OUTLET		SUCTION PRESS	DISC PRESS	RPM	PRESS	TEMP.	IN	OUT	
11/17	1140												TURN FLOW TO DISPOSAL WELL
11/17	1145								15				BY PASSING FILTER SYSTEM
11/17	1200								19				NO GAS MEASUREMENT - LINING OUT SEPARATOR
11/17	1300								36	150			PUT FILTER INTO SERVICE W/VERY LITTLE PRESSURE
11/17	1342												SHUT WELL IN TO RUN BOTTOM HOLE TEMPERATURE
11/17	1800	OPEN WELL ON 16/64 POS. THRU SEPARATOR TO DISPOSAL WELL											
11/17	1815								28	123	35	35	
11/17	1830								32	127	35	35	
11/17	1900								45	140	50	50	
11/17	1930								49	150	50	50	
11/17	1930												OPEN ADJ. CHOKE TO 8/64 ADJ. + 16/64 POS.
11/17	1945								70	160	90	90	
11/17	2000								77	165	100	100	
11/17	2030								90	176	120	110	BY PASS FILTERS
11/17	2034												OPEN ADJ. TO 12/64 ADJ. + 16/64 POS.

GEOTHERMAL FIELD TEST DATA

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINIADÉ
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET # 14,235 PACKER # NONE CASING SIZE 5 1/2 SET # 14,261 T.D. ORIFICE METER (1st 3 X .500

		WELLHEAD DATA				MANIFOLD DATA				GAS MEASURING DATA				FLUID DATA							
DATE	TIME	CH (KE SIZE	TUBING PRESS	ANNULUS	WH TEMP	MANF TEMP	MANF PRESS	READING	CALC SAND	CORS COUP	ORIFICE READING			VOLUME CF/D	FLUID METER 1	+	FLUID METER 2	+	BBLs PER DAY	CHLORIDES PPM OR SP. G.	GAS WATER RATIO
											DIFF	PRESS	TEMP								
11/17	2041	16POS 2ADJ		SEE REMARKS																	
11/17	2045	16POS 2ADJ	4895	5450	185	185	400	NORMAL			30	400	150	173,000	956.6		0				
11/17	2100	16POS 2ADJ	4895	5475	190	190	400	NORMAL			29	400	155	171,000	1041.4	84.8	0		8140.8	21	
11/17	2115	16POS 2ADJ	4860	5490	195	195	400	NORMAL			30	400	160	174,000	1128.0	86.6	0		8313.6	20.9	
11/17	2130	16POS 2ADJ	4864	5400	200	200	400	NORMAL			32	400	170	179,000	1213.3	85.3	0		8188.8	21.9	
11/17	2200	16POS 2ADJ	4855	5465	214	214	400	NORMAL			35	400	177	187,000	1388.2	174.9	0		8395.2	22.3	
11/17	2230	16POS 2ADJ	4825	5440	218	218	420	NORMAL			33	420	184	186,000	1565.3	177.1	0		8500.8	21.9	
11/17	2300	16POS 2ADJ	4869	5500	222	222	420	NORMAL			33	420	190	186,000	1742.7	177.4	0		8515.2	21.8	
11/17	2330	16POS 2ADJ	4820	5500	226	226	420	NORMAL			*33	420	191	186,000	1920.2	177.5	0		8520	21.8	
11/17	2340			SEE REMARKS																	
11/17	2345	16POS 2ADJ	4370	5340	228	228	420	NORMAL			46	420	199	220,000	2014.6	94.4	0		9062.4	*24.3	
11/17	2400	16POS 2ADJ	4350	5380	230	230	420	NORMAL			*45	420	199	218,000	2116.9	102.3	0		9820.8	22.2	
11/18	0005	16POS 2ADJ		OPEN ADJ. CHOKE TO 17/64 ADJ. + 16/64 POS																	
11/18	0015	16POS 17ADJ	4415	5380	231	231	420	NORMAL			46	420	200	220,000	2216.6	99.7	0		9571.2	23	
11/18	0030	16POS 17ADJ	4482	5410	231	231	420	NORMAL			44	420	201	215,000	2315.2	98.6	0		9465.6	22.7

GEOTHERMAL FIELD TEST DATA

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINAIDE
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET 14,235 PACKER NONE CASING SIZE 5 1/2 SET 14,261 T.D. ORIFICE METER 1st 3 X .500

		COOLER DATA				PUMP DATA			DISPOSAL WELL		FILTERS		REMARKS
DATE	TIME	INLET		OUTLET		SUCTION PRES.	DISC PRESS	RPM	PRESS	TEMP	IN	OUT	
		PRESS	TEMP	PRESS	TEMP								
11/17	2041												BY-PASSED FILTERS, UP SEPARATOR PRESSURE TO 400#
11/17	2045								105	185			
11/17	2100								120	190			
11/17	2115								135	196			
11/17	2130								152	201			
11/17	2200								168	210			bled 9 5/8 FROM 500# TO 200#
11/17	2230								193	200			bled 9 5/8 FROM 500# TO 200#
11/17	2300								210	215			
11/17	2330								220	218			
11/17	2340												bled 9 5/8 FROM 500# TO 250# - OPEN ADJ. CHOKE TO 16/64 ADJ.+16/64 POS. - DUMPING TO PIT.
11/17	2345												BY PASSING DISPOSAL WELL
11/17	2400												
11/18	0005												OPEN ADJ. CHOKE TO 17/64 ADJ.+16/64 POS. bled 9 5/8 FROM 500# TO 250#
11/18	0015												
11/18	0030

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINAIDE
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET # 14,235 PACKER # NONE CASING SIZE 5 1/2 SET # 14,261 T.D. ORIFICE METER 1st 3 x .500

		COOLER DATA				PUMP DATA			DISPOSAL WELL		FILTERS		REMARKS
DATE	TIME	INLET		OUTLET		SUCTION PRESS	DISC PRESS	RPM	PRESS	TEMP	IN	OUT	
		PRESS	TEMP	PRESS	TEMP								
11/18	0035												OPEN ADJ. CHOKE TO 19/64 ADJ.+16/64 POS. CHOKE
11/18	0045												
11/18	0100												
11/18	0130												bled 9 5/8 FROM 500# TO 200#
11/18	0145												
11/18	0145												SHUT IN WELL FOR BUILD-UP
11/18	0150												
11/18	0155												
11/18	0200												
11/18	0215												PULLED CORROSION COUPON OUT OF SAND LOOP (REPLACE W/WT. 8.8682, SERIAL #4843)
11/18	0230												PULLED CORROSION COUPON OUT OF DISPOSAL WELL (REPLACE W/WT. 8.8512, SERIAL #4842)
11/18	0300												
11/18	0400												
11/18	0500												
11/18	0600

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINIADÉ
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET - 14,235 PACKER - NONE CASING SIZE 5 1/2 SET # 14,261 T.D. ORIFICE METER (1st) 3 X .500

		WELLHEAD DATA				MANIFOLD DATA					GAS MEASURING DATA				FLUID DATA						
DATE	TIME	CHOKE SIZE	TUBING PRESS	ANNULUS	W H TEMP	MANF TEMP	MANF PRESS	READING	CALC SAND	CORS COUP	ORIFICE READING			VOLUME	FLUID METER	+	FLUID METER	+	BBL PER DAY	CHLORIDES PPM OR SP G	GAS WATER RATIO
11/18	0700	S.I.	6282																		
11/18	0800	S.I.	6281	CALIBRATED TURBINE USED DURING FLOW TEST - TEST TANK GAUGE 81.22 BBLs. - HALIBURTON METER = 81.8																	
11/18	0900	S.I.	6276																		
11/18	1000	S.I.	6273	1030 - CHECKED POS. CHOKE AND ADJ. CHOKE FOR SCALING - RESULTS, NONE																	
11/18	1100	S.I.	6279																		
11/18	1200	S.I.	6277	5759																	
11/18	1300	S.I.	6280	5758																	
11/18	1400	S.I.	6275	5865																	
11/18	1500	S.I.	6272	5760																	
11/18	1600	S.I.	6275	5765																	
11/18	1700	S.I.	6274	5760																	
11/18	1800	S.I.	6274	5760																	
11/18	1900	S.I.	6277	5759																	
11/18	2000	S.I.	6277	5759																	
11/18	2100	S.I.	6277	5759																	

[illegible]

COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINIADÉ
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET = 14,235 PACKER = NONE CASING SIZE 5 1/2 SET = 14,674 T.D. ORIFICE METER (1st 3 X .500

[illegible]

[illegible]

COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINIAD
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET 14,235 PACKER NONE CASING SIZE 5 1/2 SET 14,261 T.D. ORIFICE METER (1st 3 X .500

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINIAD
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET # 14,235 PACKER # NONE CASING SIZE 5 1/2 SET # 14,261 T.D. ORIFICE METER (1st 3 X .500

		WELLHEAD DATA				MANIFOLD DATA					GAS MEASURING DATA				FLUID DATA							
DATE	TIME	CH OKE SIZE	TUBING PRESS.	CH OKE PRESS. ANNULUS	W.H. TEMP.	MANIF. TEMP.	MANIF. PRESS.	READING	CALC. SAND	CORS. COUP	ORIFICE READING			VOLUME CF/D	FLUID METER 1	+	FLUID METER 2	+	BBLs PER DAY	CHLORIDES PPM OR SP. G.	GAS WATER RATIO	
											DIFF.	PRESS.	TEMP.									
11/23	2100			OPEN WELL ON 16/64 POSITIVE CHOKE THRU SEPARATOR AND DUMPING TO PIT																		
11/23	2115	16POS	5657	5620																		
11/23	2130	16POS	5435	5580			1/2 HOUR READINGS							97.6	97.6			4684.8				
11/23	2145	16POS	5535	5610											152.2	54.6			5241.6			
11/23	2150	S.I.		SHUT IN TO SEE IF POSITIVE CHOKE IS PLUGGING - OPEN UP SLOWLY ON ADJ. CHOKE																		
11/23	2200	ADJ.	5660	5635	130	130	450					450	83		198.4	46.2			4435.2			
11/23	2210	ADJ.		PINCH ADJ. & OPEN POSITIVE																		
11/23	2215	ADJ	6075	5720	130	130	425	SHUT IN POSITIVE SIDE					425	70		241.0	42.6			4089.6		
11/23	2230	ADJ	6070	5722	130	130	430					430	98		273.4	32.4			3110.4			
11/23	2242	ADJ.		OPEN UP POSITIVE SIDE																		
11/23	2245	16POS	5515	5640	142	142	450					450	100		317.5	44.1			4233.6			
11/23	2300	16POS	5517	5616	150	150	450					450	105		377.2	59.7			5731.2			
11/23	2315	16POS	5180	5572	158	158	450					18	450	115	142,000	445.5	68.3		6556.8			
11/23	2330	16POS	5179	5572	166	166	450					18	450	123	142,000	519.6	74.1		7113.6			
11/23	2330	16POS	4645	5495	174	174	450					28	450	132	177,000	600.5	80.9		7766.4

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINAIDE
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET @ 14,235 PACKER @ NONE CASING SIZE 5 1/2 SET @ 14,261 T.D. ORIFICE METER (1st 3 x .500

		COOLER DATA				PUMP DATA			DISPOSAL WELL		FILTERS		REMARKS
DATE	TIME	INLET		OUTLET		SUCTION PRESS	DISC PRESS	RPM	PRESS	TEMP.	IN	OUT	
		PRESS	TEMP.	PRESS	TEMP.								
11/23	2100												DUMPING FLUID TO PIT OPEN WELL ON 16/64 POS. THRU SEPARATOR
11/23	2115												
11/23	2130												
11/23	2145												
11/23	2150												SHUT IN TO SEE IF POS. CHOKE PLUGGED WHILE OPEN OPENING ADJ. CHOKE SLOWLY
11/23	2200								180				
11/23	2210												
11/23	2215								130				SHUT IN POSITIVE SIDE TO CHECK FOR PLUGGING WHILE OPENING ADJ.
11/23	2230								160	125			
11/23	2242												
11/23	2245								200	140			
11/23	2300								195	150			
11/23	2315								210	155			
11/23	2330								225	165			EASE ADJ. SLIGHTLY PLUS 16/64 CHOKE
11/23	2345								245	170			

COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINIADÉ
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET # 14,235 PACKER # NONE CASING SIZE 5 1/2 SET # 14,261 T.D. ORIFICE METER (1st - 3 X .500

[illegible]

GEOTHERMAL FIELD TEST DATA

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINAIDE
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3-1/2 SET @ 14,235 PACKER @ NONE CASING SIZE 5 1/2 SET @ 14,261 T.D. ORIFICE METER (1st 3 X .500)

		COOLER DATA				PUMP DATA			DISPOSAL WELL		FILTERS		REMARKS
DATE	TIME	INLET		OUTLET		SUCTION PRESS	DISC. PRESS	RPM	PRESS	TEMP.	IN	OUT	
		PRESS	TEMP.	PRESS	TEMP.								
11/23	2400								260	205			(EASE ADJ. CHOKE SLIGHTLY)
11/24	0015												R.D.I. LOSING WEIGHT ON TOOL - PINCHED BACK ON ADJ.
11/24	0300												SHUT IN WELL TO CHECK R.D.I.'S B.H. INSTRUMENT
11/24	0100												WELL SHUT IN
11/24	0130												WELL SHUT IN
11/24	0200												WELL SHUT IN
11/24	0300												WELL SHUT IN
11/24	0400												WELL SHUT IN
11/24	0500												WELL SHUT IN
11/24	0600												WELL SHUT IN
11/24	0700												WELL SHUT IN
11/24	0800												WELL SHUT IN
11/24	0900												WELL SHUT IN- 0915 - R.D.I. STARTED OUT OF HOLE
11/24	1000												WELL SHUT IN
11/24	1100												WELL SHUT IN

COMPANY GRUY FEDERAL, INC LEASE REILAH SIMON WELL NO. 1 FIELD COSSINIADÉ
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET # 14,235 PACKER # .NONE CASING SIZE 5 1/2 SET # 14,261 T.D. ORIFICE METER (1st 3 X .500

COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA

TUBING SIZE 3 1/2 SET # 14,235 PACKER # NONE CASING SIZE 5 1/2 SET # 14,261 T.D. ORIFICE METER (1st 3 X .500

[illegible]

GEOTHERMAL FIELD TEST DATA

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINIAD
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14.674 - 14.770 SAND CAMERINA
TUBING SIZE 3 1/2 SET # 14,235 PACKER # NONE CASING SIZE 5 1/2 SET # 14,261 T.D. ORIFICE METER (1st 3 X 500

		WELLHEAD DATA				MANIFOLD DATA						GAS MEASURING DATA				FLUID DATA											
DATE	TIME	CH/KE SIZE	TUBING PRESS.	ANNULUS PRESS.	W.H. TEMP.	MANIF. TEMP.	MANIF. PRESS.	READING	CALC. SAND	CORS. COUP.	ORIFICE READING			VOLUME CF/D	FLUID METER 1	+	FLUID METER 2	+	BBL'S PER DAY	CHLORIDES PPM ON SP. G.	GAS WATER RATIO						
											DIFF.	PRESS.	TEMP.														
11/28					SEE REMARKS																						
11/28	2100				OPEN WELL ON 18/64 POS. CHOKER THRU SEPARATOR DUMPING FLUID TO PIT W/6233# S.I.T.P. & 5769# ANNULUS																						
11/28	2115	18POS	5872	5654	116	116	320								48.7	48.7			4675.2								
11/28	2122				SEE REMARKS																						
11/28	2130	18POS 12ADJ	5750	5599	115	115	450		SEE REMARKS						109.4	60.7			5827.2								
11/28	2145	18POS 16ADJ	5490	5555	130	130	430								198.3	88.7			8534.4								
11/28	2147	18POS 20ADJ			SEE REMARKS																						
11/28	2200	18POS 20ADJ	5362	5505	141	141	460		SEE REMARKS						303.7	105.4			10188.4								
11/28	2215	18POS 22ADJ	5312	5485	161	161	500		SEE REMARKS						418.4	114.7			11011.2								
11/28	2230	18POS 22ADJ	5262	5487	175	175	500								535.4	117			11232								
11/28	2300	18POS 22ADJ	5205	5488	190	190	500				41	500	156	226,000	778.9	243.5			1688		19.34						
11/28	2400	18POS 22ADJ	5092	5480	218	218	500				42	500	177	229,000	1240.3	461.4			11073.6		20.66						
11/29	0100	18POS 22ADJ	4975	5467	223	223	500				44	500	185	234,000	1711.5	471.2			11308.8		20.70						
11/29	0200	18POS 22ADJ	4875	5453	226	226	500				*44	500	192	234,000	2183.3	471.8			11323.2		20.67						
11/29												CORRECTED			200.174	CU.FT.			*10,737.0		*18.60

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINAIDE
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET @ 14,235 PACKER @ NONE CASING SIZE 5 1/2 SET @ 14,261 T.D. ORIFICE METER (1st 3 X .500

DATE	TIME	COOLER DATA				PUMP DATA			DISPOSAL WELL		FILTERS		REMARKS
		INLET		OUTLET		SUCTION PRESS	DISC. PRESS	RPM	PRESS	TEMP.	IN	OUT	
11/28													CORROSION COUPON #4842/WT. 8.8512 = DISPOSAL WELL CORROSION COUPON #4843/WT. 8.8682 = SAND LOOP
11/28	2100												
11/28	2115												LINING OUT SEPARATOR LEVELS AND PRESSURE
11/28	2122												OPEN ADJ. CHOKE TO 12/64 ADJ. +18/64 POS.
11/28	2130												OPEN ADJ. TO 16/64+18/64 POS.
11/28	2145												
11/28	2147												OPEN ADJ. TO 20/64ADJ.+18/64 POS.
11/28	2200												OPEN ADJ. TO 22/64ADJ.+18/64POS.-PRESSURE TO 500#
11/28	2215												TURN WELL TO DISPOSAL WELL THRU HALIBURTON FILTERS
11/28	2230												PUT SEPARATOR RECORDER INTO SERVICE
11/28	2300								70	200			PRESSURE GAUGE UPSTREAM OF FILTERS = 205#.
11/28	2400								70	215	230	70	DOWNSTREAM PRESSURE = DISPOSAL WELL PRESSURE = 70#
11/29	0100								75	224	210	75	
11/29	0200								78	226	210	78	
-	-

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINIADÉ
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET @ 14,235 PACKER @ NONE CASING SIZE NONE SET @ 14,261 T.D. ORIFICE METER (1st 3 X 500

		WELLHEAD DATA				MANIFOLD DATA					GAS MEASURING DATA				FLUID DATA						
DATE	TIME	CH. I/O SIZE	TUBING PRESS.	ANNULUS PRESS.	W.H. TEMP.	MANIF. TEMP.	MANIF. PRESS.	READING	CALC. SAND	CORS. COUP	ORIFICE READING			VOLUME CF/D	FLUID METER 1	+	FLUID METER 2	+	BBL'S PER DAY	CHLORIDES PPM OR SP. G.	GAS WATER RATIO
											DIFF.	PRESS.	TEMP.								
11/29	0300	18POS 22ADJ	4747	5445	230	230	500				45	500	192	236.000	2655	471.9			11.320	8	20.91
11/29	0400	18POS 22ADJ	4654	5425	234	234	500				46	500	193	239.000	3126.8	471.8			11.323	2	21.14
11/29	0500	18POS 22ADJ	4570	5420	235	235	500				46	500	200	239.000	3698.5	471.7			11.320	8	21.14
11/29	0600	18POS 22ADJ	4520	5405	236	236	500				*46	500	200	239.000	4069.0	470.5			11.292	0	21.20
														CORRECTED	203.445	CU. FT.			*10.758	5	*18.9
11/29	0700	18POS 22ADJ	4490	5395	238	238	500				46	500	207	239.000	4551.5	472.5			11.340	0	21.11
11/29	0800	18POS 22ADJ	4530	5385	238	238	500				47	500	204	241.000	5012.5	471.0			11.304	0	21.40
11/29	0900	18POS 22ADJ	4602	5370	238	238	500				47	500	200	241.000	5483.1	470.6			11.294	4	21.42
11/29	1000	18POS 22ADJ	4665	5360	242	242	500				46	500	198	239.000	5953.2	470.1			11.282	4	21.22
														CORRECTED	204.242	CU. FT.			*10.709	9	*19.1
11/29	1100	18POS 22ADJ	4746	5353	242	242	500				46	500	200	239.000	6423.3	470.1			11.282	4	21.18
11/29	1200	18POS 22ADJ	4785	5340	242	242	500				46	500	205	239.000	6892.8	469.5			11.268		21.21
11/29	1300	18POS 22ADJ	4805	5332	245	245	510				47	500	207	241.000	7362.3	469.5			11.268		21.38
11/29	1400	18POS 22ADJ	4840	5322	246	246	510				47	500	207	241.000	7831.5	469.2			11.260	8	21.40
														CORRECTED	203.920	CU. FT.			*10.672	8	*19.1

GEOTHERMAL FIELD TEST DATA

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINAIDE
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET @ 14,235 PACKER @ NONE CASING SIZE 5 1/2 SET @ 14,261 T.D. ORIFICE METER (1st 3 X 500

		COOLER DATA				PUMP DATA			DISPOSAL WELL		FILTERS		REMARKS
DATE	TIME	INLET		OUTLET		SUCTION PRESS	DISC PRESS	RPM	PRESS	TEMP.	IN	OUT	
		PRESS	TEMP.	PRESS	TEMP.								
11/29	0300								78	230	210	78	
11/29	0400								79	232	210	79	
11/29	0500								79	236	212	79	
11/29	0600								80	237	212	80	
11/29	0700								80	238	212	80	
11/29	0800								80	240	213	80	
11/29	0900								81	240	214	81	
11/29	1000								82	240	210	82	
11/29	1100								82	242	230	82	
11/29	1200								83	244	215	83	
11/29	1300								83	245	230	83	
11/29	1400								83	244	230	83	

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINIADÉ
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14.674 - 14.770 SAND CAMERINA
TUBING SIZE 3 1/2 SET # 14,235 PACKER # NONE CASING SIZE 5 1/2 SET # 14,261 T.D. ORIFICE METER (1st 3 X 500

DATE	TIME	WELLHEAD DATA				MANIFOLD DATA					GAS MEASURING DATA				FLUID DATA						
		CH OKE SIZE	TUBING PRESS.	ANNULUS PRESS.	W.M. TEMP.	MANIF. TEMP.	MANIF. PRESS.	READING	CALC. SAND	CORS. COUP	ORIFICE READING			VOLUME CF/D	FLUID METER 1	+	FLUID METER 2	+	BBLs PER DAY	CHLORIDES PPM OR SP. G.	GAS WATER RATIO
											DIFF.	PRESS.	TEMP.								
11/29	1500	18POS 22ADJ	4838	5315	246	246	510				47	500	208	242,000	8300.0	468	5		11,244		21.52
11/29	1600	18POS 22ADJ	4383	5307	246	246	510				47	500	210	242,000	8775.3	475	3		11,407	2	21.2
11/29	1700	18POS 22ADJ	4787	5297	246	246	515				48	500	218	245,000	9236.8	461	5		11,076		22.12
11/29	1800	18POS 22ADJ	4754	5289	246	246	515				48	500	215	245,000	9705.0	468	2		11,237		21.80
											CORRECTED			*204,720	CU.FT.				*10,637	9	*19.2
11/29	1900	18POS 22ADJ	4677	5282	246	246	515				48	500	220	245,000	10173.3	468	3		11,239		21.80
11/29	2000	18POS 22ADJ	4640	5274	246	246	515				8	500	221	245,000	10641.3	468			11,232		21.81
11/29	2100	18POS 22ADJ	4625	5269	246	246	520				48	500	221	245,000	11108.9	467	6		11,222	4	21.83
11/29	2200	18POS 22ADJ	4554	5260	246	246	520				48	500	224	245,000	11576.2	467	3		11,215	2	21.85
											CORRECTED			*204,589	CU.FT.				*10,622	0	*19.3
11/29	2300	18POS 22ADJ	4507	5253	246	246	520				48	500	222	245,000	12043.2	467			11,208		21.86
11/29	2400	18POS 22ADJ	4480	5245	246	246	520				48	500	223	245,000	12510.0	467			11,208		21.81
11/30	0100	18POS 22ADJ	4455	5239	246	246	520				48	500	224	245,000	12977.0	467			11,208		21.81
11/30	0200	18POS 22ADJ	4425	5235	0	0	520				48	500	224	245,000	13443.3	466			11,184		21.8t
											CORRECTED			*204,285	CU.FT.				*10,600	8	*19.3

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINAIDE
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET @ 14,235 PACKER @ NONE CASING SIZE 5 1/2 SET @ 14,261 T.D. ORIFICE METER (1st. 3 X .500

DATE	TIME	COOLER DATA				PUMP DATA			DISPOSAL WELL		FILTERS		REMARKS
		INLET		OUTLET		SUCTION PRESS	DISC PRESS	RPM	PRESS	TEMP.	IN	OUT	
		PRESS	TEMP	PRESS	TEMP								
11/29	1500								90	245	220	90	PULLED COUPON OUT OF SAND LOOP FOR CHAMPION CHEM. REPLACED W/#4836 WT. 9500 AT 1430
11/29	1600								85	245	215	85	S.P.L. TOOK GAS & FLUID SAMPLE
11/29	1700								83	246	217	83	
11/29	1800								83	247	217	83	
11/29	1900								82	247	215	82	
11/29	2000								83	250	215	83	
11/29	2100								83	249	216	83	
11/29	2200								82	245	215	82	
11/29	2300								82	250	215	82	
11/29	2400								85	250	215	85	
11/30	0100								87	250	215	87	
11/30	0200								87	250	215	87	

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINIADÉ
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET # 14,235 PACKER # NONE CASING SIZE 5 1/2 SET # 14,261 T.D. ORIFICE METER (1st) 3 X .500

		WELLHEAD DATA				MANIFOLD DATA					GAS MEASURING DATA				FLUID DATA						
DATE	TIME	CHKE SIZE	TUBING PRESS.	18POS 22ADJ ANNULUS	W.H. TEMP.	MANF. TEMP.	MANF. PRESS.	READING	CALC. SAND	CORS. COUP	ORIFICE READING			VOLUME CF/D	FLUID METER 1	+	FLUID METER 2	+	BBLs PER DAY	CHLORIDES PPM OR SP. G.	GAS WATER RATIO
											DIFF.	PRESS	TEMP.								
11/30	0300	18POS 22ADJ	4355	5225	246	245	520				48	500	224	245,000	13910.0	466.7			11,200		21.83
11/30	0400	18POS 22ADJ	4290	5225	246	246	520				48	500	220	245,000	14376.2	466.2			11,188.8		21.85
11/30	0500	18POS 22ADJ	4265	5215	246	246	520				48	500	220	245,000	14842.3	466.1			11,186.4		21.86
11/30	0600	18POS 22ADJ	4300	5210	246	246	520				48	500	220	245,000	15308.1	465.8			11,179.2		21.87
												CORRECTED			*204,589	CU.FT.			*10,585.7		*19.3
11/30	0700	18POS 22ADJ	4200	5202	246	246	520				48	500	220	245,000	15774.0	465.9			11,181.6		21.87
11/30	0800	18POS 22ADJ	4325	5201	250	250	515				49	500	220	247,000	16239.9	465.9			11,181.6		22.09
11/30	0900	18POS 22ADJ	4525	5195	250	250	515				49	500	225	247,000	16705.3	465.4			11,169.6		22.12
11/30	1000	18POS 22ADJ	4560	5192	250	250	515				49	500	218	247,000	17170.1	464.8			11,155.2		22.14
												CORRECTED			*206,176	CU.FT.			*10,551.3		*19.5
11/30	1100	18POS 22ADJ	4672	5197	250	250	515				49	500	223	247,000	17634.7	464.6			11,150.2		22.15
11/30	1200	18POS 22ADJ	4635	5180	250	250	515				50	500	233	250,000	18093.6	464.9			11,157.6		22.41
11/30	1300	18POS 22ADJ	4457	5177	250	250	515				50	500	226	250,000	18564.4	464.8			11,155.2		22.41
11/30	1400	18POS 22ADJ	4415	5171	250	250	515				49	500	230	247000	19029.2	464.8			11,155.2		22.14
												CORRECTED			*206,704	CU.FT.			*10,539.2		*19.6

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINAIDE
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET # 14,235 PACKER # NONE CASING SIZE 5 1/2 SET # 14,261 T.D. ORIFICE METER (1st 3 X .500

		COOLER DATA				PUMP DATA			DISPOSAL WELL		FILTERS		REMARKS
DATE	TIME	INLET		OUTLET		SUCTION PRESS	DISC PRESS	RPM	PRESS	TEMP.	IN	OUT	
		PRESS	TEMP.	PRESS	TEMP.								
11/30	0300								87	250	215	87	
11/30	0400								87	250	215	87	
11/30	0500								87	250	215	87	
11/30	0600								87	250	215	87	
11/30	0700								87	250	215	87	
11/30	0800								88	250	218	88	(BLED 9 5/8 CASING FROM 500# TO 200#)
11/30	0900								88	250	220	88	
11/30	1000								88	250	218	88	
11/30	1100								88	250	218	88	
11/30	1200								88	251	219	88	
11/30	1300								88	250	220	88	
11/30	1400								89	251	220	89

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COMPANY GRJY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINI ADE
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET # 14,235 PACKER# NONE CASING SIZE 5 1/2 SET # 14,261 T.D. ORIFICE METER (1st 3 X .500

		WELLHEAD DATA				MANIFOLD DATA					GAS MEASURING DATA				FLUID DATA						
DATE	TIME	CH OK SIZE	TUBING PRESS	ANNULUS PRESS	W.H. TEMP.	MANIF. TEMP.	MANIF. PRESS.	READING	CALC. SAND	CORS. COUP	ORIFICE READING			VOLUME CF/D	FLUID METER 1	+	FLUID METER 2	+	BBL'S PER DAY	CHLORIDES PPM OR SP. G.	GAS WATER RATIO
											DIFF	PRESS	TEMP								
11/30	1500	18POS 22ADJ	4400	5165	250	250	510				50	500	230	250,000	19493.9	464.7			11,152.8		22.42
11/30	1600	18POS 22ADJ	4497	5152	250	250	511				50	500	233	250,000	19958.6	464.7			11,152.8		22.42
11/30	1700	18POS 22ADJ	4352	5157	250	250	517				49	500	230	247,000	20423.3	464.7			11,152.8		22.15
11/30	1800	18POS 22ADJ	4217	5155	250	250	520				49	500	232	247,000	20887.8	464.5			11,148		22.16
											CORRECTED			*206,253	CU.FT.				*10,534.7		*19.6
11/30	1900	18POS 22ADJ	4067	5150	252	252	520				49	500	234	247,000	21352.1	464.3			11,143.2		22.17
11/30	2000	18POS 22ADJ	4130	5144	252	252	520				49	500	234	247,000	21816.1	464			11,136		22.18
11/30	2100	18POS 22ADJ	4052	5139	253	253	520				49	500	233	247,000	22280.4	464.3			11,143.2		22.16
11/30	2200	18POS 22ADJ	4022	5137	253	253	520				49	500	233	247,000	22743.8	463.4			11,121.6		22.21
											CORRECTED			*204,912	CU.FT.				*10,501.9		*19.5
11/30	2300	18POS 22ADJ	3947	5130	253	253	520				49	500	233	247,000	23207.6	463.8			11,131.2		22.19
11/30	2400	18POS 22ADJ	3405	5125	252	252	520				48	500	230	245,000	23670.8	463.2			11,116.8		22.04
12/1	0100	18POS 22ADJ	3406	5120	254	254	520				48	500	232	245,000	24133.7	462.9			11,109.6		22.05
12/2	0200	18POS 22ADJ	3406	5115	253	253	520				48	500	232	245,000	24596.6	462.9			11,109.6		22.05
											CORRECTED			*203,490	CU.FT.				*10,481.5		*19.4

GEOTHERMAL FIELD TEST DATA

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DATE 11/30/79

COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINAIDE
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET @ 14,235 PACKER @ NONE CASING SIZE 5 1/2 SET @ 14,261 T.D. ORIFICE METER (1st 3 X 500

		COOLER DATA				PUMP DATA			DISPOSAL WELL		FILTERS		REMARKS
DATE	TIME	INLET		OUTLET		SUCTION PRESS	DISC PRESS	RPM	PRESS	TEMP	IN	OUT	
		PRESS	TEMP	PRESS	TEMP								
11/30	1500								95	250	210	95	
11/30	1600								90	250	218	90	
11/30	1700								89	251	218	89	
11/30	1800								88	252	218	88	PULLED COUPON IN SAND LOOP AND CHAMPION CHEMICAL INSPECTED IT. SAME COUPON WAS PIIT IN SAND LOOP
11/30	1900								89	253	217	88	
11/30	2000								88	253	218	88	
11/30	2100								89	253	218	89	
11/30	2200								88	253	217	88	
11/30	2300								88	253	217	88	
11/30	2400								89	252	216	89	
12/1	0100								89	252	217	89	
12/1	0200								89	252	216	89

GEOTHERMAL FIELD TEST DATA

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DATE 12/5/79

COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINIAD
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET 14,235 PACKER# NONE CASING SIZE 5 1/2 SET 14,261 T.D. ORIFICE METER (1st 3 X .500

DATE	TIME	WELLHEAD DATA				MANIFOLD DATA					GAS MEASURING DATA				FLUID DATA						
		CH CKE SIZE	TUBING PRESS	ANNULUS PRESS	W.H. TEMP.	MANF. TEMP.	MANF. PRESS.	READING	CALC. SAND	CORS COUP	ORIFICE READING			VOLUME CF/D	FLUID METER 1	+	FLUID METER 2	+	BBLs PER DAY	CHLORIDES PPM OR SP. G.	GAS WATER RATIO
12/4	2300	18POS 22ADJ	3276	4832	257	257	519				49	500	235	247,000			2199.8	453	4 10,881.6		22.70
12/4	2400	18POS 22ADJ	3273	4830	256	256	520				49	500	235	247,000			2653.4	453	6 10,886.4		22.69
12/5	0100	18POS 22ADJ	3273	4827	256	256	520				49	500	235	247,000			3106.8	453	4 10,881.6		22.70
12/5	0200	18POS 22ADJ	3273	4825	256	256	520				49	500	235	247,000			3559.2	452	4 10,857.6		22.75
											CORRECTED			*204,592					*10,242.1		*20.0
12/5	0300	18POS 22ADJ	3274	4824	256	256	520				49	500	235	247,000			4012.2	453	10,872		22.72
12/5	0400	18POS 22ADJ	3274	4820	256	256	520				49	500	235	247,000			4465.2	453	10,872		22.72
12/5	0500	18POS 22ADJ	3274	4818	256	256	520				49	500	234	247,000			4918.3	453	1 10,874.4		22.72
12/5	0600	18POS 22ADJ	3275	4815	256	256	520				49	500	235	247,000			5371.3	453	10,872		22.72
											CORRECTED			*204,592					*10,239.9		*20.0
12/5	0700	18POS 22ADJ	3275	4814	256	256	520				49	500	234	247,000			5824.4	453	1 10,874.4		22.72
12/5	0800	18POS 22ADJ	3273	4812	256	256	520				49	500	234	247,000			6277.6	453	2 10,876.8		22.71
12/5	0900	18POS 22ADJ	3272	4810	256	256	519				49	500	235	247,000			6730.9	453	3 10,879.8		22.71
12/5	1000	18POS 22ADJ	3271	4808	256	256	517				49	500	235	247,000			7184.2	453	2 10,879.2		22.71
											CORRECTED			*204,592					*10,245.1		*20.0

GEOTHERMAL FIELD TEST DATA

PAGE 31 CONT
DATE 12/5/79

COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINAIDE
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET @ 14,235 PACKER @ NONE CASING SIZE 5 1/2 SET @ 14,261 T.D. ORIFICE METER (1st, 3 X .500

		COOLER DATA				PUMP DATA			DISPOSAL WELL		FILTERS		REMARKS
DATE	TIME	INLET		OUTLET		SUCTION PRESS	DISC PRESS	RPM	PRESS	TEMP.	IN	OUT	
		PRESS	TEMP.	PRESS	TEMP.								
12/4	2300								90	255	215	90	
12/4	2400								90	255	215	90	
12/5	0100								90	255	215	90	
12/5	0200								90	255	215	90	
12/5	0300								90	255	215	90	
12/5	0400								90	255	215	90	
12/5	0500								90	255	215	90	
12/5	0600								90	255	215	90	
12/5	0700								90	255	215	90	
12/5	0800								90	255	215	90	
12/5	0900								90	255	216	90	
12/5	1000								90	255	217	90

GEOHERMAL FIELD TEST DATA

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINIAD
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET # 14,235 PACKER # NONE CASING SIZE 5 1/2 SET # 14,261 T.D. ORIFICE METER (1st 3 X .500

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		WELLHEAD DATA				MANIFOLD DATA					GAS MEASURING DATA				FLUID DATA						
DATE	TIME	CH (KE SIZE	TUBING PRESS	GASING PRESS ANNUEUS	W H TEMP.	MANIF. TEMP.	MANIF. PRESS.	READING	CALC. SAND	CORS COUP	ORIFICE READING			VOLUME CF/D	FLUID METER 1	+	FLUID METER 2	+	BBLs PER DAY	CHLORIDES PPM OR SP. G.	GAS WATER RATIO
											DIFF	PRESS	TEMP								
12/5	1100	18POS 22ADJ	3274	4809	256	256	517				49	500	234	247,000			7637.2	453	10,872		22.72
12/5	1200	18POS 22ADJ	3274	4806	256	256	517				49	500	234	247,000	47670.8	452.6			10,862.4		22.74
12/5	1300	18POS 22ADJ	3272	4805	258	258	512				49.5	500	233	248,000	48126.1	455.3			10,927.2		22.70
12/5	1400	18POS 22ADJ	3270	4800	257	257	512				49	500	233	247,000	48581.1	455			10,920		22.62
												CORRECTED		*204,977					*10,268.3		*20.0
12/5	1500	18POS 22ADJ	3268	4797	258	258	513				49	500	233	247,000	49035.9	454.8			10,915.2		22.63
12/5	1600	18POS 22ADJ	3270	4797	260	260	512				50	500	235	250,000	49490.9	455			10,920		22.89
12/5	1700	18POS 22ADJ	3270	4795	260	260	519				49.5	500	232	248,000	49938.4	447.5			10,740		23.09
12/5	1800	18POS 22ADJ	3270	4790	258	258	519				48	500	232	245,000	50400.0	461.5			11,078.4		22.12
												CORRECTED		*205,119					*10,262.7		*20.0
12/5	1900	18POS 22ADJ	3272	4790	258	258	520				48	500	225	245,000	50855.7	455.7			10,936.8		22.40
12/5	2000	18POS 22ADJ	3271	4788	258	258	518				48	500	224	245,000	51310.6	454.9			10,917.6		22.44
12/5	2100	18POS 22ADJ	3269	4786	258	258	519				47.5	500	223	243,000	51765.2	454.6			10,910.4		22.27
12/5	2200	18POS 22ADJ	3268	4786	259	259	518				49	500	235	247,000	52220.1	454.9			10,917.6		22.62
												CORRECTED		*203,907					*10,271.2		*19.9

GEOTHERMAL FIELD TEST DATA

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DATE 12/5/79

COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINAIDE
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET # 14,235 PACKER # NONE CASING SIZE 5 1/2 SET # 14,261 T.D. ORIFICE METER (1st 3 X .500

		COOLER DATA				PUMP DATA			DISPOSAL WELL		FILTERS		REMARKS
DATE	TIME	INLET		OUTLET		SUCTION PRESS	DISC PRESS	RPM	PRESS	TEMP	IN	OUT	
		PRESS	TEMP	PRESS	TEMP								
12/5	1100								90	255	219	90	1151 HRS.-SWITCHED FROM METER #2 TO METER #1 METER #1 HAS. = 47605.9, METER #2 HAS 8025.5
12/5	1200								90	255	219	90	
12/5	1300								92	255	219	92	
12/5	1400								91	255	219	91	
													(1530 HR.) PULL COUPON #4840, WT. 8.9147 OUT OF SAND LOOP. REPLACED W/COUPON #4841, WT. 8.8249
12/5	1500								92	255	219	92	
12/5	1600								93	256	221	93	
12/5	1700								92	255	221	92	
12/5	1800								91	255	220	91	
11/5	1900								92	255	222	92	BLED 9 5/8 DOWN TO 200# - FROM 500#
12/5	2000								91	254	221	91	
12/5	2100								91	254	224	91	
12/5	2200								92	255	224	92

GEOTHERMAL FIELD TEST DATA

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINTADE
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET # 14,235 PACKER # NONE CASING SIZE 5 1/2 SET # 14,261 T.D. ORIFICE METER (1st 3 X .500

		WELLHEAD DATA				MANIFOLD DATA					GAS MEASURING DATA				FLUID DATA						
DATE	TIME	CH/KE SIZE	TUBING PRESS.	ANNULUS PRESS.	W.H. TEMP.	MANF. TEMP.	MANF. PRESS.	READING	CALC SAND	CORS CROP	ORIFICE READING			VOLUME CF/D	FLUID METER 1	+	FLUID METER 2	+	BBLS PER DAY	CHLORIDES PPM OR SP. G.	GAS WATER RATIO
											DIFF.	PRESS	TEMP								
12/5	2300	18POS 22ADJ	3270	4786	258	258	520				48	500	229	245,000	52675.4	455.3			10,927.2		22.42
12/5	2400	18POS 22ADJ	3268	4783	258	258	519				48.5	500	231	246,000	53130.5	455.1			10,922.4		22.52
12/5	0100	18POS 22ADJ	3265	4780	258	258	519				48.5	500	235	246,000	53585.4	454.9			10,917.6		22.51
12/6	0200	18POS 22ADJ	3264	4778	258	258	520				49	500	236	247,000	54040.5	455.1			10,922.4		22.62
												CORRECTED		*203,855					*10,276.4		*19.8
12/6	0300	18POS 22ADJ	3265	4775	257	257	520				48	500	236	245,000	54495.5	455			10,920		22.39
12/6	0400	18POS 22ADJ	3264	4775	257	257	520				49	500	236	247,000	54950.5	455			10,920		22.62
12/6	0500	18POS 22ADJ	3263	4773	258	258	520				49	500	236	247,000	55404.7	454.2			10,900.8		22.66
12/6	0600	18POS 22ADJ	3261	4769	259	259	516				49	500	236	247,000	55859.3	454.6			10,910.4		22.64
												CORRECTED		*203,959					*10,266.6		*19.9
12/6	0700	18POS 22ADJ	3261	4767	260	260	519				49	500	236	247,000	56414.9	454.6			10,910.4		22.64
12/6	0800	18POS 22ADJ	3261	4766	260	260	519				49	500	236	247,000	56758.6	454.7			10,912.8		22.64
12/6	0900	18POS 22ADJ	3259	4765	260	260	519				49	500	238	247,000	57223.1	454.5			10,908		22.65
12/6	1000	18POS 22ADJ	3259	4762	260	260	517				49	500	235	247,000	57677.3	454.2			10,900.8		22.66
												CORRECTED		*204,487					*10,252.8		*19.9

GEOTHERMAL FIELD TEST DATA

PAGE 33 CONT
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COMPANY GFUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINAIDE
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET # 14,235 PACKER # NONE CASING SIZE 5 1/2 SET # 14,261 T.D. ORIFICE METER (1st 3 X .500

		COOLER DATA				PUMP DATA			DISPOSAL WELL		FILTERS		REMARKS
DATE	TIME	INLET		OUTLET		SUCTION PRESS	DISC PRESS	RPM	PRESS	TEMP	IN	OUT	
		PRESS	TEMP	PRESS	TEMP								
12/5	2300								93	255	219	93	
12/5	2400								91	255	214	91	
12/6	0100								91	255	217	91	
12/6	0200								91	255	217	91	
12/6	0300								91	255	216	91	
12/6	0400								91	255	216	91	
12/6	0500								91	255	216	91	
12/6	0600								91	256	216	91	
12/6	0700								91	256	216	91	
12/6	0800								91	255	216	91	
12/6	0900								91	257	216	91	
12/6	1000								91	255	215	91

GEOTHERMAL FIELD TEST DATA

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINIADÉ
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET # 14,235 PACKER # NONE CASING SIZE 5 1/2 SET # 14,261 T.D. ORIFICE METER (1st 3 X .500

		WELLHEAD DATA				MANIFOLD DATA				GAS MEASURING DATA				FLUID DATA							
DATE	TIME	CHK/KE SIZE	TUBING PRESS	Casing PRESS ANNULUS	W.H TEMP.	MANIF TEMP	MANIF PRESS	READING	CALC. SAND	CORS COUP	ORIFICE READING			VOLUME CF/D	FLUID METER 1	+	FLUID METER 2	+	BBL'S PER DAY	CHLORIDES PPM OR SP. G.	GAS WATER RATIO
											DIFF	PRESS	TEMP								
12/6	1100	18POS 22ADJ	3261	4760	260	260	519				49	500	235	247,000	58131.2	453.9			10,893.6	22.67	
12/6	1200	18POS 22ADJ	3264	4759	260	260	513				48	500	222	245,000	58584.7	453.5			10,884	22.51	
12/6	1300	18POS 22ADJ	3260	4757	260	260	513				48	500	222	245,000	59037.8	453.1			10,874.4	22.53	
12/6	1400	18POS 22ADJ	3265	4755	258	258	518				48	500	223	245,000	59480.2	442.4	10.6	10.6	10,872	22.53	
													CORRECTED	*203,827					*10,224.2	*19.9	
12/6	1500	18POS 22ADJ	3263	4752	258	258	513				47	500	220	242,000			461.0	450	4	10,809.6	22.39
12/6	1600	18POS 22ADJ	3260	4750	258	258	513				46.5	500	224	241,000			911.3	450	3	10,807.2	22.30
12/6	1700	18POS 22ADJ	3257	4747	258	258	519				47	500	230	242,000			1361.8	450	5	10,812	22.38
12/6	1800	18POS 22ADJ	3255	4747	260	260	519				47.5	500	235	243,000			1812.3	450	5	10,812	22.48
													CORRECTED	*201,423					*10,161.8	*19.8	
12/6	1900	18POS 22ADJ	3254	4744	260	260	519				48	500	235	245,000			2263.5	451	2	10,828.8	22.62
12/6	2000	18POS 22ADJ	3252	4740	260	260	521				48	500	235	245,000			2714.3	450	8	10,819.2	22.64
12/6	2100	18POS 22ADJ	3250	4738	260	260	520				48	500	236	245,000			3164.9	450	6	10,814.4	22.65
12/6	2200	18POS 22ADJ	3247	4732	260	260	519				48	500	236	245,000			3615.4	450	2	10,812	22.66
													CORRECTED	*203,376					*10,166.3	*20.0

GEOTHERMAL FIELD TEST DATA

PAGE 34 CONT
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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINAIDE
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14.674 - 14.770 SAND CAMERINA
TUBING SIZE 3 1/2 SET # 14.235 PACKER # NONE CASING SIZE 5 1/2 SET # 14.261 T.D. ORIFICE METER (1st 3 X 500

		COOLER DATA				PUMP DATA			DISPOSAL WELL		FILTERS		REMARKS
DATE	TIME	INLET		OUTLET		SUCTION PRESS	DISC PRESS	RPM	PRESS	TEMP.	IN	OUT	
		PRESS	TEMP	PRESS	TEMP								
12/6	1100								91	255	215	91	
12/6	1200								91	252	216	91	
12/6	1300								91	252	215	91	
12/6	1400								91	252	214	91	SWITCH TO METER #2 = 0 - METER #1 = 59480.2
													CALIBRATION TEST METER #1 = 63.1 METER W/63.6 TANK
12/6	1500								91	252	214	91	
12/6	1600								91	253	213	91	
12/6	1700								91	254	214	91	
12/6	1800								91	255	213	91	
12/6	1900								92	255	215	92	
12/6	2000								91	255	214	91	
12/6	2100								91	255	215	91	
12/6	2200								90	255	214	90

GEOTHERMAL FIELD TEST DATA

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINIADÉ
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET 14,235 PACKER NONE CASING SIZE 5 1/2 SET 14,261 T.D. ORIFICE METER (1st 3 X .500

		WELLHEAD DATA				MANIFOLD DATA					GAS MEASURING DATA				FLUID DATA						
DATE	TIME	CH/CKE SIZE	TUBING PRESS.	CHOKES ANNULUS	W.H TEMP	MANIF TEMP	MANIF PRESS.	READING	CALC SAND	CORS COUP	ORIFICE READING			VOLUME CF/D	FLUID METER 1	+	FLUID METER 2	+	BBLS PER DAY	CHLORIDES PPM OR SP. G.	GAS WATER RATIO
											DIFF	PRESS	TEMP								
12/6	2300	18POS 22ADJ	3247	4729	260	260	520				48	500	235	245,000			4065.7	450.3	10,807.2		22.67
12/6	2400	18POS 22ADJ	3243	4727	260	260	520				48	500	235	245,000			4516.0	450.3	10,807.2		22.67
12/7	0100	18POS 22ADJ	3241	4725	260	260	500				48	500	235	245,000			4966.5	450.5	10,812		22.61
12/7	0200	18POS 22ADJ	3241	4722	260	260	520				48	500	235	245,000			5416.9	450.4	10,809.6		22.62
														CORRECTED	*202,493				*10,161		*19.9
12/7	0300	18POS 22ADJ	3239	4719	259	259	520				48	500	235	245,000			5867.1	450.2	10,804.8		22.63
12/7	0400	18POS 22ADJ	3239	4719	259	259	520				48	500	235	245,000			6317.3	450.2	10,804.8		22.63
12/7	0500	18POS 22ADJ	3237	4718	259	259	520				48	500	235	245,000			6767.3	450	10,800		22.64
12/7	0600	18POS 22ADJ	3240	4718	259	259	521				48	500	235	245,000			7217.4	450.1	10,802.4		22.63
														CORRECTED	*202,493				*10,159.6		*19.6
12/7	0700	18POS 22ADJ	3239	4712	258	258	521				47	500	235	242,000			7667.0	449.6	10,790.4		22.42
12/7	0800	18POS 22ADJ	3237	4712	258	258	520				47	500	233	242,000			8116.9	449.9	10,797		22.41
12/7	0900	18POS 22ADJ	3238	4712	259	259	520				47	500	230	242,000			8566.5	449.6	10,790.4		22.42
12/7	1000	18POS 22ADJ	3238	4713	260	260	520				48	500	233	245,000			9016.2	499.7	10,792.8		22.65
														CORRECTED	*201,107				*10,146		*19.8

GEOTHERMAL FIELD TEST DATA

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINAIDE
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET # 14,235 PACKER# NONE CASING SIZE 5 1/2 SET # 14,261 T.D. ORIFICE METER (1st 3 X .500

		COOLER DATA				PUMP DATA			DISPOSAL WELL		FILTERS		REMARKS
DATE	TIME	INLET		OUTLET		SUCTION PRESS	DISC PRESS	RPM	PRESS	TEMP.	IN	OUT	
		PRESS	TEMP	PRESS	TEMP								
12/6	2300								91	255	215	91	
12/6	2400								91	256	215	91	
12/7	0100								91	255	215	91	
12/7	0200								91	255	216	91	
12/7	0300								91	255	216	91	
12/7	0400								91	255	215	91	
12/7	0500								91	255	215	91	
12/7	0600								91	255	215	91	
12/7	0700								91	255	214	91	
12/7	0800								91	255	215	91	
12/7	0900								91	255	215	91	
12/7	1000								91	255	215	91

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINIAD
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14.674 - 14.770 SAND CAMERINA
TUBING SIZE 3 1/2 SET # 14,235 PACKER # NONE CASING SIZE 5 1/2 SET # 14,261 T.D. ORIFICE METER (1st) 3 X 500

		WELLHEAD DATA				MANIFOLD DATA					GAS MEASURING DATA				FLUID DATA						
DATE	TIME	CH (KE SIZE	TUBING PRESS	ANNULUS	W.H. TEMP	MANF. TEMP	MANF. PRESS	READING	CALC SAND	CORS COUP	ORIFICE READING			VOLUME CF/D	FLUID METER 1	+	FLUID METER 2	+	BBLS PER DAY	CHLORIDES PPM OR SP. G.	GAS WATER RATIO
											DIFF	PRESS	TEMP								
12/7	1100	18POS 22ADJ	3238	4710	260	260	518				49	500	236	247,000			9465.9	449.7	10,792.8		22.89
12/7	1200	18POS 22ADJ	3235	4707	259	259	517				49	500	238	247,000			9915.7	448.5	10,795.2		22.89
12/7	1300	18POS 22ADJ	3236	4706	259	259	512				50	500	237	250,000			10365.7	450	10,800		23.15
12/7	1400	18POS 22ADJ	3243	4716	259	259	512				50	500	238	250,000			10815.5	449.8	10,795.2		23.16
												CORRECTED		*205,207					*10,154.4		*20.2
12/1	1500	18POS 22ADJ	3243	4713	259	259	512				50	500	236	250,000			11265.5	450.1	10,802.1		23.14
12/7	1600	18POS 22ADJ	3241	4712	256	256	512				49.5	500	236	248,000			11715.7	450.1	10,802.4		22.96
12/7	1700	18POS 22ADJ	3238	4710	257	257	513				49.5	500	237	248,000			12165.9	450.2	10,804.8		22.96
12/7	1800	18POS 22ADJ	3238	4706	257	257	519				48.5	500	236	246,000			12616.0	450.1	10,802.4		22.77
												CORRECTED		*205,310					*10,169		*20.2
12/7	1900	18POS 22ADJ	3236	4704	257	257	520				48	500	236	245,000			13066.1	450.1	10,802.4		22.68
12/7	2000	18POS 22ADJ	3236	4702	257	257	520				48	500	236	245,000			13516.1	450	10,800		22.69
12/7	2100	18POS 22ADJ	3232	4700	257	257	519				48	500	236	245,000			13965.9	449.8	10,795.2		22.70
12/7	2200	18POS 22ADJ	3233	4700	256	256	520				48	500	235	245,000			14416.0	450.1	10,802.4		22.68
												CORRECTED		*202,388					*10,165.2		*19.9

GEOTHERMAL FIELD TEST DATA

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINAIDE
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET # 14,235 PACKER # NONE CASING SIZE 5 1/2 SET # 14,261 T.D. ORIFICE METER (1st 3 X .500)

		COOLER DATA				PUMP DATA			DISPOSAL WELL		FILTERS		REMARKS
DATE	TIME	INLET		OUTLET		SUCTION PRESS	DISC PRESS	RPM	PRESS	TEMP	IN	OUT	
		PRESS	TEMP	PRESS	TEMP								
12/7	1100								93	255	215	93	
12/7	1200								94	256	215	94	
12/7	1300								95	256	127	95	
12/7	1400								96	256	217	96	
12/7	1500								94	256	216	94	
12/7	1600								94	256	217	94	WELL HEAD TEMPERATURE PROVING WRONG. 10 DEGREES TOO HIGH. (MADE CORRECTIONS ON DATA SHEETS)
12/7	1700								93	256	217	93	
12/7	1800								93	255	218	93	
12/7	1900								92	255	217	92	
12/7	2000								92	255	216	92	
12/7	2100								92	255	216	92	
12/7	2200								91	255	215	91	

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GEOTHERMAL FIELD TEST DATA

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINIAD
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,476 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET # 14,235 PACKER # NONE CASING SIZE 5 1/2 SET # 14,261 T.D. ORIFICE METER (1st) 3 X .500

		WELLHEAD DATA				MANIFOLD DATA					GAS MEASURING DATA				FLUID DATA						
DATE	TIME	CH (KE SIZE	TUBING PRESS.	ANNULUS PRESS.	W.H. TEMP.	MANIF. TEMP.	MANIF. PRESS.	READING	CALC. SAND	CORS COUP	ORIFICE READING			VOLUME CF/D	FLUID METER 1	+	FLUID METER 2	+	BBLs PER DAY	CHLORIDES PPM OR SP. G.	GAS WATER RATIO
											DIFF	PRESS	TEMP								
12/7	2300	18POS 22ADJ	3233	4695	256	256	521				48	500	236	245,000			14866.0	450	10,800		22.69
12/7	2400	18POS 22ADJ	3232	4695	256	256	521				48	500	236	245,000			15316.0	450	10,800		22.69
12/8	0100	18POS 22ADJ	3231	4694	256	256	520				48	500	236	245,000			15765.9	449.9	10,797.6		22.64
12/8	0200	18POS 22ADJ	3230	4692	256	256	520				49	500	235	247,000			16215.7	449.8	10,795.2		22.88
												CORRECTED		*203,019					*10,169.1		*20.0
12/8	0300	18POS 22ADJ	3230	4690	256	256	520				49	500	235	247,000			16665.4	449.7	10,792.8		22.89
12/8	0400	18POS 22ADJ	3230	4687	256	256	520				49	500	236	247,000			17115.3	449.9	10,797.6		22.88
12/8	0500	18POS 22ADJ	3229	4687	256	256	520				49	500	236	247,000			17565.0	449.7	10,792.8		22.89
12/8	0600	18POS 22ADJ	3229	4685	256	256	520				49	500	235	247,000			18014.5	449.5	10,788		22.90
												CORRECTED		*204,100					*10,164.5		*20.1
12/8	0700	18POS 22ADJ	3227	4684	256	256	520				48	500	235	245,000			18464.0	449.5	10,788		22.66
12/8	0800	18POS 22ADJ	3226	4682	256	256	520				49	500	235	247,000			18913.6	449.6	10,790.4		22.89
12/8	0900	18POS 22ADJ	3229	4682	256	256	520				49	500	234	247,000			19363	449.4	10,785.6		22.90
12/8	1000	18POS 22ADJ	3230	4680	256	256	520				49	500	225	247,000			19812.1	449.1	10778.4		22.92
												CORRECTED		*204,077					*10,157.0		*20.1

GEOTHERMAL FIELD TEST DATA

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINAIDE

COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA

TUBING SIZE 3 1/2 SET @ 14,235 PACKER @ NONE CASING SIZE 5 1/2 SET @ 14,261 T.D. ORIFICE METER (1st 3 x .500

		COOLER DATA				PUMP DATA			DISPOSAL WELL		FILTERS		REMARKS
DATE	TIME	INLET		OUTLET		SUCTION PRESS	DISC PRESS	RPM	PRESS	TEMP.	IN	OUT	
		PRESS	TEMP.	PRESS	TEMP.								
12/7	2300								92	255	216	92	
12/7	2400								92	255	217	92	
12/8	0100								93	255	216	93	
12/8	0200								93	255	215	93	
12/8	0300								92	255	215	92	
12/8	0400								92	255	215	92	
12/8	0500								92	255	215	92	
12/8	0600								92	255	215	92	
12/8	0700								92	255	215	92	
12/8	0800								92	255	216	92	
12/8	0900								92	255	216	92	
12/8	1000								92	255	215	92

GEOHERMAL FIELD TEST DATA

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINIAD
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET # 14,235 PACKER# NONE CASING SIZE 5 1/2 SET # 14,261 T.D. ORIFICE METER (1st 3 X .500

		WELLHEAD DATA				MANIFOLD DATA					GAS MEASURING DATA				FLUID DATA						
DATE	TIME	CH (KE SIZE	TUBING PRESS.	ANNULUS	W. H. TEMP.	MANF TEMP.	MANF PRESS.	READING	CALC SAND	CORS COUP	ORIFICE READING			VOLUME CF/D	FLUID METER 1	+	FLUID METER 2	+	BBL PER DAY	CHLORIDES PPM OR SP. G.	GAS WATER RATIO
											DIFF	PRESS	TEMP								
12/8	1100	18POS 22ADJ	3227	4677	256	256	517				48	500	230	245,000			20261.3	449.2	10,780.8	22.68	
12/8	1200	18POS 22ADJ	3227	4675	256	256	515				48	500	232	245,000			20710.5	449.5	10,780.8	22.68	
12/8	1300	18POS 22ADJ	3226	4673	256	256	511				48.5	500	235	246,000			21159.7	449.2	10,780.8	22.82	
12/8	1400	18POS 22ADJ	3224	4671	257	257	512				48.5	500	234	246,000			21608.7	449	10,776	22.83	
												CORRECTED		*203,185					*10,156.2	*20.0	
12/8	1500	18POS 22ADJ	3225	4671	257	257	511				48.5	500	228	246,000			22057.8	449.1	10,778.4	22.83	
12/8	1600	18POS 22ADJ	3226	4670	257	257	512				48.5	500	229	246,000			22506.9	449.1	10,778.4	22.83	
12/8	1700	18POS 22ADJ	3224	4667	257	257	519				47	500	220	242,000			22955.5	448.6	10,766.4	22.48	
12/8	1800	18POS 22ADJ	3227	4664	256	256	520				47	500	222	242,000			23404.2	448.7	10,768.8	22.47	
												CORRECTED		*203,472					*10,141.0	*20.1	
12/8	1900	18POS 22ADJ	3225	4662	256	256	520				46.5	500	220	241,000			23853.2	449	10,776	22.36	
12/8	2000	18POS 22ADJ	3223	4660	256	256	520				46.5	500	227	241,000			24301.9	228.7	10,768.8	22.38	
12/8	2100	18POS 22ADJ	3221	4658	256	256	520				47	500	299	242,000			24750.9	449	10,776	22.46	
12/8	2100			SHUT WELL IN FOR BUILD UP								CORRECTED		*201,007					*10,147.4	*19.8

GEOTHERMAL FIELD TEST DATA

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINAIDE
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET @ 14,235 PACKER @ NONE CASING SIZE 5 1/2 SET @ 14,261 T.D. ORIFICE METER (1st 3 X .500

		COOLER DATA				PUMP DATA			DISPOSAL WELL		FILTERS		REMARKS
DATE	TIME	INLET		OUTLET		SUCTION PRESS	DISC PRESS	RPM	PRESS	TEMP.	IN	OUT	
		PRESS	TEMP	PRESS	TEMP								
12/8	1100								92	255	215	92	
12/8	1200								92	255	215	92	
12/8	1300								93	255	216	93	BLED 9 5/8 CASING DOWN
12/8	1400								93	255	216	93	
12/8	1500								94	255	217	94	
12/8	1600								94	255	217	94	
12/8	1700								93	254	215	93	RIGGED UP PRESS. RECORDER & DEAD WEIGHT ON RESERVOIR DATA, INC. LUBRICATOR
12/8	1800								92	254	215	92	
12/8	1900								92	254	217	92	
12/8	2000								91	254	216	91	
12/8	2100								91	254	215	91	

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINIAD
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET # 14,235 PACKER # NONE CASING SIZE 5 1/2 SET # 14,261 T.D. ORIFICE METER (1st 3 X .500

DATE	TIME	WELLHEAD DATA				MANIFOLD DATA					GAS MEASURING DATA				FLUID DATA						
		CH OK SIZE	TUBING PRESS.	ANNULUS	W.H. TEMP.	MANF. TEMP.	MANF. PRESS.	READING	CALC. SAND	CORS. COUP	ORIFICE READING			VOLUME CF/D	FLUID METER 1	+	FLUID METER 2	+	BBLs PER DAY	CHLORIDES PPM OR SP. G.	GAS WATER RATIO
12/8	2105	S.I.	5436	4925																	
12/8	2110	S.I.	5440	4930																	
12/8	2115	S.I.	5439	4932																	
12/8	2120	S.I.	5439	4936																	
12/8	2125	S.I.	5439																		
12/8	2130	S.I.	5441	4940																	
12/8	2200	S.I.	5444	4947																	
12/8	2300	S.I.	5460	4961																	
12/8	2400	S.I.	5470	4972																	
12/9	0100	S.I.	5479	4983																	
12/9	0200	S.I.	5488	4995																	
12/9	0300	S.I.	5497	5005																	
12/9	0400	S.I.	5505	5015																	
12/9	0500	S.I.	5512	5024																	
12/9	0600	S.I.	5517	5032

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COMPANY GRUY FEDERAL, INC. LEASE BEULAH SIMON WELL NO. 1 FIELD COSSINIADÉ
COUNTY or PARISH VERMILION STATE LOUISIANA PERF. 14,674 - 14,770 SAND CAMERINA
TUBING SIZE 3 1/2 SET = 14,235 PACKER = NONE CASING SIZE 5 1/2 SET = 14,261 T.D. ORIFICE METER (1st 3 X .500

[illegible]

PRESSURE BUILD-UP MODEL ANALYSIS
BY
H.J. GRUY AND ASSOCIATES, INC.

BUELAH SIMON NO.2 VERMILION PARISH, LOUISIANA
PRESSURE BUILDUP ANALYSIS
GRUY FEDERAL INC.
HOUSTON TEXAS 77063

0 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 0. 0.
INPUT DATA TO PROGRAM

BASE PRESSURE = 14.65PSI
RESERVOIR TEMPERATURE = 745. (R)
POROSITY FRACTION = .190
RESERVOIR THICKNESS = 186. FEET
TOTAL COMPRESSIBILITY = .00000600 VOL/VOL/PSI
AVERAGE VISCOSITY = .4000 CP
INITIAL VISCOSITY = .4000 CP
DEPARTURE TIME FROM FIRST STRAIGHT LINE = 52.1700 HOURS
STARTING TIME OF SECOND STRAIGHT LINE = 0.0000 HOURS

FLOW RATES (RBBL / DAY) DURING TEST

PERIOD	RATE	CUM. TIME	INC. S.I. TIME
1	11000.00	240.0	0.0

Y VALUES ARE PWS

RESERVOIR DEFINED BY BOUNDARIES

BOTH BOUNDARIES ARE IMPERVIOUS
X VALUES ARE SUPERIMPOSED TIME RATIO FOR CONSTANT FLOW
 $X = QB \log (DT/(T + DT))$

INTERMEDIATE RESULTS CALCULATED BY PROGRAM

INSTRUMENT PRECISION = 15.000PSI
DIMENSIONLESS PRESSURE FUNCTION OF INSTRUMENT PRECISION = 1151.2925
RESERVOIR FLUID MOBILITY = 29.043179 MD/CP
NEAREST BOUNDARY DISTANCE SQUARED DIVIDED BY DIFFUSIVITY = 11.459613 HOURS
MAXIMUM RADIUS OF INVESTIGATION = 3638. FEET
DISTANCE FROM WELL TO NEAREST BOUNDARY = 556. FEET
SLOPE OF FIRST STRAIGHT LINE = .30000000E-01 PSI/LOG CYCLE
INTERCEPT = 12605.000
SECOND STRAIGHT LINE NOT DEFINED BY DATA

ITERATIONS FOR WEDGE BOUNDARY MODEL WHERE M = 2

SUM OF ERRORS FOR MODEL = 81345.849 THETA = 180.00 ALPHA = 90.00 STD. DEV. = 34.844184

BEST FIT FOR WEDGE BOUNDARY MODEL WHERE M = 2

THETA = 180.00 ALPHA = 90.00 D2 = 556.

X	Y	Y(CALC)	DIF	DT(HRS)	(DT/(T+DT))
-14941.091	12145.000	12151.881	-6.8814949	11.000000	.43824701E-01
-14544.412	12155.000	12163.539	-8.5385925	12.000000	.47619048E-01
-14180.949	12165.000	12174.262	-9.2621427	13.000000	.51383399E-01
-13845.762	12175.000	12184.202	-9.2018067	14.000000	.55118110E-01
-13534.938	12183.000	12193.475	-10.474968	15.000000	.58823529E-01
-13245.320	12192.000	12202.175	-10.175041	16.000000	.62500000E-01
-12974.326	12200.000	12210.377	-10.377320	17.000000	.66147860E-01
-12719.819	12208.000	12218.143	-10.143203	18.000000	.69767442E-01
-12480.008	12215.000	12225.523	-10.523282	19.000000	.73359073E-01
-12253.377	12222.000	12232.560	-10.559650	20.000000	.76923077E-01
-12038.633	12229.000	12239.288	-10.287646	21.000000	.80459770E-01
-11834.665	12235.000	12245.737	-10.737185	22.000000	.83969466E-01
-11640.507	12241.000	12251.934	-10.933794	23.000000	.87452471E-01
-11455.320	12247.000	12257.899	-10.899410	24.000000	.90909091E-01
-11278.365	12253.000	12263.653	-10.653022	25.000000	.94339623E-01
-11108.991	12258.000	12269.211	-11.211170	26.000000	.97744361E-01
-10946.622	12264.000	12274.588	-10.588352	27.000000	.10112360
-10640.897	12274.000	12284.849	-10.849484	29.000000	.10780669
-10223.608	12284.000	12299.161	-15.160525	32.000000	.11764706
-9933.4674	12293.000	12309.332	-16.331736	34.290000	.12501367
-9096.9980	12325.000	12339.746	-14.746495	42.000000	.14893617
-8243.1746	12360.000	12372.582	-12.582050	52.000000	.17808219
-7753.0109	12381.000	12392.291	-11.290703	59.000000	.19732441
-7563.7678	12389.000	12400.071	-11.070790	62.000000	.20529801
-7385.2513	12398.000	12407.498	-9.4977106	65.000000	.21311475
-7005.0431	12416.000	12423.601	-7.6006374	72.000000	.23076923
-6807.6084	12425.000	12432.116	-7.1156254	76.000000	.24050633
-6622.6599	12434.000	12440.187	-6.1869040	80.000000	.25000000
-6448.9230	12443.000	12447.852	-4.8522607	84.000000	.25925926
-6285.3029	12450.000	12455.145	-5.1448897	88.000000	.26829268
-6130.8528	12459.000	12462.094	-3.0941274	92.000000	.27710843
-5984.7485	12466.000	12468.726	-2.7260407	96.000000	.28571429
-5846.2681	12474.000	12475.064	-1.0639046	100.00000	.29411765
-5714.7761	12481.000	12481.129	-.12859202	104.00000	.30232558
-5589.7104	12487.000	12486.939	.61102817E-01	108.00000	.31034483
-5470.5710	12494.000	12492.512	1.4881957	112.00000	.31818182
-5356.9121	12501.000	12497.863	3.1372860	116.00000	.32584270
-4996.8421	12520.000	12515.034	4.9658161	130.00000	.35135135
-4903.4348	12526.000	12519.543	6.4570954	134.00000	.35828877
-4813.7398	12532.000	12523.893	8.1067012	138.00000	.36507937
-4727.5252	12537.000	12528.094	8.9059175	142.00000	.37172775
-4644.5789	12542.000	12532.153	9.8466908	146.00000	.37823834
-4564.7068	12547.000	12536.078	10.921565	150.00000	.38461538
-4487.7305	12552.000	12539.876	12.123626	154.00000	.39086294
-4413.4858	12557.000	12543.554	13.446448	158.00000	.39698492
-4341.8214	12562.000	12547.116	14.884054	162.00000	.40298507
-4272.5974	12566.000	12550.569	15.430871	166.00000	.40886700
-4205.6843	12571.000	12553.918	17.081699	170.00000	.41463415
-4140.9620	12575.000	12557.168	17.831678	174.00000	.42028986
-4078.3191	12579.000	12560.324	18.676256	178.00000	.42583732

-4047.7446	12585.000	12561.867	23.132677	180.00000	.42857143
-3766.6495	12617.000	12576.166	40.834381	200.00000	.45454545
-3523.6867	12635.000	12588.679	46.321494	220.00000	.47826087
-3311.3300	12651.000	12599.731	51.268879	240.00000	.50000000
-3123.9632	12668.000	12609.572	58.427821	260.00000	.52000000
-2957.2984	12681.000	12618.396	62.604364	280.00000	.53846154
-2807.9976	12691.000	12626.355	64.644740	300.00000	.55555556
-2673.4185	12699.000	12633.575	65.425291	320.00000	.57142857
-2551.4398	12708.000	12640.155	67.845318	340.00000	.58620690
-2440.3362	12719.000	12646.178	72.821911	360.00000	.60000000
-2338.6890	12726.000	12651.714	74.286123	380.00000	.61290323
-2245.3198	12733.000	12656.820	76.180115	400.00000	.62500000
-2159.2411	12736.000	12661.545	74.454975	420.00000	.63636364
-2079.6186	12744.000	12665.931	78.069036	440.00000	.64705882
-2005.7423	12751.000	12670.013	80.986573	460.00000	.65714286
-1937.0038	12757.000	12673.823	83.176762	480.00000	.66666667
-1901.1947	12758.000	12675.812	82.187750	491.00000	.67168263

ARITH. SUM OF DIFFERENCES = 955.14266 AVERAGE = 14.255861

SUM OF SQUARES OF DIFFERENCES = 81345.849 AVERAGE = 34.844184

ITERATIONS FOR WEDGE BOUNDARY MODEL WHERE M = 4

SUM OF ERRORS FOR MODEL =	214082.50	THETA = 90.00	ALPHA = 45.00	STD. DEV. =	56.526641
SUM OF ERRORS FOR MODEL =	162612.00	THETA = 90.00	ALPHA = 44.00	STD. DEV. =	49.265046
SUM OF ERRORS FOR MODEL =	119111.98	THETA = 90.00	ALPHA = 43.00	STD. DEV. =	42.163855
SUM OF ERRORS FOR MODEL =	83177.667	THETA = 90.00	ALPHA = 42.00	STD. DEV. =	35.234326
SUM OF ERRORS FOR MODEL =	54405.068	THETA = 90.00	ALPHA = 41.00	STD. DEV. =	28.495893
SUM OF ERRORS FOR MODEL =	32386.094	THETA = 90.00	ALPHA = 40.00	STD. DEV. =	21.985781
SUM OF ERRORS FOR MODEL =	16703.966	THETA = 90.00	ALPHA = 39.00	STD. DEV. =	15.789646
SUM OF ERRORS FOR MODEL =	6928.8273	THETA = 90.00	ALPHA = 38.00	STD. DEV. =	10.169333
SUM OF ERRORS FOR MODEL =	2613.6433	THETA = 90.00	ALPHA = 37.00	STD. DEV. =	6.2457667
SUM OF ERRORS FOR MODEL =	3290.4348	THETA = 90.00	ALPHA = 36.00	STD. DEV. =	7.0079218
SUM OF ERRORS FOR MODEL =	8466.9428	THETA = 90.00	ALPHA = 35.00	STD. DEV. =	11.241543
SUM OF ERRORS FOR MODEL =	17623.853	THETA = 90.00	ALPHA = 34.00	STD. DEV. =	16.218587

BEST FIT FOR WEDGE BOUNDARY MODEL WHERE M = 4

THETA = 90.00 ALPHA = 37.00 D2 = 738.

X	Y	Y(CALC)	DIF	DT(HRS)	(DT/(T+DT))
-14941.091	12145.000	12143.436	1.5643843	11.000000	.43824701E-01
-14544.412	12155.000	12154.346	.65375992	12.000000	.47619048E-01
-14180.949	12165.000	12164.332	.667779705	13.000000	.51383399E-01
-13845.762	12175.000	12173.545	1.4546104	14.000000	.55118110E-01
-13534.938	12183.000	12182.105	.89453675	15.000000	.58823529E-01
-13245.320	12192.000	12190.108	1.8919229	16.000000	.62500000E-01
-12974.326	12200.000	12197.631	2.3693452	17.000000	.66147860E-01
-12719.819	12208.000	12204.737	3.2634448	18.000000	.69767442E-01
-12480.008	12215.000	12211.478	3.5218674	19.000000	.73359073E-01
-12253.377	12222.000	12217.899	4.1009744	20.000000	.76923077E-01
-12038.633	12229.000	12224.036	4.9641072	21.000000	.80459770E-01
-11834.665	12235.000	12229.920	5.0802517	22.000000	.83969466E-01
-11640.507	12241.000	12235.577	5.4229989	23.000000	.87452471E-01
-11455.320	12247.000	12241.030	5.9697273	24.000000	.90909091E-01
-11278.365	12253.000	12246.299	6.7009539	25.000000	.94339623E-01
-11108.991	12258.000	12251.400	6.5998130	26.000000	.97744361E-01
-10946.622	12264.000	12256.348	7.6516358	27.000000	.10112360
-10640.897	12274.000	12265.836	8.1644875	29.000000	.10780669
-10223.608	12284.000	12279.193	4.8071603	32.000000	.11764706
-9933.4674	12293.000	12288.798	4.2018640	34.290000	.12501367
-9096.9980	12325.000	12318.248	6.7521417	42.000000	.14893617
-8243.1746	12360.000	12351.613	8.3868934	52.000000	.17808219
-7753.0109	12381.000	12372.588	8.4118257	59.000000	.19732441
-7563.7678	12389.000	12381.084	7.9161232	62.000000	.20529801
-7385.2513	12398.000	12389.313	8.6872229	65.000000	.21311475
-7005.0431	12416.000	12407.566	8.4342404	72.000000	.23076923
-6807.6084	12425.000	12417.451	7.5487323	76.000000	.24050633
-6622.6599	12434.000	12426.974	7.0257864	80.000000	.25000000
-6448.9230	12443.000	12436.158	6.8424185	84.000000	.25925926
-6285.3029	12450.000	12445.022	4.9781913	88.000000	.26829268
-6130.8528	12459.000	12453.585	5.4147507	92.000000	.27710843
-5984.7485	12466.000	12461.865	4.1354771	96.000000	.28571429
-5846.2681	12474.000	12469.875	4.1252181	100.00000	.29411765
-5714.7761	12481.000	12477.630	3.3700794	104.00000	.30232558
-5589.7104	12487.000	12485.143	1.8572597	108.00000	.31034483
-5470.5710	12494.000	12492.425	1.5749165	112.00000	.31818182
-5356.9121	12501.000	12499.488	1.5120567	116.00000	.32584270
-4996.8421	12520.000	12522.621	-2.6213047	130.00000	.35135135
-4903.4348	12526.000	12528.814	-2.8138634	134.00000	.35828877
-4813.7398	12532.000	12534.836	-2.8356569	138.00000	.36507937
-4727.5252	12537.000	12540.694	-3.6938610	142.00000	.37172775
-4644.5789	12542.000	12546.395	-4.3952382	146.00000	.37823834
-4564.7068	12547.000	12551.946	-4.9461688	150.00000	.38461538
-4487.7305	12552.000	12557.353	-5.3526801	154.00000	.39086294
-4413.4858	12557.000	12562.620	-5.6204714	158.00000	.39698492
-4341.8214	12562.000	12567.755	-5.7549376	162.00000	.40298507
-4272.5974	12566.000	12572.761	-6.7611898	166.00000	.40886700
-4205.6843	12571.000	12577.644	-6.6440752	170.00000	.41463415
-4140.9620	12575.000	12582.408	-7.4081938	174.00000	.42028986
-4078.3191	12579.000	12587.058	-8.0579150	178.00000	.42583732

-4047.7446	12585.000	12589.341	-4.3411825	180.00000	.42857143
-3766.6495	12617.000	12610.762	6.2376245	200.00000	.45454545
-3523.6867	12635.000	12629.909	5.0913301	220.00000	.47826087
-3311.3300	12651.000	12647.129	3.8706774	240.00000	.50000000
-3123.9632	12668.000	12662.705	5.2952148	260.00000	.52000000
-2957.2984	12681.000	12676.863	4.1369863	280.00000	.53846154
-2807.9976	12691.000	12689.791	1.2086965	300.00000	.55555556
-2673.4185	12699.000	12701.645	-2.6450369	320.00000	.57142857
-2551.4398	12708.000	12712.554	-4.5542506	340.00000	.58620690
-2440.3362	12719.000	12722.629	-3.6286366	360.00000	.60000000
-2338.6890	12726.000	12731.961	-5.9613973	380.00000	.61290323
-2245.3198	12733.000	12740.632	-7.6322518	400.00000	.62500000
-2159.2411	12736.000	12748.710	-12.709804	420.00000	.63636364
-2079.6186	12744.000	12756.253	-12.253426	440.00000	.64705882
-2005.7423	12751.000	12763.315	-12.314770	460.00000	.65714286
-1937.0038	12757.000	12769.939	-12.938990	480.00000	.66666667
-1901.1947	12758.000	12773.411	-15.410554	491.00000	.67168263

ARITH. SUM OF DIFFERENCES =	41.463650	AVERAGE =	.61886045
SUM OF SQUARES OF DIFFERENCES =	2613.6433	AVERAGE =	6.2457667

ITERATIONS FOR WEDGE BOUNDARY MODEL WHERE M = 3

SUM OF ERRORS FOR MODEL =	9334867.8	THETA = 120.00	ALPHA = 60.00	STD. DEV. =	373.26450
SUM OF ERRORS FOR MODEL =	9178575.5	THETA = 120.00	ALPHA = 59.00	STD. DEV. =	370.12655
SUM OF ERRORS FOR MODEL =	9014530.9	THETA = 120.00	ALPHA = 58.00	STD. DEV. =	366.80409
SUM OF ERRORS FOR MODEL =	8842565.8	THETA = 120.00	ALPHA = 57.00	STD. DEV. =	363.28858
SUM OF ERRORS FOR MODEL =	8662533.4	THETA = 120.00	ALPHA = 56.00	STD. DEV. =	359.57133
SUM OF ERRORS FOR MODEL =	8474313.0	THETA = 120.00	ALPHA = 55.00	STD. DEV. =	355.64348
SUM OF ERRORS FOR MODEL =	8277815.0	THETA = 120.00	ALPHA = 54.00	STD. DEV. =	351.49606
SUM OF ERRORS FOR MODEL =	8072986.1	THETA = 120.00	ALPHA = 53.00	STD. DEV. =	347.12005
SUM OF ERRORS FOR MODEL =	7859814.2	THETA = 120.00	ALPHA = 52.00	STD. DEV. =	342.50644
SUM OF ERRORS FOR MODEL =	7638333.7	THETA = 120.00	ALPHA = 51.00	STD. DEV. =	337.64624
SUM OF ERRORS FOR MODEL =	7408629.5	THETA = 120.00	ALPHA = 50.00	STD. DEV. =	332.53054
SUM OF ERRORS FOR MODEL =	7170841.2	THETA = 120.00	ALPHA = 49.00	STD. DEV. =	327.15055
SUM OF ERRORS FOR MODEL =	6925166.3	THETA = 120.00	ALPHA = 48.00	STD. DEV. =	321.49758
SUM OF ERRORS FOR MODEL =	6671862.4	THETA = 120.00	ALPHA = 47.00	STD. DEV. =	315.56304
SUM OF ERRORS FOR MODEL =	6411248.5	THETA = 120.00	ALPHA = 46.00	STD. DEV. =	309.33845
SUM OF ERRORS FOR MODEL =	6143705.9	THETA = 120.00	ALPHA = 45.00	STD. DEV. =	302.81530
SUM OF ERRORS FOR MODEL =	5869677.1	THETA = 120.00	ALPHA = 44.00	STD. DEV. =	295.98500
SUM OF ERRORS FOR MODEL =	5589665.3	THETA = 120.00	ALPHA = 43.00	STD. DEV. =	288.83878
SUM OF ERRORS FOR MODEL =	5304233.2	THETA = 120.00	ALPHA = 42.00	STD. DEV. =	281.36748
SUM OF ERRORS FOR MODEL =	5014002.1	THETA = 120.00	ALPHA = 41.00	STD. DEV. =	273.56142
SUM OF ERRORS FOR MODEL =	4719652.9	THETA = 120.00	ALPHA = 40.00	STD. DEV. =	265.41021
SUM OF ERRORS FOR MODEL =	4421928.6	THETA = 120.00	ALPHA = 39.00	STD. DEV. =	256.90258
SUM OF ERRORS FOR MODEL =	4121639.6	THETA = 120.00	ALPHA = 38.00	STD. DEV. =	248.02623
SUM OF ERRORS FOR MODEL =	3819673.5	THETA = 120.00	ALPHA = 37.00	STD. DEV. =	238.76778
SUM OF ERRORS FOR MODEL =	3517008.5	THETA = 120.00	ALPHA = 36.00	STD. DEV. =	229.11277
SUM OF ERRORS FOR MODEL =	3214731.6	THETA = 120.00	ALPHA = 35.00	STD. DEV. =	219.04582
SUM OF ERRORS FOR MODEL =	2914061.8	THETA = 120.00	ALPHA = 34.00	STD. DEV. =	208.55086
SUM OF ERRORS FOR MODEL =	2616375.6	THETA = 120.00	ALPHA = 33.00	STD. DEV. =	197.61169
SUM OF ERRORS FOR MODEL =	2323235.5	THETA = 120.00	ALPHA = 32.00	STD. DEV. =	186.21267
SUM OF ERRORS FOR MODEL =	2036418.7	THETA = 120.00	ALPHA = 31.00	STD. DEV. =	174.33964
SUM OF ERRORS FOR MODEL =	1757941.4	THETA = 120.00	ALPHA = 30.00	STD. DEV. =	161.98127
SUM OF ERRORS FOR MODEL =	1490076.9	THETA = 120.00	ALPHA = 29.00	STD. DEV. =	149.13066
SUM OF ERRORS FOR MODEL =	1235362.1	THETA = 120.00	ALPHA = 28.00	STD. DEV. =	135.78748
SUM OF ERRORS FOR MODEL =	996584.51	THETA = 120.00	ALPHA = 27.00	STD. DEV. =	121.96063
SUM OF ERRORS FOR MODEL =	776745.01	THETA = 120.00	ALPHA = 26.00	STD. DEV. =	107.67177
SUM OF ERRORS FOR MODEL =	578984.46	THETA = 120.00	ALPHA = 25.00	STD. DEV. =	92.959986
SUM OF ERRORS FOR MODEL =	406465.73	THETA = 120.00	ALPHA = 24.00	STD. DEV. =	77.888720
SUM OF ERRORS FOR MODEL =	262198.98	THETA = 120.00	ALPHA = 23.00	STD. DEV. =	62.557314
SUM OF ERRORS FOR MODEL =	148799.77	THETA = 120.00	ALPHA = 22.00	STD. DEV. =	47.126342
SUM OF ERRORS FOR MODEL =	68172.578	THETA = 120.00	ALPHA = 21.00	STD. DEV. =	31.898294
SUM OF ERRORS FOR MODEL =	21120.020	THETA = 120.00	ALPHA = 20.00	STD. DEV. =	17.754554
SUM OF ERRORS FOR MODEL =	6894.0556	THETA = 120.00	ALPHA = 19.00	STD. DEV. =	10.143784
SUM OF ERRORS FOR MODEL =	22733.051	THETA = 120.00	ALPHA = 18.00	STD. DEV. =	18.420078
SUM OF ERRORS FOR MODEL =	63472.601	THETA = 120.00	ALPHA = 17.00	STD. DEV. =	30.779088
SUM OF ERRORS FOR MODEL =	121377.79	THETA = 120.00	ALPHA = 16.00	STD. DEV. =	42.562998

BEST FIT FOR WEDGE BOUNDARY MODEL WHERE M = 3

THETA = 120.00 ALPHA = 19.00 D2 = 1676.

X	Y	Y(CALC)	DIF	DT(HRS)	(DT/(T+DT))
-14941.091	12145.000	12149.188	-4.1879828	11.000000	.43824701E-01
-14544.412	12155.000	12161.138	-6.1378996	12.000000	.47619048E-01
-14180.949	12165.000	12172.246	-7.2458486	13.000000	.51383399E-01
-13845.762	12175.000	12182.643	-7.6427354	14.000000	.55118110E-01
-13534.938	12183.000	12192.427	-9.4274168	15.000000	.58823529E-01
-13245.320	12192.000	12201.676	-9.6760957	16.000000	.62500000E-01
-12974.326	12200.000	12210.449	-10.448751	17.000000	.66147860E-01
-12719.819	12208.000	12218.794	-10.793588	18.000000	.69767442E-01
-12480.008	12215.000	12226.750	-11.750142	19.000000	.73359073E-01
-12253.377	12222.000	12234.351	-12.351469	20.000000	.76923077E-01
-12038.633	12229.000	12241.626	-12.625705	21.000000	.80459770E-01
-11834.665	12235.000	12248.597	-13.597185	22.000000	.83969466E-01
-11640.507	12241.000	12255.287	-14.287252	23.000000	.87452471E-01
-11455.320	12247.000	12261.715	-14.714854	24.000000	.90909091E-01
-11278.365	12253.000	12267.897	-14.896989	25.000000	.94339623E-01
-11108.991	12258.000	12273.849	-15.849029	26.000000	.97744361E-01
-10946.622	12264.000	12279.585	-15.584983	27.000000	.10112360
-10640.897	12274.000	12290.459	-16.458948	29.000000	.10780669
-10223.608	12284.000	12305.439	-21.439438	32.000000	.11764706
-9933.4674	12293.000	12315.939	-22.938560	34.290000	.12501367
-9096.9980	12325.000	12346.555	-21.555413	42.000000	.14893617
-8243.1746	12360.000	12378.457	-18.457242	52.000000	.17808219
-7753.0109	12381.000	12397.265	-16.264877	59.000000	.19732441
-7563.7678	12389.000	12404.673	-15.672759	62.000000	.20529801
-7385.2513	12398.000	12411.756	-13.755597	65.000000	.21311475
-7005.0431	12416.000	12427.216	-11.216134	72.000000	.23076923
-6807.6084	12425.000	12435.488	-10.488025	76.000000	.24050633
-6622.6599	12434.000	12443.417	-9.4169286	80.000000	.25000000
-6448.9230	12443.000	12451.044	-8.0442587	84.000000	.25925926
-6285.3029	12450.000	12458.404	-8.4038473	88.000000	.26829268
-6130.8528	12459.000	12465.523	-6.5234152	92.000000	.27710843
-5984.7485	12466.000	12472.426	-6.4257552	96.000000	.28571429
-5846.2681	12474.000	12479.130	-5.1296836	100.00000	.29411765
-5714.7761	12481.000	12485.651	-4.6508075	104.00000	.30232558
-5589.7104	12487.000	12492.002	-5.0021424	108.00000	.31034483
-5470.5710	12494.000	12498.195	-4.1946101	112.00000	.31818182
-5356.9121	12501.000	12504.237	-3.2374406	116.00000	.32584270
-4996.8421	12520.000	12524.313	-4.3130194	130.00000	.35135135
-4903.4348	12526.000	12529.766	-3.7655680	134.00000	.35828877
-4813.7398	12532.000	12535.101	-3.1007029	138.00000	.36507937
-4727.5252	12537.000	12540.322	-3.3222759	142.00000	.37172775
-4644.5789	12542.000	12545.434	-3.4337848	146.00000	.37823834
-4564.7068	12547.000	12550.438	-3.4384366	150.00000	.38461538
-4487.7305	12552.000	12555.339	-3.3391992	154.00000	.39086294
-4413.4858	12557.000	12560.139	-3.1388430	158.00000	.39698492
-4341.8214	12562.000	12564.840	-2.8399738	162.00000	.40289507
-4272.5974	12566.000	12569.445	-3.4450596	166.00000	.40886700
-4205.6843	12571.000	12573.956	-2.9564516	170.00000	.41463415
-4140.9620	12575.000	12578.376	-3.3764017	174.00000	.42028986
-4078.3191	12579.000	12582.707	-3.7070757	178.00000	.42583732

-4047.7446	12585.000	12584.840	.16040985	180.00000	.42857143
-3766.6495	12617.000	12605.020	11.979710	200.00000	.45454545
-3523.6867	12635.000	12623.281	11.719074	220.00000	.47826087
-3311.3300	12651.000	12639.831	11.168960	240.00000	.50000000
-3123.9632	12668.000	12654.858	13.142273	260.00000	.52000000
-2957.2984	12681.000	12668.528	12.472110	280.00000	.53846154
-2807.9976	12691.000	12680.990	10.010166	300.00000	.55555556
-2673.4185	12699.000	12692.375	6.6251687	320.00000	.57142857
-2551.4398	12708.000	12702.799	5.2012603	340.00000	.58620690
-2440.3362	12719.000	12712.364	6.6363609	360.00000	.60000000
-2338.6890	12726.000	12721.159	4.8405998	380.00000	.61290323
-2245.3198	12733.000	12729.265	3.7348519	400.00000	.62500000
-2159.2411	12736.000	12736.751	-.75059294	420.00000	.63636364
-2079.6186	12744.000	12743.677	.32278178	440.00000	.64705882
-2005.7423	12751.000	12750.099	.90066960	460.00000	.65714286
-1937.0038	12757.000	12756.065	.93502232	480.00000	.66666667
-1901.1947	12758.000	12759.167	-1.1671482	491.00000	.67168263

ARITH. SUM OF DIFFERENCES = -366.73893 AVERAGE = -5.4737153

SUM OF SQUARES OF DIFFERENCES = 6894.0556 AVERAGE = 10.143784

BEST FIT FOR WEDGE BOUNDARY ANALOGS

THETA = 90.00 ALPHA = 37.00 D2 = 738.

ITERATIONS FOR PARALLEL BOUNDARY MODEL

SUM OF ERRORS FOR MODEL =	108081.42	D2 =	555.78	R =	1.00	STD. DEV. =	40.164108
SUM OF ERRORS FOR MODEL =	90780.564	D2 =	567.12	R =	.98	STD. DEV. =	36.809425
SUM OF ERRORS FOR MODEL =	74713.265	D2 =	578.94	R =	.96	STD. DEV. =	33.393463
SUM OF ERRORS FOR MODEL =	60812.682	D2 =	591.25	R =	.94	STD. DEV. =	30.127263
SUM OF ERRORS FOR MODEL =	48573.372	D2 =	604.11	R =	.92	STD. DEV. =	26.925373
SUM OF ERRORS FOR MODEL =	37963.324	D2 =	617.53	R =	.90	STD. DEV. =	23.803713
SUM OF ERRORS FOR MODEL =	28995.910	D2 =	631.57	R =	.88	STD. DEV. =	20.803239
SUM OF ERRORS FOR MODEL =	21552.282	D2 =	646.25	R =	.86	STD. DEV. =	17.935324
SUM OF ERRORS FOR MODEL =	15556.088	D2 =	661.64	R =	.84	STD. DEV. =	15.237467
SUM OF ERRORS FOR MODEL =	10898.110	D2 =	677.78	R =	.82	STD. DEV. =	12.753759
SUM OF ERRORS FOR MODEL =	7584.8622	D2 =	694.72	R =	.80	STD. DEV. =	10.639873
SUM OF ERRORS FOR MODEL =	5693.0894	D2 =	712.54	R =	.78	STD. DEV. =	9.2179978
SUM OF ERRORS FOR MODEL =	5204.3563	D2 =	731.29	R =	.76	STD. DEV. =	8.8134534
SUM OF ERRORS FOR MODEL =	6093.4825	D2 =	751.05	R =	.74	STD. DEV. =	9.5366398
SUM OF ERRORS FOR MODEL =	8299.2391	D2 =	771.91	R =	.72	STD. DEV. =	11.129656
SUM OF ERRORS FOR MODEL =	11791.734	D2 =	793.97	R =	.70	STD. DEV. =	13.266350

BEST FIT FOR PARALLEL BOUNDARY MODEL

D1 = 555.78 D2 = 731.29 RATIO = .76

X	Y	Y(CALC)	DIF	DT(HRS)	(DT/(T+DT))
-14941.091	12145.000	12142.528	2.4716855	11.000000	.43824701E-01
-14544.412	12155.000	12153.354	1.6464330	12.000000	.47619048E-01
-14180.949	12165.000	12163.254	1.7460519	13.000000	.51383399E-01
-13845.762	12175.000	12172.381	2.6187252	14.000000	.55118110E-01
-13534.938	12183.000	12180.855	2.1449535	15.000000	.58823529E-01
-13245.320	12192.000	12188.771	3.2293444	16.000000	.62500000E-01
-12974.326	12200.000	12196.205	3.7948250	17.000000	.66147860E-01
-12719.819	12208.000	12210.940	-2.9403233	18.000000	.69767442E-01
-12480.008	12215.000	12218.019	-3.0187847	19.000000	.73359073E-01
-12253.377	12222.000	12224.774	-2.7739605	20.000000	.76923077E-01
-12038.633	12229.000	12231.242	-2.2419402	21.000000	.80459770E-01
-11834.665	12235.000	12237.453	-2.4531579	22.000000	.83969466E-01
-11640.507	12241.000	12243.433	-2.4334460	23.000000	.87452471E-01
-11455.320	12247.000	12249.205	-2.2048643	24.000000	.90909091E-01
-11278.365	12253.000	12254.786	-1.7863592	25.000000	.94339623E-01
-11108.991	12258.000	12260.194	-2.1942917	26.000000	.97744361E-01
-10946.622	12264.000	12265.443	-1.4428628	27.000000	.10112360
-10640.897	12274.000	12275.510	-1.5099419	29.000000	.10780669
-10223.608	12284.000	12289.680	-5.6799167	32.000000	.11764706
-9933.4674	12293.000	12299.856	-6.8555865	34.290000	.12501367
-9096.9980	12325.000	12330.889	-5.8886569	42.000000	.14893617
-8243.1746	12360.000	12365.551	-5.5514347	52.000000	.17808219
-7753.0109	12381.000	12386.986	-5.9859550	59.000000	.19732441
-7563.7678	12389.000	12395.581	-6.5812159	62.000000	.20529801
-7385.2513	12398.000	12403.858	-5.8575305	65.000000	.21311475
-7005.0431	12416.000	12422.041	-6.0413629	72.000000	.23076923
-6807.6084	12425.000	12431.789	-6.7887897	76.000000	.24050633
-6622.6599	12434.000	12441.112	-7.1121963	80.000000	.25000000
-6448.9230	12443.000	12450.042	-7.0418700	84.000000	.25925926
-6285.3029	12450.000	12458.605	-8.6048393	88.000000	.26829268
-6130.8528	12459.000	12466.825	-7.8253799	92.000000	.27710843
-5984.7485	12466.000	12474.725	-8.7254146	96.000000	.28571429
-5846.2681	12474.000	12482.325	-8.3248342	100.00000	.29411765
-5714.7761	12481.000	12489.642	-8.6417590	104.00000	.30232558
-5589.7104	12487.000	12496.693	-9.6927555	108.00000	.31034483
-5470.5710	12494.000	12503.493	-9.4930176	112.00000	.31818182
-5356.9121	12501.000	12510.057	-9.0565194	116.00000	.32584270
-4996.8421	12520.000	12531.342	-11.341773	130.00000	.35135135
-4903.4348	12526.000	12536.986	-10.986061	134.00000	.35828877
-4813.7398	12532.000	12542.454	-10.453677	138.00000	.36507937
-4727.5252	12537.000	12547.753	-10.753179	142.00000	.37172775
-4644.5789	12542.000	12552.893	-10.892558	146.00000	.37823834
-4564.7068	12547.000	12557.879	-10.879283	150.00000	.38461538
-4487.7305	12552.000	12562.720	-10.720347	154.00000	.39086294
-4413.4858	12557.000	12567.422	-10.422307	158.00000	.39698492
-4341.8214	12562.000	12571.991	-9.9913134	162.00000	.40298507
-4272.5974	12566.000	12576.433	-10.433150	166.00000	.40886700
-4205.6843	12571.000	12580.753	-9.7532547	170.00000	.41463415
-4140.9620	12575.000	12584.957	-9.9567515	174.00000	.42028986
-4078.3191	12579.000	12589.048	-10.048470	178.00000	.42583732

-4047.7446	12585.000	12591.054	-6.0538463	180.00000	.42857143
-3766.6495	12617.000	12609.746	7.2535227	200.00000	.45454545
-3523.6867	12635.000	12626.275	8.7250244	220.00000	.47826087
-3311.3300	12651.000	12641.004	9.9962633	240.00000	.50000000
-3123.9632	12668.000	12654.218	13.781938	260.00000	.52000000
-2957.2984	12681.000	12666.145	14.855132	280.00000	.53846154
-2807.9976	12691.000	12676.967	14.032880	300.00000	.55555556
-2673.4185	12699.000	12686.834	12.165865	320.00000	.57142857
-2551.4398	12708.000	12695.869	12.130921	340.00000	.58620690
-2440.3362	12719.000	12704.175	14.825479	360.00000	.60000000
-2338.6890	12726.000	12711.837	14.163378	380.00000	.61290323
-2245.3198	12733.000	12718.928	14.071681	400.00000	.62500000
-2159.2411	12736.000	12725.512	10.488198	420.00000	.63636364
-2079.6186	12744.000	12731.640	12.359562	440.00000	.64705882
-2005.7423	12751.000	12737.360	13.639702	460.00000	.65714286
-1937.0038	12757.000	12742.711	14.288624	480.00000	.66666667
-1901.1947	12758.000	12745.510	12.489898	491.00000	.67168263

ARITH. SUM OF DIFFERENCES = -90.514850 AVERAGE = -1.3509679

SUM OF SQUARES OF DIFFERENCES = 5204.3563 AVERAGE = 8.8134534

SOUTHERN PETROLEUM LABORATORIES, INC.

P.O. BOX 20807
HOUSTON, TEXAS 77025
(713) 668-4448

P.O. BOX 52768
LAFAYETTE, LOUISIANA 7050
(318) 984-2374

RECEIVED
GRUY FEDERAL, INC.
HOUSTON, TEXAS

March 5, 1980

MAR 4 1980

Gruy Federal, Inc.
2500 Tanglewilde, Suite 150
Houston, Texas 77063

Re: PVT Study
Southport Beulah, Simon No. 1
Sample (11-30-1979)
Kaplan Field, Louisiana

Gentlemen:

Enclosed are the results of a recombined study of the produced brine from the subject well. The brine has a saturation pressure of 12500 psia at 268° F.

Due to the small amount of gas liberated at each step, the accuracy of the over-all test is not representative of normal PVT oil studies.

After evaluating this data, we will let you determine whether the other sample should be run.

Sincerely,

SOUTHERN PETROLEUM LABORATORIES, INC.

Sammy Russo
Sammy Russo

SR/jmb

Encl.

SOUTHERN PETROLEUM LABORATORIES, INC.

P.O. BOX 20807
HOUSTON, TEXAS 77025
(713) 668-4443

P.O. BOX 52768
LAFAYETTE, LOUISIANA 7050
(318) 984-2374

DIFFERENTIAL LIBERATION OF A
19.6 GAS-WATER MIXTURE
at 268° F.

<u>Pressure</u> <u>PSIA</u>	<u>Formation</u> <u>Volume Factor</u> <u>(BW)</u>	<u>Gas-Water</u> <u>Ratio*</u> <u>SCF/BB1 H₂O</u>
12500 B.P.	1.0403	24.0
10000	1.0430	18.0
8000	1.0455	13.4
6000	1.0486	9.6
4000	1.0528	6.0
2000	1.0588	2.6
15	1.0690	0

*Std condition = 60° F. and 14.696 PSIA

SOUTHERN PETROLEUM LABORATORIES, INC.

P.O. BOX 20807
HOUSTON, TEXAS 77025
(713) 668-4448

P.O. BOX 52768
LAFAYETTE, LOUISIANA 7050
(318) 984-2374

PV RELATION ON 19.6 GAS-WATER RATIO

MIXTURE AT 268° F.

(Sampled 11-30-1979)

<u>PRESSURE</u> (PSIA)	<u>RELATIVE</u> <u>Volume</u> (V/VSAT)	<u>DENSITY</u> (gm/cc)
13015	0.9985	1.0262
12500 B.P.	1.0000	1.0247
10000	1.0072	1.0174
9000	1.0107	1.0139
8000	1.0137	1.0109
7000	1.0175	1.0071
6427	1.0194	1.0052
4928	1.0252	0.9995
3624	1.0322	0.9927
2643	1.0411	0.9842
1975	1.0521	0.9740
1538	1.0645	0.9626
906	1.1060	0.9265

SOUTHERN PETROLEUM LABORATORIES, INC.

P.O. BOX 20807
HOUSTON TEXAS 77025
(713) 668-4448

P.O. BOX 52768
LAFAYETTE, LOUISIANA 70501
(318) 984-2374

July 8, 1980

6. 10. 1980
Houston, Texas

JUL 10 1980

Gruy Federal, Inc.
2500 Tanglewilde, Suite 150
Houston, Texas 77063

Re: PVT Study
Southport Beulah, Simon No. 1
Sample date (12-8-1979)
Kaplan Field, Louisiana

Gentlemen:

Enclosed are the results of a recombined study of the produced brine from the subject well. The brine has a saturation pressure of 12650 psia at 268° F.

Due to the small amount of gas liberated at each step, the accuracy of the over-all test is not representative of normal PVT oil studies.

We have enjoyed this opportunity to be of service.

Sincerely,

SOUTHERN PETROLEUM LABORATORIES, INC.

Sammy Russo

SR/jmb

Encl.

SOUTHERN PETROLEUM LABORATORIES, INC.

P.O. BOX 20807
HOUSTON, TEXAS 77025
(713) 668-4448

P.O. BOX 52768
LAFAYETTE, LOUISIANA 70501
(318) 984-2374

DIFFERENTIAL LIBERATION OF A

20.0 GAS-WATER MIXTURE

at 268° F.

<u>Pressure</u> <u>PSIA</u>	<u>Formation</u> <u>Volume Factor</u> <u>(BW)</u>	<u>Gas-Water</u> <u>Ratio*</u> <u>SCF/BB1 H2O</u>
12650 B.P.	1.0401	24.1
10000	1.0452	18.1
8000	1.0497	13.8
6000	1.0544	9.7
4000	1.0591	6.0
2000	1.0640	2.7
15	1.0690	0.0

*Std condition = 60° F. and 14.696 PSIA

SOUTHERN PETROLEUM LABORATORIES, INC.

P.O. BOX 20807
HOUSTON TEXAS 77025
(713) 668-4448

P.O. BOX 52768
LAFAYETTE, LOUISIANA 70501
(318) 984-2374

PV RELATION ON 20.0 GAS-WATER RATIO

MIXTURE AT 268° F.

(Sampled 12-8-1979)

<u>PRESSURE</u> (PSIA)	<u>RELATIVE</u> Volume (V/VSAT)	<u>DENSITY</u> (gm/cc)
13015	0.9994	1.0309
12650	1.0000	1.0303
10000	1.0071	1.0230
9000	1.0097	1.0204
8000	1.0129	1.0172
7000	1.0162	1.0139
6000	1.0198	1.0103
5000	1.0235	1.0066
4000	1.0285	1.0018
3000	1.0360	0.9945
2000	1.0487	0.9825
1000	1.0943	0.9415
500	1.1931	0.8635

HOUSTON
P.O. BOX 20807
ZIP 77025
PHONE: 713 668-4448

SOUTHERN PETROLEUM LABORATORIES, INC.

LAFAYETTE
P.O. BOX 52768
ZIP 70505
PHONE: 318 984-2374

CERTIFICATE OF ANALYSIS NO. 79466

COMPANY: GRUY FEDERAL
LOCATION: SOUTHPORT
FIELD: KAPLAN, LA
SAMPLE OF: WATER
SAMPLE POINT: TEST SEP.
CONDITIONS: 50 PSIG
SAMPLE DATE: 11-30-79

ANALYSIS:

	MOL %	GPM @ 15.025 PSIA
NITROGEN	0.75	
CARBON DIOXIDE	18.42	
METHANE	79.17	
ETHANE	1.75	
PROPANE	0.34	0.098
ISOBUTANE	0.09	0.030
N-BUTANE	0.05	0.016
ISOPENTANE	0.03	0.007
N-PENTANE	0.01	0.004
	-----	-----
	100.00	0.152

SPECIFIC GRAVITY @ 60 DEG.F. (AIR=1) 0.7421

CALCULATED B.T.U./CU. FT. @ 15.025 PSIA AND 60 DEG.F.:

DRY BASIS..... 842

WET BASIS..... 847

SOUTHERN PETROLEUM LABORATORIES, INC.

Sammy Russo

INSTITUTE OF GAS TECHNOLOGY • 3424 SOUTH STATE STREET • IIT CENTER • CHICAGO, ILLINOIS 60616

GENERAL PHONE 312/567-3650
TELEX 25-6189
DIRECT DIAL 312/567- 5292

RECEIVED
GRUY FEDERAL, INC.
HOUSTON, TEXAS

April 17, 1980

APR 21 1980

Mr. Jim Hartsock
Gruy Federal
2500 Tanglewilde
Suite 150
Houston, Texas 77063

Dear Jim:

Attached are brine and gas analyses made by IGT on samples from the Fairfax-Foster-Sutter and the Beulah Simon wells. You are free to include the results in your reports (with acknowledgements) if you see fit to do so. We have not made detailed comparisons of these results with the results of others. Should comparison of the IGT results with others reveal any significant discrepancies, we would appreciate learning about it so as to resolve the differences.

Thank you for the cooperation Gruy Federal extended to IGT in providing the samples.

Sincerely,

Leo A. Rogers
Manager, Gas Reservoir Analysis

LAR/cel
Attachment

LIQUID SAMPLES FROM THE BEULAH SIMON NO. 2 WELL

<u>Sample No.</u>	<u>Description</u>
BS2, FW/F/F, 12-6-79, 1100, 03, Se	This sample was collected in a stainless steel cylinder from the separator at 1100 hours on 12/6/79 at -240°F and -500 psi.
BS2, FW/F/F, 12-7-79, -, 11, BF	This sample was collected in a stainless steel cylinder on 12/7/79 from the tubing just upstream of the Halliburton filters.
BS2, FW/F/F, 12-7-79, 1000, 05, Se	This sample was collected in a stainless steel cylinder from the separator at 1000 hours on 12/7/79 at -240°F and -500 psi.
BS2, F/F, 12-9-79, 1000, 07, AC	This sample was fresh water that was added to the surface equipment after the formation water had been drained out. It was collected in a plastic bottle on 12/9/79 soon after it was added to the surface equipment.
BS2, F/F, 12-9-79, 1240, 08, AC	This sample was fresh water that was added to the surface equipment after the formation water had been drained out. It was collected in a plastic bottle on 12/9/79 after it had been circulated from the choke to the disposal well for 2-3/4 hours.
BS2, FW1/F, 12-30-79, -, 01, DH	This sample was obtained on 12/30/79 from down hole using a Gearhart-Owen sampler.
+BS2, FW/F, 12-31-79, 0915, 09, AC	This sample was collected in a plastic bottle at 0915 hours on 12/31/79 after the well had been shut-in. It is fluid that had been approximately 5000 to 7000 feet down while the well was shut-in.
BS2, FW/F, 12-31-79, 1010, 10, AC	This sample was collected in a plastic bottle at 1010 hours on 12/31/79 after the well had been shut-in. It is fluid that had been approximately at the bottom while the well was shut-in.

NOTE: The samples contained in stainless steel cylinders or the Gearhart-Owen sampler were flashed, and the liquid was filtered through a 0.45 µm membrane filter. The samples contained in plastic bottles were filtered.

ANALYSES OF FILTERED WATER SAMPLES FROM BEULAH SIMON NO. 2 WELL

Component	BS2, FW/F/F, 12-6-79, 1100, 03, Se	BS2, FW/F, 12-7-79, — 11, BF	BS2, FW/F/F, 12-7-79, 1000, 05, Se	BS2, F/F, 12-9-79, 1000, 07, AC	BS2, F/F, 12-9-79, 1240, 08, AC	BS2, FW1/F, 12-30-79, — ,01, DH	BS2, FW/F, 12/31/79, 0915, 09, AC	BS2, FW/F, 12/31/79, 1010, 10, AC
Alkalinity	918	949	1,010	1,080	1,200	688	778	868
Aluminum, mg/l	N.D.	N.D.	N.D.	N.D.	N.D.	<0.5	N.D.	N.D.
Ammonia, mg/l NH ₃	N.D.	N.D.	N.D.	N.D.	N.D.	10.4	N.D.	N.D.
Arsenic, mg/l	N.D.	N.D.	N.D.	N.D.	N.D.	<0.01	N.D.	N.D.
Barium, mg/l	N.D.	N.D.	N.D.	N.D.	N.D.	2.6	N.D.	N.D.
Bicarbonate, mg/l CaCO ₃	918	949	1,010	1,080	1,200	688	778	868
Boron, mg/l	75	60	59	5.7	4.3	82	70	61
Cadmium, mg/l	N.D.	N.D.	N.D.	N.D.	N.D.	0.1	N.D.	N.D.
Calcium, mg/l	2,850	3,000	2,870	90	100	2,190	2,880	2,900
Carbonate, mg/l CaCO ₃ (a)	0	0	0	0	0	0	0	0
Chloride/Bromide, mg/l	53,300	56,100	53,800	5,410	6,190	52,300	53,600	53,200
Chromium, mg/l	N.D.	N.D.	N.D.	N.D.	N.D.	.11	N.D.	N.D.
Copper, mg/l	N.D.	N.D.	N.D.	N.D.	N.D.	<0.025	N.D.	N.D.
Hardness, Calcium, (b) mg/l CaCO ₃	N.D.	N.D.	N.D.	N.D.	N.D.	4,300	N.D.	N.D.
Hardness, Total, mg/l CaCO ₃	N.D.	N.D.	N.D.	N.D.	N.D.	4,500	N.D.	N.D.
Iron, mg/l	N.D.	N.D.	N.D.	N.D.	N.D.	0.4	N.D.	N.D.
Lead, mg/l	N.D.	N.D.	N.D.	N.D.	N.D.	0.7	N.D.	N.D.
Magnesium, mg/l	250	260	250	19	23	250	250	260
Manganese, mg/l	N.D.	N.D.	N.D.	N.D.	N.D.	6.0	N.D.	N.D.
Mercury, mg/l	N.D.	N.D.	N.D.	N.D.	N.D.	<0.001	N.D.	N.D.
pH	7.6	7.2	7.2	7.9	7.8	7.2	6.3	6.7
Potassium, mg/l	472	478	444	10.1	10.1	462	486	476
Silicate, Dissolved, mg/l SiO ₂	141	56	66	17	19	53	51	47
Sodium, mg/l	29,700	29,500	30,300	3,620	4,000	27,400	23,200	28,800
Solids, Dissolved, mg/l	90,900	94,100	90,700	9,770	11,000	90,400	90,400	92,700
Solids, Suspended, mg/l	220	197	171	122	81	714	597	62,400
Strontium, mg/l	340	360	340	2.7	2.7	360	360	350
Sulfate, mg/l SO ₄ ²⁻	412	344	464	N.D.	N.D.	420	284	360
Sulfide, mg/l (c)	N.D.	N.D.	N.D.	N.D.	N.D.	<1	N.D.	N.D.
Zinc, mg/l	N.D.	N.D.	N.D.	N.D.	N.D.	0.1	N.D.	N.D.

(a) Since the initial pH at the time of analysis was less than 8.3, the procedure assumed the carbonate (contribution to alkalinity) to be zero.

(b) Spurious results, in comparison to calcium values, were probably due to incompatibility of titration systems with brine samples.

(c) The reported values may be low due to the air oxidation of sulfide sulfur to elemental sulfur.

N.D. = Not determined.

GAS SAMPLES FROM THE BEULAH SIMON NO. 2 WELL

<u>Sample No.</u>	<u>Description</u>
BS2 01-1	First fraction flashed from liquid BS2, FW1/F, 12-30-79, -, 01, DH.
BS2 01-2	Second fraction flashed from liquid BS2, FW1/F, 12-30-79, -, 01, DH.
BS2 01-T	Total of gas flashed from liquid BS2, FW1/F, 12-30-79, -, 01, DH.
BS2 03-1	First fraction flashed from liquid BS2, FW/F/F, 12-6-79, 1100, 03, Se.
BS2 03-2	Second fraction flashed from liquid BS2, FW/F/F, 12-6-79, 1100, 03, Se.
BS2 03-T	Total of gas flashed from liquid BS2, FW/F/F, 12-6-79, 1100, 03, Se.
BS2 05-1	First fraction flashed from liquid BS2, FW/F/F, 12-7-79, 1000, 05, Se.
BS2 05-2	Second fraction flashed from liquid BS2, FW/F/F, 12-7-79, 1000, 05, Se.
BS2 05-3	Third fraction flashed from liquid BS2, FW/F/F, 12-7-79, 1000, 05, Se.
BS2 05-4	Fourth fraction flashed from liquid BS2, FW/F/F, 12-7-79, 1000, 05, Se.
BS2 05-T	Total of gas flashed from liquid BS2, FW/F/F, 12-7-79, 1000, 05, Se.
BS2 02	Gas taken from line connecting the torch to the separator at 1100 hours on 12/6/79 at -240°F and -500 psig.
BS2 04	Gas taken from line connecting the torch to the separator at 1000 hours on 12/7/79 at -240°F and -500 psig.

QUANTITATIVE ANALYSES OF GAS SAMPLES FLASHED FROM
WATER SAMPLES FROM THE BEULAH SIMON NO. 2

INSTITUTE OF GAS TECHNOLOGY	Sample No.	BS2 03-1	BS2 03-2	BS2 03-T	BS2 05-1	BS2 05-2	BS2 05-3	BS2 05-4	BS2 05-T
		μmoles							
	H ₂ S	0	0	0	0	0	0	0	0
	N ₂	90	6	96	0.9	8	90	0	99
	CO	0	0	0	0	0	0	0	0
	O ₂	0	0	0	0	0	0	0	0
	CO ₂	4500	3000	7500	48	410	4400	4700	9600
	H ₂	500	300	800	5	30	400	500	900
	Ar	0	0	0	0	0	0	0	0
	He	0	0	0	0	0	0	0	0
	Methane	83,200	54,400	137,600	864	7570	80,400	80,600	169,400
	Ethane	2100	1400	3500	22	190	2000	2000	4200
	Propane	660	410	1070	5.3	55	660	630	1400
	N-Butane	80	50	130	0.8	7	70	90	200
	I-Butane	160	100	260	1.7	13	130	140	280
	Pentanes	20	10	30	0.3	2	20	20	40
	Hexanes	0	0	0	0	0	0	0	0
	Heptanes	0	0	0	0	0	0	0	0
	Benzene	30	10	40	0.2	2	20	30	52
	Toluene	9	6	15	0	0.8	9	9	20
	Xylene	0	0	0	0	0	0	0	0
	Total	91,300	59,700	151,000	948	8290	88,200	88,700	186,000
	Flashed to	99.61 psia	44.10 psia					59.05 psia	
	Water Vapor Correction	< 0.6%	< 1.2%	< 1%	< 3.2%	< 3.7%	< 0.6%	< 1%	< 1%

QUANTITATIVE ANALYSES OF THE GASES FLASHED FROM THE
DOWN-HOLE SAMPLE OBTAINED FROM THE BEULAH SIMON NO. 2

<u>Sample No.</u>	<u>BS2 01-1</u>	<u>BS2 01-2</u> <u>μmoles</u>	<u>BS2 01-T</u>
H ₂ S	0	0	0
N ₂	170	170	340
CO	0	0	0
O ₂	0	0	0
CO ₂	1100	2580	3680
H ₂	1710	1280	2990
Ar	0	0	0
He	6	5	11
Methane	58,530	46,500	105,000
Ethane	1640	1140	2780
Propane	530	340	870
N-Butane	77	40	117
I-Butane	120	73	193
Pentanes	20	10	30
Hexanes	0	5	5
Heptanes	0	0	0
Benzene	6	10	16
Toluene	0	0	0
Xylene	0	0	0
Total	63,900	52,100	116,000
Flashed to	68.65 psia	15.00 psia	
Water Vapor Correction	< 1%	< 4%	< 2%
Gas/Water Ratio			22.1

**QUANTITATIVE ANALYSES OF GAS SAMPLES
FROM THE BEULAH SIMON NO. 2**

<u>Sample No.</u>	<u>BS2 02</u>	<u>BS2 04</u>
	<u>Mole %</u>	
H ₂ S	0.0	0.0
N ₂	0.0	0.1
CO	0.0	0.0
O ₂	0.0	0.0
CO ₂	6.6	6.3
H ₂	0.5	0.4
Ar	0.00	0.00
He	0.00	0.00
Methane	89.6	90.0
Ethane	2.3	2.2
Propane	0.73	0.67
N-Butane	0.07	0.07
I-Butane	0.17	0.17
Pentanes	0.02	0.01
Hexanes	0.00	0.00
Heptanes	0.00	0.00
Benzene	0.04	0.03
Toluene	0.01	0.01
Xylene	0.00	0.00
Total	100.04	99.96

ACTIVITY SUMMARY FOR GRUY FEDERAL - KAPLAN, IA.

Delivery of the initial 1,000 gallons of T-96 was made on October 24, 1979. After loading the annular area, an attempt was made to flow the well on October 28, 1979. Reservior Data, Inc. incurred wireline difficulties after approximately 5 hours of flowing and a rig was moved on location.

During the interim, efforts to get the dual Stonebore chemical injection pumps operating was futile. The pumps were returned to Houston for repair and testing. The main problem was bolts shearing off.

After removal of wireline devices, an additional 1,000 gallons of T-96 was requested and delivery was made on November 14, 1979.

On November 17, 1979, a second attempt to flow the well proved unsuccessful after approximately 13 hours. Pressure built up on the S.W.D. well. Attached is a water analysis report, a scale analysis report and an inhibitor concentration report for this period.

On November 19, 1979, the S.W.D. well was acidized without benefit. A decision by Gruy personnel to change to high temperature valves. on all test equipment and to install a line cooling unit was made in an effort to ease the effects of the 268° fluids.

After additional wireline, valve and S.W.D. problems, Otis was called in on November 25, 1979, to wireline the S.W.D. well. The bottom 200' was plugged with mainly acid-insoluble residue. Attached please find a deposit analysis, a standard water analysis, an evaluation of the suspended solids present in the water sample and a series of photo-micrographs of the deposited solids.

Upon completion of a clean-up program by NOWSCO, the 10-day test experiment period began November 28, 1979 at 9 P.M. A daily visual inspection of a coupon immediately downstream of the choke body was done. Also, samples for inhibitor residuals were pulled daily. Coupon analysis and residual results are incomplete at this time, however, these will be forwarded. Coupons seemed to show very little build-up. The test equipment Weatherly Engineering had on location showed no indication of scale deposition. This was confirmed by a phone conversation on December 12, 1979.

As a whole, the chemical injection pump used at the surface performed satisfactorily. The tubing pressure originally was 6300 psi and gradually declined through the test to 3200 psi.

Activity Summary
Page 2

Meanwhile, the Stonebore duplex electrical pumps used for injecting through the casing required constant maintenance and overall general attention. The casing pressure held steadily at 5400 psi for the entire 10-day test.

GRUY FEDERAL, INC.

BEULAH SIMON NO. 2

KAPLAN, LA.

INHIBITOR CONCENTRATIONS

<u>DATE:</u>	<u>TIME:</u>	<u>SAMPLE POINT:</u>	<u>T-96 (ppm):</u>
11/29/79	8:00 A.M.	Sand Loop	32
11/29/79	3:00 P.M.	" "	43
11/30/79	6:00 P.M.	" "	51
12/01/79	7:30 A.M.	" "	8
12/01/79	4:00 P.M.	" "	Broken in Shipment
12/02/79	8:30 A.M.	" "	8
12/02/79	4:00 P.M.	" "	37
12/03/79	9:00 A.M.	" "	26
12/03/79	4:00 P.M.	" "	24
12/04/79	10:30 A.M.	" "	7
12/04/79	3:00 P.M.	" "	29
12/05/79	4:00 P.M.	" "	26
12/06/79	9:00 A.M.	" "	15
12/07/79			
12/08/79			

GRUY FEDERAL, INC.

BEULAH SIMON NO. 2

KAPLAN, LA.

WATER ANALYSIS OF 12/2/79
(Done by Southern Petroleum Laboratories)

CaCO ₃	7388
MgCO ₃	848
HCO ₃	640
CO ₃	< 1
Cl	50,516
Fe	30
SO ₄	434
Si	100
pH	6.6
NH ₃	30

* Stability Index @ 200°	=	2.17
" " 240°	=	3.14
" " 266°	=	3.85

*SI run by Mark Vile

**Champion
Chemicals, Inc.**

ANALYTICAL LABORATORY
3720 WESTBANK EXPRESSWAY
HARVEY, LA. 70058
504/347-1581

PLANT and LABORATORY: Odessa, Texas 915/362-2353
RESEARCH FACILITY: Houston, Texas 713/433-6771

Report for R. L. McCoy
cc _____
Company GRUY FEDERAL, INC.
Address _____
Service Engineer George Dorr

Date Received 11/19/79
Date Reported 11/20/79
Field, Lse. or Well Kaplan
Submitted by _____

CHEMICAL ANALYSIS (AS PARTS PER MILLION)
Field, Lease, or Well

Chemical Component	Kaplan 11/17/79	Kaplan 11/18/79			
Chloride (Cl)	52,200	60,000			
Iron (Fe)	36	54			
Calcium (Ca)	3,000	3,000			
Magnesium (Mg)	316	486			
Hydrogen Sulfide (H ₂ S)	-	-			
Sulfate (SO ₄)	420	400			
Specific Gravity (gms/cc)	1.060	1.055			
pH - [] Meter [] Strip	*	*			
Bicarbonate (HCO ₃)	*	*			
Carbonate (CO ₃)					

Other Description, Remarks and Recommendations

* Samples were acidized before pH and bicarbs could be run.

Reported by Laura Becker

SCALE ANALYSIS REPORT

PLANT and LABORATORY: Odessa, Texas
LABORATORY: Houston, Texas ID 3-6771

P. O. BOX 35036
HOUSTON, TEXAS 77035

REPORT FOR _____ DATE SAMPLED 11/17/79 & 11/18/79
CC _____ DATE REPORTED _____
CC _____ FIELD, LEASE OR WELL KAPLAN
CC _____ COUNTY _____ STATE _____
COMPANY GRUY FEDERAL, INC. FORMATION _____
ADDRESS _____ DEPTH _____
SERVICE ENGINEER George Dorr SUBMITTED BY George Dorr

OTHER DESCRIPTION

CHEMICAL ANALYSIS (AS WEIGHT PERCENT)					
SCALE COMPONENT	Field, Lease, or Well				
	11/17/79 Disposal Well	11/18/79 Sand Loop			
Hydrocarbons	7.2	22.1			
Carbonate	17.8	23.3			
Iron Compound	64.5	38.0			
Acid Insoluble	10.5	16.6			
TOTAL	100.0%	100.0%			

REMARKS AND RECOMMENDATIONS

REPORTED BY _____

TARA PLACE-WEST, SUITE 162
1604 PINHOOK ROAD
LAFAYETTE, LA 70508

(318) 232-2275

CUSTOMER: GRUY FEDERAL, INC.
FIELD: KAPLAN
ATTENTION: Dr. James Hartsock, Paul Langston

INHIBITOR CONCENTRATION

<u>SAMPLE:</u>	<u>DATE:</u>	<u>T-96 (ppm):</u>
9:30 P.M.	11/17/79	79
1:15 A.M.	11/18/79	81

Susan Becker

cc: Ray Frazier
Cary Elkins

CHAMPION CHEMICALS, INC.

INTER-OFFICE CORRESPONDENCE

TO: George Dorr

DATE: November 27, 1979

FROM: Mark Vile

SUBJECT: Disposal Well Plugging
at Gruy Federal, Kaplan

FILE: MAV: 149-79

Dear George,

Attached are the results of sample analyses from the subject lease. Included are a deposit analysis, a standard water analysis, an evaluation of the suspended solids present in the water sample and a series of photomicrographs of the deposited solids. Discussion of each of these follows.

Water Analysis

Compared to results of samples taken on 17 and 18 November, 1979, no significant differences are noted. A higher iron count may be indicative of a corrosion process in progress (see discussion of Deposit Analysis). The high sulfate value would contraindicate a barium sulfate problem unless contamination by a barium - bearing water were to occur.

Suspended Solids Analysis

Visually observing a large quantity of suspended solids in the water sample, these were separated for analysis by filtration through a 5 micron pore - size membrane filter. Upon analysis, these suspended solids were found to be precipitated iron in the form of ferric oxide (Fe_2O_3 ; due to atmospheric oxidation of the water sample) and finely divided acid-insoluble particles. Microscopic examination proved these particles to be visually identical to the acid-insoluble residue of the deposit analysis. These particles are described in the following section.

Deposit Analysis

The deposit sample received was an unconsolidated grayish - brown sludge having the general appearance of clay. Only minor amounts of hydrocarbons and acid solubles were present, the bulk being acid - insoluble residue. The presence of sulfides was detected by the evolution of hydrogen sulfide gas (confirmed by lead acetate paper) during the acid washes. This may be indicative of some SRB (sulfate reducing bacteria) activity. Serial dilution cultures should be prepared to confirm or deny this possibility.

A portion of the acid - insoluble residue was deposited on a membrane filter and dried at 105°C in preparation for microscopic

November 27, 1979

examination. The attached photomicrographs are studies of these residue solids.

Frames 1 and 2 are a low magnification (30X) view of the edge of the solids - cake deposited on the membrane filter. The sketch below will describe the field of view.

Clearly visible to the left of the frames is the solids - cake deposited on the membrane and the shrinkage cracks which developed during drying. A small section of the edge at the center of the picture has crumbled revealing the tiny, individual particles comprising the cake.

Frame 3 shows this same area at 77X magnification. A variety of individual particles can be seen.

Frame 4 depicts some of these particles separated and placed in darkfield illumination at 300X magnification. Sizes range from less than 10 microns to greater than 80 microns. These were typical of the vast majority of solids present in both the deposit sample and the water sample.

Frame 5, at 770X magnification, shows the smallest particles found. These were typically 1-2 microns in size.

Close inspection of these solids revealed a wide variety of types including amorphous, plate - like, fibrous and crystalline. Most were colorless but minor quantities of red, brown, black, green and metallic colored particles were also present. Clearly distinguishable were garnet - type and pyrite - type microcrystals. An estimated 15-20% of the particles were optically active under

November 27, 1979

polarized light.

Treatment of the residue with boiling, concentrated sulfuric acid decomposed approximately 70% of its volume. A qualitative test indicated a minor quantity of barium sulfate to be present.

Combining the various forms of evidence it was concluded that the deposit sample consisted primarily of drilling mud clay solids with minor amounts of sand and barite. Reduction of injectivity in the disposal zone is most likely the result of the formation of a filter - cake on the wellbore face. Some invasion may also have occurred resulting in skin damage. Stimulation of the well will require a mud - acid job as a minimum and possible nitrogen back-wash as well. If extensive skin damage has occurred, fracturing or depth - perforation may be necessary. To prevent a recurrence of this problem consideration should be given to the installation of a centrifugal - type desilter, at least until the producing well cleans up.

I will leave it up to you, George, to relay this information to the proper persons. Let me know if there is anything else I can do.

Regards,

Mark Vile

cc: Ray Frazier
Ed Cruse
Cedric Adams
Russell Adams
Homer Grant

CaCO₃

CaSO₄

SCALE ANALYSIS REPORT

PLANT and LABORATORY: Odessa, Texas
RESEARCH FACILITY: Houston, Texas

3720 WESTBANK EXPRESSWAY
HARVEY, LOUISIANA 70058
(504) 347-1581

REPORT FOR _____ DATE SAMPLED 11-25-79
cc _____ DATE REPORTED 11-27-79
cc _____ FIELD, LEASE OR WELL Kaplan, SWD Well
cc _____ COUNTY _____ STATE _____
COMPANY GRUY FEDERAL FORMATION _____
ADDRESS _____ DEPTH _____
SERVICE ENGINEER George Dorr SUBMITTED BY George Dorr

OTHER DESCRIPTION

APPEARANCE: GRAYISH - BROWN SLUDGE; AMORPHOUS AND UNCONSOLIDATED LOSS ON
DRYING (105°C) : 28.2%

CHEMICAL ANALYSIS (AS WEIGHT PERCENT)					
SCALE COMPONENT (AFTER DRYING)	Field, Lease, or Well				
	Deposit in Tubing at 2352				
HYDROCARBONS	5.4%				
CARBONATES	1.2				
IRON COMPOUNDS *	2.0				
ACID INSOLUBLES **	91.4				
TOTAL	100.0				

REMARKS AND RECOMMENDATIONS

* MAJOR CONSTITUENT : IRON SULFIDE (FeS).

** MAJOR CONSTITUENTS: CLAY SOLIDS
SAND

MINOR CONSTITUENTS: BARITE

COMPOSITION IS TYPICAL OF DRILLING MUD.

REPORTED BY _____

PLANT and LABORATORY: Odessa, Texas 915/362-2353
RESEARCH FACILITY: Houston, Texas 713/433-6771

Report for _____
cc _____
Company GRUY FEDERAL
Address _____
Service Engineer George Dorr

Date Received 11-26-79
Date Reported 11-26-79
Field, Lse. or Well Kaplan
Submitted by George Dorr

CHEMICAL ANALYSIS (AS PARTS PER MILLION)
Field, Lease, or Well

Chemical Component	SWD System				
Chloride (Cl)	54200				
Iron (Fe) (Dissolved)	80				
Calcium (Ca)	3040				
Magnesium (Mg)	389				
Hydrogen Sulfide (H ₂ S)	--				
Sulfate (SO ₄)	470				
Specific Gravity (gms/cc)	1.060				
pH — ☐ Meter ☐ Strip					
Bicarbonate (HCO ₃)	524				
Carbonate (CO ₃)					
Total Suspended Solids	213				
Suspended Iron (Fe ₂ O ₃)	76				
Total Iron (Fe)	156				

Other Description, Remarks and Recommendations

Reported by M. J. Lee

3720 WESTBANK EXPRESSWAY
HARVEY, LA. 70058

(504) 347-1581

November 28, 1979

GRUY FEDERAL
Kaplan, LA.

Attn: George Dorr

Suspended Solids Analysis

Sample: SWD Well

Date: November 25, 1979

<u>Component</u>	<u>Milligrams per Liter</u>	<u>Weight Percent</u>
Hydrocarbons	13.2	6.2%
Carbonates	6.3	3.0
Iron Oxides	108.6	51.1
Clay, Sand	<u>84.5</u>	<u>39.7</u>
Total	212.6	100.0%

Wile

FRAME 1

FRAME 2

FRAME 3

FRAME 4

FRAME 5