

SIDE ONE

STATE CORPORATION COMMISSION OF KANSAS
OIL & GAS CONSERVATION DIVISION
WELL COMPLETION FORM
ACO-1 WELL HISTORY
DESCRIPTION OF WELL AND LEASE

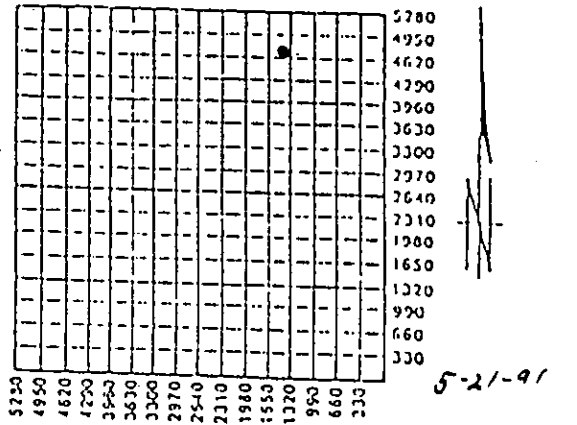
Operator: License # 5952
Name: Amoco Production Company
Address P.O. Box 800, Rm. 1833
City/State/Zip Denver, CO 80201
Purchaser: _____
Operator Contact Person: J. A. Victor
Phone (303) 830-4009
Contractor: Name: Murfin Drilling
License: 6033
Wellsite Geologist: _____

Designate Type of Completion:
 New Well Re-Entry Workover
 Oil SWD Temp. Completion
 Gas Inj Delayed Completion
 Dry Other (Core, Water Supply, etc.)

If O.W.O.: old well info as follows:
Operator: N/A
Well Name: _____
Comp. Date _____ Old Total Depth _____

Drilling Method:
 Mud Rotary Air Rotary Cable
10/11/90 10/20/90
Spud Date Date Reached TD Completion Date

API NO. 15- 071-20522-0000
County Greeley
NE NW NE Sec. 26 Twp. 18 Rge. 43
4660 Ft. North from Southeast Corner of Sect
1350 Ft. West from Southeast Corner of Sect
(NOTE: Locate well in section plat below)
Lease Name Settles Well # 2
Field Name Wildcat
Producing Formation Basal Upper Morrow
Elevation: Ground 3874' KD 3886'
Total Depth 5300' POID 5200'



Amount of Surface Pipe Set and Cemented at 614 F
Multiple Stage Cementing Collar Used? Yes No
If yes, show depth set 2709 F
If Alternate II completion, cement circulated from _____
feet depth to _____ w/ _____ SA CI

INSTRUCTIONS: This form shall be completed in triplicate and filed with the Kansas Corporation Commission, 200 Colorado Derby Building, Wichita, Kansas 67202, within 120 days of the spud date of any well. Rule 02-3-130, 02-3-107 and 02-3-106 apply. Information on side two of this form will be held confidential for a period of 12 months if requested in writing and submitted with the form. See rule 02-3-107 for confidentiality in excess of 12 months. One copy of all wireline logs and drillers time log shall be attached with this form. ALL CEMENTING TICKETS MUST BE ATTACHED. Submit CP-1 form with all plugged wells. Submit CP-111 form with all temporarily abandoned wells. Any recompletion, workover or conversion of a well requires filing of ACO-2 within 120 days from commencement date of such work.

All requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Signature J. F. Hampton
Title Sr. Staff Admin. Supv. Date 1/22/91
Subscribed and sworn to before me this 22 day of January
19 91
Notary Public Julie A. Victor
Date Commission Expires 4/7/94

K.C.C. OFFICE USE ONLY
F Letter of Confidentiality Attached
C Wireline Log Received
C Drillers Timelog Received
Distribution
 KCC SW/Rep MGA
 KGS Plug Other
(Specify)

SIDE TWO

Operator Name Amoco Production Company Lease Name Settles Well # 2
 Sec. 26 Twp. 18 Rge. 43 East County Greeley
 West

INSTRUCTIONS: Show important tops and base of formations penetrated. Detail all cores. Report all drill stem tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface during test. Attach extra sheet if more space is needed. Attach copy of log.

Drill Stem Tests Taken Yes No
 (Attach Additional Sheets.)
 Samples Sent to Geological Survey Yes No
 Cores Taken Yes No
 Electric Log Run Yes No
 (Submit Copy.)

Formation Description		
Name	Top	Bottom
Stone Corral	2520'	
Chase	2685'	
Pennsylvanian	3490'	
Heebner	3940'	
Upper Morrow	4990'	
Mississippian	5195'	

CASING RECORD New Used

Report all strings set-conductor, surface, intermediate, production, etc.

Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs./Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
Surface	12-1/4"	8-5/8"	24#	614'	Premium C	165	
Production	7-7/8"	5-1/2"	15.5#	5291'	Class C Premium C	150 260	CACL2 2%
					Premium C	100	CACL2 2%

PERFORATION RECORD		Acid, Fracture, Shot, Cement Squeeze Record	
Shots Per Foot	Specify Footage of Each Interval Perforated	(Amount and Kind of Material Used)	Depth
4 JSPF	5100-5106'	Frac with 5000 gals of 28% HCl	5100-5184'
4 JSPF	5177-5184'		

TUBING RECORD N/A Size _____ Set At _____ Packer At _____ Liner Run Yes No

Date of First Production	Producing Method <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other (Explain)							
Estimated Production Per 24 Hours	Oil	Dbls.	Gas	Hcf	Water	Dbls.	Gas-Oil Ratio	Gravity

Disposition of Gas: Vented Sold Used on Lease (If vented, submit ACO-18.)

METHOD OF COMPLETION

Open Hole Perforation Dually Completed Conningled

Other (Specify) _____

Production Interval _____

3120
01/10/91

AMDCO PRODUCTION COMPANY

LEASE : SETTLES

WELL NO. : 2
TEST NO. : 1

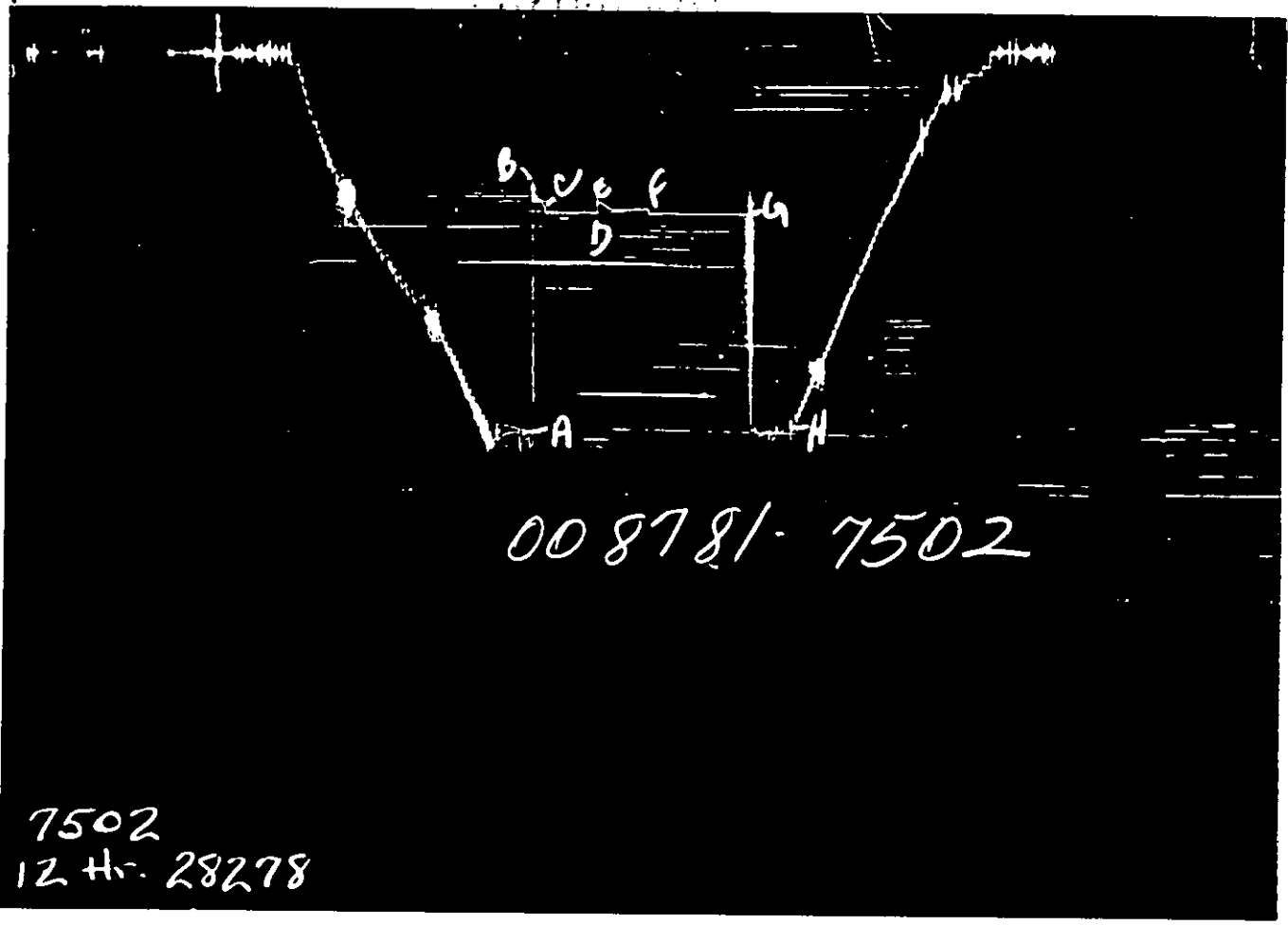
TICKET NO. 00878100
24-OCT-90
LIBERAL.

RECEIVED
STATE CORPORATION COMMISSION

JAN 24 1991

LEGAL LOCATION	SETTLES	WELL NO.	2	TEST NO.	1	TESTED INTERVAL	4978.6 - 5120.0	AMDCO PRODUCTION COMPANY
LEASE NAME								LEASE OWNER/COMPANY NAME
SEC. - TRIP. - RNS.	26-189-43H							
FIELD AREA	MOORE JOHNSON SOUTH	COUNTY	GREELEY	STATE	KANSAS	SM		

0010 7/1



7502
 12 Hr. 28278

GAUGE NO: 7502 DEPTH: 4963.5 BLANKED OFF: NO HOUR OF CLOCK: 12

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2414	2384.1			
B	INITIAL FIRST FLOW	903	802.4			
C	FINAL FIRST FLOW	910	960.8	9.0	7.3	F
C	INITIAL FIRST CLOSED-IN	910	960.8			
D	FINAL FIRST CLOSED-IN	1002	1000.1	30.0	31.6	C
E	INITIAL SECOND FLOW	935	905.2			
F	FINAL SECOND FLOW	973	975.4	30.0	30.5	F
F	INITIAL SECOND CLOSED-IN	973	975.4			
G	FINAL SECOND CLOSED-IN	1002	1002.5	60.0	59.6	C
H	FINAL HYDROSTATIC	2414	2357.4			

STATE CORPORATION COMMISSION

JAN 24 1991

COURTESY DIVISION



BT 7503
12 Hr 2249X

GAUGE NO: 7503 DEPTH: 5116.7 BLANKED OFF: YES HOUR OF CLOCK: 12

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2513	2456.4			
B	INITIAL FIRST FLOW	981	1002.7			
C	FINAL FIRST FLOW	987	996.8	9.0	7.3	F
C	INITIAL FIRST CLOSED-IN	987	996.8			
D	FINAL FIRST CLOSED-IN	1026	1023.4	30.0	31.6	C
E	INITIAL SECOND FLOW	991	989.8			
F	FINAL SECOND FLOW	1017	1006.5	30.0	30.5	F
F	INITIAL SECOND CLOSED-IN	1017	1006.5			
G	FINAL SECOND CLOSED-IN	1026	1027.2	60.0	59.6	C
H	FINAL HYDROSTATIC	2513	2416.1			

STATE CORPORATION COMMISSION

JAN 24 1991

CONSTITUTION DIVISION

ORIGIN

EQUIPMENT & HOLE DATA	TICKET NUMBER: <u>00878100</u>
FORMATION TESTED: <u>MORROW</u>	DATE: <u>10-18-90</u> TEST NO: <u>1</u>
NET PAY (ft): <u>24.0</u>	TYPE DST: <u>OPEN HOLE</u>
GROSS TESTED FOOTAGE: <u>141.4</u>	FIELD CAMP: <u>LIBERAL</u>
ALL DEPTHS MEASURED FROM: <u>KELLY BUSHING</u>	TESTER: <u>JEFF CLARK</u>
CASING PERFS. (ft): _____	WITNESS: <u>DAN BELL</u>
HOLE OR CASING SIZE (in): <u>7.875</u>	DRILLING CONTRACTOR: <u>MURFIN DRILLING #25</u>
ELEVATION (ft): <u>3882.0 GROUND LEVEL</u>	
TOTAL DEPTH (ft): <u>5120.0</u>	
PACKER DEPTH(S) (ft): <u>4979</u>	
FINAL SURFACE CHOKE (in): <u>0.62500</u>	
BOTTOM HOLE CHOKE (in): <u>0.750</u>	
MUD WEIGHT (lb/gal): <u>9.30</u>	
MUD VISCOSITY (sec): <u>43</u>	
ESTIMATED HOLE TEMP. (°F): _____	
ACTUAL HOLE TEMP. (°F): <u>132 @ 5115.0</u> ft	

FLUID PROPERTIES FOR RECOVERED MUD & WATER		
SOURCE	RESISTIVITY	CHLORIDES
<u>PIT</u>	<u>0.345 @ 70 °F</u>	<u>12540 ppm</u>
<u>TOP</u>	<u>0.345 @ 70 °F</u>	<u>12540 ppm</u>
<u>MIDDLE</u>	<u>0.345 @ 70 °F</u>	<u>12540 ppm</u>
<u>BOTTOM</u>	<u>0.345 @ 70 °F</u>	<u>12540 ppm</u>
_____	_____ °F	_____ ppm
_____	_____ °F	_____ ppm

SAMPLER DATA
Psig AT SURFACE: <u>970.0</u>
cu.ft. OF GAS: <u>5.800</u>
cc OF OIL: _____
cc OF WATER: _____
cc OF MUD: _____
TOTAL LIQUID cc: _____

HYDROCARBON PROPERTIES
OIL GRAVITY (°API): _____ @ _____ °F
GAS/OIL RATIO (cu.ft. per bbl): _____
GAS GRAVITY: _____

CUSHION DATA		
TYPE	AMOUNT	WEIGHT
_____	_____	_____
_____	_____	_____

RECOVERED :
 360 FEET OF GAS CUT DRILLING MUD

STATE CORPORATION COMMISSION

JAN 24 1991

MEASURED FROM TESTER VALVE

REMARKS :
 SAMPLER CONTAINED NO FLUID.

CHARTS INDICATE POSSIBLE SLIGHT PLUGGING OF ANCHOR PERFORATIONS DURING EARLY PORTION OF FIRST FLOW PERIOD.

NOTE: READINGS FOR GAUGE #7502 MAY BE SOMEWHAT QUESTIONABLE DUE TO ERRATIC BEHAVIOR OF THE GAUGE.

CO. OF RECORDS

ORIGINAL

L9T

TYPE & SIZE MEASURING DEVICE :		.625 IN-LINE CHOKE			TICKET NO: 00878100
TIME	CHOKE SIZE	SURFACE PRESSURE PSI	GAS RATE MCF	LIQUID RATE BPD	REMARKS
10-18-90					
0045					CALLED OUT
					REQUESTED AS SOON AS POSSIBLE
0545					ON LOCATION
					RIG TRIPPED OUT OF HOLE WITH BIT
0745					RIG ON BANK
0800					PICKED UP TEST TOOL
0845					TOOL MADE UP AT KELLY BUSHING
0855					TRIPPED IN HOLE WITH TEST TOOL
1115					RIGGED UP SURFACE EQUIPMENT
1130					TOOL ON BOTTOM WITH 20,000#
1131	BH				TOOL OPENED. BLOW OFF BOTTOM
					OF BUCKET IN 30 SECONDS
1132					TURNED OUT TO TANK, SURFACE
					LEAK...GAS TO THE SURFACE IN
					2 MINUTES
1140	.625	625			CLOSED TOOL FOR FIRST CIP
					(UNABLE TO COMPLETELY TURN OUT
					TO TANK DUE TO SURFACE LEAKS)
1210	.625	0			OPENED TOOL FOR 2ND FLOW
1213	.625	195	1947.18		
1215	.625	250	2496.39		
1217	.625	370	3694.66		FLUID TO THE SURFACE (DRILLING MUD)
					STATE CORPORATION COMMISSION
1220	.625	450	4493.50		
1225	.625	475	4743.14		JAN 24 1991
1230	.625	475	4743.14		CONSERVATION DIVISION
1235	.625	475	4743.14		Cincinnati, Ohio
1240	.625	460	4593.36		CLOSED TOOL FOR 2ND CIP
					GAS BURNS
1340					OPENED BYPASS. RIGGED DDWN
					SURFACE EQUIPMENT
1345					TRIPPED OUT OF HOLE WITH DST #1
1630					TOOL AT KB - MADE BREAKS
1735					LOADED OUT
					RELEASED...JOB COMPLETED

ORIGINAL

TICKET NO: 00878100
 CLOCK NO: 28278 HOUR: 12

GAUGE NO: 7502
 DEPTH: 4963.5

REF	MINUTES	PRESSURE	AP	$\frac{t \cdot \Delta t}{t \cdot \Delta t}$	$\log \frac{t \cdot \Delta t}{t \cdot \Delta t}$
FIRST FLOW					
B	1	0.0	802.4		
	2	2.0	918.0	115.6	
	3	4.0	918.0	0.0	
	4	6.0	943.1	25.1	
C	5	7.3	960.8	17.7	
FIRST CLOSED-IN					
C	1	0.0	960.8		
	2	0.5	999.5	38.7	0.5 1.205
	3	1.0	1000.1	39.3	0.9 0.918
	4	1.5	1000.3	39.5	1.3 0.764
	5	2.0	1000.3	39.5	1.6 0.664
	6	2.5	1000.3	39.5	1.9 0.593
	7	3.0	1000.3	39.5	2.1 0.540
	8	3.5	1000.3	39.5	2.3 0.494
	9	4.0	1000.3	39.5	2.6 0.455
	10	4.5	1000.3	39.5	2.8 0.419
	11	5.0	1000.3	39.5	3.0 0.391
	12	6.0	1000.3	39.5	3.3 0.348
	13	7.0	1000.3	39.5	3.6 0.310
	14	8.0	1000.3	39.5	3.8 0.282
	15	9.0	1000.3	39.5	4.0 0.260
	16	10.0	1000.3	39.5	4.2 0.239
	17	12.0	1000.3	39.5	4.5 0.207
	18	14.0	1000.6	39.8	4.8 0.183
	19	16.0	1000.6	39.8	5.0 0.164
	20	18.0	1000.6	39.8	5.2 0.148
	21	20.0	999.3	38.5	5.4 0.136
	22	22.0	997.6	36.8	5.5 0.125
	23	24.0	997.3	36.4	5.6 0.115
	24	26.0	998.4	37.6	5.7 0.108
	25	28.0	999.5	38.7	5.8 0.101
	26	30.0	1000.5	39.6	5.9 0.095
D	27	31.6	1000.1	39.3	5.9 0.091
SECOND FLOW					
E	1	0.0	905.2		
	2	2.0	932.2	27.0	
	3	4.0	947.4	15.2	
	4	6.0	961.6	14.2	
	5	8.0	974.2	12.6	
	6	10.0	979.7	5.4	
	7	12.0	980.9	1.3	
	8	14.0	981.4	0.5	
	9	16.0	980.9	-0.5	
	10	18.0	980.3	-0.6	
	11	20.0	980.0	-0.3	
	12	22.0	977.9	-2.1	

REF	MINUTES	PRESSURE	AP	$\frac{t \cdot \Delta t}{t \cdot \Delta t}$	$\log \frac{t \cdot \Delta t}{t \cdot \Delta t}$
SECOND FLOW - CONTINUED					
	13	24.0	976.9	-1.0	
	14	26.0	976.8	-0.2	
	15	28.0	976.0	-0.8	
	16	30.0	975.5	-0.5	
F	17	30.5	975.4	-0.2	
SECOND CLOSED-IN					
F	1	0.0	975.4		
	2	0.5	1005.9	30.5	0.5 1.861
	3	1.0	1005.9	30.5	1.0 1.578
	4	1.5	1005.9	30.5	1.4 1.424
	5	2.0	1005.9	30.5	1.9 1.300
	6	2.5	1005.9	30.5	2.4 1.202
	7	3.0	1005.9	30.5	2.7 1.139
	8	3.5	1005.9	30.5	3.2 1.070
	9	4.1	1005.9	30.5	3.7 1.013
	10	4.5	1005.9	30.5	4.1 0.969
	11	5.0	1005.9	30.5	4.4 0.929
	12	6.0	1005.6	30.2	5.2 0.864
	13	7.0	1004.9	29.6	5.9 0.804
	14	8.0	1004.1	28.8	6.6 0.759
	15	9.0	1003.6	28.3	7.3 0.716
	16	10.0	1003.2	27.8	7.9 0.678
	17	12.0	1003.0	27.7	9.1 0.617
	18	14.0	1002.7	27.3	10.2 0.568
	19	16.0	1003.8	28.5	11.3 0.526
	20	18.0	1006.2	30.9	12.2 0.492
	21	20.0	1007.0	31.7	13.1 0.461
	22	22.0	1007.0	31.7	13.9 0.434
	23	24.0	1007.0	31.7	14.7 0.411
	24	26.0	1007.0	31.7	15.4 0.390
	25	28.0	1007.0	31.7	16.1 0.371
	26	30.0	1007.0	31.7	16.7 0.354
	27	35.0	1006.5	31.2	18.2 0.318
	28	40.0	1006.5	31.2	19.4 0.289
	29	45.0	1006.7	31.3	20.5 0.265
	30	50.0	1006.7	31.3	21.5 0.245
	31	55.0	1005.7	30.4	22.4 0.227
G	32	59.6	1002.5	27.2	23.1 0.213

RECEIVED
 STATE CORPORATION COMMISSION

JAN 24 1991

CONSERVATION DIVISION
 Wichita, Kansas

REMARKS:

ORIGINAL

TICKET NO: 00878100

GAUGE NO: 7503

CLOCK NO: 2249 HOUR: 12

DEPTH: 5116.7

REF	MINUTES	PRESSURE	AP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
FIRST FLOW					
B 1	0.0	1002.7			
2	2.0	978.2	-24.4		
3	4.0	983.3	5.1		
4	6.0	988.1	4.8		
C 5	7.3	995.8	8.7		
FIRST CLOSED-IN					
C 1	0.0	995.8			
2	0.5	1017.0	20.2	0.5	1.211
3	1.0	1020.9	24.0	0.9	0.908
4	1.5	1021.3	24.5	1.2	0.770
5	2.0	1021.8	25.0	1.5	0.675
6	2.5	1021.8	25.0	1.9	0.593
7	3.0	1021.8	25.0	2.1	0.533
8	3.5	1021.8	25.0	2.3	0.494
9	4.0	1021.8	25.0	2.6	0.452
10	4.5	1022.1	25.3	2.8	0.418
11	5.0	1022.3	25.4	3.0	0.394
12	6.0	1022.3	25.4	3.3	0.347
13	7.0	1022.3	25.4	3.5	0.311
14	8.0	1022.3	25.4	3.8	0.283
15	9.0	1022.4	25.6	4.0	0.259
16	10.0	1022.6	25.8	4.2	0.239
17	12.0	1022.6	25.8	4.6	0.206
18	14.0	1023.1	26.2	4.8	0.182
19	16.0	1023.1	26.2	5.0	0.164
20	18.0	1023.2	26.4	5.2	0.148
21	20.0	1023.4	26.6	5.4	0.135
22	22.0	1023.6	26.7	5.5	0.125
23	24.0	1023.6	26.7	5.6	0.116
24	26.0	1023.9	27.0	5.7	0.108
25	28.0	1023.9	27.0	5.8	0.101
26	30.0	1023.9	27.0	5.9	0.095
D 27	31.6	1023.4	26.6	5.9	0.091
SECOND FLOW					
E 1	0.0	989.8			
2	2.0	987.5	-2.4		
3	4.0	992.5	5.1		
4	6.0	998.4	5.9		
5	8.0	1003.0	4.6		
6	10.0	1006.4	3.3		
7	12.0	1007.7	1.3		
8	14.0	1007.7	0.0		
9	16.0	1007.7	0.0		
10	18.0	1007.3	-0.3		
11	20.0	1007.2	-0.2		
12	22.0	1006.9	-0.3		





















REF	MINUTES	PRESSURE	AP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$
SECOND FLOW - CONTINUED					
13	24.0	1005.9	0.0		
14	25.0	1005.9	0.0		
15	28.0	1005.5	-0.3		
16	30.0	1005.5	0.0		
F 17	30.5	1005.5	0.0		
SECOND CLOSED-IN					
F 1	0.0	1006.5			
2	0.5	1020.9	14.3	0.5	1.855
3	1.0	1022.6	16.1	0.9	1.606
4	1.5	1023.1	16.5	1.4	1.423
5	2.0	1023.2	16.7	1.9	1.298
6	2.5	1023.9	17.3	2.3	1.212
7	3.0	1023.9	17.3	2.7	1.138
8	3.5	1024.2	17.7	3.2	1.067
9	4.0	1024.4	17.8	3.6	1.019
10	4.5	1024.7	18.1	4.0	0.971
11	5.0	1024.7	18.1	4.4	0.935
12	6.0	1025.1	18.6	5.2	0.860
13	7.0	1025.6	19.1	5.9	0.807
14	8.0	1026.1	19.6	6.6	0.759
15	9.0	1026.1	19.6	7.3	0.717
16	10.0	1026.1	19.6	7.9	0.680
17	12.0	1026.1	19.6	9.1	0.619
18	14.0	1026.1	19.6	10.2	0.568
19	16.0	1026.3	19.7	11.2	0.527
20	18.0	1026.3	19.7	12.2	0.491
21	20.0	1026.6	20.0	13.1	0.461
22	22.0	1026.6	20.0	13.9	0.435
23	24.0	1026.9	20.4	14.7	0.411
24	26.0	1026.9	20.4	15.4	0.390
25	28.0	1026.9	20.4	16.1	0.371
26	30.0	1026.9	20.4	16.7	0.354
27	35.0	1027.1	20.5	18.2	0.318
28	40.0	1027.1	20.5	19.4	0.289
29	45.0	1027.2	20.7	20.5	0.265
30	50.0	1027.7	21.1	21.5	0.245
31	55.0	1027.7	21.1	22.4	0.227
G 32	59.6	1027.2	20.7	23.1	0.213

RECORDED
STATE CORPORATION COMMISSION

JAN 24 1991

CO
W. H. H. H.

REMARKS:

		O.D.	I.D.	LENGTH	DEPTH	
1		DRILL PIPE.....	4.500	3.826	4490.2	
3		DRILL COLLARS.....	6.250	2.250	359.9	
50		IMPACT REVERSING SUB.....	6.000	3.000	1.0	4850.6
3		DRILL COLLARS.....	6.250	2.250	92.3	
5		CROSSOVER.....	6.000	2.250	1.0	
11		HANDLING SUB & CHOKE ASSEMBLY...	4.500	3.500	4.7	
13		DUAL CIP SAMPLER.....	5.000	0.750	8.5	
60		HYDROSPRING TESTER.....	5.000	0.750	5.0	4961.7
80		AP RUNNING CASE.....	5.000	2.250	4.1	4963.5
15		JAR.....	5.000	1.750	5.0	
16		VR SAFETY JOINT.....	5.000	1.000	2.8	
70		OPEN HOLE PACKER.....	5.250	1.530	5.8	4978.6
20		FLUSH JOINT ANCHOR.....	5.000	2.370	6.0	
5		CROSSOVER.....	6.000	2.250	1.0	
3		DRILL COLLARS.....	6.250	2.250	122.0	
5		CROSSOVER.....	6.000	2.250	1.0	
5		CROSSOVER.....	6.000	2.250	1.0	
20		FLUSH JOINT ANCHOR.....	5.000	2.370	3.0	
82		TEMPERATURE RUNNING CASE.....	5.000		1.5	5114.9
81		BLANKED-OFF RUNNING CASE.....	5.000		4.1	5116.7
TOTAL DEPTH						5120.0

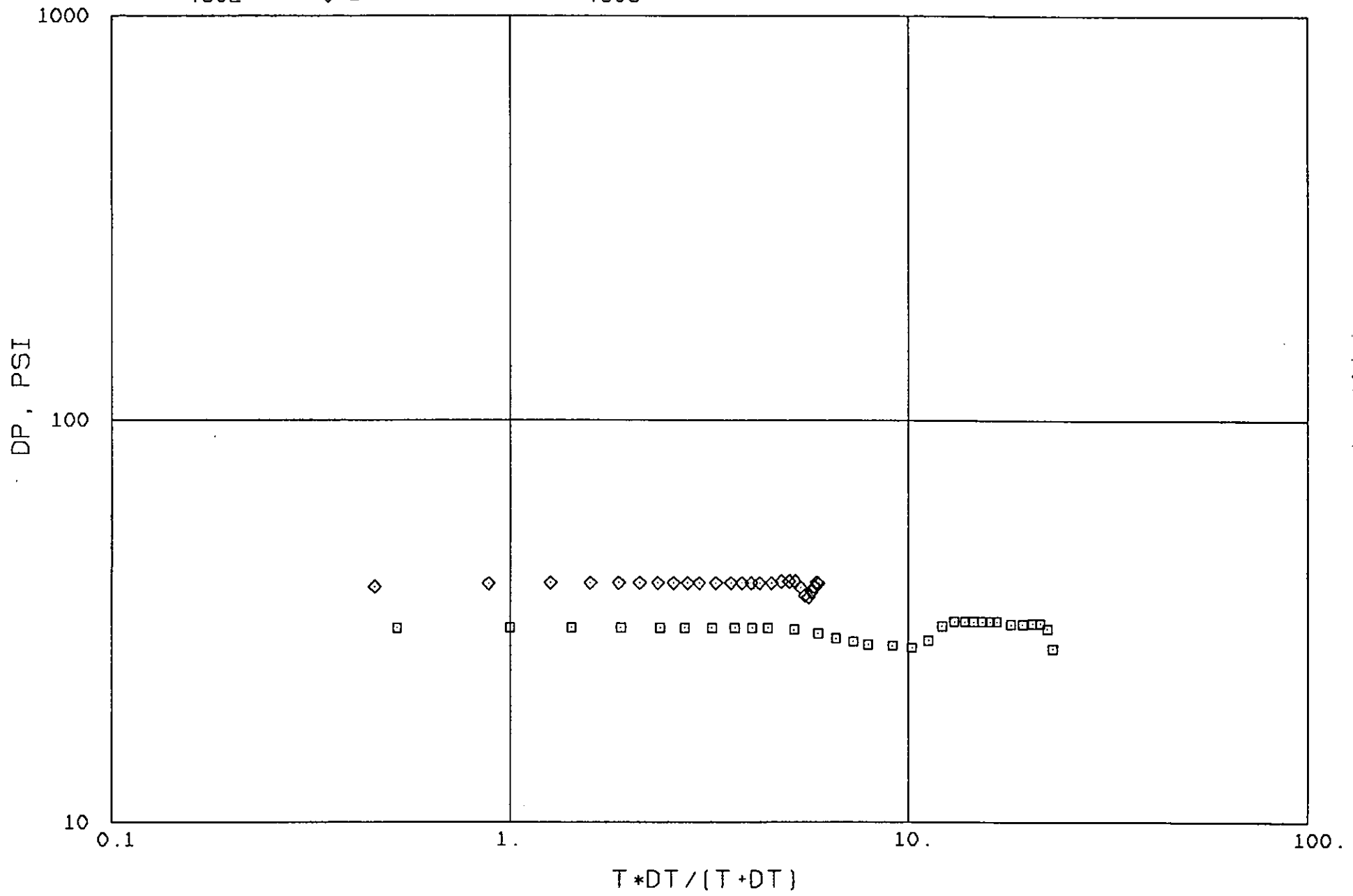
RECEIVED
STATE CORPORATION COMMISSION

JAN 24 1991

CONSERVATION DIVISION
Wichita, Kansas

GAUGE NO CIP 1 2
7502 ◇ □

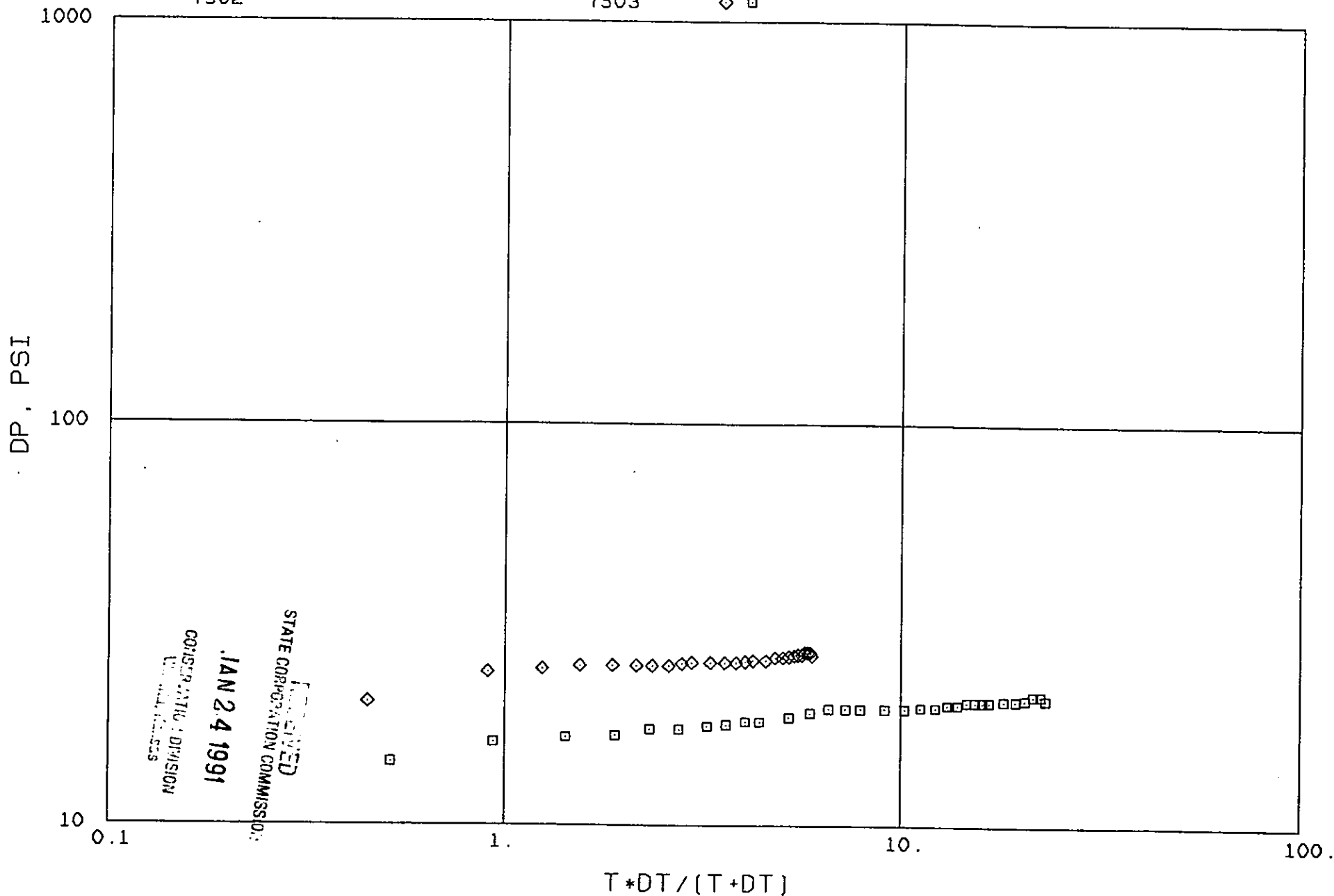
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7502

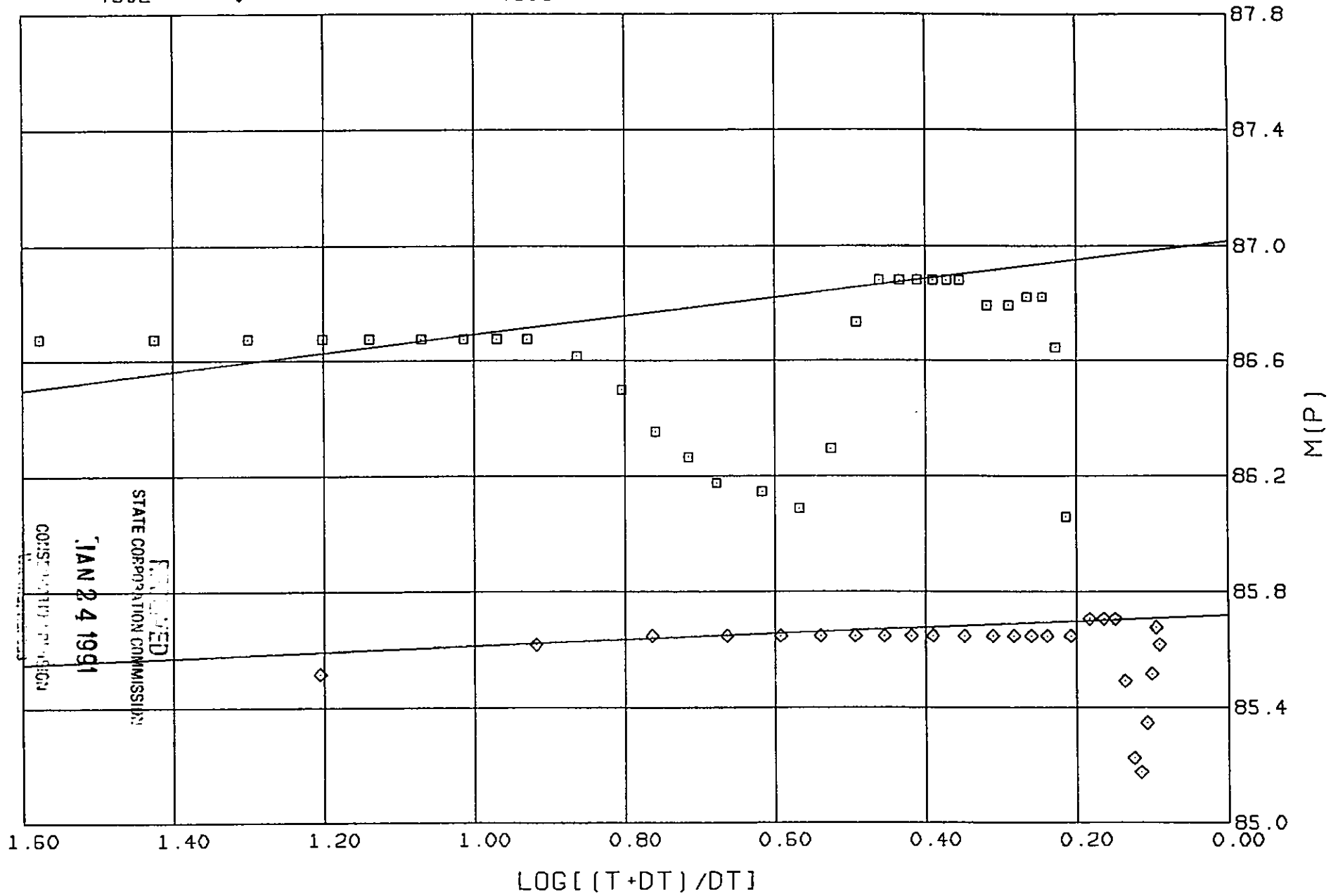
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ORIGINAL

GAUGE NO CIP 1 2
7502 ◇ □

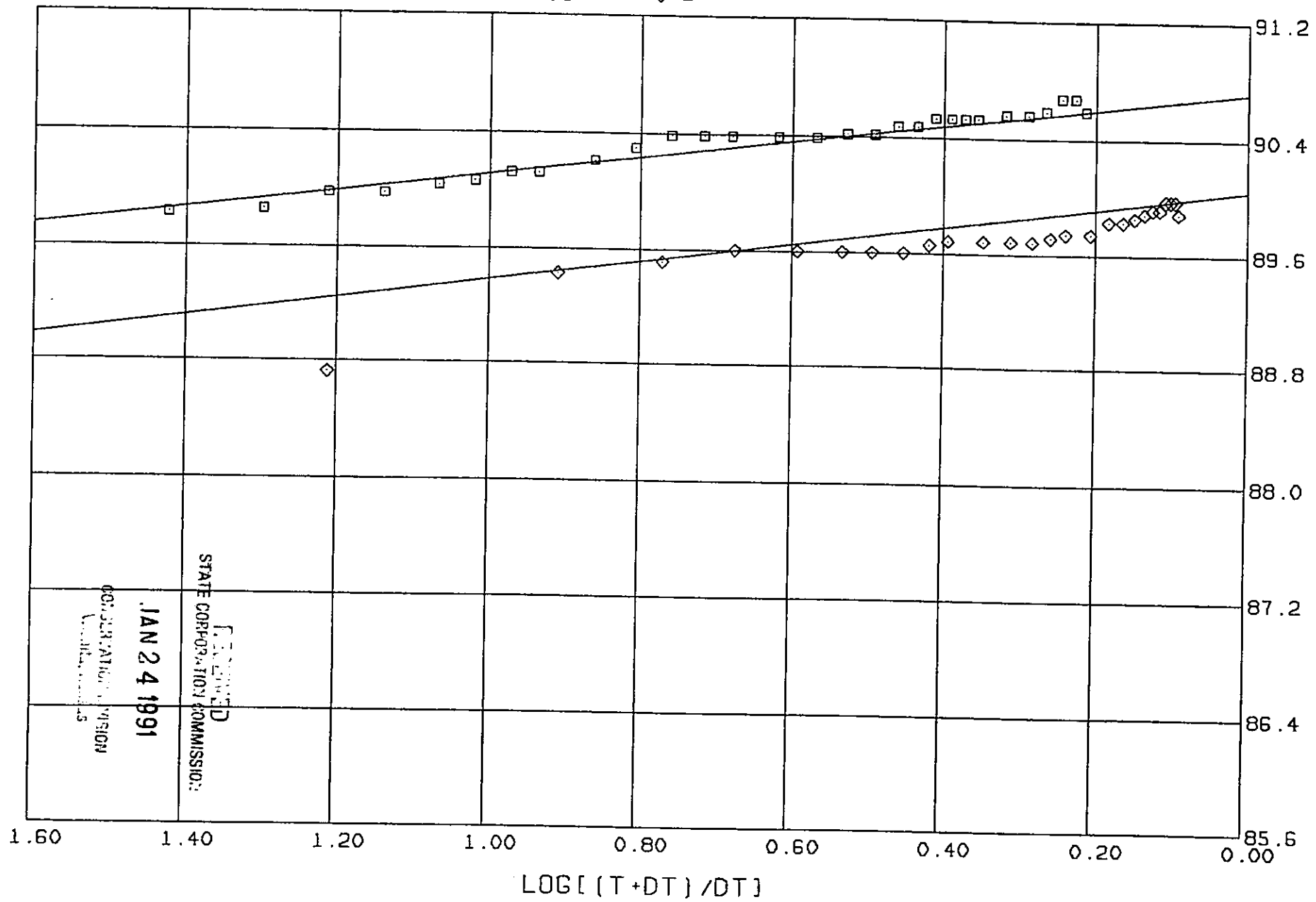
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7503



TICKET NO 00878100

GAUGE NO CIP 1 2
7502

GAUGE NO CIP 1 2
7503 \diamond \square



STATE OF TEXAS
REGULATORY COMMISSION
JAN 24 1991
REGULATORY DIVISION
LAW OFFICES

ORIGINAL

**SUMMARY OF RESERVOIR PARAMETERS
USING HORNER METHOD FOR GAS WELLS**

GAS GRAVITY 0.600 TEMPERATURE 132.0 °F
 NET PAY 24.0 ft POROSITY 10.0 %
 RADIUS OF WELL BORE 0.328 ft VISCOSITY 0.013 cp
 GAS DEVIATION FACTOR 0.904 GAS PROPERTIES AT 1027.9 psig
 SYSTEM COMPRESSIBILITY 851.21 x 10⁻⁶ vol/vol/psi

	7502	7502	7503	7503			
GAUGE NUMBER	4963.5	4963.5	5116.7	5116.7			
GAUGE DEPTH	1	2	1	2			UNITS
FLOW AND CIP PERIOD	960.8	975.4	996.8	1006.5			psig
FINAL FLOW PRESSURE	7.3	37.8	7.3	37.8			min
TOTAL FLOW TIME	1000.7	1007.7	1024.3	1027.9			psig
CALC. STATIC PRESSURE P*	85.7	87.0	90.1	90.7			$\frac{mmp\ si^2}{cp}$
EXTRAPOLATED PRESSURE m(P*)	85.6	86.7	89.4	90.1			$\frac{mmp\ si^2}{cp}$
ONE CYCLE PRESSURE m(P ₁₀)	4593.0			4593.0			MCFD
PRODUCTION RATE Q	13748.7			7336.97			md-ft
FLOW CAPACITY kh	572.864			305.707			md
PERMEABILITY k	11.2			0.6			
SKIN FACTOR S	2.6			1.1			
DAMAGE RATIO DR	77112.5			106087			MCFD
INDICATED RATE MAX AOF ₁	18819.6			22073.9			MCFD
INDICATED RATE MIN AOF ₂	198058			114995			MCFD
THEORETICAL RATE DRxAOF ₁	48336.8			23927.4			MCFD
THEORETICAL RATE DRxAOF ₂	574.6			419.8			ft
RADIUS OF INVESTIGATION r _i							

REMARKS: ALL CALCULATED RESERVOIR PARAMETERS ARE EFFECTIVE TO GAS PRODUCTION.
 THE RATE WAS CHOSEN FROM THE LAST REPORTED SURFACE PRODUCTION RATE.

RECEIVED
 STATE CORPORATION COMMISSION

JAN 24 1991

COMPLETION DIVISION
 WELLS DIVISION

NOTICE: BECAUSE OF THE UNCERTAINTY OF VARIABLE WELL CONDITIONS AND THE NECESSITY OF RELYING ON FACTS AND SUPPORTING SERVICES FURNISHED BY OTHERS, HRS IS UNABLE TO GUARANTEE THE ACCURACY OF ANY CHART INTERPRETATION, RESEARCH ANALYSIS, JOB RECOMMENDATION OR OTHER DATA FURNISHED BY HRS. HRS PERSONNEL WILL USE THEIR BEST EFFORTS IN GATHERING SUCH INFORMATION AND THEIR BEST JUDGMENT IN INTERPRETING IT BUT CUSTOMER AGREES THAT HRS SHALL NOT BE RESPONSIBLE FOR ANY DAMAGES ARISING FROM THE USE OF SUCH INFORMATION EXCEPT WHERE DUE TO HRS GROSS NEGLIGENCE OR WILLFUL MISCONDUCT IN THE PREPARATION OF FURNISHING OF INFORMATION.

N.L.S., INC.
P.O. BOX 1417
LIBERAL, KANSAS
316-624-4581

FAX. NO: 316-624-6919
800-633-9860
NATION WIDE:

TEMPERATURE SURVEY

DATE: 10-22-90

COMPANY: AMOCO PRODUCTION COMPANY

LOCATION:

LEASE: **SETTLES**

WELL #: **2**

COUNTY: GREELY

FIELD:

STATE: KANSAS

INSTR. NO: 35594-RT7A

CASING SIZE: 5 1/2"

SET AT: 2,695' DV TOOL

T.D.:

HOLE SIZE: 7 7/8"

FLOAT AT: 2,695'

SACKS CEMENT:

CALCULATED

MIXTURE:

FILL UP:

ZERO POINT: 7' A.G.L.

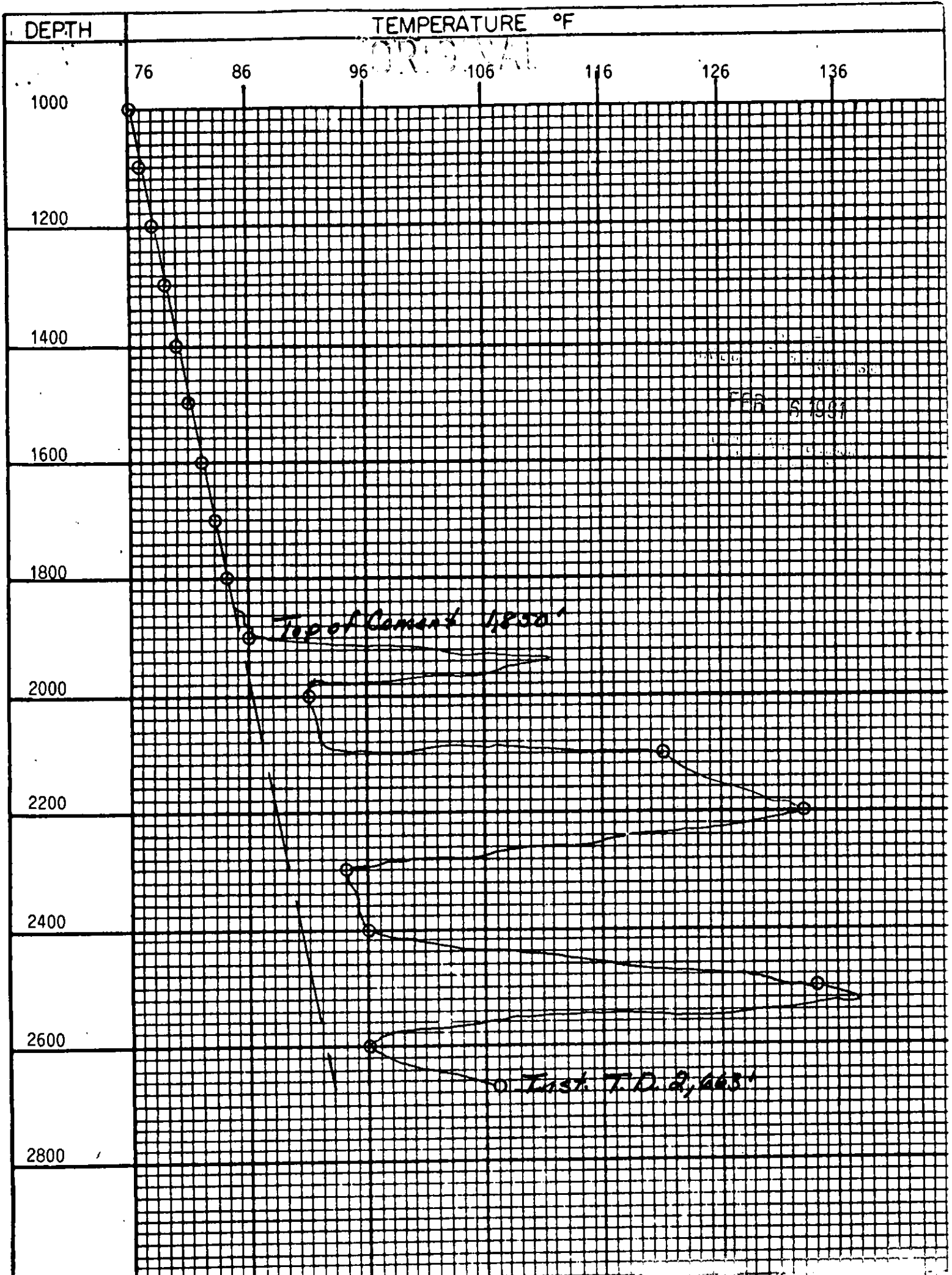
REMARKS:

TOP OF CEMENT 1,850'
INSTRUMENT T.D. @ 2,663' FROM GROUND LEVEL

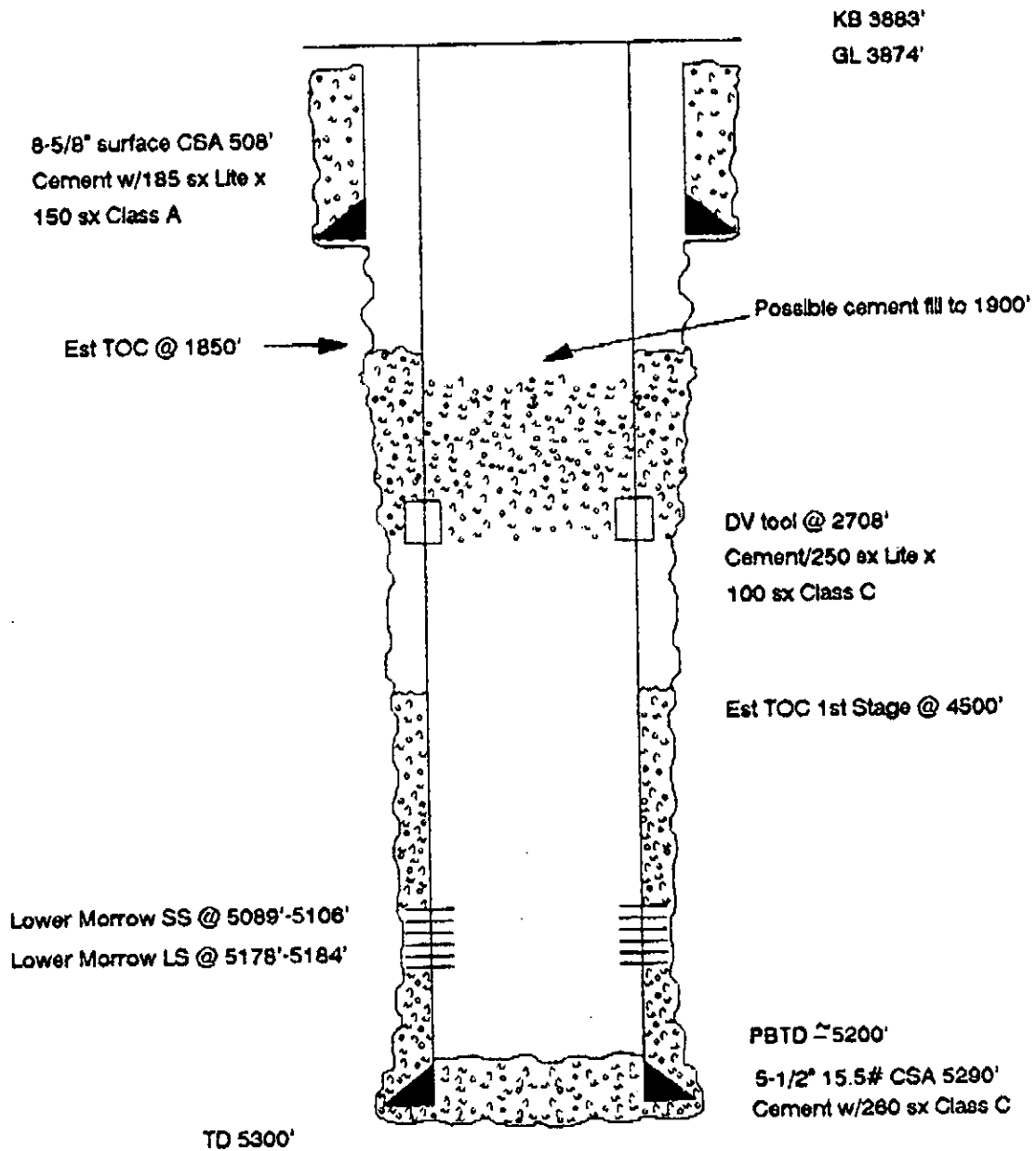
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STATE OF KANSAS
COMMISSIONER



AMOCO - SETTLES #2
650' FNL & 1350' FEL
Section 26-T18S-R43W
Greeley Co., Kansas



NOTE: REVISED 10/24/90

Amoco Production Company

DRODB

Daily Drilling Operations Report

Denver Region

Item Required for Input of that Line.

0	Date 2/02/90	FLAC Well	Hzn Sub	Check Digit	Rig Status Code	API Well	Side Trk.
---	-----------------	-----------	---------	-------------	-----------------	----------	-----------

LEASE NO. SETTLES NO. 2 CONTRACTOR NAME AND RIG NO. MURFIN RIG NO. 25

Days from CRDD 10 Days Operated 10 Auth. TD 5300 Last Csg Size 5.50 Depth 5290.91 Field Name MORRE-JOHNSON

1	Total Depth 25300	PBDT	Present Operations (max. 28 char.) CIRC x WOC FIRST STAGE	Formation (max. 18 char.)	Progress
---	----------------------	------	--	---------------------------	----------

2	O. C. Date	Rig Move On Date	CRDD Date	Rig Released Date 2/02/90	Dri Flag Y	Suspended Date	Resumed Date	Ind Susp Flag Y	State of Production
---	------------	------------------	-----------	------------------------------	---------------	----------------	--------------	--------------------	---------------------

7	Daily Mud Cost	Cumulative Mud Cost 6446.	Daily Well Cost 89,821.	Cumulative Well Cost 172,178.	Latest Est. Well Cost	Authorized Well Cost
---	----------------	------------------------------	----------------------------	----------------------------------	-----------------------	----------------------

3	Test Depth 25300	Mud Type PL	Temp In	Temp Out	Weight 9.4	Viscosity 745	PV	YP	Gels 0/10	Fluid Loss	Filter Cake	HT-HP Temp	Fluid Loss F.L.	Filter Cake											
17 % Solid		18 % Oil		19 % Water		20 % Sand		21 MBT		22 pH		23 Pl		24 Mt		25 Pm		26 Total Chlorides		27 Total Hardness		28 Calcium			
29 % NaCl		30 % CaCl		31 Aqueous Chlorides		32 Excess Lime		33 Electrical Stability		34 CaOM		35 POM		36 KCl		37 Antiline Paint		38 % Salt		39 Bentonite		40 Solids Drilled		41 Barite	
42 LCM Concentrat.		43 Type		44 Other Volume & Units		45 Type		46 Other Volume & Units		47 Mud Comment (Max 38 characters)										48 MBT		49 Over Burden Gradient			
50 Pore Pressure		51 Type		52 Unit No. 1 Wt. OF		53 Wt. UF		54 Flow Rate		55 Type		56 Unit No. 2 Wt. OF		57 Wt. UF		58 Flow Rate									

ND	Unit No. 3	Unit No. 4
----	------------	------------

Mud Types
 NM - Native Mud
 PW - Water
 PL - LSDND
 WM - Dispersed Water Base
 XM - Salt Mud Brine Kcl
 LB - Oil Base Mud
 IV - Inverted Or External EML
 FM - Foam Mist Areated
 AG - Dry Air Or Gas

Mud, Air, Gas or Foam Additives (Line 3 Req'd)						
Type	Additive Name	Units	Volume	Type	Additive Name	Units
13						
13						
13						
13						
13						

Type Additives

- | | | | |
|-------------------------|---------------|----------------------------|----------------------------|
| A Alkalinity Ph Control | D Defoamers | G Filtrate Reducer | K Shale Control |
| B Biocides | E Emulsifiers | H Foaming Agents | L Lubricants |
| C Calcium Treatment | F Flocculants | I Inhibitors For Corrosion | M Materials For Lost Circ. |
| | | | N Material For Weighting |
| | | | O Other |
| | | | S Surfactants |
| | | | T Thinner Dispersants |
| | | | V Viscosifiers |
| | | | W Water |

4	Bit Number	Bit Size	Bit Type	Jets	Bit TFA	Depth In	Depth Out	Footage Dri	Hours
14		15		16		17		18	
14		15		16		17		18	
26		27		28		29		30	
37		38		39		40			

4	Bit Number	Bit Size	Bit Type	Jets	Bit TFA	Depth In	Depth Out	Footage Dri	Hours
14		15		16		17		18	
14		15		16		17		18	
26		27		28		29		30	
37		38		39		40			

5	Depth	Inclination	Direction	Depth	Inclination	Direction	Depth	Inclination	Direction
5		6		7		8		9	

Code				Remarks (max. 64 char.)			
14	2	3	4	14	2	3	4
14	2	25	CIRC	14	2	250	CIRC
14	2	5.75	LDDP	14	2	1.00	CMT
14	2	1.00	OTHER	14	2	1.00	CIRC
14	2	6.50	OTHER	14	2		
14	2	1.50	OTHER	14	2		
14	2	4.00	RCSG	14	2		

10	SW/BHA	PUI/SD	RBL/AMPS	BG/CG/TG	FUEL	NXTCSG/LOG	
10		11		12		13	
10		11		12		13	
10		11		12		13	

Called In By: _____

Call Received By: LDB SFY

Amoco Production Company DRODB Daily Drilling Operations Report Denver Region

Item Required for
Input of that Line.

0	Date 2/02/90	FLAC Well	Hzn Sub	Check Digit	Rig Status Code	API Well	Side Trk.	SEITLES No. 2	Lease Name and Well No.	Contractor Name and Rig No.
---	-----------------	-----------	---------	-------------	-----------------	----------	-----------	---------------	-------------------------	-----------------------------

Days from CRDO 11 Days Operated 11 Auth. TD 5300 Last Csg Size 5.50 Depth 5290.91 Field Name MOORE-JOHNSON

1	Total Depth 25300	PBDT	Present Operations (max. 28 char.) RD MO RT	Formation (max. 18 char.)	Progress
---	----------------------	------	--	---------------------------	----------

2	O. C. Date	Rig Move On Date	CRDO Date	Rig Released Date	Dri Flag Y	Suspended Date	Resumed Date	Ind Susp Flag Y	State of Production
---	------------	------------------	-----------	-------------------	---------------	----------------	--------------	--------------------	---------------------

7	Daily Mud Cost	Cumulative Mud Cost 6446.	Daily Well Cost	Cumulative Well Cost 172,178	Latest Est. Well Cost	Authorized Well Cost
---	----------------	------------------------------	-----------------	---------------------------------	-----------------------	----------------------

3	Test Depth	Mud Type	Temp In	Temp Out	Weight	Viscosity	PV	YP	Gels	O/10	Fluid Loss	Filter Cake	HT-HP Temp	Full Loss F.L.	Filter Cake																													
17		18		19		20		21		22		23		24		25		26		27		28																						
29		30		31		32		33		34		35		36		37		38		39		40		41																				
42		43		44		45		46		Mud Comment (Max 36 characters)										48		49																						
50					51					52					53					54					55					56					57					58				

ND	Unit No. 3	Unit No. 4
----	------------	------------

- Mud Types**
- NM - Native Mud
 - PW - Water
 - PL - LSND
 - WM - Dispersed Water Base
 - XM - Salt Mud Brine Kcl
 - LB - Oil Base Mud
 - IV - Inverted Or External EML
 - FM - Foam Mist Areated
 - AG - Dry Air Or Gas

Mud, Air, Gas or Foam Additives (Line 3 Req'd)									
13	Type	Additive Name	Units	Volume	Type	Additive Name	Units	Volume	Type
13									
13									
13									
13									

- Type Additives**
- | | | | |
|-------------------------|---------------|----------------------------|----------------------------|
| A Alkalinity Ph Control | D Defoamers | G Filtrate Reducer | K Shale Control |
| B Biocides | E Emulsifiers | H Foaming Agents | L Lubricants |
| C Calcium Treatment | F Flocculants | I Inhibitors For Corrosion | M Materials For Lost Circ. |
| | | | N Material For Weighting |
| | | | O Other |
| | | | S Surfactants |
| | | | T Thinner Dispersants |
| | | | V Viscosifiers |
| | | | W Water |

4	Bit Number	Bit Size	Bit Type	Jets	Bit TFA	Depth In	Depth Out	Footage Dri	Hours												
14		15		16		17		18													
26		27		28		29		30		31		32		33		34		35		36	
37		38		39		40															

4	Bit Number	Bit Size	Bit Type	Jets	Bit TFA	Depth In	Depth Out	Footage Dri	Hours												
14		15		16		17		18													
26		27		28		29		30		31		32		33		34		35		36	
37		38		39		40															

5	Depth	Inclination	Direction	Depth	Inclination	Direction	Depth	Inclination	Direction
5									

14	Hours	Operation	Description (max. 40 char.)	14	Hours	Operation	Description (max. 40 char.)
14	3.00	CIRCLWOC	FIRST STAGE	14			
14	2.00	CMT		14			
14	2.00	ND BOP		14			
14	2.00	CRT OFF	X SET SLIPS	14			
14				14			
14				14			

10	SW/BHA	PU/ISO	RBL/AMPS	BG/CG/TG	FUEL	NEXTCSG (LOG)
10	W	3	RUN 125 JTS 5:50 CSG, CMT FIRST STAGE W/200 SX CLASS "C" PREM			
10			CMT SECOND STAGE W/750 SX HOWCO LIFE X 100 SX CLASS "C" PREM			
10			W/100% RETURNS BOTH STAGES. CMT DID NOT CIRC TO SURFACE.			
10			SWELL RUN TEMP. SURVEY TO LOCATE TOP CMT. RIG REL 1500 HRS. 10-21-90.			

Called In By: _____ Call Received By: LDB SFY

Amoco Production Company
DRODB
Casing and Cementing/Tubing Report
Denver Region

Item Required for
Input of that Line

Identification							
0	Date	FLAC Well	Hzn Sub	Check Digit	Rig Status Code	API Well	Side Trk.
0	2/02/90						

SETTLES NO. 2 Lease Name and Well No.
MURFIN RIG NO. 25 Contractor and Rig No.

Days from CRDO 10 Days Operated 10 Auth. TD 5300 Last Csg Size 8.625 Depth 508

Type Casing or Tubing			
9	Depth Set	Date Set	Type
9	25290.81	102090	R

C - Conductor P - Protective T - Tie Back
 S - Surface R - Production O - Other
 I - Intermediate L - Liner U - Tubing

Detail Casing or Tubing Intervals (Line 9 Req'd)							
41	Interval Top Depth	Interval Bottom Depth	O.D.	Weight/Foot	Grade Code	Type Conn.	Number of Joints
41	5200.19	5287.81	5.50	15.50	63	72	82
41	2712.75	5200.19	5.50	15.50	63	72	82
41	0	2708.75	5.50	15.50	63	72	82
41							
41							
41							
41							
41							

- | Grade Code | Connection Types |
|------------|-----------------------|
| 1. H40 | 1. 8 Round STXC |
| 2. J55 | 2. 8 Round LTXC |
| 3. K55 | 3. Buttress |
| 4. C75 | 4. 8rd EUE |
| 5. N80 | 5. Hydril FJ-P |
| 6. S80 | 6. Hydril Super FJ-P |
| 7. L80 | 7. Hydril FJ-40 |
| 8. SO80 | 8. Hydril Super EU |
| 9. ... | 9. Hydril Triple Seal |
| 10. E95 | 10. Hydril HCS |
| 11. SO95 | 11. Hydril CTS |
| 12. SS95 | 12. Hydril CTS-4 |
| 13. ... | 13. Hydril PH6 |
| 14. S105 | 14. ... |
| 15. P110 | 15. Atlas Brad FL-35 |
| 16. SO125 | 16. Atlas Brad TC-45 |
| 17. SO140 | 17. VAM |
| 18. V150 | 18. X Line |
| 19. SO155 | 19. Other |
| 20. Other | |

Casing or Tubing Tools (Line 41 Req'd)					
42	Type Tool	Top Depth	Bottom Depth	Number of Tools	Tool Name (max. 26 char.)
42	214	5287.81	5287.81	1	GUIDE SHOE
42	219	5200.19	5200.19	1	BAFFLE
42	25	2708.75	2712.75	1	DY TOOL
42					
42					
42					
42					
42					
42					

- | Type Casing Tools | Type Tubing Tools |
|---------------------------|---------------------|
| 1. Rigid Centralizers | 50. Packer |
| 2. Non Rigid Centralizers | 51. Seal |
| 3. Soot Scratchers | 52. Valve |
| 4. Rotate Scratchers | 53. Screen Liner |
| 5. DV Tool | 54. Blast Joint |
| 6. Frac Baffle | 55. Nipple |
| 7. P B R | 56. Crossover |
| 8. Csg Formation Pkr | 57. Production Tube |
| 9. Float Collar | 58. Sliding Sleeve |
| 10. Float Shoe | 59. Safety Joint |
| 11. X-Over Joint | 60. Hanger |
| 12. X-Over Collar | 61. Anchor |
| 13. Cement Basket | 62. Other - - |
| 14. Guide Shoe | |
| 15. Liner Hanger | |
| 16. Liner Hanger Pkr | |
| 17. Liner Tie Back Sleeve | |
| 18. Exterior Preparation | |
| 19. Other | |

Operations Performance Factors					
70	Depth	Max. Pump Pressure	Max. Flowrate (BPM)	Pump Horsepower	Avg. Daily Operation Cost
70					

Logs						
71	Date	Type	Top Depth	Bottom Depth	BHT	Log Service Company (max. 20 char.)
71	102090	JHL	500	5289	123	HLC
71	102090	JHL	500	5289	123	HLC
71		GRG	500	5289		
71		NEU	3500	5292		
71		CAL	500	5289		
71		SDIL	500	5294		

- Type Log Code
- ACS Any Acoustic Log
 - VEL Acoustic Velocity Log
 - CBL Cement Bond Log
 - INL Any Induction Log
 - LTL Any Lateral Log
 - DLL Dual Lateral Log
 - MCL Any Micro Log
 - MLL Any Microlateral Log
 - PRX Any Proximity Log
 - RST Any Resistivity Log
 - 2IL Any Conductivity Log
 - DEN Any Density Log
 - FDC Density Porosity Log
 - NEU Any Neutron Log
 - CNL Any Neutron Porosity Log
 - TDL Any TDT or Neutron Lifetime Log
 - GRL Any Gamma Ray Log
 - SP Any Spontaneous Potential Log
 - CAL Any Caliper Log
 - TMP Any Temperature Log
 - MAG Any Nuclear Magnetism Log
 - HDT Any Dipmeter
 - PDC Any Collar Log
 - BHG Borehole Gravity Meter
 - SN Any Short Normal Log
 - LN Any Long Normal Log
 - SF Any Spherically Focused Log
 - MS Micro Spherically Focused Log
 - NR Any Neutron Ratio Log
 - MG Any Magnetic Log
 - AT Any Activation Log

Code				Remarks (max. 64 char.)			
10	CD	Csg Slackoff	Inch	Lbs.	Sw		
10						7/10/91	
10						FFR 6/10/91	
10							
10							
10							
10							

Called in By: _____

Call Received By: LDB SFY

Primary Cementing Report

Date 102190

Lease Name and Well No. SETTLES No. 2

43	Stage No.	Batch No.	API Class	Trade Name	Volume	Volume Units	Slurry Density	Hole Fluid Density	Type Hole Fluid	Avg. Displacement Pressure				
1	2	1	C	HOWCO CLASS "C" PREM	260	SX	14.8	9.4	104	11300				
	12	5.5	13	1	14	20	21	22	23	Y				
	12	6.0	13	1	14	20	21	22	23	Y				
1	2	2	C	HOWCO CLASS "C" PREM	100	SX	14.8	12.3	108	11300				
	12	6.0	13	1	14	20	21	22	23	Y				
1	2	3												
	12		13	14	15	16	17	18	19	20	21	22	23	Y
1	2	3												
	12		13	14	15	16	17	18	19	20	21	22	23	Y
1	2	3												
	12		13	14	15	16	17	18	19	20	21	22	23	Y

Primary Cementing Additives (Line 43 Req'd)

44	Stage No.	Batch No.	Type Additive	Additive Name	Additive Volume	Volume Units
1	2	1	7	CFR-3	0.3	PC BY VOL
	8	1	9	CALL	2.00	PC BY VOL
1	2	1	7	CFR-3	0.3	PC BY VOL
	8	1	9	CALL	2.00	PC BY VOL
1	2	1	5	FLOCBLLE	2.5	LB PER SA
	8	9				
1	2	2	7	CFR-3	0.3	PC BY VOL
	8	1	9	CALL	2.00	PC BY VOL
1	2	2	5	FLOCBLLE	2.5	LB PER SA
	8	9				
1	2	3				
	8	9				
1	2	3				
	8	9				
1	2	3				
	8	9				
1	2	3				
	8	9				
1	2	3				
	8	9				
1	2	3				
	8	9				

- API Class
- A API Class A
 - B API Class B
 - C API Class C
 - D API Class D
 - E API Class E
 - F API Class F
 - G API Class G
 - H API Class H
 - J API Class J
 - P Pozzolan
 - O Other

- Type Fluid (Hole, Pre-Flush, Displacement)
- 1. Water
 - 2. Brine
 - 3. Oil
 - 4. Mud
 - 5.
 - 6. Oil/Mud
 - 7. Air/Gas
 - 8. Other

- Type Pipe Movement
- 1. Stationary
 - 2. Reciprocate
 - 3. Rotate
 - 4. Reciprocate and Rotate

- Type Additive
- 1. Accelerator
 - 2. Retarder
 - 3. Weight Reducer
 - 4. Weighting Material
 - 5. Lost Circulation Control
 - 6. Filtration or Water Loss Control
 - 7. Dispersant or Friction Reducer
 - 8. High Temperature or High Strength
 - 9. Other

STATE CORPORATION COMMISSION

FEB 6 1991

CONSERVATION DIVISION



Amoco Production Company

CASING AND TUBING TALLY

LEASE/UNIT/FACILITY SETTLES WELL No. 2 DATE 10-20, 1990

PIPE RUN SIZE 5.50 WEIGHT 15.50 GRADE K-55 TYPE JOINT LTC MAKE _____ NO. FT. _____

PIPE RUN SIZE _____ WEIGHT _____ GRADE _____ TYPE JOINT _____ MAKE _____ NO. FT. _____

PIPE RUN SIZE _____ WEIGHT _____ GRADE _____ TYPE JOINT _____ MAKE _____ NO. FT. _____

NO.	LENGTH OF JOINT	NO.	LENGTH OF JOINT	NO.	LENGTH OF JOINT	NO.	LENGTH OF JOINT	NO.	LENGTH OF JOINT	NO.	LENGTH OF JOINT	TALLY OF JOINTS NOT RUN	
												NO.	LENGTH OF JOINT
1	43.96	51	42.63	101	43.78	151		201		251			
2	43.66	52	40.97	102	44.08	152		202		252		1	22.58
3	44.58	53	41.86	103	43.68	153		203		253		2	44.59
4	42.32	54	41.20	104	44.15	154		204		254		3	47.06
5	42.97	55	43.72	105	44.34	155		205		255		4	44.07
6	43.73	56	43.44	106	41.10	156		206		256		5	44.70
7	43.00	57	43.67	107	43.09	157		207		257		6	
8	43.10	58	44.28	108	43.08	158		208		258		7	
9	41.71	59	44.06	109	41.17	159		209		259		8	
10	42.17	60	43.70	110	44.70	160		210		260		9	
11	41.71	61	35.12	111	43.42	161		211		261		10	
12	42.22	62	44.06	112	43.46	162		212		262		11	
13	43.77	63	38.93	113	43.19	163		213		263		12	
14	43.06	64	43.67	114	41.16	164		214		264		13	
15	43.99	65	43.98	115	44.07	165		215		265		14	
16	42.91	66	42.73	116	43.65	166		216		266		15	
17	36.00	67	43.17	117	43.74	167		217		267		16	
18	43.83	68	37.02	118	47.06	168		218		268		17	
19	42.27	69	43.20	119	43.66	169		219		269		18	
20	42.05	70	43.32	120	43.83	170		220		270		19	
21	37.92	71	43.72	121	44.59	171		221		271		20	
22	44.20	72	44.01	122	43.64	172		222		272		21	
23	43.28	73	43.98	123	43.41	173		223		273		22	
24	43.67	74	42.97	124	41.76	174		224		274		23	
25	42.13	75	43.71	125	43.93	175		225		275		24	
26	44.67	76	43.71	126	43.01	176		226					203.00
27	43.75	77	43.43	127	43.61	177		227					
28	43.68	78	43.58	128	37.31	178		228			NO JOINTS DELIVERED		12.0
29	38.53	79	43.63	129	42.61	179	CUT OFF	229			NO JOINTS RUN		12.5
30	42.44	80	42.45	130		180		230					
31	39.52	81	38.75	131		181		231			TOTAL RUN-OVERALL		592031
32	43.62	82	33.77	132		182		232			OFF FOR THREADS		24.50
33	43.34	83	42.57	133		183		233			TOTAL-THREADS OFF		5283.81
34	42.76	84	41.78	134		184		234			TOP PIPE BELOW:		
35	36.16	85	42.74	135		185		235			<input type="checkbox"/> ROTARY DRIVE BUSHING		2.00
36	44.15	86	43.68	136		186		236			<input type="checkbox"/> DERRICK FLOOR		
37	43.16	87	43.41	137		187		237			DEPTH LANDED		5=90.71
38	43.93	88	44.15	138		188		238			REMARKS:		
39	43.75	89	43.12	139		189		239					
40	44.22	90	43.63	140		190		240					
41	44.20	91	41.14	141		191		241					
42	44.31	92	43.83	142		192		242					
43	43.50	93	44.48	143		193		243					
44	37.01	94	44.92	144		194		244					
45	43.47	95	43.75	145		195		245					
46	43.53	96	44.16	146		196		246					
47	43.66	97	40.51	147		197		247					
48	42.93	98	44.33	148		198		248					
49	45.43	99	43.78	149		199		249					
50	43.58	100	44.01	150		200		250					

2133.51

2129.53

1254.27

APPROVED

L D B

S F Y

Amoco Representative

Form 9432-71 (12-70)

2135.51

2133.53

5523.31

**WORK ORDER CONTRACT
AND PRE-TREATMENT DATA**

FORM 1908 R-7

ATTACH TO INVOICE & TICKET NO. 910797

DISTRICT Liberal

DATE 10-20-90

TO: HALLIBURTON SERVICES YOU ARE HEREBY REQUESTED TO FURNISH EQUIPMENT AND SERVICEMEN TO DELIVER AND OPERATE.

THE SAME AS AN INDEPENDENT CONTRACTOR TO: AMOCO Production Co. (CUSTOMER)
AND DELIVER AND SELL PRODUCTS, SUPPLIES, AND MATERIALS FOR THE PURPOSE OF SERVICING

WELL NO. 2 LEASE Settles SEC. 21 TWP. 18S RANGE 121W

FIELD W. Indiant COUNTY Greene STATE Ks OWNED BY AMOCO Prod. Co.

THE FOLLOWING INFORMATION WAS FURNISHED BY THE CUSTOMER OR HIS AGENT

FORMATION NAME _____ TYPE _____
FORMATION THICKNESS _____ FROM _____ TO _____
PACKER: TYPE _____ SET AT _____
TOTAL DEPTH _____ MUD WEIGHT _____
BORE HOLE _____
INITIAL PROD: OIL _____ BPD, H₂O _____ BPD, GAS _____ MCF
PRESENT PROD: OIL _____ BPD, H₂O _____ BPD, GAS _____ MCF

	NEW USED	WEIGHT	SIZE	FROM	TO	MAX. ALLOW. P.S.I.
CASING	<u>N</u>		<u>5 1/2</u>	<u>KB</u>	<u>5279</u>	
LINER						
TUBING						
OPEN HOLE			<u>7 7/8</u>		<u>5300</u>	SHOTS/FT.
PERFORATIONS						
PERFORATIONS						
PERFORATIONS						

PREVIOUS TREATMENT: DATE _____ TYPE _____ MATERIALS _____

TREATMENT INSTRUCTIONS: TREAT THRU TUBING ANNULUS CASING TUBING/ANNULUS HYDRAULIC HORSEPOWER ORDERED _____

Comment 2 Stage Longstring
1st Stage 260 SK Premium Plus .06% halad 9, .03% AFR-3 2 1/2" O.C.
2nd Stage 750 SK's N/C 1/4" K Filocelr , 100 SK's Premium Plus
1/4" Filocelr

CUSTOMER OR HIS AGENT WARRANTS THE WELL IS IN PROPER CONDITION TO RECEIVE THE PRODUCTS, SUPPLIES, MATERIALS, AND SERVICES

As consideration, the above-named Customer agrees: THIS CONTRACT MUST BE SIGNED BEFORE WORK IS COMMENCED

- a) To pay Halliburton in accord with the rates and terms stated in Halliburton's current price list. Invoices are payable NET by the 20th of the following month after date of invoice. Upon Customer's default in payment of Customer's account by the last day of the month following the month in which the invoice is dated, Customer agrees to pay interest thereon after default at the highest lawful contract rate applicable, but never to exceed 18% per annum. In the event it becomes necessary to employ attorneys to enforce collection of said account, Customer agrees to pay all collection costs and attorney fees in the amount of 20% of the amount of the unpaid account.
- b) To defend, indemnify, release and hold harmless Halliburton, its divisions, subsidiaries, parent and affiliated companies and the officers, directors, employees, agents and servants of all of them from and against any claims, liability, expenses, attorneys fees, and costs of defense to the extent permitted by law for:
 1. Damage to property owned by, in the possession of, or leased by Customer, and/or the well owner (if different from Customer), including, but not limited to, surface and subsurface damage. The term "well owner" shall include working and royalty interest owners.
 2. Reservoir, formation, or well loss or damage, subsurface trespass or any action in the nature thereof.
 3. Personal injury or death or property damage (including, but not limited to, damage to the reservoir, formation or well), or any damages whatsoever, growing out of or in any way connected with or resulting from pollution, subsurface pressure, losing control of the well and/or a well blowout or the use of radioactive material.

The defense, indemnity, release and hold harmless obligations of Customer provided for in this Section b) and Section c) below shall apply to claims or liability even if caused or contributed to by Halliburton's negligence, strict liability, or the unseaworthiness of any vessel owned, operated, or furnished by Halliburton or any defect in the data, products, supplies, materials, or equipment of Halliburton whether in the preparation, design, manufacture, distribution, or marketing thereof, or from a failure to warn any person of such defect. Such defense, indemnity, release and hold harmless obligations of Customer shall not apply where the claims or liability are caused by the gross negligence or willful misconduct of Halliburton. The term "Halliburton" as used in said Sections b) and c) shall mean Halliburton, its divisions, subsidiaries, parent and affiliated companies, and the officers, directors, employees, agents and servants of all of them.
- c) That because of the uncertainty of variable well conditions and the necessity of relying on facts and supporting services furnished by others, Halliburton is unable to guarantee the effectiveness of the products, supplies or materials, nor the results of any treatment or service, nor the accuracy of any chart interpretation, research analysis, job recommendation or other data furnished by Halliburton. Halliburton personnel will use their best efforts in gathering such information and their best judgment in interpreting it, but Customer agrees that Halliburton shall not be liable for and Customer shall indemnify Halliburton against any damages arising from the use of such information.
- d) That Halliburton warrants only title to the products, supplies and materials and that the same are free from defects in workmanship and materials. THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATELY PRECEDING SENTENCE. Halliburton's liability and Customer's exclusive remedy in any cause of action (whether in contract, tort, breach of warranty or otherwise) arising out of the sale or use of any products, supplies or materials is expressly limited to the replacement of such products, supplies or materials on their return to Halliburton or, at Halliburton's option, to the allowance to the Customer of credit for the cost of such items. In no event shall Halliburton be liable for special, incidental, indirect, punitive or consequential damages.
- e) That Customer shall, at its risk and expense, attempt to recover any Halliburton equipment, tools or instruments which are lost in the well and if such equipment, tools or instruments are not recovered, Customer shall pay Halliburton its replacement cost unless such loss is due to the sole negligence of Halliburton. If Halliburton equipment, tools or instruments are damaged in the well, Customer shall pay Halliburton the lesser of its replacement cost or the cost of repairs unless such damage is caused by the sole negligence of Halliburton. In the case of equipment, tools or instruments for marine operations, Customer shall, in addition to the foregoing, be fully responsible for loss of or damage to any of Halliburton's equipment, tools or instruments which occurs at any time after delivery to Customer at the landing until returned to the landing, unless such loss or damage is caused by the sole negligence of Halliburton.
- f) To waive the provisions of the Deceptive Trade Practices - Consumer Protection Act, to the extent permitted by law.
- g) That this contract shall be governed by the law of the state where services are performed or materials are furnished.
- h) That Halliburton shall not be bound by any changes or modifications in this contract, except where such change or modification is made in writing by a duly authorized executive officer of Halliburton.

STATE OF KANSAS
INDUSTRIAL COMMISSION
JAN 24 1991
CONSERVATION DIVISION

I HAVE READ AND UNDERSTAND THIS CONTRACT AND REPRESENT THAT I AM AUTHORIZED TO SIGN THE SAME AS CUSTOMER'S AGENT.

SIGNED _____ CUSTOMER

DATE 10-20-90

TIME 0200 P.M.

We certify that the Fair Labor Standards Act of 1938, as amended, has been complied with in the production of goods and services furnished under this contract.

CUSTOMER



A Division of Halliburton Company

TICKET NO. **910997-X**

FORM 1906 R-11

WELL NO. -- FARM OR LEASE NAME 2 Settles		COUNTY Greeley	STATE Ks	CITY / OFFSHORE LOCATION	DATE 10-20-90
CHARGE TO AMOCO Production Co		OWNER AMOCO Prod. Co.		TICKET TYPE (CHECK ONE) SERVICE <input checked="" type="checkbox"/> SALES <input type="checkbox"/>	
ADDRESS		CONTRACTOR Murkin #25		LOCATION 1 Lamar, Co	
CITY, STATE, ZIP		SHIPPED VIA Co TRK		LOCATION 2	
WELL TYPE		WELL PERMIT NO. B-85 7282		DELIVERED TO E. Towner, Co	
TYPE AND PURPOSE OF JOB		ORDER NO.		REFERRAL LOCATION	
WELL CATEGORY		FREIGHT CHARGES <input type="checkbox"/> PPD <input type="checkbox"/> COLLECT		NITROGEN JOB YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	
CODE		CODE		CODE	

As consideration, the above-named Customer agrees to pay Halliburton in accord with the rates and terms stated in Halliburton's current price lists. Invoices payable NET by the 20th of the following month after date of invoice. Upon Customer's default in payment of Customer's account by the last day of the month following the month in which the invoice is dated, Customer agrees to pay interest thereon after default at the highest lawful contract rate applicable, but never to exceed 18% per annum. In the event it becomes necessary to employ an attorney to enforce collection of said account, Customer agrees to pay all collection costs and attorney fees in the amount of 20% of the amount of the unpaid account. These terms and conditions shall be governed by the law of the state where services are performed or equipment or materials are furnished.

Halliburton warrants only title to the products, supplies and materials and that the same are free from defects in workmanship and materials. THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATELY PRECEDING SENTENCE. Halliburton's liability and customer's exclusive remedy in any cause of action (whether in contract, tort, product liability, breach of warranty or otherwise) arising out of the sale or use of any products, supplies or materials is expressly limited to the replacement of such products, supplies or materials on their return to Halliburton or, at Halliburton's option, to the allowance to the customer of credit for the cost of such items. In no event shall Halliburton be liable for special, incidental, indirect, punitive or consequential damages.

PRICE REFERENCE	SECONDARY REF OR PART NO.	L O C.	ACCOUNT	DESCRIPTION	UNITS 1		UNITS 2		UNIT PRICE	AMOUNT
					QTY	MEAS	QTY	MEAS		
000-117				MILEAGE	185	mi			2.35	152.75
007-013	001-016			Pump Charge 1st Stage	529	ST	2	hrs		1325.00
007-061				Pump Charge 2nd Stage	1	CA				950.00
007-203				Additional hours	8	2A			165.00	1320.00
29	834.10211			PDF Float shoe	1	CA				546.00
40	807.93022			S-4 Centralizers	8	CA			44.00	352.00
66	807.14031			FasGrip Champs	3	CA			11.30	33.90
71				Multi Stage Cementer	1	CA				2450.00
595	812.01695			Catchdown Plug	1	CA		5 1/2 in		345.00
596	801.03743			Catchdown Baffle	1	CA		5 1/2 in		100.00
350	590.10802			Halliburton Weld A	2	CA			11.00	22.00
75	812.0162			Two Stage Face Fall Plug Set	1	CA				400.00

NOT AN INVOICE

STATE CORPORATION COMMISSION

JAN 24 1991

CO. REGISTRATION DIVISION

AS PER ATTACHED BULK MATERIAL DELIVERY TICKET NO. **B-857282**

WAS JOB SATISFACTORILY COMPLETED? _____

WAS OPERATION OF EQUIPMENT SATISFACTORY? _____

WAS PERFORMANCE OF PERSONNEL SATISFACTORY? _____

CUSTOMER OR HIS AGENT (PLEASE PRINT)

CUSTOMER OR HIS AGENT (SIGNATURE)

WE CERTIFY THAT THE FAIR LABOR STANDARDS ACT OF 1938, AS AMENDED HAS BEEN COMPLIED WITH IN THE PRODUCTION OF GOODS AND OR WITH RESPECT TO SERVICES FURNISHED UNDER THIS CONTRACT.

H. D. Moore
HALLIBURTON OPERATOR

HALLIBURTON APPROVAL

CUSTOMER

SUB TOTAL

12,716.15
20,712.80

APPLICABLE TAXES WILL BE ADDED ON INVOICE.

HALLIBURTON SERVICES
JOB LOG

WELL NO. 2 LEASE Sec #12.5 TICKET NO. 910997
 CUSTOMER AMOCO Production PAGE NO. 1
 JOB TYPE 5 1/2" Logging DATE 10-20-90

FORM 2013 R-2

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GALS)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0400							Called out Unit #6595 P
	0800							Request on loc
	0715							ON LOC, Rig Laying down Pipe
	1310							Pipe RAMS WONT FIT BDP
	2115							WAIT ON RAMS
10-21-90	0197							START RUNNING CASING
	0147						800	START CIRCULATE NRIG PUMP
	0147						800	HAVING TROUBLE CIRCULATING
	0255						300	PRESSURE HIGH
	0256						1st stage	FINISH CIRC. W/RIG PRESSURE OK
	0300	5	20				300	START PUMP WATER AHEAD
	0300						300	FINISH PUMP WATER AHEAD
	0310	6	61				0	START CEMENT MIXING
	0311						0	FINISH MIXING CEMENT
	0314						0	DROP PLUG + WASH PUMP LINES
	0322						300	START DISPLACEMENT W/WATER
	0340	7	124				650	FINISH WATER
	0340						1500	FINISH mud plug landed
	0343							LATCH PLUG HELD
	0400						1350	DROP DISPLACEMENT PLUG
	0410							DU OPEN
10-21-90								HOOK UP TO RIG PUMP
	0937							2nd STAGE
	0842	4	20					START PUMP WATER AHEAD
	0843							FINISH PUMP WATER AHEAD
	0915	9.25	259					START MIX HLC CEMENT
	0911							FINISH MIX HLC CEMENT
	0915	6	24					START PREM + CEMENT
	0916							FINISH PREM + CEMENT
	0922							DROP PLUG + WASH PUMP LINES
	0932	6.5	65					START DISPLACEMENT
	0932							FINISH DISPLACEMENT
	1000							PLUG LANDED + DU HELD
								CEMENT DIDNT CIRCULATE
								JOB COMPLETE
								THANK YOU
								HARRY & CREW

RECEIVED
STATE CORPORATION COMMISSION

IAN 24 1991

CONSERVATION DIVISION

CUSTOMER



HALLIBURTON SERVICES
Division, Oklahoma 73025

BULK MATERIALS DELIVERY
AND ORIGINAL
TICKET CONTINUATION

FOR INVOICE AND
TICKET NO. 910997

A Division of Halliburton Company

DATE 10-20-90	CUSTOMER ORDER NO.	WELL NO. AND FARM Settles # 2	COUNTY Greeley	STATE Ks
CHARGE TO Amoco Production Co.		OWNER Same	CONTRACTOR WEXX Murfin	No. B 857282
MAILING ADDRESS		DELIVERED FROM HARRISON Lamar	LOCATION CODE 25685	PREPARED BY Rick Rawlins
CITY & STATE		DELIVERED TO Loc. ES/Towner, Co.	TRUCK NO.	RECEIVED BY H. D. Moore

PRICE REFERENCE	SECONDARY REF. OR PART NO.	CODE		DESCRIPTION	UNITS 1		UNITS 2		UNIT PRICE	AMOUNT	
		L	D		QTY.	MEAS.	QTY.	MEAS.			
504-050	516.00265	2	B	Premium Plus Cement	360	sk			7.08 6.85	2549.80 2464.00	
504-120		2	B	Halliburton Light Cement	750	sk			6.29	4717.50	
507-153	516.00161	2	B	CFR-3 blended W/260	73	lb			3.90	284.70	
507-665	516.00161 70.15556	2	B	Halad-9 blended W/260	147	lb			6.65	977.55	
507-210	890.50071	2	B	Floecle blended W/850	213	lb			1.30	276.90	
509-406	890.50812	2	B	Calcium Chloride blended W/260	5	sk			26.25	131.25	
STATE COMMISSIONED											
JAN 24 1991											
		Returned Mileage Charge		TOTAL WEIGHT	LOADED MILES		CONSERVATION TON MILES	REVISION			
				SERVICE CHARGE ON MATERIALS RETURNED			CU. FEET				
500-207		2	B	SERVICE CHARGE			CU. FEET	1134	1.00	1247.40	
500-306		2	D	Mileage Charge	TOTAL WEIGHT	LOADED MILES	TON MILES				
					103,838	65	3376.735		.75	2531.05	
No. B 857282		CARRY FORWARD TO INVOICE					SUB-TOTAL				12,716.15

CUSTOMER



JOB SUMMARY

HALLIBURTON DIVISION
HALLIBURTON LOCATION

10-20-90
Greene, KS

BILLED ON TICKET NO. 910997

WELL DATA
FIELD Wildcat SEC. 21 TWP. 18S RING. 43W COUNTY Greene STATE KS

FORMATION NAME _____ TYPE _____
FORMATION THICKNESS _____ FROM _____ TO _____
INITIAL PROD. OIL _____ BPD. WATER _____ BPD. GAS _____ MCFD
PRESENT PROD. OIL _____ BPD. WATER _____ BPD. GAS _____ MCFD
COMPLETION DATE _____ MUD TYPE _____ MUD WT. _____
PACKER TYPE _____ SET AT _____
BOTTOM HOLE TEMP. _____ PRESSURE _____
MISC. DATA _____ TOTAL DEPTH _____

	NEW USED	WEIGHT	SIZE	FROM	TO	MAXIMUM PSI ALLOWABLE
CASING	N		5 1/2	KBS	5299	
LINER						
TUBING						
OPEN HOLE		24	8 7/8		5300	SHOTS/FT.
PERFORATIONS						
PERFORATIONS						
PERFORATIONS						

JOB DATA

TOOLS AND ACCESSORIES			
TYPE AND SIZE	QTY.	MAKE	
FLOAT COLLAR			
FLOAT SHOE PDF	1	Howco	
GUIDE SHOE			
CENTRALIZERS S-4	8	Howco	
BOTTOM PLUG D11 Tool	1	Howco	
TOP PLUG Catcher	1	Howco	
HEAD FREE FALL	1	Howco	
PACKER D11 Plug SET	1	Howco	
OTHER			

CALLED OUT	ON LOCATION	JOB STARTED	JOB COMPLETED
DATE 10-20-90	DATE 10-20-90	DATE	DATE
TIME 0400	TIME 0715	TIME	TIME

PERSONNEL AND SERVICE UNITS

NAME	UNIT NO. & TYPE	LOCATION
G.D. Moore	40079	Lamar, Co
J. Crawford	2801	Lamar, Co
D-7877	6595	Lamar, Co
C. Lay	3233	Hugoton, KS
D-9259	5302	Hugoton, KS
J. Davis	1539	Hugoton, KS
P-9202	7149	Hugoton, KS
J. Hoge	4673	Hugoton, KS
ED-385	75817	Hugoton, KS

MATERIALS

TREAT. FLUID _____ DENSITY _____ LB/GAL. API
DISPL. FLUID _____ DENSITY _____ LB/GAL. API
PROP. TYPE _____ SIZE _____ LB.
ACID TYPE _____ GAL. %
SURFACTANT TYPE _____ GAL. IN.
NE AGENT TYPE _____ GAL. IN.
FLUID LOSS ADD. TYPE _____ GAL.-LB. IN.
GELLING AGENT TYPE _____ GAL.-LB. IN.
FRIC. RED. AGENT TYPE _____ GAL.-LB. IN.
BREAKER TYPE _____ GAL.-LB. IN.
BLOCKING AGENT TYPE _____ GAL.-LB. IN.
PERFPAC BALLS TYPE _____ QTY. _____
OTHER _____

DEPARTMENT Cement
DESCRIPTION OF JOB Cement 2 stage 5 1/2" long string
JOB DONE THRU: TUBING CASING STATE CORPORATION T&A COMMISSION

CUSTOMER REPRESENTATIVE X
HALLIBURTON OPERATOR H. D. ...
CONSERVATION DIVISION
COPIES REQUESTED _____
DATE IAN 24 1991

CEMENT DATA

STAGE	NUMBER OF SACKS	CEMENT	BRAND	BULK SACKED	ADDITIVES	YIELD CU.FT./SK.	MIXED LBS./GAL.
1	2100	Pacem +	SWS	B	1/2% Natasg 3/4% FR3, 2% ACC	1.32	11.8
2	750	HLC	SWS	B	1/4% FR3	2.05	12.3
3	100	Pacem +	SWS	B	1/4% FR3	1.32	14.5

PRESSURES IN PSI
CIRCULATING _____ DISPLACEMENT _____
BREAKDOWN _____ MAXIMUM _____
AVERAGE _____ FRACTURE GRADIENT _____
SHUT-IN: INSTANT _____ 5-MIN. _____ 15-MIN. _____
HYDRAULIC HORSEPOWER _____
ORDERED _____ AVAILABLE _____ USED _____
AVERAGE RATES IN BPM _____
TREATING _____ DISPL. _____ OVERALL _____
CEMENT LEFT IN PIPE _____
FEET 89 REASON Shoe Joint

SUMMARY
PRELUSH: BBL-GAL. _____ TYPE _____
LOAD & BKDN: BBL-GAL. _____ PAD: BBL-GAL. _____
TREATMENT: BBL-GAL. _____ DISPL. BBL-GAL. _____
CEMENT SLURRY: BBL-GAL. _____
TOTAL VOLUME: BBL-GAL. _____
REMARKS
See JO log
Thank you for calling
HALLIBURTON

CUSTOMER: AMCO Prod. Co
LEASE: 5 1/2" Long string
WELL NO: 2
JOB TYPE: 5 1/2" Long string
DATE: 10-20-90



HALLIBURTON SERVICES
Duncan, Oklahoma 73128

A Division of Halliburton Company

TICKET

NO. 910887-**X**

PAGE 1 OF 2 PAGES

WELL NO. - FARM OR LEASE NAME 2 Settles		COUNTY Greelay	STATE Ks	CITY / OFFSHORE LOCATION	DATE 10-12-90
PURCHASER TO Murfin Drilling Co		OWNER Amoco Prod Co		TICKET TYPE (CHECK ONE) SERVICE <input checked="" type="checkbox"/> SALES <input type="checkbox"/>	
ADDRESS		CONTRACTOR Murfin 25		LOCATION Lamor Co	
CITY, STATE, ZIP		SHIPPED VIA Howco		FREIGHT CHARGES PPD <input type="checkbox"/> COLLECT <input type="checkbox"/>	
WELL TYPE 01	WELL CATEGORY 01	WELL PERMIT NO. B- 815298	DELIVERED TO Loc E Tower		LOCATION 3
JOB AND PURPOSE OF JOB 010			ORDER NO.		REFERRAL LOCATION

As consideration, the above-named Customer agrees to pay Halliburton in accord with the rates and terms stated in Halliburton's current price lists. Invoices payable NET by the 20th of the following month after date of invoice. Upon Customer's default in payment of Customer's account by the last day of the month following the month in which the invoice is dated, Customer agrees to pay interest thereon after default at the highest lawful contract rate applicable, but never to exceed 18% per annum. In the event it becomes necessary to employ an attorney to enforce collection of said account, Customer agrees to pay all collection costs and attorney fees in the amount of 20% of the amount of the unpaid account. These terms and conditions shall be governed by the law of the state where services are performed or equipment or materials are furnished.

Halliburton warrants only title to the products, supplies and materials and that the same are free from defects in workmanship and materials. THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATELY PRECEDING SENTENCE. Halliburton's liability and customer's exclusive remedy in any cause of action (whether in contract, tort, product liability, breach of warranty or otherwise) arising out of the sale or use of any products, supplies or materials is expressly limited to the replacement of such products, supplies or materials on their return to Halliburton or, at Halliburton's option, to the allowance to the customer of credit for the cost of such items. In no event shall Halliburton be liable for special, incidental, indirect, punitive or consequential damages.

PRICE REFERENCE	SECONDARY REF OR PART NO.	L O C	ACCOUNT	DESCRIPTION	UNITS 1		UNITS 2		UNIT PRICE	AMOUNT	
					QTY	MEAS	QTY	MEAS			
000 117				MILEAGE	60	mi			2 ³⁵	141	00
001 016				Casing Job	508	FT			630 ⁰⁰	630	00
30 503				CPI Wooden Plug	1	ea	6 5/8"		59 ⁰⁰	59	00
168	830.2171			Type M Casing Shoe	1	ea			161 ⁰⁰	161	00
40	807.93059			S-4 Cent rollers	3	ea			53 ⁰⁰	159	00
66	807.64056			Fog Grip Clamp	1	ea			13 ⁷⁵	13	75
350	890.10802			Howco Weld	1	ea			11 ⁰⁰	11	00
597	825.1266			fiber buffer photo	1	ea			91 ⁰⁰	91	00
RECEIVED STATE CORPORATION COMMISSION JAN 24 1991 CORPORATION DIVISION WASHINGTON DC 20543											

AS PER ATTACHED BULK MATERIAL DELIVERY TICKET NO. **B- 815298** 3300 43

IS JOB SATISFACTORILY COMPLETED? IS OPERATION OF EQUIPMENT SATISFACTORY?	WE CERTIFY THAT THE FAIR LABOR STANDARDS ACT OF 1938, AS AMENDED HAS BEEN COMPLIED WITH IN THE PRODUCTION OF GOODS AND OR WITH RESPECT TO SERVICES FURNISHED UNDER THIS CONTRACT.
---	---

ORIGINAL

SPEEDIBET MOORE BUSINESS FORMS, INC.

**BULK MATERIALS DELIVERY
AND
TICKET CONTINUATION**

FOR INVOICE AND TICKET NO. 910867



DATE 10-12-90	CUSTOMER ORDER NO.	WELL NO. AND FARM #2 Settles	COUNTY Greeley	STATE Ks.
CHARGE TO Murfin Drlg.		OWNER AMOCO Prod.	CONTRACTOR Murfin Drlg. #25	No. B 815298
MAILING ADDRESS		DELIVERED FROM Lamar Co.	LOCATION CODE 25615	PREPARED BY Slattem
CITY & STATE		DELIVERED TO Loc.	TRUCK NO. 4149-5077	RECEIVED BY Painter <i>JEP</i>

PRICE REFERENCE	SECONDARY REF. OR PART NO.	CODE		DESCRIPTION	UNITS 1		UNITS 2		UNIT PRICE	AMOUNT
		L	D		QTY.	MEAS.	QTY.	MEAS.		
				185 40% poz 60% cmt 2% gel						
504-308				Standard Cement	112	isks			5.90	660.80
506-105				Pozmix	73	isks			4.30	313.90
506-121				Gel 2% allowed	3	isks				N/C
504-308				Standard Cement	150	isks			5.90	885.00
509-406				Chloride Calcium 3% in all	11	isks			32.50	357.50

RECEIVED
STATE CORPORATION COMMISSION
JAN 24 1991
CLERK OF COURSE

		Returned Mileage Charge	TOTAL WEIGHT	LOADED MILES	TON MILES		
			SERVICE CHARGE ON MATERIALS RETURNED		CU. FEET		
500-207			SERVICE CHARGE		CU. FEET 346	1.10	380.60
500-314		Mileage Charge	31228 TOTAL WEIGHT	60 LOADED MILES	TON MILFS 936.84	.75	702.63

7571



HALLIBURTON SERVICES

WORK ORDER CONTRACT AND PRE-TREATMENT DATA

ATTACH TO INVOICE & TICKET NO. 910887

IM 1008 R-7

A Division of Halliburton Company

DISTRICT Liberal

DATE 10-12-90

HALLIBURTON SERVICES YOU ARE HEREBY REQUESTED TO FURNISH EQUIPMENT AND SERVICEMEN TO DELIVER AND OPERATE

THE SAME AS AN INDEPENDENT CONTRACTOR TO: Murfin Drilling (CUSTOMER) AND DELIVER AND SELL PRODUCTS, SUPPLIES, AND MATERIALS FOR THE PURPOSE OF SERVICING

WELL NO. 2 LEASE Settles SEC TWP. RANGE

COUNTY Greeley STATE Ks OWNED BY Amoco Prod. Co

THE FOLLOWING INFORMATION WAS FURNISHED BY THE CUSTOMER OR HIS AGENT

Table with columns: INFORMATION, TYPE, NEW USED, WEIGHT, SIZE, FROM, TO, MAX. ALLOW. P.S.I. Rows include CASING (24, 8 5/8, KB, 508), LINER, TUBING, OPEN HOLE, PERFORATIONS.

PREVIOUS TREATMENT: DATE TYPE MATERIALS

TREATMENT INSTRUCTIONS: TREAT THRU TUBING ANNULUS CASING TUBING/ANNULUS HYDRAULIC HORSEPOWER ORDERED

Cement 8 5/8 Surface Casing with 185 sks 60% cnt 40% Pass. 2% 6 1/2" 100/100 mesh. by 150 sks Std 3% CC

JAN 24 1991

COMMERCIAL DIVISION

CUSTOMER OR HIS AGENT WARRANTS THE WELL IS IN PROPER CONDITION TO RECEIVE THE PRODUCTS, SUPPLIES, MATERIALS, AND SERVICES

As consideration, the above-named Customer agrees: THIS CONTRACT MUST BE SIGNED BEFORE WORK IS COMMENCED

- a) To pay Halliburton in accord with the rates and terms stated in Halliburton's current price list.
b) To defend, indemnify, release and hold harmless Halliburton, its divisions, subsidiaries, parent and affiliated companies...
c) That because of the uncertainty of variable well conditions and the necessity of relying on facts and supporting services...
d) That Halliburton warrants only title to the products, supplies and materials...
e) That Customer shall, at its risk and expense, attempt to recover any Halliburton equipment, tools or instruments...
f) To waive the provisions of the Deceptive Trade Practices - Consumer Protection Act...
g) That this contract shall be governed by the law of the state where services are performed...
h) That Halliburton shall not be bound by any changes or modifications in this contract...

I HAVE READ AND UNDERSTAND THIS CONTRACT AND REPRESENT

ORIGINAL

SPEEDISERT BUSINESS FORMS, INC., WICHITA FALLS, TEX. - N 832

HALLIBURTON SERVICES
JOB SUMMARY

HALLIBURTON
DIVISION

~~Wichita~~ OKC OK

HALLIBURTON
LOCATION

Lamer, Co

BILLED ON
TICKET NO. 910887

WELL DATA

LOC. _____ SEC. _____ TWP. _____ RNG. _____ COUNTY Grealey STATE Ks

FORMATION NAME _____ TYPE _____

FORMATION THICKNESS _____ FROM _____ TO _____

PRODUCTION OIL _____ SPD. WATER _____ SPD. GAS _____ MCFD

VENT PRODUCTION OIL _____ SPD. WATER _____ SPD. GAS _____ MCFD

COMPLETION DATE _____ MUD TYPE _____ MUD WT. _____

WELL TYPE _____ SET AT _____

FORMATION TEMPERATURE _____ PRESSURE _____

LOG DATA _____ TOTAL DEPTH _____

JOB DATA

CALLER OUT DATE	ON LOCATION DATE	JOB STARTED DATE	JOB COMPLETED DATE
10-11	10-12	10-12	10-12
TIME 2100	TIME 0100	TIME 0800	TIME 1030

PERSONNEL AND SERVICE UNITS

NAME	UNIT NO. & TYPE	LOCATION
E Painter 44366	33670	Lamer, Co
J Crawford 07877	6595	"
D McIntyre 091104	5070	"

RECEIVED
STATE CORPORATION COMMISSION
JAN 24 1991
CONSTITUTION DIVISION

TOOLS AND ACCESSORIES

TYPE AND SIZE	QTY.	MAKE
WELL COLLAR		
WELL SHOE		
WELL SHOE TYPE M	1	Howro
STABILIZERS 5.4	3	"
WELL PLUG		
PLUG LA2	1	"
WELL		
WELL fiber buffer	1	"

MATERIALS

WELL FLUID _____ DENSITY _____ LB/GAL. API

WELL FLUID _____ DENSITY _____ LB/GAL. API

WELL TYPE _____ SIZE _____ LB.

WELL TYPE _____ SIZE _____ LB.

WELL TYPE _____ GAL. _____ %

WELL TYPE _____ GAL. _____ %

WELL TYPE _____ GAL. _____ %

WELL FACTANT TYPE _____ GAL. _____ IN

WELL AGENT TYPE _____ GAL. _____ IN

WELL LOSS ADD. TYPE _____ GAL.-LB. _____ IN

WELL LING AGENT TYPE _____ GAL.-LB. _____ IN

WELL C. RED. AGENT TYPE _____ GAL.-LB. _____ IN

WELL WAKER TYPE _____ GAL.-LB. _____ IN

WELL CHECKING AGENT TYPE _____ GAL.-LB. _____

WELL SPAC BALLS TYPE _____ QTY. _____

DEPARTMENT Cm

DESCRIPTION OF JOB
Cement 8 1/8 Surface Casings

JOB DONE THRU: TUBING CASING ANNULUS TBG./ANN.

CUSTOMER REPRESENTATIVE X R. Halling

HALLIBURTON OPERATOR E Painter COPIES REQUESTED 1

CEMENT DATA

WELL	NUMBER OF BAGS	TYPE	API CLASS	BRAND	BULK SACKED	ADDITIVES	YIELD CU. FT./BK.	MIXED LB./GAL.
1	185	6040 cement	I	B	B	2% Om 3% CC	1.28	14.3
2	150	STD	I	B	B	3% CC	1.18	15.6

PRESSURES IN PSI

SUMMARY

VOLUMES

WELL CULATING _____ DISPLACEMENT _____ PRELUSHI BBL.-GAL. _____ TYPE _____

WELL BREAKDOWN _____ MAXIMUM _____ LOAD & BKDN BBL.-GAL. _____ PADI BBL.-GAL. _____

WELL GRADE _____ FRACTURE GRADIENT _____ TREATMENT BBL.-GAL. _____ DISPL. BBL.-GAL. 29.6

WELL 15-MIN INSTANT _____ 5-MIN. _____ 15-MIN. _____ CEMENT SLURRY: 42 + 32

WELL HYDRAULIC HORSEPOWER _____ TOTAL VOLUME: BBL.-GAL. _____

WELL OPERATED _____ AVAILABLE _____ USED _____

AVERAGE RATES IN BPM _____

REMARKS _____

CUSTOMER: Murfin Drilling

LEASE: Settles

WELL NO.: 2

JOB TYPE: Surface Casing

DATE: 10-12

01000000

305

SPEEDSET © MOORE BUSINESS FORMS, INC. - N

HALLIBURTON SERVICES JOB LOG

WELL NO. 2 LEASE Settles TICKET NO. 910887
 CUSTOMER Murfin Drilling PAGE NO. 1
 JOB TYPE 8 1/2 Surface DATE 10-12-90

FORM 2013 R-2

CHART NO.	TIME	RATE (DPM)	VOLUME (DBL GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	2100							Called out 10-11-90
	0100							On location unit G595 (P) rig drilling at 350'
	0800							start casing rig up to circulate casing down
	1007	5			-	250		rig up to cement Start Lead Cement
	1014	5	42		-	350		Start Tail Cement
	1020	5	74		-	350		all cement mixed - deep plus
	1022	5			-	100		start displacement
	1030	4	30		-	300		displacement in - shut in head
								circulated good cement good circ thru out job

RECEIVED
STATE CORPORATION COMMISSION

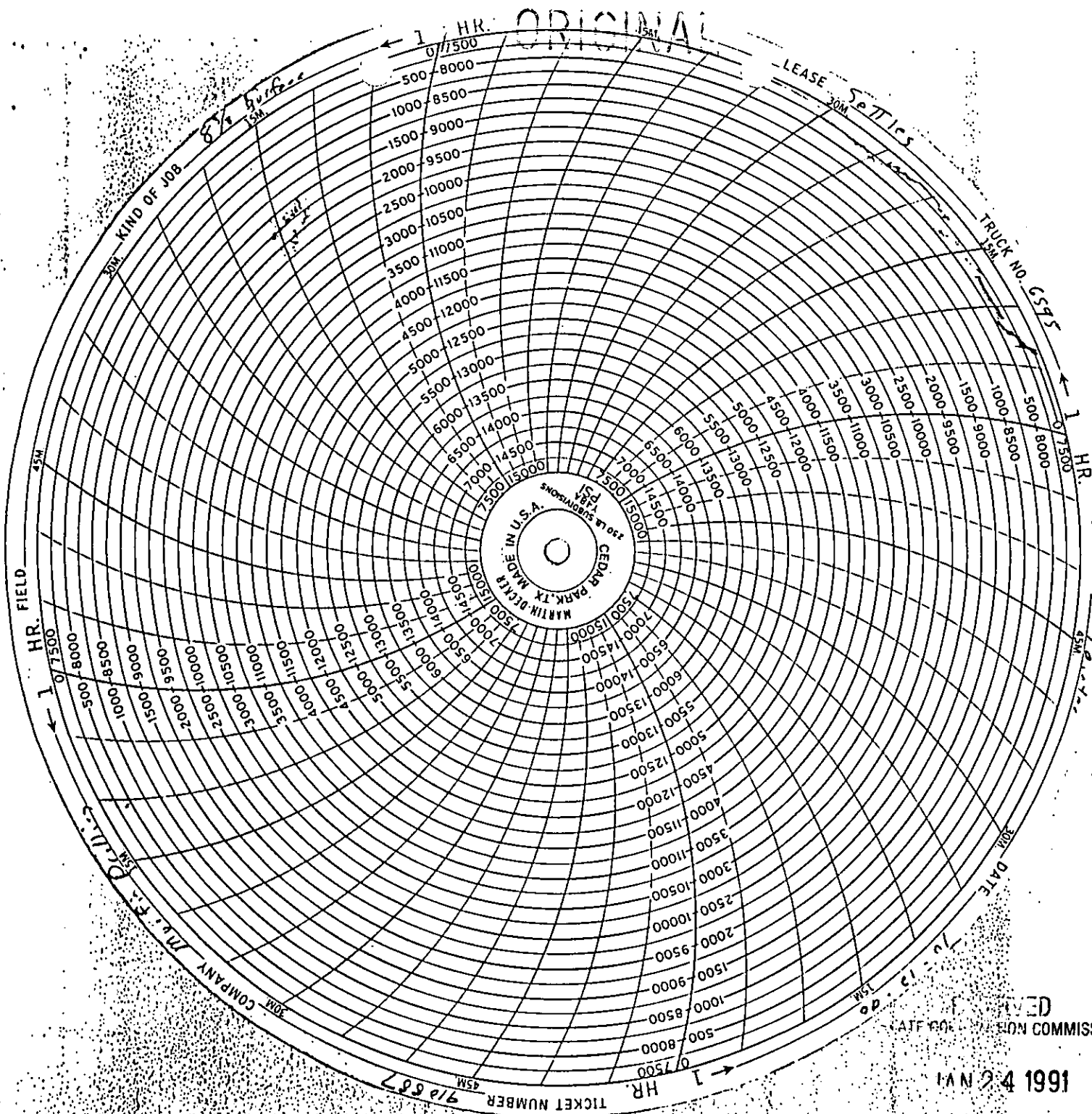
JAN 24 1991

CORPORATION DIVISION

Thank you
Call again

Earl
Joe & Donita

ORIGINAL



LEASE SETTLES

TRUCK NO. 6575

OPERATOR

HR. FIELD

KIND OF JOB

8 1/2

DATE

COMPANY

TICKET NUMBER 91867

RECEIVED DATE FOR REGISTRATION COMMISSION

NOV 24 1991

DIVISION



TICKET NO. 910997-X

FORM 1900 R-11

WELL NO. - FARM OR LEASE NAME 2 Settles		COUNTY Greecley	STATE Ks	CITY / OFFSHORE LOCATION	DATE 10-30-90
CHARGE TO AMOCO Production Co		OWNER AMOCO Prod. Co.		TICKET TYPE (CHECK ONE) SERVICE <input checked="" type="checkbox"/> SALES <input type="checkbox"/>	NITROGEN JOB YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
ADDRESS		CONTRACTOR MURFIN #25		LOCATION 1 Lamar, Co	CODE 25615
CITY, STATE, ZIP		SHIPPED VIA Co TRK	FREIGHT CHARGES <input type="checkbox"/> PFD <input type="checkbox"/> COLLECT	LOCATION 2 HUGOTON	CODE 25535
WELL TYPE 01	WELL CATEGORY 01	WELL PERMIT NO.	DELIVERED TO E. TOWNER, CO	LOCATION 3	CODE
TYPE AND PURPOSE OF JOB 035		ORDER NO. B-857282		REFERRAL LOCATION	

As consideration, the above-named Customer agrees to pay Halliburton in accord with the rates and terms stated in Halliburton's current price lists. Invoices payable NET by the 20th of the following month after date of invoice. Upon Customer's default in payment of Customer's account by the last day of the month following the month in which the invoice is dated, Customer agrees to pay interest thereon after default at the highest lawful contract rate applicable, but never to exceed 18% per annum. In the event it becomes necessary to employ an attorney to enforce collection of said account, Customer agrees to pay all collection costs and attorney fees in the amount of 20% of the amount of the unpaid account. These terms and conditions shall be governed by the law of the state where services are performed or equipment or materials are furnished.

Halliburton warrants only title to the products, supplies and materials and that the same are free from defects in workmanship and materials. THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATELY PRECEDING SENTENCE. Halliburton's liability and customer's exclusive remedy in any cause of action (whether in contract, tort, product liability, breach of warranty or otherwise) arising out of the sale or use of any products, supplies or materials is expressly limited to the replacement of such products, supplies or materials on their return to Halliburton or, at Halliburton's option, to the allowance to the customer of credit for the cost of such items. In no event shall Halliburton be liable for special, incidental, indirect, punitive or consequential damages.

PRICE REFERENCE	SECONDARY REF OR PART NO.	L O C	ACCOUNT	DESCRIPTION	UNITS 1		UNITS 2		UNIT PRICE	AMOUNT
					QTY	MEAS	QTY	MEAS		
000-117				MILEAGE	65	mi			2.35	152 75
007-013	001-016			Pump Charge 1st Stage	5299	ST	8	hrs		1325 00
007-061				Pump Charge 2nd Stage	1	EA				950 00
007-203				Additional hours	8	EA			165.00	1320 00
29	834.10211			PDF Float shoe	1	EA				546 00
40	807.93022			S-4 Centralizers	8	EA			141.75	352 00
66	807.64031			Fr3 Grip Clamps	3	EA			11.30	33 90
71	813.80300			Multi Stage Cementite	1	EA				2450 00
595	812.01695			Catchdown Plug	1	EA		5 1/2 in		345 00
596	801.03743			Catchdown Baffle	1	EA		5 1/2 in		114 00
350	890.10802			Halliburton Weld H	2	EA			11.00	22 00
75	812.0162			Two Stage Free Fall Plug Set	1	EA				400 00

STATE CORPORATION COMMISSION
 JAN 24 1991
 CORPORATIONS DIVISION
 WASHINGTON, D.C.

AS PER ATTACHED BULK MATERIAL DELIVERY TICKET NO. **B-857282** 12,715 15

WAS JOB SATISFACTORILY COMPLETED?
 WAS OPERATION OF EQUIPMENT SATISFACTORY?
 WAS PERFORMANCE OF PERSONNEL SATISFACTORY?
 CUSTOMER OR HIS AGENT (PLEASE PRINT)
 CUSTOMER OR HIS AGENT (SIGNATURE)

WE CERTIFY THAT THE FAIR LABOR STANDARDS ACT OF 1938, AS AMENDED HAS BEEN COMPLIED WITH IN THE PRODUCTION OF GOODS AND OR WITH RESPECT TO SERVICES FURNISHED UNDER THIS CONTRACT.

HALLIBURTON OPERATOR
 HALLIBURTON APPROVAL *[Signature]*

SUB TOTAL **20725 80**
 APPLICABLE TAXES WILL BE ADDED ON INVOICE.

BULK MATERIALS DELIVERY AND TICKET CONTINUATION

FOR INVOICE AND TICKET NO. 910997



DATE 10-20-90	CUSTOMER ORDER NO.	WELL NO. AND FARM Settles # 2	COUNTY Greeley	STATE Ks KR CO
CHARGE TO Anoco Production Co.		OWNER Same	CONTRACTOR NXX Murfin	
MAILING ADDRESS		DELIVERED FROM MNNM Lamar	LOCATION CODE 25615	PREPARED BY Rick Rawlins
CITY & STATE		DELIVERED TO Loc. ES/Towner, Co.	TRUCK NO.	RECEIVED BY H.P. Payne

PRICE REFERENCE	SECONDARY REF. OR PART NO.	CODE		DESCRIPTION	UNITS 1		UNITS 2		UNIT PRICE	AMOUNT	
		L	D		QTY.	MEAS.	QTY.	MEAS.			
504-050	516.00265	1	B	Premium Plus Cement	360	sk			7.08	2548	80
504-120		1	B	Halliburton Light Cement	750	sk			6.29	4717	50
507-153	516.00161	1	B	CFR-3 blended W/260	73	1b			3.90	284	70
507-665	818XXXX 7015556	1	B	Halad-9 blended W/260	147	1b			6.65	977	55
507-210	890.50071	1	B	Flocele blended W/850	213	1b			1.30	276	90
509-406	890.50812	1	B	Calcium Chloride blended W/260	5	sk			26.25	131	25
STATE CORPORATION COMMISSION											
JAN 24 1991											
		Returned Mileage Charge	TOTAL WEIGHT		LOADED MILES		TON MILES				
		SERVICE CHARGE ON MATERIALS RETURNED					CU. FEET				
500-207		2	B	SERVICE CHARGE			CU. FEET	1134	1.00	1247	40
500-306		2	T	Mileage Charge	TOTAL WEIGHT 103,838	LOADED MILES 65	TON MILES 3374.735		.75	2531	05
No. B 857282		CARRY FORWARD TO INVOICE					SUB-TOTAL		12,715 15		

DISTRICT Liberal

DATE 10-20-90

TO: HALLIBURTON SERVICES YOU ARE HEREBY REQUESTED TO FURNISH EQUIPMENT AND SERVICEMEN TO DELIVER AND OPERATE THE SAME AS AN INDEPENDENT CONTRACTOR TO: AMOCO Production Co. (CUSTOMER) AND DELIVER AND SELL PRODUCTS, SUPPLIES, AND MATERIALS FOR THE PURPOSE OF SERVICING

WELL NO. 2 LEASE Settles SEC. 21 TWP. 18S RANGE 43W

FIELD Wildcat COUNTY Greeley STATE Ks OWNED BY AMOCO Prod. Co.

THE FOLLOWING INFORMATION WAS FURNISHED BY THE CUSTOMER OR HIS AGENT

FORMATION NAME	TYPE	NEW USED	WEIGHT	SIZE	FROM	TO	MAX. ALLOW. P.S.I.
FORMATION THICKNESS	FROM TO						
PACKER: TYPE	SET AT						
TOTAL DEPTH	MUD WEIGHT						
BORE HOLE							
INITIAL PROD: OIL BPD, H ₂ O BPD, GAS MCF							
PRESENT PROD: OIL BPD, H ₂ O BPD, GAS MCF							
CASING		N	15.5	5 1/2	KB	5299	
LINER							
TUBING							
OPEN HOLE				7 7/8		5300	SHOTS/FT.
PERFORATIONS							
PERFORATIONS							
PERFORATIONS							

PREVIOUS TREATMENT: DATE TYPE MATERIALS

TREATMENT INSTRUCTIONS: TREAT THRU TUBING ANNULUS CASING TUBING/ANNULUS HYDRAULIC HORSEPOWER ORDERED

Cement 2 Stage Longstring
1st Stage 260 SK Premium Plus .06% hard 9, .05% CFR-3 2% CC
2nd Stage 750 SK's HIC 1/4" SK Floccle, 100 SK's Pacm Plus
1/4" Floccle

CUSTOMER OR HIS AGENT WARRANTS THE WELL IS IN PROPER CONDITION TO RECEIVE THE PRODUCTS, SUPPLIES, MATERIALS, AND SERVICES

- As consideration, the above-named Customer agrees: THIS CONTRACT MUST BE SIGNED BEFORE WORK IS COMMENCED
- To pay Halliburton in accord with the rates and terms stated in Halliburton's current price list. Invoices are payable NET by the 20th of the following month after date of invoice. Upon Customer's default payment of Customer's account by the last day of the month following the month in which the invoice is dated, Customer agrees to pay interest thereon after default at the highest lawful contract rate applicable but never to exceed 18% per annum. In the event it becomes necessary to employ attorneys to enforce collection of said account, Customer agrees to pay all collection costs and attorney fees in the amount of 20% of the amount of the unpaid account.
 - To defend, indemnify, release and hold harmless Halliburton, its divisions, subsidiaries, parent and affiliated companies and the officers, directors, employees, agents and servants of all of them from and against any claims, liability, expenses, attorneys fees, and costs of defense to the extent permitted by law for:
 - Damage to property owned by, in the possession of, or leased by Customer, and/or the well owner (if different from Customer), including, but not limited to, surface and subsurface damage. The term "well owner" shall include working and royalty interest owners.
 - Reservoir, formation, or well loss or damage, subsurface trespass or any action in the nature thereof.
 - Personal injury or death or property damage (including, but not limited to, damage to the reservoir, formation or well), or any damages whatsoever, growing out of or in any way connected with or resulting from pollution, subsurface pressure, losing control of the well and/or a well blowout or the use of radioactive material.

The defense, indemnity, release and hold harmless obligations of Customer provided for in this Section (b) and Section (c) below shall apply to claims or liability even if caused or contributed to by Halliburton negligence, strict liability, or the unreasonableness of any vessel owned, operated, or furnished by Halliburton or any defect in the data, products, supplies, materials, or equipment of Halliburton whether the preparation, design, manufacture, distribution, or marketing thereof, or from a failure to warn any person of such defect. Such defense, indemnity, release and hold harmless obligations of Customer shall not apply where the claims or liability are caused by the gross negligence or willful misconduct of Halliburton. The term "Halliburton" as used in said Sections (b) and (c) shall mean Halliburton, its divisions, subsidiaries, parent and affiliated companies, and the officers, directors, employees, agents and servants of all of them.
 - That because of the uncertainty of variable well conditions and the necessity of relying on facts and supporting services furnished by others, Halliburton is unable to guarantee the effectiveness of the product supplies or materials, nor the results of any treatment or service, nor the accuracy of any chart interpretation, research analysis, job recommendation or other data furnished by Halliburton. Halliburton personnel will use their best efforts in gathering such information and their best judgment in interpreting it, but Customer agrees that Halliburton shall not be liable for and Customer shall indemnify Halliburton against any damages arising from the use of such information.
 - That Halliburton warrants only title to the products, supplies and materials and that the same are free from defects in workmanship and materials. THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED OF MERCHANTABILITY, FITNESS OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE IMMEDIATELY PRECEDING SENTENCE. Halliburton's liability and Customer's exclusive remedy in the cause of action (whether in contract, tort, breach of warranty or otherwise) arising out of the sale or use of any products, supplies or materials is expressly limited to the replacement of such products, supplies or materials on their return to Halliburton or, at Halliburton's option, to the allowance to the Customer of credit for the cost of such items. In no event shall Halliburton be liable for special, incidental, indirect punitive or consequential damages.
 - That Customer shall, at its risk and expense, attempt to recover any Halliburton equipment, tools or instruments which are lost in the well and if such equipment, tools or instruments are not recovered, Customer shall pay Halliburton its replacement cost unless such loss is due to the sole negligence of Halliburton. If Halliburton equipment, tools or instruments are damaged in the well, Customer shall pay Halliburton the lesser of its replacement cost or the cost of repairs unless such damage is caused by the sole negligence of Halliburton. In the case of equipment, tools or instruments for marine operations, Customer shall, in addition to the foregoing, be fully responsible for loss of or damage to any Halliburton's equipment, tools or instruments which occurs at any time after delivery to Customer at the landing unit returned to the landing, unless such loss or damage is caused by the sole negligence of Halliburton.
 - To waive the provisions of the Deceptive Trade Practices - Consumer Protection Act, to the extent permitted by law.
 - That this contract shall be governed by the law of the state where services are performed or materials are furnished.
 - That Halliburton shall not be bound by any changes or modifications in this contract, except where such change or modification is made in writing by a duly authorized executive officer of Halliburton.

STATE CORPORATION COMMISSION
 JAN 24 1991
 CONSERVATION DIVISION

I HAVE READ AND UNDERSTAND THIS CONTRACT AND REPRESENT THAT I AM AUTHORIZED TO SIGN THE SAME AS CUSTOMER'S AGENT.

SIGNED _____ CUSTOMER
 DATE 10-20-90
 TIME 1:20 P.M.

WELL DATA
FIELD: Wildcat SEC: 21 TWP: 18S RING: 43W COUNTY: Greecley STATE: KS

FORMATION NAME _____ TYPE _____
FORMATION THICKNESS _____ FROM _____ TO _____
INITIAL PROD: OIL _____ BPD. WATER _____ BPD. GAS _____ MCFD
PRESENT PROD: OIL _____ BPD. WATER _____ BPD. GAS _____ MCFD
COMPLETION DATE _____ MUD TYPE _____ MUD WT. _____
PACKER TYPE _____ SET AT _____
BOTTOM HOLE TEMP. _____ PRESSURE _____
MISC. DATA _____ TOTAL DEPTH _____

Table with columns: NEW USED, WEIGHT, SIZE, FROM, TO, MAXIMUM PSI ALLOWABLE. Rows include CASING, LINER, TUBING, OPEN HOLE, PERFORATIONS.

JOB DATA

Table with columns: CALLED OUT, ON LOCATION, JOB STARTED, JOB COMPLETED. Includes dates and times for each stage.

TOOLS AND ACCESSORIES

Table with columns: TYPE AND SIZE, QTY., MAKE. Lists items like FLOAT COLLAR, GUIDE SHOE, CENTRALIZERS, etc.

PERSONNEL AND SERVICE UNITS

Table with columns: NAME, UNIT NO. & TYPE, LOCATION. Lists personnel like G.D. MOORE, J. Crawford, etc.

MATERIALS

TREAT. FLUID _____ DENSITY _____ LB/GAL. API
DISPL. FLUID _____ DENSITY _____ LB/GAL. API
PROP. TYPE _____ SIZE _____ LB.
ACID TYPE _____ GAL. %
SURFACTANT TYPE _____ GAL. IN
FLUID LOSS ADD. TYPE _____ GAL.-LB. IN
GELLING AGENT TYPE _____ GAL.-LB. IN
FRIC. RED. AGENT TYPE _____ GAL.-LB. IN
BREAKER TYPE _____ GAL.-LB. IN
BLOCKING AGENT TYPE _____ GAL.-LB.
PERFPAC BALLS TYPE _____ QTY.

DEPARTMENT: Cement
DESCRIPTION OF JOB: Cement 2 stage 5/8" casing
JOB DONE THRU: TUBING CASING ANNULUS TBG/ANN.

CUSTOMER REPRESENTATIVE: X
HALLIBURTON OPERATOR: H.D. [Signature]
COPIES REQUESTED: _____

CEMENT DATA

Table with columns: STAGE, NUMBER OF SACKS, CEMENT, BRAND, BULK SACKED, ADDITIVES, YIELD CU FT./SK., MIXED LBS./GAL.

PRESSURES IN PSI

SUMMARY

VOLUMES

CIRCULATING _____ DISPLACEMENT _____
BREAKDOWN _____ MAXIMUM _____
AVERAGE _____ FRACTURE GRADIENT _____
SHUT-IN: INSTANT _____ 5-MIN _____ 15-MIN _____
HYDRAULIC HORSEPOWER _____
ORDERED _____ AVAILABLE _____ USED _____
AVERAGE RATES IN BPM _____
TREATING _____ DISPL. _____ OVERALL _____
CEMENT LEFT IN PIPE _____
FEET _____ REASON: Shoe Joint

PRESLUSH: BBL.-GAL. _____
LOAD & BKDN: BBL.-GAL. _____ PAD: BBL.-GAL. _____
TREATMENT: BBL.-GAL. _____
CEMENT SLURRY: BBL.-GAL. _____
TOTAL VOLUME: BBL.-GAL. _____
REMARKS: See SO blog, JAN 24 1991
Thank you for calling Halliburton

STATE CORPORATION COMMISSION

CONSERVATION DIVISION

CUSTOMER: J. [Signature]
LEASE: S. [Signature]
WELL NO: 2
JOB TYPE: 5/8" casing
DATE: 10-20-90

JOB LOG

WELL NO. _____ LEASE _____ TICKET NO. 110111

CUST R. M/MCO Production Co PAGE NO. 1

JOB TYPE 5 1/2" Long string DATE 10-20-90

FORM 200 P#2

CHART NO.	TIME	RATE (BPM)	VOLUME (BBL) (GAL)	PUMPS		PRESSURE (PSI)		DESCRIPTION OF OPERATION AND MATERIALS
				T	C	TUBING	CASING	
	0400							Called out Unit #6595P
	0800							Request on loc
	0715							ON LOC, Rig lying down pipe
								Pipe Rams won't fit BOP.
	1310							WAIT on RAINS
	2115							START Running Casing
1021-90	0147							START Circulate N/Rig Pump
	0147						800	HAVING Trouble Circulating
	0147						800	Pressure High
	0255						300	Finish Circ. w/Rig Pressure OK
	0256						1st Stage	START Pump Water Ahead
	0300	5	20				300	Finish Pump Water Ahead
	0300						300	START Cement Mixing
	0310	6	61				0	Finish Mixing Cement
	0311						0	Drop Plug + Wash Pump Lines
	0314						0	START Displacement w/water
	0322						300	Finish Water + START mud
	0340	7	124				650	Finish mud Plug Landed
	0340						1500	Latch Plug held
	0343							DROP DU opening, plug
	0400						1350	DU open
	0410							Hook up to Rig Pump
10-21-90								2nd Stage
1	0837							START Pump Water Ahead
2	0842	4	20					Finish Pump Water Ahead
3	0843							START Mix HLC Cement
4	0914	9.85	259					Finish Mix HLC Cement
5	0911							START Prem + Cement
6	0915	6	24					Finish Prem + Cement
7	0916							Drop Plug + Wash Pump Lines
8	0927							START Displacement
9	0932	6.5	65					Finish Displacement
10	0932							Plug Landed + DU held
	1000							Cement didn't Circulate

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JAN 24 1991

REGISTRATION DIVISION
L. J. ...

Job Complete
THANK YOU
Larry E. Crew

DOWELL SCHLUMBERGER INCORPORATED

P.O. BOX 4378 HOUSTON, TEXAS 77210

CUSTOMER

OILFIELD SERVICES
INDUSTRIAL SERVICES

DSI SERVICE ORDER
RECEIPT AND INVOICE NO.
03-12-3771

DSI SERVICE LOCATION NAME AND NUMBER
11455ES K3 03-12

CUSTOMER NUMBER _____ CUSTOMER P.O. NUMBER _____
TYPE SERVICE CODE _____ BUSINESS CODES _____

CUSTOMER'S NAME **Amoco Production Company**
ADDRESS _____
CITY, STATE AND ZIP CODE _____

WORKOVER NEW WELL OTHER N API OR IC NUMBER _____

IMPORTANT
SEE OTHER SIDE FOR TERMS & CONDITIONS
ARRIVE LOCATION MO. DAY YR. TIME
5 9 91 1145

SERVICE ORDER RECEIPT
I certify that the materials and services listed were authorized and received and all services performed in a workmanlike manner and that I have the authority to accept and execute this document.

JOB COMPLETION MO. DAY YR. TIME
5 9 91 1506

DSI will furnish and Customer shall purchase materials and services required in the performance of the following SERVICE INSTRUCTIONS or DSI INDUSTRIAL SERVICE CONTRACT NO. _____ in accordance with the terms and conditions as printed on the reverse side of this form.
400 SKs 50/50 Poz/H + 2% Dzo

SIGNATURE OF CUSTOMER OR AUTHORIZED REPRESENTATIVE
Richard Jensch

STATE **Kansas** CODE _____ COUNTY / PARISH **Greeley** CODE _____ CITY _____

WELL NAME AND NUMBER / JOB SITE **SETTLES #2** LOCATION AND POOL / PLANT ADDRESS **Sec** SHIPPED VIA **DS**

ITEM/PRICE REF. NO.	MATERIAL, EQUIPMENT AND SERVICES USED	UNIT	QUANTITY	UNIT PRICE	\$ AMOUNT
102572-020	Pump Truck chg	EO	1	1020 ⁰⁰	1020 ⁰⁰
059200-002	Mileage chg	Mi	98	265	259 ⁷⁰
059697-000	PAGE	EO	1	125 ⁰⁰	125 ⁰⁰
049102-000	Delivery chg. 51,408" + 98	Tu/mi	2519	.80	2015 ²⁰
049100-000	Service chg	FT3	617	115	709 ⁵⁵
040015-000	CLASS 4	SK	300	725	2175 ⁰⁰
045008-000	LITE Poz 3	FT3	300	350	1050 ⁰⁰
045014-050	Dzo BEATONITE	LB	1008	-14	141 ²⁸
RECEIVED					
STATE CORPORATION COMMISSION					
MAY 20 1991					
CONSERVATION DIVISION Wichita, Kansas					
				SUB TOTAL	

Field Estimate # **7515 73**

LICENSE/REIMBURSEMENT FEE _____
LICENSE/REIMBURSEMENT FEE _____
REMARKS: **Thanks For Using DS!**
STATE _____ % TAX ON \$ _____
COUNTY _____ % TAX ON \$ _____
CITY _____ % TAX ON \$ _____
SIGNATURE OF DSI REPRESENTATIVE **[Signature]** TOTAL \$ _____

CEMENTING SERVICE REPORT

DS-498 PRINTED IN U.S.A.

DOWELL SCHLUMBERGER INCORPORATED

EATMENT NUMBER 03-12-3771 DATE 5-9-91

STAGE DS DISTRICT 0145381

WELL NAME AND NO. **SETTLES #2** LOCATION (LEGAL) _____ RIG NAME: **Hemlock**

FIELD/POOL _____ FORMATION _____ WELL DATA: BOTTOM TOP

COUNTY/PARISH **GREELY** STATE **Kansas** API. NO. _____

NAME **Amoco Production Company**

AND _____

ADDRESS _____

ZIP CODE _____

SPECIAL INSTRUCTIONS _____

IS CASING/TUBING SECURED? YES NO

LIFT PRESSURE _____ PSI CASING WEIGHT - SURFACE AREA (3.14 x R²) _____

PRESSURE LIMIT _____ PSI BUMP PLUG TO _____ PSI

ROTATE _____ RPM RECIPROCATATE _____ FT No. of Centralizers _____

BIT SIZE	CSG/Liner Size				
TOTAL DEPTH	WEIGHT				
<input type="checkbox"/> ROT <input type="checkbox"/> CABLE	FOOTAGE				
MUD TYPE	GRADE				
<input type="checkbox"/> BHST <input type="checkbox"/> BHCT	THREAD				
MUD DENSITY	LESS FOOTAGE SHOE JOINT(S)				TOTAL
MUD VISC.	Disp. Capacity				

NOTE: Include Footage From Ground Level To Head In Disp. Capacity

Flood	TYPE		Stage Tool	TYPE	
	DEPTH			DEPTH	
SHOE	TYPE		Stage Tool	TYPE	
	DEPTH			DEPTH	

Head & Plugs TGB D.P. SQUEEZE JOB

Double SIZE **2 7/8** TOOL TYPE **PACKER**

Single WEIGHT DEPTH **1475**

Swage GRADE TAIL PIPE: SIZE _____ DEPTH _____

Knockoff THREAD TUBING VOLUME **9.71** Bbls

TOP OR W NEW USED CASING VOL. BELOW TOOL **2.26** Bbls

BOT OR W DEPTH **1475** TOTAL **11.97** Bbls

ANNUAL VOLUME _____ Bbls

JOB SCHEDULED FOR TIME: **1200** DATE: **5-9-91** ARRIVE ON LOCATION TIME: **1145** DATE: **5-9-91** LEFT LOCATION TIME: **1600** DATE: **5-9-91**

TIME	PRESSURE		VOLUME PUMPED BBL		INJECT RATE	FLUID TYPE	FLUID DENSITY	SERVICE LOG DETAIL
	TGB OR D.P.	CASING	INCREMENT	CUM.				
0001 to 2400								PRE-JOB SAFETY MEETING
1252								PUMP INTO SQUEEZE PERFS
1256		500		7	2	Fluo		CATCH PRESSURE
1258		690		9	2			FORMATION BROKE
1306		540		11	242			SHUT DW.
1408	2000	2000		11				PRESSURE TEST LINES
1410		620		11				PRESSURE BACKSIDE
1410	620	620		1172				SHUT DW - BACKSIDE LOADED
1411	500	500			2			ESTABLISH INJECTION RATE
1413	590	590			3			SHUT DW - INJECTION RATE ESTABLISHED
1415	540	540	125		3	14.5		START CEMENT
1420	520	520		12	3			CEMENT TO PERFS.
1454	500	500		125	-			SHUT DW - CEMENT MIXED
1454				125	-			WASH PUMP LINES.
1459	500	550	11	125	1			START DISPLACEMENT
1506	1000	1000		136	142			SHUT DW - CEMENT DISPLACED

REMARKS _____

SYSTEM CODE	NO. OF SACKS	YIELD CU. FT/SK	COMPOSITION OF CEMENTING SYSTEMS		SLURRY MIXED	
			BBLs	DENSITY	BBLs	DENSITY
1.	600	1.17	50/50 PORTLAND + 2% DZO	125	14.5	
2.						
3.						
4.						
5.						
6.						

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BREAKDOWN FLUID TYPE _____ VOLUME _____ DENSITY _____ PRESSURE MAX. **1000** MIN: _____

HESITATION SO RUNNING SO CIRCULATION LOST YES NO Cement Circulated To Surf. YES NO Bbls.

BREAKDOWN PSI FINAL PSI DISPLACEMENT VOL. **11** Bbls

Washed Thru Parts YES NO TO _____ FT MEASURED DISPLACEMENT **X** WIRELINE

PERFORATIONS TO _____ TO _____ CUSTOMER REPRESENTATIVE **Richard Jensen** DS SUPERVISOR **Greg Greenie**

JOWELL SCHLUMBERGER INCORPORATED

CUSTOMER

P.O. BOX 4378 HOLTON, TEXAS 77210

OILFIELD SERVICES
 INDUSTRIAL SERVICES

DSI SERVICE ORDER
 RECEIPT AND INVOICE NO.
3782

DSI SERVICE LOCATION NAME AND NUMBER
OL-500 KS 0212

CUSTOMER NUMBER _____ CUSTOMER P.O. NUMBER _____
 TYPE SERVICE CODE _____ BUSINESS CODES _____

CUSTOMER'S NAME **Amoco**
 ADDRESS _____
 CITY, STATE AND ZIP CODE _____

WORKOVER NEW WELL OTHER API OR IC NUMBER _____

IMPORTANT
 SEE OTHER SIDE FOR TERMS & CONDITIONS
 ARRIVE MO. DAY YR. TIME
 LOCATION **5 13 91 1100**

SERVICE ORDER RECEIPT
 I certify that the materials and services listed were authorized and received and all services performed in a workmanlike manner and that I have the authority to accept and execute this document.

JOB COMPLETION MO. DAY YR. TIME
5 13 91 1325

DSI will furnish and Customer shall purchase materials and services required in the performance of the following SERVICE INSTRUCTIONS or DSI INDUSTRIAL SERVICE CONTRACT NO. _____ in accordance with the terms and conditions as printed on the reverse side of this form.

SIGNATURE OF CUSTOMER OR AUTHORIZED REPRESENTATIVE _____

STATE **Kansas** CODE _____ COUNTY/PARISH **Greely** CODE _____ CITY _____

WELL NAME AND NUMBER / JOB SITE **Settles #2** LOCATION AND POOL / PLANT ADDRESS _____ SHIPPED VIA **AD**

ITEM/PRICE REF. NO.	MATERIAL, EQUIPMENT AND SERVICES USED	UNIT	QUANTITY	UNIT PRICE	\$ AMOUNT
19871-005	pump Trk chg	Cr	1	505.00	505.00
19102-000	Delivery chg	257	2570	.80	2056.00
19100-000	Service chg	f3	617	1.15	709.55
19697-000	PACK	Eq	1	125.00	125.00
19200-002	mileage	mi	100	2.65	265.00
40003-000	Chgs Coml	f3	300	7.75	2325.00
43008-000	ditch for 3	f3	300	3.50	1050.00
45014-050	Q20 Gc11	lbs	1008	.16	161.28

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 Wichita, Kansas

Field Eq 7196.00

SUB TOTAL _____

LICENSE/REIMBURSEMENT FEE _____

LICENSE/REIMBURSEMENT FEE _____

MARKS: **Thank you for using D.S.**
 STATE _____ % TAX ON \$ _____
 COUNTY _____ % TAX ON \$ _____
 CITY _____ % TAX ON \$ _____
 SIGNATURE OF DSI REPRESENTATIVE **[Signature]** TOTAL \$ _____

CEMENTING SERVICE REPORT

ORIGINAL
DS

IS-496 PRINTED IN U.S.A.

JOWELL SCHLUMBERGER INCORPORATED

TREATMENT NUMBER: 0512-3782 DATE: 5/13/91
AGE: DS DISTRICT: WYSSISK's

WELL NAME AND NO. Schles #2 LOCATION (LEGAL) _____
 FIELD POOL _____ FORMATION _____
 COUNTY/PARISH Greely STATE Kansas API. NO. _____
 NAME Amoco
 ADDRESS _____ ZIP CODE _____

RIG NAME: _____
 WELL DATA: BIT SIZE _____ CSG/Liner Size 8 5/8 BOTTOM _____ TOP _____
 TOTAL DEPTH _____ WEIGHT 241 _____
 ROT CABLE FOOTAGE _____
 MUD TYPE _____ GRADE _____
 BHST BHCT THREAD _____
 MUD DENSITY _____ LESS FOOTAGE SHOE JOINT(S) _____ TOTAL _____
 MUD VISC. _____ Disp. Capacity _____

SPECIAL INSTRUCTIONS
Provide materials + service to
entry cont well
 CASING/TUBING SECURED? YES NO
 TEST PRESSURE _____ PSI CASING WEIGHT - SURFACE AREA (3.14 x R²) _____
 PRESSURE LIMIT _____ PSI BUMP PLUG TO _____ PSI
 ROTATE _____ RPM RECIPROCATE _____ FT No. of Centralizers _____

NOTE: Include Footage From Ground Level To Head in Disp. Capacity
 Float TYPE _____ DEPTH _____
 Stage Tool TYPE _____ DEPTH _____
 Shoe TYPE _____ DEPTH _____
 Head & Plugs TBG D.P. SQUEEZE JOB
 Double SIZE _____ TOOL TYPE _____
 Single WEIGHT _____ DEPTH _____
 Swage GRADE _____ TAIL PIPE: SIZE _____ DEPTH _____
 Knockoff THREAD _____ TUBING VOLUME _____ Bbls
 TOP OR OW NEW USED CASING VOL. BELOW TOOL _____ Bbls
 BOT OR OW DEPTH _____ TOTAL _____ Bbls
 ANNUAL VOLUME _____ Bbls

TIME	PRESSURE		VOLUME PUMPED BBL		JOB SCHEDULED FOR			ARRIVE ON LOCATION		LEFT LOCATION	
	TBG OR D.P.	CASING	INCREMENT	CUM	INJECT RATE	FLUID TYPE	FLUID DENSITY	TIME	DATE	TIME	DATE
0001 to 2400											
12:10	1500	NA	1	-	1	1120	8.32				
12:12	N/A	300	88	-	3.5	1120	8.32				
12:39		120	122	-	3.1	-	11.2+				
1:00		70	-	-	0	-	-				
1:04											

PRE-JOB SAFETY MEETING posit test line
1120 ahead
Start cont slurry
Int. Conn. Wash Line
End Job

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 STATE CORPORATION COMMISSION
 MAY 20 1991
 CONSERVATION DIVISION
 Wichita, Kansas

REMARKS _____

SYSTEM CODE	NO. OF SACKS	YIELD CU. FT/SK	COMPOSITION OF CEMENTING SYSTEMS		SLURRY MIXED	
					BBLs	DENSITY
1	600	1.42	30/50/PZ/C + 2% DSO		151.7	11.0
2						
3						
4						
5						
6						

BREAKDOWN FLUID TYPE _____ VOLUME _____ DENSITY _____ PRESSURE MAX. 500 MIN. 0
 HESITATION SO _____ RUNNING SO _____ CIRCULATION LOST YES NO Cement Circulated To Surt. YES NO Bbls _____
 BREAKDOWN _____ PSI FINAL _____ PSI DISPLACEMENT VOL. 0 Bbls TYPE OF WELL OIL STORAGE BRINE WATER
 GAS INJECTION WILDCAT
 Washed Thru Peris YES NO TO _____ FT MEASURED DISPLACEMENT WIRELINE
 REFORMATIONS _____ CUSTOMER REPRESENTATIVE Richard Jenisch DS SUPERVISOR Greg Black