

BEFORE EXAMINER CATANACH
OIL CONSERVATION DIVISION
M/W EXHIBIT NO. 37
CASE NO. 11996

CHACO NO. 1
SENW, SEC 18 - T26N - R12W

**Gas & Water
Analyses**

Gas & Water Analysis

**PENDRAGON ENERGY PRINRS
WELL ANALYSIS COMPARISON**
-----LEASE : CHACO 1
STN.NO. :02/12/1998
60000-10050

DATE	02/11/98	02/03/98	03/20/97
RUN NR.	PEN80021	PEN80017	PEN70011

NITROGEN	0.516	0.511	0.230
CO2	0.946	0.956	0.866
METHANE	96.121	96.034	96.225
ETHANE	2.336	2.387	2.450
PROPANE	0.041	0.062	0.138
I-BUTANE	0.009	0.014	0.031
N-BUTANE	0.006	0.010	0.022
I-PENTANE	0.004	0.006	0.013
N-PENTANE	0.000	0.002	0.004
HEXANES	0.021	0.018	0.021

BTU	1019.4	1020.2	1026.7
GPM	0.6517	0.6742	0.7258
SP.GRAV.	0.5787	0.5791	0.5789



2030 Afton Place
Farmington, N.M. 87401
(505) 325-6622

Analysis No. PEN80021
Cust. No. 60000-10050

WELL/LEASE INFORMATION

Company	: PENDRAGON ENERGY PRTRNS	Source	:
Well Name	: CHACO 1	Pressure	: 46 PSIG
County	: SAN JUAN	Sample Temp.	: N/A DEG.F
State	: NM	Well Flowing	: YES
Location	: 18F-26N-12W	Date Sampled	: 02/11/98
Fld/Formation	:	Sampled By	: BOB DURBIN
Cust.Stn.No.	:	Foreman/Engr	:

Remarks: SAMPLED AT 10:00

ANALYSIS

COMPONENT	MOLE %	GPM**	B.T.U.*	SP.GR.*
NITROGEN	0.516	0.0000	0.00	0.0050
CO2	0.945	0.0000	0.00	0.0144
METHANE	96.121	0.0000	973.03	0.5324
ETHANE	2.336	0.6249	41.43	0.0243
PROPANE	0.041	0.0113	1.03	0.0006
I-BUTANE	0.009	0.0029	0.29	0.0002
N-BUTANE	0.006	0.0019	0.20	0.0001
I-PENTANE	0.004	0.0015	0.16	0.0001
N-PENTANE	0.000	0.0000	0.00	0.0000
HEXANES	0.021	0.0092	1.08	0.0007
TOTAL	100.000	0.6517	1017.23	0.5777

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

** @ 14.730 & 60 DEG. F

COMPRESSIBILITY FACTOR	(1/Z)	1.0021
BTU/CU.FT. (DRY) CORRECTED FOR	(1/Z)	1019.4
BTU/CU.FT. (WET) CORRECTED FOR	(1/Z)	1001.6
REAL SPECIFIC GRAVITY		0.5787

ANALYSIS RUN AT 14.730 PSIA & 60 DEGREES F

CYLINDER #	: A092
CYLINDER PRESSURE	: 42 PSIG
DATE RUN	: 02/12/98
ANALYSIS RUN BY	: CHELLE DURBIN



PENDRAGON ENERGY PARTNERS
WELL ANALYSIS COMPARISON

LEASE : CHACO 1
S N.NO. :

WELLHEAD-TBG

02/06/1998
60000-10050

DATE 02/03/98 03/20/97

R N NR. PEN80017 PEN70011

NITROGEN	0.511	0.230
O ₂	0.956	0.866
ETHANE	96.034	96.225
ETHANE	2.387	2.450
PROPANE	0.062	0.138
ISOBUTANE	0.014	0.031
ISOBUTANE	0.010	0.022
ISOPENTANE	0.006	0.013
ISOPENTANE	0.002	0.004
HEAVY ENDS	0.018	0.021

BTU 1020.2 1026.7

HEAT 0.6742 0.7258

GRAV. 0.5791 0.5789



2030 Afton Place
Farmington, N.M. 87401
(505) 325-6622

Analysis No. PEN80017
Cust. No. 60000-10050

WELL/LEASE INFORMATION

Company	: PENDRAGON ENERGY PARTNRS	Source	: WELLHEAD-TBG
Well Name	: CHACO 1	Pressure	: 52 PSIG
County	: SAN JUAN	Sample Temp.	: 49 DEG.F
State	: NM	Well Flowing	: YES
Location	:	Date Sampled	: 02/03/98
Fld/Formation	: PICTURED CLIFFS	Sampled By	: MIKE WAGONER
Cust.Stn.No.	:	Foreman/Engr	:

Remarks:

ANALYSIS

COMPONENT	MOLE %	GPM**	B.T.U.*	SP.GR.*
NITROGEN	0.511	0.0000	0.00	0.0049
CO2	0.956	0.0000	0.00	0.0145
METHANE	96.034	0.0000	972.15	0.5319
ETHANE	2.387	0.6385	42.34	0.0248
PROPANE	0.062	0.0171	1.56	0.0009
I-BUTANE	0.014	0.0046	0.46	0.0003
N-BUTANE	0.010	0.0032	0.33	0.0002
I-PENTANE	0.005	0.0022	0.24	0.0001
N-PENTANE	0.002	0.0007	0.08	0.0000
HEXANES	0.018	0.0079	0.93	0.0006
TOTAL	100.000	0.6742	1018.08	0.5781

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

** @ 14.730 & 60 DEG. F

COMPRESSIBILITY FACTOR	(1/Z)	1.0021
BTU/CU.FT. (DRY) CORRECTED FOR	(1/Z)	1020.2
BTU/CU.FT. (WET) CORRECTED FOR	(1/Z)	1002.5
REAL SPECIFIC GRAVITY		0.5791

ANALYSIS RUN AT 14.730 PSIA & 60 DEGREES F

CYLINDER #	: KO 48
CYLINDER PRESSURE	: 50 PSIG
DATE RUN	: 02/05/98
ANALYSIS RUN BY	: DAVE MARTIN

CO.CD 23 EL PASO NATURAL GAS
CUSTOMER ACCOUNTING SERVICES DEPARTMENT
VOLUME CALCULATION DIVISION
POST OFFICE BOX 1492
EL PASO, TEXAS 79978

CONTACTS:
EL PASO FIELD SERVICES
(713) 757-5953
EL PASO MAINLINE
(915) 496-2595

DATE 1/07/98

CHROMATOGRAPHIC GAS ANALYSIS REPORT

RECEIVED

JAN 12 1998

PENDRAGON ENERGY
PARTNERS, INC.

MAILEE
05380

PENDRAGON ENERGY PARTNERS INC
SUITE 750
621-17TH STREET
DENVER, CO 80293-9999

METER NUMBER 02625 - CHACO PLANT 1 & 2 CPD
OPERATOR 0580 - PENDRAGON ENERGY PARTNERS INC.

ANALYSIS DATE 12/24/97
SAMPLE DATE 12/16/97
EFFECTIVE DATE 1/01/98
EFFECTIVE FOR 6 MONTHS

TYPE CODE 2 - ACTUAL
H2S GRAINS 0
LOCATION F - FARM BECK

COMPONENTS	NORMALIZED MOL %	GPM
CO2	.82	.000
H2S	.00	.000
N2	.97	.000
METHANE	90.38	.000
ETHANE	5.07	1.356
PROPANE	1.47	.405
ISO-BUTANE	.31	.101
NORM-BUTANE	.39	.123
ISO-PENTANE	.17	.062
NORM-PENTANE	.11	.040
HEXANE PLUS	<u>.31</u>	<u>.135</u>
	100.00	2.222

SPECIFIC GRAVITY .630

MIXTURE HEATING VALUE
(BTU @ 14.73 DRY) 1095

RATIO OF SPECIFIC HEATS .000

NO TEST SECURED FOR H2S CONTENT



RECEIVED
APR - 8 1997
PENDRAGON ENERGY
PARTNERS, INC.

1115 Farmington Avenue
Farmington, N.M. 87401
(505) 5-6622

Analysis No. PEN70011
Cust. No. 60000-10050

WELL/LEASE INFORMATION

Company	: PENDRAGON ENERGY PRTNRS	Source	:
Well Name	: CHACO 1	Pressure	: 50 PSIG
County	: SAN JUAN	Sample Temp.	: N/A DEG.F
State	: NM	Well Flowing	: YES
Location	:	Date Sampled	: 03/20/97
Fld/Formation	:	Sampled By	: MIKE WAGONER
Cust.Stn.No.	:	Foreman/Engr	:

Remarks:

ANALYSIS

COMPONENT	MOLE %	GPM**	B.T.U.*	SP.GR.*
NITROGEN	0.230	0.0000	0.00	0.0022
CO2	0.866	0.0000	0.00	0.0132
METHANE	96.225	0.0000	974.09	0.5330
ETHANE	2.450	0.6554	43.46	0.0254
PROPANE	0.138	0.0380	3.48	0.0021
I-BUTANE	0.031	0.0101	1.01	0.0006
N-BUTANE	0.022	0.0069	0.72	0.0004
I-PENTANE	0.013	0.0048	0.52	0.0003
N-PENTANE	0.004	0.0014	0.16	0.0001
HEXANES	0.021	0.0092	1.08	0.0007
TOTAL	100.000	0.7258	1024.51	0.5779

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

** @ 14.730 & 60 DEG. F

COMPRESSIBILITY FACTOR	(1/Z)	1.0021
BTU/CU.FT. (DRY) CORRECTED FOR	(1/Z)	1026.7
BTU/CU.FT. (WET) CORRECTED FOR	(1/Z)	1008.8
REAL SPECIFIC GRAVITY		0.5789

ANALYSIS RUN AT 14.730 PSIA & 60 DEGREES F

CYLINDER #	: KFL148
CYLINDER PRESSURE	: 49 PSIG
DATE RUN	: 03/25/97
ANALYSIS RUN BY	: DAVE MARTIN

EL PASO NATURAL GAS COMPANY
VOLUME ACCOUNTING DEPARTMENT
MEASUREMENT DIVISION
POST OFFICE BOX 1492
EL PASO, TEXAS 79978
PHONE: (915) 541-2595
CHROMATOGRAPHIC GAS ANALYSIS REPORT

DATE 4/08/96

MAILEE
05380

PENDRAGON ENERGY PARTNERS INC
SUITE 750
621-17TH STREET
DENVER, CO 80293-9999

METER NUMBER 02625 - CHACO PLANT 1 & 2 CPD
OPERATOR 0580 - PENDRAGON ENERGY PARTNERS INC.

ANALYSIS DATE 3/22/96 TYPE CODE 2 - ACTUAL
SAMPLE DATE 3/19/96 H2S GRAINS 0
EFFECTIVE DATE 4/01/96 LOCATION D - DANIELS FM
EFFECTIVE FOR 6 MONTHS

COMPONENTS	NORMALIZED MOL %	GPM
CO2	1.17	.000
H2S	.00	.000
N2	.59	.000
METHANE	89.42	.000
ETHANE	5.04	1.348
PROPANE	2.05	.565
ISO-BUTANE	.51	.167
NORM-BUTANE	.38	.120
ISO-PENTANE	.29	.106
NORM-PENTANE	.16	.058
HEXANE PLUS	<u>.39</u>	<u>.170</u>
	100.00	2.534

SPECIFIC GRAVITY .646
MIXTURE HEATING VALUE
(BTU @ 14.73 DRY) 1116
RATIO OF SPECIFIC HEATS .000
NO TEST SECURED FOR H2S CONTENT

GAS COMPANY OF NEW MEXICO

January 21, 1981

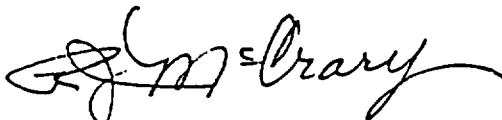
Merrion & Bayless
P. O. Box 507
Farmington, New Mexico 87401

Dear Sir:

For your information we are attaching copies of recent Gas Analysis taken for various wells for which we show you as operator. As of this time we are not set up to show the well name, but the six digit station number reported will be that as used by the Accounting Department in making monthly settlements to you.

Should you desire further copies directed to another location or person, please advise.

Very truly yours,

A handwritten signature in cursive script, appearing to read "R. J. McCrary".

R. J. McCrary, Manager
Purchases & Prorations Dept.

RJM:sb

Attachment

GAS ANALYSIS: TRANSCRIPTION OF TAPE FROM AUTOMATIC CHROMATOGRAPH

NAME/LOCATION: 591 *Merion + Baynes* ATE: 7 8 81
 STREAM NO. 7 *Chaco #1*

STATION NO. 901286

SPECIFIC GRAVITY 0.6404 BTU/CF 14.73/60F/DRY: 1130.2

COMPONENT	MOL %	G.P.M.
CARBON DIOXIDE	0.420	0.0000
NITROGEN	0.520	0.0000
METHANE	89.600	0.0000
ETHANE	5.560	1.4860
PROPANE	2.237	0.6150
ISOBUTANE	0.480	0.1570
N-BUTANE	0.432	0.1360
ISOPENTANE	0.247	0.0900
N-PENTANE	0.100	0.0360
HEXANE +	0.421	0.1850
TOTAL	100.017	2.7050

(ECBTU/074)

GAS ANALYSIS: TRANSCRIPTION OF TAPE FROM AUTOMATIC CHROMATOGRAPH

NAME/LOCATION:

12

11

20

STREAM NO. 7

STATION NO. 9012

86 591

Chaco #1

SPECIFIC GRAVITY 0.6434

BTU/CF 14.73/60F/DRY: 1131.9

COMPONENT	MOL %	G.P.M.
CARBON DIOXIDE	0.561	0.0000
NITROGEN	0.483	0.0000
METHANE	89.290	0.0000
ETHANE	5.690	1.5210
PROPANE	2.263	0.6220
ISOBUTANE	0.513	0.1670
N-BUTANE	0.454	0.1430
ISOPENTANE	0.253	0.0920
N-PENTANE	0.101	0.0360
HEXANE +	0.417	0.1830
TOTAL	100.925	2.7640

Found in Chaco 15 file
~~initials~~

(ECBTU/074)

**Production
Data**

1

140/140

1001

Year	Month	Day	Time	Location	Activity	Remarks
1973	Jan	1	10:00	Home	Work	
1974	Jan	1	10:00	Home	Work	
1975	Jan	1	10:00	Home	Work	
1976	Jan	1	10:00	Home	Work	
1977	Jan	1	10:00	Home	Work	
1978	Jan	1	10:00	Home	Work	
1979	Jan	1	10:00	Home	Work	
1980	Jan	1	10:00	Home	Work	
1981	Jan	1	10:00	Home	Work	
1982	Jan	1	10:00	Home	Work	
1983	Jan	1	10:00	Home	Work	
1984	Jan	1	10:00	Home	Work	
1985	Jan	1	10:00	Home	Work	
1986	Jan	1	10:00	Home	Work	
1987	Jan	1	10:00	Home	Work	
1988	Jan	1	10:00	Home	Work	
1989	Jan	1	10:00	Home	Work	
1990	Jan	1	10:00	Home	Work	
1991	Jan	1	10:00	Home	Work	
1992	Jan	1	10:00	Home	Work	
1993	Jan	1	10:00	Home	Work	
1994	Jan	1	10:00	Home	Work	
1995	Jan	1	10:00	Home	Work	
1996	Jan	1	10:00	Home	Work	
1997	Jan	1	10:00	Home	Work	
1998	Jan	1	10:00	Home	Work	
1999	Jan	1	10:00	Home	Work	
2000	Jan	1	10:00	Home	Work	
2001	Jan	1	10:00	Home	Work	
2002	Jan	1	10:00	Home	Work	
2003	Jan	1	10:00	Home	Work	
2004	Jan	1	10:00	Home	Work	
2005	Jan	1	10:00	Home	Work	
2006	Jan	1	10:00	Home	Work	
2007	Jan	1	10:00	Home	Work	
2008	Jan	1	10:00	Home	Work	
2009	Jan	1	10:00	Home	Work	
2010	Jan	1	10:00	Home	Work	
2011	Jan	1	10:00	Home	Work	
2012	Jan	1	10:00	Home	Work	
2013	Jan	1	10:00	Home	Work	
2014	Jan	1	10:00	Home	Work	
2015	Jan	1	10:00	Home	Work	
2016	Jan	1	10:00	Home	Work	
2017	Jan	1	10:00	Home	Work	
2018	Jan	1	10:00	Home	Work	
2019	Jan	1	10:00	Home	Work	
2020	Jan	1	10:00	Home	Work	
2021	Jan	1	10:00	Home	Work	
2022	Jan	1	10:00	Home	Work	
2023	Jan	1	10:00	Home	Work	
2024	Jan	1	10:00	Home	Work	
2025	Jan	1	10:00	Home	Work	
2026	Jan	1	10:00	Home	Work	
2027	Jan	1	10:00	Home	Work	
2028	Jan	1	10:00	Home	Work	
2029	Jan	1	10:00	Home	Work	
2030	Jan	1	10:00	Home	Work	
2031	Jan	1	10:00	Home	Work	
2032	Jan	1	10:00	Home	Work	
2033	Jan	1	10:00	Home	Work	
2034	Jan	1	10:00	Home	Work	
2035	Jan	1	10:00	Home	Work	
2036	Jan	1	10:00	Home	Work	
2037	Jan	1	10:00	Home	Work	
2038	Jan	1	10:00	Home	Work	

CHACO AREA VOLUME ALLOCATIONS FOR WELLS WITH COMMON METERS

METER NO. WELL NAMES	Month/Year 1/98						
	Pendragon Well Volume MCF	Total El Paso Meter volume MCF	Apparent Discrepancy MCF	Percent Allocation	El Paso Volume Allocation	PROD. ZONE	TAX CREDITS
# 14280							
Cowsaround 2-7	6824			92.30%	6079 FC		YES
Hickman 7R **	569			7.70%	507		YES
Cowsaround 2-14	0			0.00%	0 FC		YES
Bengal B6 **	0			0.00%	0 N/A		NO
TOTAL	7393	6586	-807	100.00%			
# 92937							
Chaco Plant 5	3944			68.90%	3946 PC		YES
Cowsaround 21-1	1780			31.10%	1781 FC		YES
TOTAL	5724	5727	3	100.00%			
# 02625							
Chaco 1	4040			47.82%	3725 PC		YES
Chaco 2R	4390			52.08%	4048 PC		YES
TOTAL	8430	7773	-657	100.00%			
# 02455							
Chaco Plant 12 **	93			17.00%	83		NO
Cowsaround 22-2	454			83.00%	407 FC		YES
TOTAL	547	490	-57	100.00%			
# 97877							
Hard Deal 2J	2253			19.91%	2250 FC + PC		YES
Lansdale Federal	6881			60.80%	6872 FC + PC		NO
Tenneco Federal	2184			19.30%	2181 FC + PC		NO
TOTAL	11318	11304	-14	100.00%			
# 97074							
Pete 1R	563			9.47%	560 FC		YES
Joe Whitney 1	1137			19.13%	1131 PC		NO
Gallegos Fr. Coal	4242			71.39%	4221 FC		YES
TOTAL	5942	5913	-29	100.00%			

** PEPI did not assume operations

Walsh Engineering & Production Well Report

RECEIVED

FEB - 6 1998

Date: 1/98
 Oper: PENDRAGON ENERGY PARTNERS
 Well: Chaco #1

Coeff: 7.71
 Range: 100
 Spring: 250
 Plate: 0.875
 Hrs On: _____
 Hrs Off: _____

PENDRAGON ENERGY
PARTNERS, INC.

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1				4.1	5.0	158	
2				4.1	5.0	158	
3				4.0	5.0	154	
4				3.9	5.0	150	
5				3.8	5.0	146	
6				3.7	5.0	143	
7		48	89	3.6	5.0	139	
8				3.4	5.0	131	
9				3.1	5.1	122	Blow well
10				3.5	5.1	138	
11				3.2	5.0	123	
12				3.0	5.0	116	
13				2.9	5.0	112	
14				2.8	5.0	108	
15				2.5	5.0	96	
16				2.5	5.0	96	Blow well to pit
17				1.5	4.8	56	Blow well to pit
18				1.5	4.8	56	Blow well to pit
19				1.5	4.8	56	Put well on line
20				4.8	5.4	200	
21		49	84	4.4	5.3	180	
22				4.4	5.0	170	
23				4.1	5.1	161	
24				3.8	5.1	149	
25				4.0	4.8	148	
26				4.0	4.8	148	
27				3.4	5.1	134	
28		50	88	3.4	5.1	134	
29				3.1	5.1	122	
30				3.1	5.1	122	
31				3.0	5.0	116	

Total MCFD: 4040

Additional Remarks:

Walsh Engineering & Production
Well Report

Walsh Engineering & Production Well Report

Date: 12/97
 Oper: PENDRAGON ENERGY PARTNERS-
 Well: Chaco #1

Coeff: 7.71
 Range: 100
 Spring: 250
 Plate: 0.875
 Hrs On: _____
 Hrs Off: _____

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1				4.3	5.4	179	
2				4.2	5.1	165	
3		56	93	3.5	5.4	146	
4				3.6	5.1	142	
5				3.4	5.2	136	Blow well
6				4.1	5.1	161	
7				4.5	4.9	170	
8				4.7	4.9	178	
9				4.7	4.9	178	
10				4.3	5.3	176	
11				4.2	5.0	162	
12				4.7	4.8	174	
13				4.8	4.9	181	
14				4.9	4.8	181	
15				5.0	4.3	185	
16				4.6	5.1	181	
17				4.6	5.0	177	
18				4.7	4.9	178	
19				4.4	5.0	170	
20				4.6	4.9	174	
21				4.8	4.9	181	
22		84	97	4.9	5.0	189	
23				4.2	5.3	172	
24				4.6	4.9	174	
25				4.4	5.0	170	
26				3.5	5.4	146	
27				4.0	5.2	160	
28				4.4	4.9	166	
29				4.8	4.8	178	
30				4.2	5.2	168	
31		48	89	4.0	5.1	157	Re-light heater
Total MCFD:						5253	

RECEIVED

JAN - 8 1998

PENDRAGON ENERGY
PARTNERS, INC.

Additional Remarks:

Walsh Engineering & Production Well Report

Walsh Engineering & Production Well Report

RECEIVED

Date: 11/97
 Oper: PENDRAGON ENERGY PARTNERS
 Well: Chaco #1

Coeff: 7.71
 Range: 100
 Spring: 250
 Plate: 0.875
 Hrs On: _____
 Hrs Off: _____

DEC - 1 1997
 PENDRAGON ENERGY
 PARTNERS, INC.

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1				3.4	5.0	131	
2				3.4	5.0	131	
3		93	99	3.4	5.0	131	
4				3.2	5.8	143	
5				4.1	4.6	145	
6				3.8	4.9	144	
7				3.7	5.1	145	
8				3.4	5.0	131	
9				3.5	4.8	130	
10				3.2	5.0	123	
11				2.8	5.3	114	
12				2.7	5.4	112	
13				2.6	5.1	102	
14				2.5	5.3	102	
15				2.5	5.3	102	
16				2.5	5.3	102	
17				2.5	5.3	102	
18				2.4	5.3	98	
19				2.5	4.8	93	
20				2.3	5.1	91	
21				2.3	5.1	90	Rig on hole
22				0.0	5.0	0	Blow to pit
23				0.0	4.8	0	Blow to pit
24				0.0	4.8	0	Put well on line
25				5.0	5.3	204	
26				4.7	5.4	196	
27				4.4	5.4	183	
28				4.3	5.3	176	
29				4.2	5.2	168	
30				4.0	5.7	176	
31						0	

Total MCFD: 3567

Additional Remarks:

Walsh Engineering & Production
Well Report

Walsh Engineering & Production Well Report

RECEIVED

NOV - 5 1997

Date: 10/97
 Oper: PENDRAGON ENERGY PARTNERS
 Well: Chaco #1

Coeff: 7.71
 Range: 100
 Spring: 250
 Plate: 0.875
 Hrs On: _____
 Hrs Off: _____

PENDRAGON ENERGY
PARTNERS, INC.

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1				5.3	5.0	204	
2				5.4	4.9	204	
3				5.4	5.0	208	
4				5.3	5.0	204	
5				5.3	5.0	204	
6				5.1	5.1	201	
7				5.2	5.1	204	
8				4.7	5.4	196	
9				4.6	5.3	188	
10				5.1	5.1	201	
11				5.0	5.1	197	
12				5.2	5.0	200	
13				5.2	5.0	200	
14				5.4	4.9	204	
15				5.4	4.9	204	
16				5.5	4.9	208	
17				5.0	5.1	197	
18				4.7	5.3	192	
19				4.7	5.3	192	
20		48	86	5.0	5.0	193	
21				4.2	5.5	178	
22		62	90	4.0	5.5	170	
23				3.8	5.5	161	
24				3.6	5.6	155	
25				3.8	5.4	158	
26				4.1	5.1	161	
27				4.3	5.1	169	
28		62	43	4.0	5.1	157	
29				3.6	5.3	147	
30				3.3	5.5	140	Blow well
31				3.5	5.9	159	

Total MCFD: 5758

Additional Remarks:

Walsh Engineering & Production Well Report

CHACO AREA VOLUME ALLOCATIONS FOR WELLS WITH COMMON METERS

CHACO KEY VOLUME ALLOCATION FOR WELLS WITH COMMON METER

		Month/Year	# 9.97					
METER NO.	WELL NAMES							
	Pendragon Well Volume MCF	Total El Paso Meter volume MCF	Apparent Discrepancy MCF	Percent Allocation	El Paso Volume Allocation	PROD. ZONE	TAX CREDITS	
# 14280								
Cowsaround 2-7	6919			0.9551353	6362.1561	FC	YES	
Hickman 7R **	325			0.0448647	298.84387		YES	
Cowsaround 2-14	0			0	0	FC	YES	
Bengal B6 **	0			0	0	N/A	NO	
TOTAL	7244	6661	-583	1				
# 92937								
Chaco Plant 5	4324			0.690404	4315.7152	PC	YES	
Cowsaround 21-1	1939			0.309596	1935.2848	FC	YES	
TOTAL	6263	6251	-12	1				
# 02625								
Chaco 1	6393			0.7119947	5891.7558	PC	YES	
Chaco 2R	2586			0.2880053	2383.2442	PC	YES	
TOTAL	8979	8275	-704	1				
# 02455								
Chaco Plant 12 **	12			0.0225989	9.1299435		NO	
Cowsaround 22-2	519			0.9774011	394.87006	FC	YES	
TOTAL	531	404	-127	1				
# 97877								
Hard Deal 2J	3016			0.2288837	2982.583	FC + PC	YES	
Lansdale Federal	8142			0.6178948	8051.7874	FC + PC	NO	
Tenneco Federal	2019			0.1532215	1996.6297	FC + PC	NO	
TOTAL	13177	13031	-146	1				
# 97074								
Joe Whitney 1	826			0.3994197	625.4913	PC	NO	
Gallegos Fr. Coal	1242			0.6005803	940.5087	FC	YES	
TOTAL	2068	1566	-502	1				

** PEPI did not assume operations

Wals Engineering & Production Well Report

RECEIVED

OCT - 8 1997

PENDRAGON ENERGY
PARTNERS, INC.

Date: 9/97
Oper: Pendragon Energy Partners, Inc.
Well: Chaco #1

Coeff: 7.71
Range: 100
Spring: 250
Plate: 0.875
Hrs On: _____
Hrs Off: _____

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1				6.5	4.8	241	
2				6.5	4.8	242	
3				6.5	4.8	241	
4		57	92	6.4	4.9	242	
5				6.0	4.9	227	
6				6.1	4.9	230	
7				6.1	4.9	230	
8				6.1	4.9	230	
9				5.8	5.0	224	
10				5.8	4.9	219	
11				4.8	6.0	222	
12				5.0	5.7	220	
13				5.3	5.1	208	
14				5.3	5.1	208	
15				5.3	5.1	208	
16		55	85	5.3	5.1	208	
17				5.0	5.3	204	
18				4.9	5.3	200	
19				4.9	5.3	200	
20				4.9	5.3	200	
21				4.7	5.6	203	
22		53	87	5.1	5.2	204	
23				4.8	5.3	196	
24				4.8	5.2	192	
25				4.9	5.2	196	
26				4.9	5.2	196	
27				5.0	5.2	200	
28				5.1	5.1	201	
29				5.0	5.1	197	
30				5.1	5.1	201	
31						0	

Total MCFD: 6393

Additional Remarks:

MONTHLY REPORT OF OPERATIONS

Model MMS-3160

OMB 1010-0040
(Expires July 31, 1998)

Lease Number _____
Agreement Number SRM1164
Field Name _____
Unit Name _____
Participating Area Name _____
County SAN JUAN State NM
Operator PENDRAGON ENERGY PARTNERS, INC K0835

☐ Amended Report Federal ☒
or
Indian ☐

The following is a correct report of operations and production (including status of all unplugged wells) for the report
period 0 9 9 7 (mmyy) (See reverse of form for instructions)

API Well Number perator Well Number	Sec. & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod	Barrels of Oil	MCF of Gas	Barrels of Water	Remarks
300452230900S1 CHACO	18SENW	26N	12W	PGW	30		5892		

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

	Oil & Condensate (BBLs)	Gas (MCF)	Water (BBLs)
On hand, Start of Month	_____	XXXXXXXXXXXXX	XXXXXXXXXXXXX
Produced	_____	5892	_____
Sold	_____	5892	XXXXXXXXXXXXX
Spilled or Lost	_____	XXXXXXXXXXXXX	XXXXXXXXXXXXX
Flared or Vented	XXXXXXXXXXXXX	_____	XXXXXXXXXXXXX
Used on or for Benefit of Lease	_____	_____	XXXXXXXXXXXXX
Injected	_____	_____	_____
Gas Transferred	XXXXXXXXXXXXX	_____	XXXXXXXXXXXXX
Plant Number/Name _____	XXXXXXXXXXXXX	XXXXXXXXXXXXX	_____
Surface Pits	_____	_____	_____
Other	_____	_____	_____
Identify _____	_____	_____	_____
On hand, End of Month	_____	XXXXXXXXXXXXX	XXXXXXXXXXXXX
API Gravity/BTU Content	_____	1061	XXXXXXXXXXXXX

COMMENTS

Robert Bomar 915-684-4407
CONTACT NAME Bomar Consulting Service
415 W. Wall St., Suite 1000
ADDRESS Midland, Texas 79701-4436

AUTHORIZING SIGNATURE Robert Bomar DATE 11/13/97 (mmddyy)

AUTHORIZING NAME (type or print) _____

CHACO AREA VOLUME ALLOCATIONS FOR WELLS WITH COMMON METERS

METER NO. WELL NAMES	Pendragon Well Volume MCF	Total El Paso Meter volume MCF	Apparent Discrepancy MCF	Percent Allocation	El Paso Volume Allocation	PROD. ZONE	TAX CREDITS
Month/Year # 8/97							
# 14280							
Cowsaround 2-7	8329			0.9624451	7736.1338	FC	YES
Hickman 7R **	325			0.0375549	301.86619		YES
Cowsaround 2-14	0			0	0	FC	YES
Bengal B6 **	0			0	0	N/A	NO
TOTAL	8654	8038	-616	1			
# 92937							
Chaco Plant 5	4478			0.6847095	4482.1083	PC	YES
Cowsaround 21-1	2062			0.3152905	2063.8917	FC	YES
TOTAL	6540	6546	6	1			
# 02625							
Chaco 1	6417			0.8250193	5802.3606	PC	YES
Chaco 2R	1361			0.1749807	1230.6394	PC	YES
TOTAL	7778	7033	-745	1			
# 02455							
Chaco Plant 12 **	12			0.0444444	12.711111		NO
Cowsaround 22-2	258			0.9555556	273.28889	FC	YES
TOTAL	270	286	16	1			
# 97877							
Hard Deal 2J	1872			0.1671279	1871.8329	FC + PC	YES
Lansdale Federal	8202			0.732256	8201.2677	FC + PC	NO
Tenneco Federal	1127			0.100616	1126.8994	FC	NO
TOTAL	11201	11200	-1	1			
# 97074							
Joe Whitney 1	558			0.1894737	422.71579	PC	NO
Gallegos Fr. Coal	2387			0.8105263	1808.2842	FC	YES
TOTAL	2945	2231	-714	1			
** PEPI did not assume operations							

West,

The # 14280 discrepancy is the suspected line leak we discussed on our last trip down there. Any suggestions as to what (if any) problems we have on #'s 02625 + 97074?

Thanks,
AL

Wal Engineering & Production Well Report

RECEIVED

Date: 8/97
 Oper: Pendragon Energy Partners, Inc.
 Well: Chaco #1

Coeff: 7.71
 Range: 100
 Spring: 250
 Plate: 0.875
 Hrs On: _____
 Hrs Off: _____

SEP - 8 1997
 PENDRAGON ENERGY
 PARTNERS, INC.

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1				3.8	5.6	164	
2				0.0	7.2	0	
3				0.0	7.2	0	
4				0.0	7.2	0	
5				5.5	4.8	204	
6				5.5	4.8	204	
7				4.1	5.5	174	
8				7.4	4.2	240	
9				5.3	5.3	217	
10				5.7	4.9	215	
11				5.7	4.9	215	
12				5.8	4.9	219	Rig on location
13				7.7	4.4	261	
14				5.6	5.1	220	
15				5.7	5.0	220	
16				5.3	5.3	217	
17				5.3	5.1	208	
18		54	94	5.6	4.9	212	
19				5.4	4.9	204	
20		54	96	4.4	5.7	193	Drip open - remove
21				4.6	5.1	181	
22		37	93	7.8	4.3	259	Blow drip - adjust dum
23				8.5	4.0	262	
24				8.5	4.0	262	
25				8.7	4.0	268	
26				8.7	4.0	268	
27		37	90	8.7	4.0	268	
28				8.7	4.0	268	
29				8.7	4.1	275	
30				8.7	4.1	275	
31				6.6	4.8	244	

Total MCFD: 6417

Additional Remarks:

AUTHORIZING NAME (type or print) _____ PAGE 1 OF 22

Wals Engineering & Production Well Report

Date: 7/97
 Oper: Pendragon Energy Partners, Inc.
 Well: Chaco #1

Coeff: 7.71
 Range: 100
 Spring: 250
 Plate: 0.875
 Hrs On: _____
 Hrs Off: _____

RECEIVED

AUG - 8 1997

PENDRAGON ENERGY
PARTNERS, INC.

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1				4.3	5.9	196	
2				4.5	5.7	198	
3				4.1	5.9	187	
4				4.4	5.5	187	
5				4.5	5.5	191	
6				4.5	5.4	187	
7		63	98	4.4	5.5	187	
8				4.4	5.4	183	
9				4.4	5.4	183	
10				4.4	5.4	183	
11				4.4	5.4	183	
12				4.5	5.4	187	
13				4.4	5.4	183	
14				4.4	5.4	183	
15		85	102	3.4	6.2	163	BLOW DRIP
16				3.0	6.0	139	
17				3.4	5.6	147	
18				3.4	5.5	144	BLOW WELL
19				3.0	5.9	136	
20				3.4	5.5	144	
21				3.3	5.5	140	
22		78	106	3.4	5.5	144	BLOW DRIP
23				4.3	5.0	166	
24						0	close well in
25						0	
26						0	
27						0	
28						0	
29						0	
30		125	125	3.9	5.7	171	open well
31				3.9	5.5	165	

Total MCFD: 4277

Additional Remarks:

7/15 REPLACE TRIM & SEAT & COUPLING

7/28 - Blow casing - put valve on casing

☐ Amended Report	Federal ☒
status of all unplugged wells) for the report	or Indian ☐

[illegible]

Form IIRAC 2100 (REV. 9/06) (Previously DIME Form 2100-01)

Wals' Engineering & Production Well Report

Date: 6/97
 Oper: Pendragon Energy Partners, Inc.
 Well: Chaco #1

Coeff: 7.71
 Range: 100
 Spring: 250
 Plate: 0.875
 Hrs On: _____
 Hrs Off: _____

RECEIVED

JUL -7 1997

**PENDRAGON ENERGY
PARTNERS, INC.**

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1				5.8	5.1	228	
2				5.7	5.3	233	
3				5.6	5.2	225	
4				5.6	5.3	229	Blow drip
5		58	92	5.4	5.3	221	
6				5.4	5.3	221	
7				5.4	5.3	221	
8				5.5	5.3	225	
9				5.1	5.4	212	
10				4.9	5.5	208	
11				5.3	5.3	217	
12				5.5	5.2	221	Blow drip
13		58	95	5.3	5.3	217	
14				5.4	5.2	216	
15				5.4	5.2	216	
16				5.4	5.2	216	
17				5.2	5.4	216	
18		56	96	5.3	5.3	217	
19				5.5	5.1	216	
20				4.8	5.6	207	
21				5.0	5.5	212	
22				6.3	4.8	233	
23				6.5	4.8	241	
24				6.8	4.7	246	
25		57	95	6.2	5.0	239	
26				5.8	5.1	228	Blow drip
27				5.7	5.1	224	
28				5.4	5.3	221	
29				5.4	5.3	221	
30				5.5	5.0	212	
31						0	

Total MCFD: 6658

Additional Remarks:

☐ Amended Report	Federal ☒
(us of all unplugged wells) for the report	or Indian ☐

[illegible]

	XXXXXXXXXXXXX	XXXXXXXXXXXXX
	5664	
	5664	XXXXXXXXXXXXX
XXXXXXXXXXXXX	XXXXXXXXXXXXX	XXXXXXXXXXXXX
		XXXXXXXXXXXXX
		XXXXXXXXXXXXX
XXXXXXXXXXXXX		XXXXXXXXXXXXX
XXXXXXXXXXXXX	XXXXXXXXXXXXX	
	XXXXXXXXXXXXX	XXXXXXXXXXXXX
	1061	XXXXXXXXXXXXX

● ●

Wals Engineering & Production Well Report

Date: 5/97
 Oper: Pendragon Energy Partners, Inc.
 Well: Chaco #1

Coeff: 7.71
 Range: 100
 Spring: 250
 Plate: 0.875
 Hrs On: _____
 Hrs Off: _____

RECEIVED

JUN - 9 1997

PENDRAGON ENERGY
PARTNERS, INC.

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1				5.0	5.5	212	
2				4.9	5.4	204	
3				5.3	5.3	217	
4				5.3	5.3	217	
5				5.3	5.3	217	
6				5.4	5.2	216	
7		92	103	5.4	5.2	216	
8				5.4	5.2	216	
9				5.4	5.2	216	
10				5.5	5.1	216	
11				6.3	4.8	233	
12				6.3	4.8	233	
13				5.6	5.3	229	
14				5.7	5.7	250	
15		92	103	5.9	5.0	227	
16				5.9	5.1	233	
17				5.9	5.0	227	
18				5.9	5.1	232	
19				5.8	5.2	234	
20				5.7	5.1	224	
21				5.8	5.1	228	
22				6.4	4.8	237	
23				6.5	4.8	241	
24				6.5	4.8	241	
25				6.5	4.8	241	
26				6.6	4.8	244	
27		57	97	6.6	4.8	244	blow drip
28				6.0	5.1	236	
29				5.9	5.1	232	
30				5.9	5.1	232	
31				5.9	5.0	227	

Total MCFD: 7074

Additional Remarks:

Lease Number _____
Agreement Number SRM1164
Field Name _____
Unit Name _____
Participating Area Name _____
County SAN JUAN State NM
Operator PENDRAGON ENERGY PARTNERS, INC K0835

The following is a correct report of operations and production (including status of all unplugged wells) for the report period 0 5 9 7 (mmyy) (See reverse of form for instructions)

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

COMMENTS _____

Wals Engineering & Production Well Report

Date: 4/97
 Oper: Pendragon Energy Partners, Inc.
 Well: Chaco #1

Coeff: 7.71
 Range: 100
 Spring: 250
 Plate: 0.875
 Hrs On: _____
 Hrs Off: _____

RECEIVED

MAY - 5 1997

PENDRAGON ENERGY
PARTNERS, INC.

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1				5.6	5.1	220	
2		62	101	5.6	5.1	220	
3				5.6	5.0	216	
4				5.6	5.0	216	
5				5.7	4.9	215	
6				5.7	4.9	215	
7				5.7	4.9	215	
8				5.7	4.9	215	
9		31	99	5.7	5.0	220	
10				5.6	5.0	216	
11				5.6	5.0	216	
12				5.7	4.9	215	
13				5.8	4.9	219	
14				5.8	4.9	219	
15				5.8	4.9	219	
16				5.8	4.9	219	
17				5.8	4.9	219	
18		59	97	5.8	4.9	219	
19				5.7	4.9	215	
20				5.8	4.9	219	
21				6.0	4.8	222	
22				6.0	4.8	222	
23				6.5	4.6	231	
24				6.0	4.8	222	
25				5.9	4.8	218	
26				6.0	4.8	222	
27				5.5	4.9	208	
28				5.2	5.0	200	R&R 2" Tee in wellhead
29		65	105	5.2	5.4	216	Replace red pen
30				5.2	5.4	216	
31						0	

Total MCFD: 6528

Additional Remarks:

*6528/10663 = 61% Chaco
39% Chaco 2R*

☐ Amended Report	Federal ☒
Status of all unplugged wells) for the report	or Indian ☐

PAGE 1 OF **

Well Report

Date: 3/97
 Oper: Pendragon Energy Partners, Inc.
 Well: Chaco #1

Coeff: 7.71
 Range: 100
 Spring: 250
 Plate: 0.875
 Hrs On: _____
 Hrs Off: _____

RECEIVED

APR - 3 1997

PENDRAGON ENERGY
PARTNERS, INC.

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1				6.3	4.9	238	
2				6.3	4.9	238	
3				6.3	4.9	238	
4				6.3	4.9	238	
5		58	98	6.3	4.9	238	
6				6.4	5.0	247	
7				6.5	5.0	251	
8				6.4	4.9	242	
9				6.4	4.9	242	
10				6.1	5.0	235	
11				6.0	5.0	231	
12				6.3	4.9	238	
13				6.1	5.1	240	
14		72	98	6.4	4.8	237	
15				6.2	4.9	234	
16				6.0	5.0	231	
17				5.8	5.1	228	
18				5.8	5.0	224	
19		61	96	5.8	5.0	224	
20				5.8	5.0	224	
21				5.8	5.0	224	
22				5.7	5.0	220	
23				5.7	5.0	220	
24				5.7	5.0	220	
25				5.6	5.0	216	
26		45	96	5.5	5.0	212	
27				6.4	4.6	227	
28				5.9	4.9	223	
29				5.9	4.9	225	
30				5.9	4.9	223	
31				5.9	4.9	223	

Total MCFD: 7148

Additional Remarks:

Lease Number _____
 Agreement Number SRM1164
 Field Name _____
 Unit Name _____
 Participating Area Name _____
 County SAN JUAN State NM
 Operator PENDRAGON ENERGY PARTNERS, INC K0835

☐ Amended Report	Federal ☒
status of all unplugged wells) for the report	or Indian ☐

The following is a correct report of operations and production (including status of all unplugged wells) for the report period 0 3 9 7 (mmyy) (See reverse of form for instructions)

[illegible]

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

	Oil & Condensate (BBLs)	Gas (MCF)	Water (BBLs)
• On hand, Start of Month		XXXXXXXXXXXX	XXXXXXXXXXXX
• Produced		6832	
• old		6832	XXXXXXXXXXXX
• Spilled or Lost		XXXXXXXXXXXX	XXXXXXXXXXXX
• Flared or Vented	XXXXXXXXXXXX		XXXXXXXXXXXX
• Used on or for Benefit of Lease			XXXXXXXXXXXX
• Injected	XXXXXXXXXXXX		XXXXXXXXXXXX
• Gas Transferred			
Plant Number/Name			
• Surface Pits	XXXXXXXXXXXX	XXXXXXXXXXXX	
• Other			
Identify			
• On hand, End of Month		XXXXXXXXXXXX	XXXXXXXXXXXX
• API Gravity/BTU Content		1202	XXXXXXXXXXXX

COMMENTS

_____ Robert Bomar 915-684-4407
 CONTACT NAME Bomar Consulting Service PHONE NUMBER () _____ EXT. _____
 ADDRESS 110 N. Marienfeld, Suite 450
 Midland, Texas 79701-4412

AUTHORIZING SIGNATURE _____ **DATE** _____ (mmddyy)

AUTHORIZING NAME (type or print) _____ PAGE 1 OF **

Wals Engineering & Production Well Report

Date: 2/97
 Oper: Pendragon Energy Partners, Inc.
 Well: Chaco #1

Coeff: 7.71
 Range: 100
 Spring: 250
 Plate: 0.875
 Hrs On: _____
 Hrs Off: _____

RECEIVED

MAR - 6 1997

PENDRAGON ENERGY
PARTNERS, INC.

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1				6.1	5.0	235	
2				6.1	5.0	235	
3		48	89	6.1	5.0	235	
4				6.2	4.9	234	
5				6.2	4.9	234	
6				6.2	4.9	234	
7				6.3	4.9	238	
8				6.3	4.9	238	
9				6.3	4.9	238	
10				6.3	4.9	238	
11		50	70	6.2	4.9	234	
12				6.2	4.9	234	
13				6.2	4.9	234	
14				6.4	4.8	237	
15				6.4	4.8	237	
16				6.4	4.8	237	
17				6.3	4.8	233	
18				6.2	4.9	234	
19				6.2	4.9	234	
20				6.2	4.9	234	
21				6.3	4.9	238	
22				6.3	4.9	238	
23				6.4	4.9	242	
24				6.5	4.9	246	
25				6.5	4.9	246	
26		49	91	6.4	4.9	242	
27				6.4	4.9	242	
28				6.3	4.9	238	
29						0	
30						0	
31						0	

Total MCFD: 6640

Additional Remarks:

☐ Amended Report	Federal ☒
us of all unplugged wells) for the report	or Indian ☐

[illegible]

	Oil & Condensate (BBLS)	Gas (MCF)	Water (BBLS)
• On hand, Start of Month		XXXXXXXXXXXX	XXXXXXXXXXXX
Produced		10572	
Sold		10572	XXXXXXXXXXXX
• Spilled or Lost		XXXXXXXXXXXX	XXXXXXXXXXXX
Flared or Vented	XXXXXXXXXXXX		XXXXXXXXXXXX
Used on or for Benefit of Lease			XXXXXXXXXXXX
• Injected			
- Gas Transferred	XXXXXXXXXXXX		XXXXXXXXXXXX
Plant Number/Name			
• Surface Pits	XXXXXXXXXXXX	XXXXXXXXXXXX	
• Other			
Identify			
On hand, End of Month		XXXXXXXXXXXX	XXXXXXXXXXXX
• API Gravity/BTU Content		1202	XXXXXXXXXXXX

AUTHORIZING NAME (type or print) _____ PAGE 1 OF **

Wals' Engineering & Production Well Report

Date: 1/97
 Oper: Pendragon Energy Partners, Inc.
 Well: Chaco #1

Coeff: 7.71
 Range: 100
 Spring: 250
 Plate: 0.875
 Hrs On: _____
 Hrs Off: _____

RECEIVED

FEB 10 1997

PENDRAGON ENERGY
PARTNERS, INC.

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1				6.3	4.8	233	
2				6.3	4.8	233	
3				6.3	4.8	233	
4				6.3	4.8	233	
5				6.3	4.8	233	
6				6.3	4.8	233	
7			111	6.0	5.3	245	
8				5.3	5.1	223	
9				6.3	4.8	233	
10				5.5	5.5	233	
11				6.3	4.9	238	
12				6.0	5.1	236	
13				6.2	4.7	225	
14				6.8	4.5	236	
15				7.2	4.5	250	
16				6.8	4.8	252	
17			98	7.0	4.5	243	
18				6.9	4.6	245	
19				6.8	4.6	241	
20				7.0	4.6	248	
21				7.0	4.6	248	
22				6.3	4.9	238	
23				6.2	5.0	239	
24				6.2	4.9	234	
25				6.2	4.9	234	
26				6.2	4.9	234	
27				6.2	4.9	234	
28				6.2	4.9	234	
29				6.1	5.0	235	
30				6.2	5.0	239	
31				5.0	5.8	224	

Total MCFD: 7346

Additional Remarks:

☐	Amended Report	Federal ☒
Status of all unplugged wells) for the report		or Indian ☐

[illegible]

	Oil & Condensate (BBLS)	Gas (MCF)	Water (BBLS)
On hand, Start of Month		XXXXXXXXXXXX	XXXXXXXXXXXX
Produced		11385	
Sold		11385	XXXXXXXXXXXX
Spilled or Lost		XXXXXXXXXXXX	XXXXXXXXXXXX
Flared or Vented	XXXXXXXXXXXX		XXXXXXXXXXXX
Used on or for Benefit of Lease			XXXXXXXXXXXX
Injected	XXXXXXXXXXXX		XXXXXXXXXXXX
Gas Transferred	XXXXXXXXXXXX		XXXXXXXXXXXX
Plant Number/Name			
Surface Pits	XXXXXXXXXXXX	XXXXXXXXXXXX	
Other			
Identify			
On hand, End of Month		XXXXXXXXXXXX	XXXXXXXXXXXX
API Gravity/BTU Content		1202	XXXXXXXXXXXX

AUTHORIZING NAME (type or print) _____ PAGE 1 OF **

Wals Engineering & Production Well Report

RECEIVED

JAN - 8 1997

PENDRAGON ENERGY
PARTNERS, INC.

Date: 12/96
Oper: Pendragon Energy Partners, Inc.
Well: Chaco #1

Coeff: 7.71
Range: 100
Spring: 250
Plate: 0.850
Hrs On: _____
Hrs Off: _____

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1				6.0	5.1	236	
2				6.0	5.1	236	
3				6.0	5.1	236	
4			114	6.0	5.1	236	
5				6.0	5.1	236	
6				6.0	5.1	236	
7				6.0	5.1	236	
8				6.0	5.1	236	
9				6.0	5.1	236	
10				6.0	5.1	236	
11				6.0	5.1	236	
12			111	6.0	5.1	236	
13				6.0	5.1	236	
14				6.1	5.1	240	
15				6.8	4.8	252	
16				7.2	4.9	272	
17				6.7	5.2	269	
18				5.7	5.3	233	
19				6.4	5.1	252	
20				6.3	5.0	243	
21				6.3	5.0	243	
22				6.3	5.0	243	
23				6.3	5.0	243	
24				6.0	5.0	231	
25				6.5	5.0	251	
26				6.5	4.9	246	
27				6.2	5.0	239	Blow drip
28				6.3	5.1	248	
29				6.5	4.8	241	
30				5.8	5.3	237	
31				6.3	5.0	243	

Total MCFD: 7490

Additional Remarks:

Lease Number _____
Agreement Number SRM1164
Field Name _____
Unit Name _____
Participating Area Name _____
County SAN JUAN State NM
Operator PENDRAGON ENERGY PARTNERS, INC K0835

☐ Amended Report
Federal ☒
or
Indian ☐

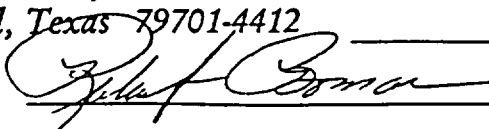
The following is a correct report of operations and production (including status of all unplugged wells) for the report
period 1 2 9 6 (mmyy) (See reverse of form for instructions)

API Well Number Operator Well Number	Sec. & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod	Barrels of Oil	MCF of Gas	Barrels of Water	Remarks
300452230900S1 CHACO	18SENW	26N	12W	PGW	31		11626		

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

	Oil & Condensate (BBLS)	Gas (MCF)	Water (BBLS)
On hand, Start of Month	_____	XXXXXXXXXXXXX	XXXXXXXXXXXXX
Produced	_____	11626	_____
Sold	_____	11636	XXXXXXXXXXXXX
Spilled or Lost	_____	XXXXXXXXXXXXX	XXXXXXXXXXXXX
Flared or Vented	XXXXXXXXXXXXX	_____	XXXXXXXXXXXXX
Used on or for Benefit of Lease	_____	_____	XXXXXXXXXXXXX
Injected	_____	_____	_____
Gas Transferred	XXXXXXXXXXXXX	_____	XXXXXXXXXXXXX
Plant Number/Name _____	_____	_____	_____
Surface Pits	XXXXXXXXXXXXX	XXXXXXXXXXXXX	_____
Other	_____	_____	_____
Identify _____	_____	_____	_____
On hand, End of Month	_____	XXXXXXXXXXXXX	XXXXXXXXXXXXX
API Gravity/BTU Content	_____	1202	XXXXXXXXXXXXX

COMMENTS _____

Robert Bomar 915-684-4407
Bomar Consulting Service
CONTACT NAME 110 N. Mariensfeld, Suite 450 HONE NUMBER () EXT. _____
ADDRESS Midland, Texas 79701-4412
AUTHORIZING SIGNATURE  DATE 02 12 97 (mmddyy)
AUTHORIZING NAME (type or print) _____ PAGE 1 OF **

Walsh Engineering & Production Well Report

RECEIVED

DEC - 9 1996

PENDRAGON ENERGY
PARTNERS, INC.

Date: 11/96
Oper: Pendragon Energy Partners, Inc.
Well: Chaco #1

Coeff: 7.18
Range: 100
Spring: 250
Plate: 0.875
Hrs On: _____
Hrs Off: _____

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1				7.4	4.8	255	
2				7.7	4.7	260	
3				7.9	4.7	267	
4				8.0	4.5	258	
5			114	8.0	4.5	258	
6				7.5	4.5	242	
7				7.5	4.7	253	
8				6.8	5.0	244	
9				6.6	5.3	251	
10				7.3	4.6	241	
11	36		111	7.4	4.4	237	
12				6.5	5.5	275	
13				7.0	4.9	264	
14				6.9	5.0	265	
15				7.0	4.9	264	
16				7.0	4.9	264	
17				7.0	4.9	264	
18				7.1	4.9	268	
19		95		5.5	6.5	275	Blew drip
20				6.5	5.0	250	
21				6.1	5.1	240	
22				6.0	5.2	240	
23				6.3	5.0	242	
24				6.3	5.0	242	
25				6.2	5.0	239	
26				6.1	5.1	240	
27				6.1	5.1	240	
28				6.1	5.1	240	
29				6.1	5.1	240	
30				6.1	5.0	235	
31						0	

Total MCFD: 7554

Additional Remarks:

Wals Engineering & Production Well Report

RECEIVED

NOV - 4 1996

PENDRAGON ENERGY
PARTNERS, INC.

Date: 10/96
Oper: Pendragon Energy Partners, Inc.
Well: Chaco #1

Coeff: 7.705
Range: 100
Spring: 250
Plate: 0.875
Hrs On: _____
Hrs Off: _____

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1				7.8	4.7	282	
2	43	43	114	7.8	4.7	282	
3				6.5	5.5	275	
4				6.8	4.8	251	
5				6.5	5.5	275	
6				7.4	4.8	274	
7				6.8	5.1	267	
8				7.5	4.8	277	
9				7.6	4.7	275	
10				8.0	4.5	277	
11				8.7	4.2	282	
12				8.5	4.2	275	
13				6.5	5.5	275	
14				7.2	4.9	272	
15				7.2	4.9	272	
16		56	No valve	7.5	4.7	272	Blew Drip
17				7.5	4.7	272	
18				7.7	4.7	279	
19				6.8	5.0	262	
20				6.9	5.0	266	
21				7.1	4.9	268	
22				7.2	4.8	266	
23				7.2	4.8	266	
24				7.1	4.9	268	
25				7.5	4.7	272	
26				7.3	4.6	259	
27				7.7	4.6	273	
28			117	7.8	4.5	270	Comp. down - restart
29				7.8	4.5	270	
30				7.2	4.7	261	
31				7.1	4.7	257	

Total MCFD: 8394

Additional Remarks:

☐	Amended Report	Federal or Indian	☒
--------------------------	----------------	-------------------	-------------------------------------

period 1 0 9 6 (mmyy)

(See reverse of form for instructions)

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

COMMENTS _____

AUTHORIZING NAME (type or print) PAGE 1 OF **

Well Engineering & Production Well Report

RECEIVED
OCT - 7 1996
PENDRAGON ENERGY
PARTNERS, INC.

Date: 9/96
Oper: Pendragon Energy Partners, Inc.
Well: Chaco #1

Coeff: 7.18
Range: 100
Spring: 250
Plate: 0.875
Hrs On: _____
Hrs Off: _____

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1				8.7	4.0	250	
2				8.4	4.4	265	
3				8.4	4.4	265	
4				8.3	4.5	268	
5				7.0	5.0	251	
6			100	8.3	4.4	262	Shut well in
7				8.5	4.3	262	
8						0	
9						0	
10						0	
11						0	
12						0	
13			135	2.0	6.3	90	Turn well on
14				8.5	5.6	342	
15				8.6	4.6	284	
16				8.1	4.9	285	
17				8.4	4.7	283	
18				7.0	5.6	281	
19				8.4	4.4	265	
20				8.4	4.5	271	
21				8.4	4.5	271	
22				8.4	4.5	271	
23				8.4	4.5	271	
24			111	8.4	4.5	271	
25				8.4	4.4	265	
26				8.2	4.6	271	
27				7.3	5.1	267	
28				8.2	4.5	265	
29				7.8	4.6	258	
30				7.9	4.7	267	
31						0	

Total MCFD: 6606

Additional Remarks:

Lease Number _____
Agreement Number SRM1164
Field Name _____
Unit Name _____
Participating Area Name _____
County SAN JUAN State NM
Operator PENDRAGON ENERGY PARTNERS, INC K0835

☐ Amended Report Federal ☒
or
Indian ☐

The following is a correct report of operations and production (including status of all unplugged wells) for the report
period 0 9 9 6 (mmyy) (See reverse of form for instructions)

API Well Number Operator Well Number	Sec. & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod	Barrels of Oil	MCF of Gas	Barrels of Water	Remarks
000452230900S1 CHACO	18SENW	26N	12W	PGW	30		7538		

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

	Oil & Condensate (BBLS)	Gas (MCF)	Water (BBLS)
• On hand, Start of Month	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
• Produced		7538	
• Sold		7538	XXXXXXXXXXXX
• Spilled or Lost	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
• Flared or Vented			XXXXXXXXXXXX
• Used on or for Benefit of Lease			XXXXXXXXXXXX
• Injected	XXXXXXXXXXXX		XXXXXXXXXXXX
• Gas Transferred	XXXXXXXXXXXX		XXXXXXXXXXXX
Plant Number/Name	XXXXXXXXXXXX	XXXXXXXXXXXX	
• Surface Pits			
• Other			
Identify			
• On hand, End of Month		XXXXXXXXXXXX	XXXXXXXXXXXX
• API Gravity/BTU Content		1116	XXXXXXXXXXXX

COMMENTS _____

CONTACT NAME _____ PHONE NUMBER () _____ EXT. _____

ADDRESS _____

AUTHORIZING SIGNATURE _____ DATE _____ (mmdyy)

AUTHORIZING NAME (type or print) _____ PAGE 1 OF **

Wals Engineering & Production Well Report

RECEIVED
SEP 12 1996
PENDRAGON ENERGY
PARTNERS, INC.

Date: 8/96
Oper: Pendragon Energy Partners, Inc.
Well: Chaco #1

Coeff: 7.18
Range: 100
Spring: 250
Plate: 0.875
Hrs On:
Hrs Off:

<u>Pressure</u>				<u>Meter</u>			Remarks
Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	
1				7.1	5.0	255	
2				7.0	5.0	251	
3				7.2	5.0	258	
4				8.0	4.5	258	
5				6.8	5.5	269	
6				6.0	5.8	250	
7				4.0	6.5	187	Repair dump control
8				5.5	6.0	237	
9	46		114	7.0	4.8	241	
10				7.9	4.6	261	
11				8.1	4.5	262	
12				8.3	4.5	268	
13				6.8	5.7	278	
14				8.2	4.5	265	
15				7.3	5.3	278	
16				7.5	5.0	269	
17				7.8	4.6	255	
18				8.4	4.4	265	
19				8.0	4.5	258	
20				7.5	5.3	285	
21				8.1	4.4	256	
22			111	8.1	4.4	256	
23				6.7	6.0	289	
24				6.7	6.0	289	
25				8.5	4.4	269	
26				8.6	4.3	266	
27			110	8.6	4.3	266	
28				8.6	4.3	266	
29				8.6	4.3	266	
30				8.6	4.3	266	
31				8.6	4.3	266	
Total MCFD:						8103	

Additional Remarks:

☐ Amended Report
 (status of all unplugged wells) for the report

Federal ☒
 or
 Indian ☐

[illegible]

	XXXXXXXXXXXX	XXXXXXXXXXXX
	8502	
	8502	XXXXXXXXXXXX
	XXXXXXXXXXXX	XXXXXXXXXXXX
XXXXXXXXXXXX		XXXXXXXXXXXX
		XXXXXXXXXXXX
XXXXXXXXXXXX		XXXXXXXXXXXX
XXXXXXXXXXXX	XXXXXXXXXXXX	
	XXXXXXXXXXXX	XXXXXXXXXXXX
	1116	XXXXXXXXXXXX

Form MMS-3160 (REV. 8/95) (Formerly BLM Form 3160-6)

Well Report

Date: 7/96

Oper: Pendragon Energy Partners, Inc.

Well: Chaco #1

Coeff: 7.18

Range: 100

Spring: 250

Plate: 0.875

Hrs On:

Hrs Off:

Pressure

Meter

Date	Line	Tubing	Casing	Diff.	Stat.	MCFD	Remarks
1				8.0	4.7	270	
2				7.9	4.7	267	
3				7.3	5.3	278	
4				8.3	4.5	268	
5				8.4	4.5	271	
6				8.2	4.5	265	
7				8.3	4.5	268	
8				7.9	4.9	273	
9			114	8.0	4.5	258	
10				8.4	4.3	259	
11				7.0	5.0	251	
12				8.5	4.5	275	
13				7.2	5.0	258	
14				4.4	5.8	183	
15				7.0	5.2	261	
16				8.0	4.5	258	
17				7.7	5.0	276	
18				7.8	4.7	263	
19				8.1	4.6	268	
20				7.6	4.9	267	
21				8.0	4.8	276	
22				7.0	5.3	266	blow location drip
23			117	7.2	5.1	264	
24				6.7	5.3	255	
25				5.6	6.1	245	
26				6.0	5.8	250	
27				7.6	4.9	267	
28				7.7	4.9	271	
29				7.2	5.1	264	
30				7.0	5.1	256	supply gas line to dump
31				6.7	5.1	245	valve plugged - repair

Total MCFD: 8104

Additional Remarks:

Federal ☒

Indian ☐

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)Water
(BBLs)

XXXXXXXXXXXX

7835

7830

XXXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXXX

VVVVVVVVVVV

~~~~~

110

## COMMENTS

PHONE NUMBER (    )                      EXT.                     

AUTHORIZING SIGNATURE \_\_\_\_\_ DATE | | | | | (mmddyy)

AUTHORIZING NAME (type or print) \_\_\_\_\_

PAGE 1 OF

\*\*\*

# Well Report

Date: 6/96

Oper: Pendragon Energy Partners, Inc.

Well: Chaco #1

Coeff: 7.18

Range: 100

Spring: 250

Plate: 0.875

Hrs On:           

Hrs Off:           

## Pressure

## Meter

| Date | Line | Tubing | Casing | Diff. | Stat. | MCFD | Remarks |
|------|------|--------|--------|-------|-------|------|---------|
| 1    |      |        |        | 7.3   | 4.7   | 246  |         |
| 2    |      |        |        | 7.9   | 4.7   | 267  |         |
| 3    |      |        |        | 8.1   | 4.7   | 273  |         |
| 4    |      |        |        | 6.8   | 5.7   | 278  |         |
| 5    |      |        |        | 7.6   | 4.9   | 267  |         |
| 6    | 41   |        |        | 8.0   | 4.6   | 264  |         |
| 7    |      |        |        | 7.8   | 4.7   | 263  |         |
| 8    |      |        |        | 8.0   | 4.7   | 270  |         |
| 9    |      |        |        | 7.9   | 4.7   | 267  |         |
| 10   |      |        |        | 7.5   | 5.0   | 269  |         |
| 11   |      |        |        | 6.0   | 6.1   | 263  |         |
| 12   |      |        | 111    | 4.0   | 6.6   | 190  |         |
| 13   |      |        |        | 6.5   | 5.8   | 271  |         |
| 14   |      |        |        | 4.8   | 6.5   | 224  |         |
| 15   |      |        |        | 6.0   | 6.0   | 258  |         |
| 16   |      |        |        | 6.3   | 5.7   | 258  |         |
| 17   |      |        |        | 6.0   | 5.9   | 254  |         |
| 18   |      |        |        | 5.8   | 6.2   | 258  |         |
| 19   |      |        |        | 7.2   | 4.8   | 248  |         |
| 20   |      |        |        | 7.3   | 4.7   | 246  |         |
| 21   | 55   |        | 118    | 7.0   | 5.2   | 261  |         |
| 22   |      |        |        | 8.2   | 4.5   | 265  |         |
| 23   |      |        |        | 7.8   | 4.9   | 274  |         |
| 24   |      |        |        | 8.1   | 4.5   | 262  |         |
| 25   |      |        |        | 5.0   | 5.8   | 208  |         |
| 26   |      |        |        | 8.0   | 4.6   | 264  |         |
| 27   |      |        |        | 8.0   | 4.5   | 258  |         |
| 28   |      |        |        | 8.4   | 4.4   | 265  |         |
| 29   |      |        |        | 8.1   | 4.6   | 268  |         |
| 30   |      |        |        | 8.1   | 4.6   | 268  |         |
| 31   |      |        |        |       |       | 0    |         |

Total MCFD: 7729

Additional Remarks:

Lease Number \_\_\_\_\_  
Agreement Number SRM1164  
Field Name \_\_\_\_\_  
Unit Name \_\_\_\_\_  
Participating Area Name \_\_\_\_\_  
County SAN JUAN State NM  
Operator PENDRAGON ENERGY PARTNERS, INC K0835

☐ Amended Report Federal ☒  
or Indian ☐

The following is a correct report of operations and production (including status of all unplugged wells) for the report period 0 | 6 | 9 | 6 (mmyy) (See reverse of form for instructions)

| API Well Number<br>Operator Well Number | Sec. &<br>1/4 of 1/4 | TWP | RNG | Well<br>Status | Days<br>Prod | Barrels<br>of Oil | MCF of<br>Gas | Barrels of<br>Water | Remarks |
|-----------------------------------------|----------------------|-----|-----|----------------|--------------|-------------------|---------------|---------------------|---------|
| 300452230900S1<br>CHACO                 | 18SENW               | 26N | 12W | PGW            | 30           |                   | 7882          |                     |         |
|                                         |                      |     |     |                |              |                   |               |                     |         |
|                                         |                      |     |     |                |              |                   |               |                     |         |
|                                         |                      |     |     |                |              |                   |               |                     |         |
|                                         |                      |     |     |                |              |                   |               |                     |         |
|                                         |                      |     |     |                |              |                   |               |                     |         |
|                                         |                      |     |     |                |              |                   |               |                     |         |
|                                         |                      |     |     |                |              |                   |               |                     |         |
|                                         |                      |     |     |                |              |                   |               |                     |         |
|                                         |                      |     |     |                |              |                   |               |                     |         |

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

|                                 | Oil & Condensate<br>(BBLs) | Gas<br>(MCF)  | Water<br>(BBLs) |
|---------------------------------|----------------------------|---------------|-----------------|
| On hand, Start of Month         | _____                      | XXXXXXXXXXXXX | XXXXXXXXXXXXX   |
| Produced                        | _____                      | 7882          | _____           |
| Sold                            | _____                      | 7882          | XXXXXXXXXXXXX   |
| Spilled or Lost                 | _____                      | XXXXXXXXXXXXX | XXXXXXXXXXXXX   |
| Flared or Vented                | XXXXXXXXXXXXX              | _____         | XXXXXXXXXXXXX   |
| Used on or for Benefit of Lease | _____                      | _____         | XXXXXXXXXXXXX   |
| Injected                        | _____                      | _____         | _____           |
| Gas Transferred                 | XXXXXXXXXXXXX              | _____         | XXXXXXXXXXXXX   |
| Plant Number/Name               | _____                      | _____         | _____           |
| Surface Pits                    | XXXXXXXXXXXXX              | XXXXXXXXXXXXX | _____           |
| Other                           | _____                      | _____         | _____           |
| Identify                        | _____                      | _____         | _____           |
| On hand, End of Month           | _____                      | XXXXXXXXXXXXX | XXXXXXXXXXXXX   |
| API Gravity/BTU Content         | _____                      | 1116          | XXXXXXXXXXXXX   |

COMMENTS

Robert Bomar 915-684-4407  
Bomar Consulting Service  
CONTACT NAME 110 N. Marienfeld, Suite 450 PHONE NUMBER ( ) EXT.    
ADDRESS Midland, Texas 79701-4412

AUTHORIZING SIGNATURE \_\_\_\_\_ DATE             (mmddyy)

AUTHORIZING NAME (type or print) \_\_\_\_\_

PAGE 1 OF \*\*

# Waisa Engineering & Production Well Report

Date: 5/96

Oper: Pendragon Energy Partners, Inc.

Well: Chaco #1

Coeff: 7.18

Range: 100

Spring: 250

Plate: 0.875

Hrs On:           

Hrs Off:           

## Pressure

## Meter

| Date | Line | Tubing | Casing | Diff. | Stat. | MCFD | Remarks |
|------|------|--------|--------|-------|-------|------|---------|
| 1    |      |        |        | 8.0   | 4.7   | 270  |         |
| 2    |      |        |        | 8.0   | 4.7   | 270  |         |
| 3    |      |        |        | 7.5   | 5.2   | 280  |         |
| 4    |      |        |        | 7.0   | 5.2   | 261  |         |
| 5    |      |        |        | 7.6   | 5.4   | 295  |         |
| 6    |      |        |        | 6.8   | 5.2   | 254  |         |
| 7    |      |        |        | 6.8   | 5.2   | 254  |         |
| 8    |      |        |        | 7.0   | 5.1   | 256  |         |
| 9    | 53   |        | 111    | 7.0   | 5.1   | 256  |         |
| 10   |      |        |        | 8.3   | 4.5   | 268  |         |
| 11   |      |        |        | 7.1   | 5.3   | 270  |         |
| 12   |      |        |        | 6.1   | 6.0   | 263  |         |
| 13   |      |        |        | 6.2   | 6.0   | 267  |         |
| 14   |      |        |        | 6.6   | 5.3   | 251  |         |
| 15   |      |        |        | 7.0   | 5.2   | 261  |         |
| 16   |      |        |        | 4.5   | 6.5   | 210  |         |
| 17   |      |        |        | 6.2   | 5.8   | 258  |         |
| 18   |      |        |        | 7.7   | 4.7   | 260  |         |
| 19   |      |        |        | 7.6   | 4.9   | 267  |         |
| 20   |      |        |        | 8.0   | 4.7   | 270  |         |
| 21   |      |        |        | 6.5   | 5.2   | 243  |         |
| 22   | 90   |        | 117    | 4.1   | 6.4   | 188  |         |
| 23   |      |        |        | 4.7   | 6.5   | 219  |         |
| 24   |      |        |        | 5.7   | 6.1   | 250  |         |
| 25   |      |        |        | 6.8   | 5.3   | 259  |         |
| 26   |      |        |        | 7.5   | 4.8   | 258  |         |
| 27   |      |        |        | 7.3   | 4.8   | 252  |         |
| 28   |      |        |        | 6.9   | 5.5   | 272  |         |
| 29   |      |        |        | 6.8   | 5.5   | 269  |         |
| 30   |      |        |        | 6.8   | 5.5   | 269  |         |
| 31   |      |        |        | 6.8   | 5.5   | 269  |         |

Total MCFD: 7990

Additional Remarks:

☐ Amended Report Federal ☒   
 g status of all unplugged wells) for the report or Indian ☐

period | 0 | 5 | 9 | 6 | (mmyy)

(See reverse of form for instructions)

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)Water  
{BBLs}**API Gravity/BTU Content**

## COMMENTS

**ADDRESS**

PHONE NUMBER ( ) EXT.

AUTHORIZING SIGNATURE \_\_\_\_\_ DATE 

|  |  |  |  |  |  |
|--|--|--|--|--|--|
|  |  |  |  |  |  |
|--|--|--|--|--|--|

 (mmddyy)

AUTHORIZING NAME (type or print) ALAN B. NICOL

PAGE 1 OF

✻ ✻

# Well Report

Date: 4/96

Coeff: 7.18

Oper: Pendragon Energy Partners, Inc.

Range: 100

Well: Chaco #1

Spring: 250

Plate: 0.875

Hrs On:           

Hrs Off:           

## Pressure

## Meter

| Date | Line | Tubing | Casing | Diff. | Stat. | MCFD | Remarks |
|------|------|--------|--------|-------|-------|------|---------|
| 1    |      |        |        | 8.0   | 4.6   | 264  |         |
| 2    |      |        |        | 7.5   | 5.0   | 269  |         |
| 3    |      |        | 104    | 6.6   | 5.3   | 251  |         |
| 4    |      |        |        | 7.5   | 4.3   | 256  |         |
| 5    |      |        |        | 6.2   | 5.0   | 294  |         |
| 6    |      |        |        | 8.3   | 4.7   | 280  |         |
| 7    |      |        |        | 6.4   | 4.7   | 283  |         |
| 8    |      |        |        | 8.4   | 4.7   | 283  |         |
| 9    |      |        |        | 8.4   | 4.6   | 277  |         |
| 10   |      |        |        | 8.4   | 4.5   | 271  |         |
| 11   |      |        |        | 7.5   | 4.9   | 284  |         |
| 12   |      |        |        | 8.1   | 4.7   | 273  |         |
| 13   |      |        |        | 8.3   | 4.5   | 265  |         |
| 14   |      |        |        | 6.3   | 4.5   | 266  |         |
| 15   |      |        |        | 8.2   | 4.5   | 265  |         |
| 16   | 37   |        | 108    | 8.1   | 4.5   | 262  |         |
| 17   |      |        |        | 8.0   | 4.5   | 258  |         |
| 18   |      |        |        | 8.0   | 4.5   | 258  |         |
| 19   |      |        |        | 7.8   | 4.7   | 263  |         |
| 20   |      |        |        | 6.6   | 5.4   | 264  |         |
| 21   |      |        |        | 5.3   | 6.0   | 228  |         |
| 22   |      |        |        | 5.3   | 6.0   | 228  |         |
| 23   |      |        |        | 6.2   | 5.6   | 249  |         |
| 24   | 60   |        | 114    | 6.4   | 5.4   | 248  |         |
| 25   |      |        |        | 6.4   | 5.7   | 262  |         |
| 26   |      |        |        | 7.1   | 5.0   | 255  |         |
| 27   |      |        |        | 7.4   | 5.0   | 266  |         |
| 28   |      |        |        | 7.6   | 4.8   | 262  |         |
| 29   |      |        |        | 7.7   | 4.8   | 265  |         |
| 30   |      |        | 107    | 7.7   | 4.8   | 265  |         |
| 31   |      |        |        |       |       | 0    |         |

Total MCFD: 7907

Additional Remarks:

Federal ☒

Indian ☐

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

## COMMENTS

ONE NUMBER ( ) EXT. \_\_\_\_\_

PAGE 1 OF

# Well Report

Date: 3/96

Coeff: 7.18

Oper: Pendragon Energy Partners, Inc.

Range: 100

Spring: 250

Well: Onaco #1

Plate: 0.875

Hrs On:         

Hrs Off:         

## Pressure

## Meter

| Date | Line | Tubing | Casing | Diff. | Stat. | MCFD | Remarks |
|------|------|--------|--------|-------|-------|------|---------|
| 1    |      |        |        | 6.0   | 5.7   | 246  |         |
| 2    |      |        |        | 7.9   | 4.6   | 261  |         |
| 3    |      |        |        | 8.1   | 4.6   | 268  |         |
| 4    |      |        |        | 8.1   | 4.6   | 268  |         |
| 5    |      |        |        | 8.1   | 4.6   | 268  |         |
| 6    |      | 40     | 96     | 8.2   | 4.5   | 265  |         |
| 7    |      |        |        | 7.2   | 5.0   | 256  |         |
| 8    |      |        |        | 7.9   | 4.6   | 261  |         |
| 9    |      |        |        | 7.9   | 4.6   | 261  |         |
| 10   |      |        |        | 8.1   | 4.6   | 266  |         |
| 11   |      |        |        | 8.2   | 4.5   | 265  |         |
| 12   |      |        |        | 8.2   | 4.5   | 265  |         |
| 13   |      |        | 96     | 8.2   | 4.5   | 265  |         |
| 14   |      |        |        | 8.2   | 4.5   | 265  |         |
| 15   |      |        |        | 8.2   | 4.5   | 265  |         |
| 16   |      |        |        | 8.2   | 4.5   | 265  |         |
| 17   |      |        |        | 8.2   | 4.5   | 265  |         |
| 18   |      |        |        | 8.2   | 4.5   | 265  |         |
| 19   |      |        |        | 8.2   | 4.5   | 265  |         |
| 20   | 58   | 58     | 104    | 6.3   | 5.3   | 240  |         |
| 21   |      |        |        | 4.7   | 6.0   | 202  |         |
| 22   |      |        |        | 5.0   | 6.4   | 230  |         |
| 23   |      |        |        | 7.3   | 5.5   | 266  |         |
| 24   |      |        |        | 7.9   | 4.6   | 261  |         |
| 25   |      |        |        | 8.1   | 4.6   | 268  |         |
| 26   |      |        |        | 8.1   | 4.6   | 268  |         |
| 27   |      |        |        | 8.1   | 4.6   | 268  |         |
| 28   |      |        |        | 7.5   | 5.0   | 269  |         |
| 29   | 64   | 64     | 106    | 6.3   | 5.5   | 249  |         |
| 30   |      |        |        | 7.5   | 4.9   | 264  |         |
| 31   |      |        |        | 7.4   | 4.8   | 255  |         |

Total MCFD: 8067

Additional Remarks:

Lease Number \_\_\_\_\_  
Agreement Number SRM1164  
Field Name \_\_\_\_\_  
Unit Name \_\_\_\_\_  
Participating Area Name \_\_\_\_\_  
County SAN JUAN State NM  
Operator HENDRAGON ENERGY PARTNERS INC K0935

☐ Amended Report Federal ☒  
or Indian ☐

The following is a correct report of operations and production (including status of all unplugged wells) for the report period 0398 (mmyy) (See reverse of form for instructions)

| API Well Number<br>Operator Well Number | Sec. &<br>1/4 of 1/4  | TWP        | RNG        | Well<br>Status | Days<br>Prod | Barrels<br>of Oil | MCF of<br>Gas | Barrels of<br>Water | Remarks |
|-----------------------------------------|-----------------------|------------|------------|----------------|--------------|-------------------|---------------|---------------------|---------|
| <u>000452230900S1</u><br><u>CHACO</u>   | <u>18SE</u> <u>NW</u> | <u>28N</u> | <u>12W</u> | <u>PGW</u>     | <u>31</u>    |                   | <u>8329</u>   |                     |         |
|                                         |                       |            |            |                |              |                   |               |                     |         |
|                                         |                       |            |            |                |              |                   |               |                     |         |
|                                         |                       |            |            |                |              |                   |               |                     |         |
|                                         |                       |            |            |                |              |                   |               |                     |         |
|                                         |                       |            |            |                |              |                   |               |                     |         |
|                                         |                       |            |            |                |              |                   |               |                     |         |
|                                         |                       |            |            |                |              |                   |               |                     |         |
|                                         |                       |            |            |                |              |                   |               |                     |         |
|                                         |                       |            |            |                |              |                   |               |                     |         |
|                                         |                       |            |            |                |              |                   |               |                     |         |
|                                         |                       |            |            |                |              |                   |               |                     |         |
|                                         |                       |            |            |                |              |                   |               |                     |         |
|                                         |                       |            |            |                |              |                   |               |                     |         |
|                                         |                       |            |            |                |              |                   |               |                     |         |

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

|                                 | Oil & Condensate<br>(BBLs) | Gas<br>(MCF) | Water<br>(BBLs) |
|---------------------------------|----------------------------|--------------|-----------------|
| On hand, Start of Month         | XXXXXXXXXXXX               | XXXXXXXXXXXX | XXXXXXXXXXXX    |
| Produced                        | 8329                       | 8329         | XXXXXXXXXXXX    |
| Sold                            | 8329                       | XXXXXXXXXXXX | XXXXXXXXXXXX    |
| Spilled or Lost                 | XXXXXXXXXXXX               | XXXXXXXXXXXX | XXXXXXXXXXXX    |
| Flared or Vented                | XXXXXXXXXXXX               | XXXXXXXXXXXX | XXXXXXXXXXXX    |
| Used on or for Benefit of Lease | XXXXXXXXXXXX               | XXXXXXXXXXXX | XXXXXXXXXXXX    |
| Injected                        | XXXXXXXXXXXX               | XXXXXXXXXXXX | XXXXXXXXXXXX    |
| Gas Transferred                 | XXXXXXXXXXXX               | XXXXXXXXXXXX | XXXXXXXXXXXX    |
| Plant Number/Name               | XXXXXXXXXXXX               | XXXXXXXXXXXX | XXXXXXXXXXXX    |
| Surface Pits                    | XXXXXXXXXXXX               | XXXXXXXXXXXX | XXXXXXXXXXXX    |
| Other                           | XXXXXXXXXXXX               | XXXXXXXXXXXX | XXXXXXXXXXXX    |
| Identify                        | XXXXXXXXXXXX               | XXXXXXXXXXXX | XXXXXXXXXXXX    |
| On hand, End of Month           | XXXXXXXXXXXX               | XXXXXXXXXXXX | XXXXXXXXXXXX    |
| API Gravity/BTU Content         | 1104                       | XXXXXXXXXXXX | XXXXXXXXXXXX    |

COMMENTS

Robert Bomar 915-684-4407  
Bomar Consulting Service  
CONTACT NAME 110 N. Marienfeld, Suite 450 PHONE NUMBER ( ) EXT.    
Midland, Texas 79701-4412  
ADDRESS  

AUTHORIZING SIGNATURE   DATE   (mmddyy)

AUTHORIZING NAME (type or print) ALAN B. NICOL

PAGE 1 OF \*\*

# Wal Engineering & Production Well Report

Date: 2/96

Oper: Pendragon Energy Partners, Inc.

Well: Chaco #1

Coeff: 7.18

Range: 100

Spring: 250

Plate: 0.875

Hrs On: \_\_\_\_\_

Hrs Off: \_\_\_\_\_

## Pressure

## Meter

| Date | Line | Tubing | Casing | Diff. | Stat. | MCFD | Remarks |
|------|------|--------|--------|-------|-------|------|---------|
| 1    |      |        |        | 7.9   | 4.6   | 261  |         |
| 2    |      |        |        | 7.9   | 4.6   | 261  |         |
| 3    |      |        |        | 7.9   | 4.6   | 261  |         |
| 4    |      |        |        | 7.9   | 4.6   | 261  |         |
| 5    |      |        |        | 7.9   | 4.6   | 261  |         |
| 6    |      |        |        | 7.9   | 4.6   | 261  |         |
| 7    |      |        |        | 7.9   | 4.6   | 261  |         |
| 8    |      |        |        | 7.9   | 4.6   | 261  |         |
| 9    |      |        |        | 7.9   | 4.6   | 261  |         |
| 10   |      |        |        | 7.9   | 4.6   | 261  |         |
| 11   |      |        |        | 7.9   | 4.6   | 263  |         |
| 12   |      |        |        | 7.9   | 4.6   | 261  |         |
| 13   |      |        |        | 7.9   | 4.6   | 261  |         |
| 14   | 41   | 41     | 97     | 7.9   | 4.6   | 261  |         |
| 15   |      |        |        | 7.9   | 4.6   | 261  |         |
| 16   |      |        |        | 7.9   | 4.6   | 261  |         |
| 17   |      |        |        | 7.9   | 4.6   | 261  |         |
| 18   |      |        |        | 7.9   | 4.6   | 261  |         |
| 19   |      |        |        | 7.6   | 4.7   | 256  |         |
| 20   |      |        |        | 7.9   | 4.6   | 261  |         |
| 21   |      |        |        | 6.7   | 5.0   | 241  |         |
| 22   |      |        |        | 3.6   | 6.8   | 176  |         |
| 23   |      |        |        | 5.0   | 6.0   | 215  |         |
| 24   |      |        |        | 7.3   | 4.6   | 241  |         |
| 25   |      |        |        | 8.1   | 4.6   | 268  |         |
| 26   |      |        |        | 8.1   | 4.6   | 268  |         |
| 27   |      |        |        | 8.1   | 4.6   | 268  |         |
| 28   |      |        |        | 8.1   | 4.6   | 268  |         |
| 29   | 41   | 41     | 99     | 8.1   | 4.6   | 268  |         |
| 30   |      |        |        |       |       | 0    |         |
| 31   |      |        |        |       |       | 0    |         |

Total MCFD: 7427

Additional Remarks:

Lease Number \_\_\_\_\_  
Agreement Number SRM1164  
Field Name \_\_\_\_\_  
Unit Name \_\_\_\_\_  
Participating Area Name \_\_\_\_\_  
County SAN JUAN State NM  
Operator PENDRAGON ENERGY PARTNERS, INC.

☐ Amended Report K0835 Federal ☒ or Indian ☐

The following is a correct report of operations and production (including status of all unplugged wells) for the report period 0 | 2 | 9 | 8 (mmyy) (See reverse of form for instructions)

| API Well Number      | Sec. & 1/4 of 1/4 | TWP        | RNG        | Well Status | Days Prod | Barrels of Oil | MCF of Gas  | Barrels of Water | Remarks |
|----------------------|-------------------|------------|------------|-------------|-----------|----------------|-------------|------------------|---------|
| Operator Well Number |                   |            |            |             |           |                |             |                  |         |
| <u>5223090051</u>    | <u>18SENW</u>     | <u>26N</u> | <u>12W</u> | <u>PGW</u>  | <u>29</u> |                | <u>8069</u> |                  |         |
| <u>CHACO</u>         |                   |            |            |             |           |                |             |                  |         |
|                      |                   |            |            |             |           |                |             |                  |         |
|                      |                   |            |            |             |           |                |             |                  |         |
|                      |                   |            |            |             |           |                |             |                  |         |
|                      |                   |            |            |             |           |                |             |                  |         |
|                      |                   |            |            |             |           |                |             |                  |         |
|                      |                   |            |            |             |           |                |             |                  |         |
|                      |                   |            |            |             |           |                |             |                  |         |
|                      |                   |            |            |             |           |                |             |                  |         |
|                      |                   |            |            |             |           |                |             |                  |         |
|                      |                   |            |            |             |           |                |             |                  |         |
|                      |                   |            |            |             |           |                |             |                  |         |
|                      |                   |            |            |             |           |                |             |                  |         |

DISPOSITION OF PRODUCTION (Lease or Agreement Basis.)

|                                 | Oil & Condensate (BBLs) | Gas (MCF)           | Water (BBLs)        |
|---------------------------------|-------------------------|---------------------|---------------------|
| On hand, Start of Month         |                         | <u>XXXXXXXXXXXX</u> | <u>XXXXXXXXXXXX</u> |
| Produced                        |                         | <u>8069</u>         |                     |
| Sold                            |                         | <u>8069</u>         | <u>XXXXXXXXXXXX</u> |
| Spilled or Lost                 |                         | <u>XXXXXXXXXXXX</u> | <u>XXXXXXXXXXXX</u> |
| Flared or Vented                | <u>XXXXXXXXXXXX</u>     |                     | <u>XXXXXXXXXXXX</u> |
| Used on or for Benefit of Lease |                         |                     | <u>XXXXXXXXXXXX</u> |
| Injected                        |                         |                     |                     |
| Gas Transferred                 | <u>XXXXXXXXXXXX</u>     |                     | <u>XXXXXXXXXXXX</u> |
| Plant Number/Name               |                         |                     |                     |
| Surface Pits                    | <u>XXXXXXXXXXXX</u>     | <u>XXXXXXXXXXXX</u> |                     |
| Other                           |                         |                     |                     |
| Identify                        |                         |                     |                     |
| On hand, End of Month           |                         | <u>XXXXXXXXXXXX</u> | <u>XXXXXXXXXXXX</u> |
| API Gravity/BTU Content         |                         | <u>1104</u>         | <u>XXXXXXXXXXXX</u> |

COMMENTS

*Robert Bomar 915-684-4407  
Bomar Consulting Service  
110 N. Marienfeld, Suite 450  
Midland, Texas 79701-4412*

CONTACT NAME ONE NUMBER ( ) EXT.

ADDRESS

AUTHORIZING SIGNATURE \_\_\_\_\_ DATE  | | | | |  (mmddyy)

AUTHORIZING NAME (type or print) ALAN B. NICOL

PAGE 1 OF \*\*

# Walsh Engineering & Production )

## Well Report

1/96

J. K. Edwards Associates Inc.

Chaco #1

Coeff: 7.18

Range: 100

Spring: 250

Plate: 0.875

Hrs On:           

Hrs Off:           

### Pressure

### Meter

| Line        | Tubing | Casing | Diff. | Stat. | MCFD | Remarks       |
|-------------|--------|--------|-------|-------|------|---------------|
|             |        |        | 7.5   | 4.8   | 258  |               |
|             |        |        | 7.5   | 4.8   | 258  |               |
|             |        |        | 7.5   | 4.8   | 258  |               |
|             |        |        | 7.5   | 4.8   | 258  |               |
|             |        |        | 7.5   | 4.8   | 258  |               |
|             |        |        | 7.5   | 4.8   | 258  |               |
|             |        |        | 7.5   | 4.8   | 258  |               |
|             |        |        | 7.3   | 4.9   | 257  |               |
|             |        |        | 7.3   | 4.9   | 257  |               |
|             |        | 108    | 7.3   | 4.9   | 257  |               |
| 48          |        |        | 7.3   | 4.9   | 257  |               |
|             |        |        | 7.5   | 4.8   | 258  |               |
|             |        |        | 7.6   | 4.8   | 262  |               |
|             |        |        | 7.7   | 4.8   | 265  |               |
|             |        |        | 7.7   | 4.8   | 265  |               |
|             |        |        | 7.5   | 4.8   | 258  |               |
|             |        | 106    | 7.5   | 4.8   | 258  |               |
|             |        |        | 7.4   | 4.8   | 255  |               |
|             |        |        | 7.4   | 4.8   | 255  |               |
|             |        |        | 7.4   | 4.8   | 255  |               |
|             |        |        | 7.4   | 4.8   | 255  |               |
|             |        |        | 7.4   | 4.8   | 255  |               |
|             |        |        | 7.4   | 4.8   | 255  |               |
|             |        |        | 7.4   | 4.8   | 255  |               |
|             |        |        | 6.8   | 5.3   | 259  |               |
|             |        |        | 7.3   | 4.8   | 252  |               |
|             |        |        | 6.0   | 5.5   | 237  |               |
|             |        |        | 7.6   | 4.7   | 256  |               |
|             |        |        | 7.6   | 4.7   | 256  |               |
|             |        |        | 7.6   | 4.8   | 262  | BLOW LOCATION |
|             |        | 104    | 7.6   | 4.8   | 262  | DRIP          |
| Total MCFD: |        |        |       |       | 7974 |               |

emarks:

# Well Engineering & Production Well Report

Date: 12/95

Coeff: 7.16

Oper: J. K. Edwards Associates Inc.

Range: 100

Spring: 250

Well: Chaco #1

Plate: 0.875

Hrs On:           

Hrs Off:           

## Pressure

## Meter

| Date | Line | Tubing | Casing | Diff. | Stat. | MCFD | Remarks |
|------|------|--------|--------|-------|-------|------|---------|
| 1    |      |        |        | 8.2   | 4.5   | 265  |         |
| 2    |      |        |        | 8.2   | 4.5   | 265  |         |
| 3    |      |        |        | 8.2   | 4.5   | 265  |         |
| 4    |      |        |        | 8.2   | 4.5   | 265  |         |
| 5    |      |        |        | 8.2   | 4.5   | 265  |         |
| 6    |      |        |        | 8.2   | 4.5   | 265  |         |
| 7    | 39   |        | 107    | 8.2   | 4.5   | 265  |         |
| 8    |      |        |        | 8.2   | 4.5   | 265  |         |
| 9    |      |        |        | 8.2   | 4.5   | 265  |         |
| 10   |      |        |        | 8.2   | 4.5   | 265  |         |
| 11   |      |        |        | 8.4   | 4.5   | 271  |         |
| 12   | 39   |        | 108    | 8.4   | 4.5   | 271  |         |
| 13   |      |        |        | 8.4   | 4.5   | 271  |         |
| 14   |      |        |        | 8.0   | 4.7   | 270  |         |
| 15   |      |        |        | 8.0   | 4.6   | 264  |         |
| 16   |      |        |        | 8.0   | 4.6   | 264  |         |
| 17   |      |        |        | 8.1   | 4.6   | 268  |         |
| 18   | 39   |        | 110    | 8.2   | 4.5   | 265  |         |
| 19   |      |        |        | 8.2   | 4.5   | 265  |         |
| 20   |      |        |        | 8.1   | 4.6   | 268  |         |
| 21   |      |        |        | 7.5   | 4.9   | 264  |         |
| 22   |      |        |        | 7.7   | 4.7   | 260  |         |
| 23   |      |        |        | 7.0   | 5.0   | 251  |         |
| 24   |      |        |        | 8.0   | 4.5   | 258  |         |
| 25   |      |        |        | 8.0   | 4.5   | 258  |         |
| 26   |      |        |        | 8.0   | 4.4   | 253  |         |
| 27   |      |        |        | 8.0   | 4.4   | 253  |         |
| 28   |      |        |        | 8.1   | 4.4   | 256  |         |
| 29   |      |        |        | 8.0   | 4.4   | 253  |         |
| 30   |      |        |        | 8.0   | 4.4   | 253  |         |
| 31   |      |        |        | 8.0   | 4.4   | 253  |         |

Total MCFD: 8139

Additional Remarks:

# Well Engineering & Production Well Report

Date: 11/95

Coeff: 7.18

Oper: J. K. Edwards Associates Inc.

Range: 100

Spring: 250

Well: Chaco #1

Plate: 0.875

Hrs On:           

Hrs Off:           

## Pressure

## Meter

| Date | Line | Tubing | Casing | Diff. | Stat. | MCFD | Remarks      |
|------|------|--------|--------|-------|-------|------|--------------|
| 1    |      |        |        | 7.3   | 4.8   | 252  |              |
| 2    |      |        |        | 7.8   | 4.7   | 263  |              |
| 3    |      |        |        | 7.8   | 4.7   | 263  |              |
| 4    |      |        |        | 7.0   | 5.1   | 256  |              |
| 5    |      |        |        | 6.8   | 5.4   | 264  |              |
| 6    |      |        |        | 7.7   | 4.5   | 249  |              |
| 7    | 43   |        | 108    | 7.5   | 4.7   | 253  | LIGHT HEATER |
| 8    |      |        |        | 7.7   | 4.7   | 260  |              |
| 9    |      |        |        | 7.7   | 4.8   | 265  |              |
| 10   |      |        |        | 7.9   | 4.7   | 267  |              |
| 11   |      |        |        | 8.0   | 4.6   | 264  |              |
| 12   |      |        |        | 8.0   | 4.6   | 264  |              |
| 13   |      |        |        | 7.8   | 4.7   | 263  |              |
| 14   | 43   |        | 106    | 7.7   | 4.7   | 260  |              |
| 15   |      |        |        | 7.8   | 4.7   | 263  |              |
| 16   |      |        |        | 7.8   | 4.7   | 263  |              |
| 17   |      |        |        | 7.8   | 4.7   | 263  |              |
| 18   |      |        |        | 7.8   | 4.7   | 263  |              |
| 19   |      |        |        | 7.8   | 4.7   | 263  |              |
| 20   |      |        |        | 7.4   | 5.0   | 266  |              |
| 21   | 41   | 0      | 108    | 8.0   | 4.6   | 264  |              |
| 22   |      |        |        | 8.1   | 4.5   | 262  |              |
| 23   |      |        |        | 8.2   | 4.5   | 265  |              |
| 24   |      |        |        | 7.7   | 4.8   | 265  |              |
| 25   |      |        |        | 8.0   | 4.6   | 264  |              |
| 26   |      |        |        | 8.1   | 4.6   | 268  |              |
| 27   |      |        |        | 8.2   | 4.6   | 271  |              |
| 28   |      |        |        | 8.2   | 4.5   | 265  |              |
| 29   |      |        |        | 8.3   | 4.5   | 268  |              |
| 30   | 38   |        | 108    | 8.3   | 4.5   | 268  |              |
| 31   |      |        |        |       |       | 0    |              |

Total MCFD: 7885

Additional Remarks:

# Wals., Engineering & Production

## Well Report

Date: 10/95

Oper: J. K. Edwards Associates Inc.

Well: Chaco #1

Coeff: 7.16

Range: 100

Spring: 250

Plate: 0.875

Hrs On:           

Hrs Off:           

### Pressure

### Meter

| Date | Line | Tubing | Casing | Diff. | Stat. | MCFD | Remarks       |
|------|------|--------|--------|-------|-------|------|---------------|
| 1    |      |        |        | 4.4   | 6.1   | 193  |               |
| 2    |      |        |        | 4.3   | 6.1   | 186  |               |
| 3    |      |        |        | 4.3   | 6.0   | 185  |               |
| 4    |      |        |        |       |       | 0    |               |
| 5    |      |        |        |       |       | 0    |               |
| 6    |      |        |        |       |       | 0    |               |
| 7    |      |        |        |       |       | 0    |               |
| 8    |      |        |        |       |       | 0    |               |
| 9    |      |        |        |       |       | 0    |               |
| 10   |      |        |        |       |       | 0    |               |
| 11   |      | 151    | 151    | 6.0   | 6.0   | 345  | WELL ON 12:05 |
| 12   |      |        |        | 6.0   | 5.8   | 250  |               |
| 13   |      |        |        | 7.5   | 5.0   | 269  |               |
| 14   |      |        |        | 7.2   | 5.2   | 269  |               |
| 15   |      |        |        | 6.3   | 6.1   | 276  |               |
| 16   |      |        |        | 7.5   | 4.7   | 253  |               |
| 17   |      |        |        | 7.5   | 5.0   | 269  |               |
| 18   |      |        |        | 7.5   | 5.0   | 269  |               |
| 19   | 58   |        | 98     | 8.0   | 4.8   | 276  |               |
| 20   |      |        |        | 7.9   | 4.5   | 255  |               |
| 21   |      |        |        | 8.1   | 4.5   | 262  |               |
| 22   |      |        |        | 8.2   | 4.5   | 265  |               |
| 23   |      |        |        | 8.1   | 4.5   | 262  |               |
| 24   |      |        |        | 8.1   | 4.5   | 268  |               |
| 25   |      | 55     | 104    | 7.1   | 5.0   | 255  |               |
| 26   |      |        |        | 7.5   | 4.9   | 264  |               |
| 27   |      |        |        | 7.6   | 4.8   | 262  |               |
| 28   |      |        |        | 7.6   | 4.8   | 262  |               |
| 29   |      |        |        | 7.6   | 4.8   | 262  |               |
| 30   |      |        |        | 7.7   | 4.9   | 271  |               |
| 31   | 50   |        | 110    | 7.5   | 5.0   | 269  |               |

Total MCFD:

6196

Additional Remarks:

# Walsh Engineering & Production Well Report

Date: 9/25Coeff: 7.18Operator: J. K. EDWARDS ASSOCIATES INC.Range: 100Spring: 250Well No: Chaco #1Plate: 0.875Hrs On:           Hrs Off:           **Pressure****Meter**

| Date | Line | Tubing | Casing | Diff. | Stat. | MCFD | Remarks           |
|------|------|--------|--------|-------|-------|------|-------------------|
| 1    |      |        |        | 7.2   | 4.8   | 248  |                   |
| 2    |      |        |        | 7.2   | 4.7   | 243  |                   |
| 3    |      |        |        | 7.3   | 4.8   | 252  |                   |
| 4    |      |        |        | 6.8   | 5.2   | 254  |                   |
| 5    | 60   |        | 107    | 7.5   | 4.9   | 264  |                   |
| 6    |      |        |        | 7.6   | 4.6   | 256  |                   |
| 7    |      |        |        | 8     | 4.7   | 270  |                   |
| 8    |      |        |        | 7.8   | 4.9   | 274  |                   |
| 9    |      |        |        | 7     | 5.1   | 256  |                   |
| 10   |      |        |        | 7.3   | 5     | 262  |                   |
| 11   |      |        |        | 7.4   | 4.8   | 255  |                   |
| 12   |      |        |        | 6.9   | 5     | 248  |                   |
| 13   | 55   | 55     | 109    | 6.8   | 4.7   | 229  |                   |
| 14   |      |        |        | 7     | 4.4   | 221  |                   |
| 15   |      |        |        | 7     | 4.6   | 231  |                   |
| 16   |      |        |        | 7.3   | 4.7   | 246  |                   |
| 17   |      |        |        | 7.5   | 4.7   | 253  |                   |
| 18   |      |        |        | 7.7   | 4.7   | 260  |                   |
| 19   | 41   | 41     | 103    | 6     | 4.6   | 264  |                   |
| 20   |      |        |        | 7.9   | 4.5   | 255  |                   |
| 21   |      |        |        | 7.7   | 4.7   | 260  |                   |
| 22   |      |        |        | 7.4   | 4.6   | 244  |                   |
| 23   |      |        |        | 7.4   | 4.7   | 250  |                   |
| 24   |      |        |        | 7.3   | 4.6   | 252  |                   |
| 25   |      |        |        | 7.5   | 4.5   | 242  |                   |
| 26   |      |        |        | 7.3   | 4.5   | 252  |                   |
| 27   | 53   | 64     | 84     | 6.7   | 5.3   | 255  | clock not working |
| 28   |      |        |        | 6.7   | 5.3   | 255  |                   |
| 29   |      |        |        | 6.7   | 5.3   | 255  |                   |
| 30   |      |        |        | 6.7   | 5.3   | 255  |                   |
| 31   |      |        |        |       |       | 0    |                   |

Total MCFD: 7563**Additional Remarks:**

9/19-Switch from 16 day chart to 8 day  
 9/26 install new clock.

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## WALSH ENGINEERING &amp; PRODUCTION

## WELL REPORT

DATE: JULY 1995OPERATOR: J. K. EDWARDS ASSOCIATESWELL NAME: Chaco #1CO-EFF: 7.18RANGE: 100SPRING: 250PLATE: .875HRS ON OFF

| DATE  | PRESSURE |        |        | METER |       |     | REMARKS |
|-------|----------|--------|--------|-------|-------|-----|---------|
|       | LINE     | TUBING | CASING | DIFF. | STAT. | MCF |         |
| 1     |          |        |        | 8.6   | 4.3   | 266 |         |
| 2     |          |        |        | 8.6   | 4.3   | 266 |         |
| 3     |          |        |        | 8.6   | 4.3   | 266 |         |
| 4     |          |        |        | 8.6   | 4.3   | 266 |         |
| 5     |          |        |        | 8.6   | 4.3   | 266 |         |
| 6     | 34       | 34     | 110    | 8.6   | 4.3   | 266 |         |
| 7     |          |        |        | 8.4   | 4.3   | 259 |         |
| 8     |          |        |        | 8.2   | 4.5   | 247 |         |
| 9     |          |        |        | 8.2   | 4.5   | 247 |         |
| 10    |          |        |        | 8.6   | 4.3   | 266 |         |
| 11    | 34       | 34     | 108    | 8.6   | 4.3   | 266 |         |
| 12    |          |        |        | 8.6   | 4.3   | 266 |         |
| 13    |          |        |        | 8.3   | 4.5   | 268 |         |
| 14    |          |        |        | 7.9   | 4.6   | 261 |         |
| 15    |          |        |        | 7.6   | 4.8   | 262 |         |
| 16    |          |        |        | 7.4   | 4.7   | 250 |         |
| 17    |          |        |        | 8.0   | 4.4   | 253 |         |
| 18    |          |        |        | 8.2   | 4.5   | 265 |         |
| 19    | 36       | 36     | 106    | 8.0   | 4.5   | 258 |         |
| 20    |          |        |        | 8.0   | 4.5   | 258 |         |
| 21    |          |        |        | 8.0   | 4.5   | 258 |         |
| 22    |          |        |        | 8.2   | 4.5   | 265 |         |
| 23    |          |        |        | 8.3   | 4.5   | 268 |         |
| 24    |          |        |        | 8.3   | 4.5   | 268 |         |
| 25    | 36       | 36     | 108    | 8.3   | 4.5   | 268 |         |
| 26    |          |        |        | 8.4   | 4.4   | 265 |         |
| 27    |          |        |        | 8.4   | 4.4   | 265 |         |
| 28    |          |        |        | 6.5   | 5.3   | 247 |         |
| 29    |          |        |        | 5.4   | 5.9   | 229 |         |
| 30    |          |        |        | 5.7   | 5.0   | 241 |         |
| 31    | 59       | 59     | 102    | 6.5   | 5.3   | 247 |         |
| 8,043 |          |        |        |       |       |     |         |

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Serial Number for Separator 30 K 2820

## WALSH ENGINEERING &amp; PRODUCTION

## WELL REPORT

DATE: JUNE 1995OPERATOR: J. K. EDWARDS ASSOCIATESWELL NAME: Chaco #1CO-EFF: 7.18RANGE: 100SPRING: 250PLATE: .875HRS ON      OFF     

## PRESSURE

## METER

| DATE | LINE | TUBING | CASING | DIFF. | STAT. | MCF | REMARKS |
|------|------|--------|--------|-------|-------|-----|---------|
| 1    |      |        |        | 5.0   | 7.0   | 251 |         |
| 2    |      |        |        | 6.0   | 6.5   | 250 |         |
| 3    |      |        |        | 6.9   | 4.9   | 243 |         |
| 4    |      |        |        | 7.1   | 4.0   | 250 |         |
| 5    | 46   | 46     | 107    | 7.2   | 4.8   | 248 |         |
| 6    |      |        |        | 7.2   | 3.8   | 250 |         |
| 7    |      |        |        | 6.9   | 5.0   | 249 |         |
| 8    |      |        |        | 6.9   | 5.1   | 253 |         |
| 9    |      |        |        | 7.4   | 4.7   | 250 |         |
| 10   |      |        |        | 7.4   | 4.7   | 250 |         |
| 11   |      |        |        | 7.4   | 4.7   | 250 |         |
| 12   |      |        |        | 7.4   | 4.7   | 250 |         |
| 13   | 45   | 45     | 99     | 7.5   | 4.7   | 250 |         |
| 14   |      |        |        | 7.3   | 4.9   | 257 |         |
| 15   |      |        |        | 7.3   | 4.6   | 241 |         |
| 16   |      |        |        | 7.2   | 4.9   | 253 |         |
| 17   |      |        |        | 7.4   | 4.8   | 258 |         |
| 18   |      |        |        | 8.0   | 4.5   | 258 |         |
| 19   |      |        |        | 8.0   | 4.5   | 258 |         |
| 20   | 38   | 38     | 87     | 8.0   | 4.5   | 258 |         |
| 21   |      |        |        | 6.5   | 5.8   | 271 |         |
| 22   |      |        |        | 7.6   | 6.2   | 285 |         |
| 23   |      |        |        | 6.0   | 5.3   | 228 |         |
| 24   |      |        |        | 8.3   | 7.3   | 253 |         |
| 25   |      |        |        | 7.3   | 4.3   | 256 |         |
| 26   |      |        |        | 8.5   | 4.3   | 256 |         |
| 27   | 59   | 39     | 110    | 6.8   | 5.3   | 254 |         |
| 28   |      |        |        | 6.8   | 5.3   | 254 |         |
| 29   |      |        |        | 6.8   | 5.3   | 254 |         |
| 30   |      |        |        | 7.8   | 4.6   | 293 |         |
| 31   |      |        |        |       |       |     |         |

7455

97.5%

7642

Serial Number for Separator 30 K 2820

WALSH ENGINEERING & PRODUCTION

WELL REPORT

DATE: MAY 1995

OPERATOR: J. K. EDWARDS ASSOCIATES

WELL NAME: Chaco #1

CO-EFF: 7.18

RANGE: 100

SPRING: 250

PLATE: .875

HRS ON      OFF     

| DATE | PRESSURE |        |        | METER |       |     | REMARKS |
|------|----------|--------|--------|-------|-------|-----|---------|
|      | LINE     | TUBING | CASING | DIFF. | STAT. | MCF |         |
| 1    |          |        |        | 6.5   | 5.0   | 233 |         |
| 2    |          |        |        | 5.6   | 5.3   | 213 |         |
| 3    |          |        |        | 6.1   | 5.1   | 223 |         |
| 4    |          |        |        | 6.1   | 5.1   | 223 |         |
| 5    |          |        |        | 6.1   | 5.1   | 223 |         |
| 6    |          |        |        | 6.1   | 5.1   | 223 |         |
| 7    |          |        |        | 6.1   | 5.1   | 223 |         |
| 8    | 53       | 53     | 108    | 6.1   | 5.1   | 223 |         |
| 9    |          |        |        | 6.1   | 5.1   | 223 |         |
| 10   |          |        |        | 5.6   | 5.3   | 213 |         |
| 11   |          |        |        | 5.3   | 5.7   | 217 |         |
| 12   |          |        |        | 5.7   | 5.2   | 213 |         |
| 13   |          |        |        | 5.7   | 5.3   | 217 |         |
| 14   |          |        |        | 5.7   | 5.2   | 213 |         |
| 15   | 54       | 54     | 107    | 5.9   | 5.1   | 216 |         |
| 16   |          |        |        | 6.3   | 5.1   | 232 |         |
| 17   |          |        |        | 6.5   | 4.9   | 229 |         |
| 18   |          |        |        | 6.5   | 4.9   | 229 |         |
| 19   |          |        |        | 6.0   | 5.2   | 224 |         |
| 20   |          |        |        | 6.4   | 5.1   | 234 |         |
| 21   |          |        |        | 5.8   | 5.4   | 225 |         |
| 22   |          |        | 104    | 6.0   | 5.3   | 228 |         |
| 23   |          |        |        | 6.1   | 5.3   | 232 |         |
| 24   |          |        |        | 6.6   | 4.9   | 232 |         |
| 25   |          |        |        | 6.5   | 5.0   | 233 |         |
| 26   |          |        |        | 6.3   | 5.1   | 231 |         |
| 27   |          |        |        | 6.8   | 4.8   | 234 |         |
| 28   |          |        |        | 6.8   | 4.9   | 239 |         |
| 29   |          |        |        | 6.7   | 4.9   | 236 |         |
| 30   | 48       | 48     | 108    | 6.7   | 4.9   | 236 |         |
| 31   |          |        |        | 6.7   | 4.9   | 236 |         |

TOTAL 6812

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Serial Number for separator 30 K 2820

# WALSH ENGINEERING & PRODUCTION

## WELL REPORT

DATE: APRIL 1995

OPERATOR: J. K. EDWARDS ASSOCIATES

WELL NAME: Chaco #1

CO-EFF: 7.18

RANGE: 100

SPRING: 250

PLATE: .875

HRS ON OFF

| PRESSURE |      |        |        | METER |       |       | REMARKS              |
|----------|------|--------|--------|-------|-------|-------|----------------------|
| DATE     | LINE | TUBING | CASING | DIFF. | STAT. | MCF   |                      |
| 1        |      |        |        | 10.0  | 4.8   | 252   |                      |
| 2        |      |        |        | 6.0   | 5.5   | 231   |                      |
| 3        |      |        |        | 8.0   | 5.5   | 231   | change plate to .875 |
| 4        | 64   | 64     |        | 7.1   | 4.9   | 250   |                      |
| 5        |      |        |        | 7.1   | 4.9   | 250   |                      |
| 6        |      |        |        | 7.4   | 4.8   | 253   |                      |
| 7        |      |        |        | 7.9   | 4.8   | 278   |                      |
| 8        |      |        |        | 7.6   | 4.9   | 267   |                      |
| 9        |      |        |        | 7.8   | 4.7   | 263   |                      |
| 10       |      |        |        | 7.8   | 4.7   | 263   |                      |
| 11       | 45   | 45     | 107    | 7.8   | 4.7   | 263   |                      |
| 12       |      |        |        | 7.6   | 4.7   | 256   |                      |
| 13       |      |        |        | 7.6   | 4.7   | 256   |                      |
| 14       |      |        |        | 7.5   | 4.7   | 253   |                      |
| 15       |      |        |        | 7.5   | 4.7   | 253   |                      |
| 16       |      |        |        | 7.5   | 4.7   | 253   |                      |
| 17       |      |        |        | 7.5   | 4.7   | 253   |                      |
| 18       | 43   | 43     | 113    | 7.5   | 4.7   | 253   |                      |
| 19       |      |        |        | 7.4   | 4.7   | 250   |                      |
| 20       |      |        |        | 7.5   | 4.7   | 253   |                      |
| 21       |      |        |        | 7.5   | 4.7   | 253   |                      |
| 22       |      |        |        | 7.5   | 4.7   | 253   |                      |
| 23       |      |        |        | 7.5   | 4.7   | 253   |                      |
| 24       |      |        |        | 7.2   | 4.7   | 246   |                      |
| 25       | 43   | 42     | 109    | 7.3   | 4.7   | 246   |                      |
| 26       |      |        |        | 6.8   | 4.9   | 239   |                      |
| 27       |      |        |        | 6.5   | 5.1   | 238   |                      |
| 28       |      |        |        | 5.9   | 5.3   | 224   |                      |
| 29       |      |        |        | 6.5   | 5.0   | 233   |                      |
| 30       | 51   | 51     | 111    | 6.5   | 5.0   | 233   |                      |
| 31       |      |        |        |       |       |       |                      |
| TOTAL    |      |        |        |       |       | 7,501 |                      |

Serial Number for Separator 30 K 2620

## WALSH ENGINEERING &amp; PRODUCTION

## WELL REPORT

DATE: MARCH 1995OPERATOR: J. K. EDWARDS ASSOCIATESWELL NAME: Chaco #1CO-EFF: 5.26RANGE: 100SPRING: 250PLATE: .750HRS ON      OFF     

| DATE | PRESSURE |        |        | METER |       |      | REMARKS                 |
|------|----------|--------|--------|-------|-------|------|-------------------------|
|      | LINE     | TUBING | CASING | DIFF. | STAT. | MCF  |                         |
| 1    |          |        |        |       |       |      |                         |
| 2    |          |        |        |       |       |      |                         |
| 3    |          |        |        |       |       |      |                         |
| 4    |          |        |        |       |       |      |                         |
| 5    |          |        |        |       |       |      |                         |
| 6    |          |        |        |       |       |      |                         |
| 7    |          | 170    | 170    |       |       |      | Waiting on hookup       |
| 8    |          |        |        |       |       |      |                         |
| 9    |          |        |        |       |       |      | Tie well into pipeline  |
| 10   |          |        |        |       |       |      |                         |
| 11   |          |        |        |       |       |      |                         |
| 12   |          |        |        |       |       |      |                         |
| 13   |          |        |        |       |       |      |                         |
| 14   |          |        |        |       |       |      |                         |
| 15   |          | 170    | 170    | 0.0   | 8.4   |      |                         |
| 16   |          |        |        | 0.0   | 8.4   |      |                         |
| 17   |          | 170    | 170    | 0.0   | 8.4   |      | turn well on            |
| 18   |          |        |        | 0.0   | 8.4   |      |                         |
| 19   |          |        |        | 0.0   | 8.4   |      | Found valve shut - open |
| 20   |          |        |        | 9.5   | 5.9   | 71   | 10:00 AM                |
| 21   | 75       | 76     | 152    | 7.0   | 5.1   | 188  | 30 est. BW/d Chg. Plate |
| 22   |          |        |        | 7.0   | 5.1   | 186  | to .750                 |
| 23   |          |        |        | 7.1   | 5.1   | 190  |                         |
| 24   |          |        |        | 7.2   | 5.2   | 197  |                         |
| 25   |          |        |        | 7.4   | 5.2   | 202  |                         |
| 26   |          |        |        | 8.6   | 5.2   | 235  |                         |
| 27   |          |        |        | 9.8   | 4.8   | 247  |                         |
| 28   |          |        |        | 9.8   | 4.8   | 247  |                         |
| 29   | 47       | 46     | 164    | 9.8   | 4.8   | 247  | 40 BW/d Est.            |
| 30   |          |        |        | 9.9   | 4.8   | 247  |                         |
| 31   |          |        |        | 9.9   | 4.8   | 247  |                         |
|      |          |        |        | TOTAL |       | 2506 |                         |

3/9 Tie separator and well into pipeline

Merrion Oil & Gas  
Gas Co Meter #9012-B-6  
147 system

WALSH ENGINEERING & PRODUCTION

WELL REPORT

DATE: February 1995

OPERATOR: J. K. EDWARDS ASSOCIATES

WELL NAME: Chaco #1

CO-EFF: \_\_\_\_\_  
RANGE: \_\_\_\_\_  
SPRING: \_\_\_\_\_  
PLATE: \_\_\_\_\_  
HRS ON OFF

| DATE | PRESSURE |        |        | METER |       |       | REMARKS              |
|------|----------|--------|--------|-------|-------|-------|----------------------|
|      | LINE     | TUBING | CASING | DIFF. | STAT. | MCF   |                      |
| 1    | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 2    | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 3    | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 4    | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 5    | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 6    | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 7    | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 8    | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 9    | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 10   | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 11   | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 12   | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 13   | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 14   | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 15   | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 16   | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 17   | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 18   | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 19   | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 20   | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 21   | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 22   | _____    | 170    | 170    | _____ | _____ | _____ | Well shut in waiting |
| 23   | _____    | _____  | _____  | _____ | _____ | _____ | on EL PASO           |
| 24   | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 25   | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 26   | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 27   | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 28   | _____    | 170    | 170    | _____ | _____ | _____ | _____                |
| 29   | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 30   | _____    | _____  | _____  | _____ | _____ | _____ | _____                |
| 31   | _____    | _____  | _____  | _____ | _____ | _____ | _____                |

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-----  
-----  
-----  
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WELL DELIVERABILITY TEST REPORT FOR 19 83

|                 |                       |                              |                    |
|-----------------|-----------------------|------------------------------|--------------------|
| WELL NAME<br>AW | POOL SLOPE<br>n = .85 | FORMATION<br>Pictured Cliffs | COUNTY<br>San Juan |
|-----------------|-----------------------|------------------------------|--------------------|

|                                          |                               |                                         |                                          |                                                    |                                   |
|------------------------------------------|-------------------------------|-----------------------------------------|------------------------------------------|----------------------------------------------------|-----------------------------------|
| COMPANY<br>Merrion Oil & Gas Corporation |                               |                                         | WELL NAME AND NUMBER<br>Chaco Plant 1    |                                                    |                                   |
| WELL LETTER<br>F                         | SECTION<br>18                 | TOWNSHIP<br>26N                         | RANGE<br>12W                             | PURCHASING PIPELINE<br>El Paso Natural Gas Company |                                   |
| PIPE O.D. - INCHES<br>2.875              | CASING I.D. - INCHES<br>2.441 | SET AT DEPTH - FEET<br>1340             | TUBING O.D. - INCHES<br>1.315            | TUBING I.D. - INCHES<br>1.049                      | TOP - TUBING PERF. - FEET<br>1120 |
| GAS PAY ZONE<br>DM 1113 TO 1139          |                               | WELL PRODUCING FROM<br>CASING TUBING XX |                                          | GAS GRAVITY<br>.650                                | GRAVITY LENGTH<br>728             |
| DATE OF FLOW TEST<br>FROM 6/20 TO 6/28   |                               |                                         | DATE SHUT-IN PRESSURE MEASURED<br>7/5/83 |                                                    |                                   |

## PRESSURE DATA - ALL PRESSURES IN PSIA

|                                         |                                                |                                          |                                          |                                               |                                                         |                                                              |
|-----------------------------------------|------------------------------------------------|------------------------------------------|------------------------------------------|-----------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------|
| (a) Flowing Casing Pressure (DWI)<br>62 | (b) Flowing Tubing Pressure (DWI)<br>57        | (c) Flowing Meter Pressure (DWI)<br>55   | (d) Flow Chart Static Reading<br>.50     | (e) Meter Error (Item c - Item d)<br>5        | (f) Friction Loss (a - c) or (b - c)<br>2               | (g) Average Meter Pressure (Integer)<br>34                   |
| Corrected Meter Pressure (g + e)<br>39  | (h) Avg. Wellhead Press. $P_h = (h + f)$<br>41 | (i) Shut-in Casing Pressure (DWI)<br>137 | (k) Shut-in Tubing Pressure (DWI)<br>127 | (j) $P_c$ = higher value of (i) or (k)<br>137 | (m) Del. Pressure $P_d = \frac{80}{111} P_c$<br>111/110 | (n) Separator or Dehydrator Pr. (DWI) for critical flow only |

## FLOW RATE CORRECTION (METER ERROR)

|                                 |                                                          |                                                        |                                  |
|---------------------------------|----------------------------------------------------------|--------------------------------------------------------|----------------------------------|
| Integrated Volume - MCF/D<br>13 | Quotient of $\frac{\text{Item c}}{\text{Item d}}$<br>1.1 | $\sqrt{\frac{\text{Item c}}{\text{Item d}}}$<br>1.0488 | Corrected Volume<br>Q = 14 MCF/D |
|---------------------------------|----------------------------------------------------------|--------------------------------------------------------|----------------------------------|

## WORKING PRESSURE CALCULATION

|                           |                             |                                                 |                 |                               |                            |
|---------------------------|-----------------------------|-------------------------------------------------|-----------------|-------------------------------|----------------------------|
| $(1 - e^{-R^2})$<br>.0511 | $(P_c Q_m)^2 (1000)$<br>498 | $R^2 = (1 - e^{-R^2}) (P_c Q_m)^2 (1000)$<br>25 | $P_t^2$<br>1681 | $P_w^2 = P_t^2 + R^2$<br>1706 | $P_w = \sqrt{P_w^2}$<br>41 |
|---------------------------|-----------------------------|-------------------------------------------------|-----------------|-------------------------------|----------------------------|

## DELIVERABILITY CALCULATION

|                                                                 |                                               |                                               |           |
|-----------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------|
| $Q = \left[ \frac{P_c^2 - P_w^2}{P_c^2 - P_w^2} \right]^a = 14$ | $\left[ \frac{6448}{17088} \right]^a = .3773$ | $\left[ \frac{6448}{17088} \right]^a = .4367$ | $6$ MCF/D |
|-----------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------|

REMARKS:

RECEIVED

FEB 03 1984

OIL CON. DIV.  
DIST. 3

## SUMMARY

Item b 39 /  
 $P_c$  137  
Q 23.14  
 $P_w$  41 /  
 $P_d$  111 /110

Pa  
Pa  
MCF/D  
Pa  
Pa

Company Merrion Oil & Gas Corporation  
By Timothy L. Merilatt  
Title Measurement Technician  
Witnessed By Rick Dean  
Company Merrion Oil & Gas Corporation

NE MEXICO OIL CONSERVATION COMMISSION  
WELL DELIVERABILITY TEST REPORT FOR 1979

Form CI72-A  
Revised 1-1-66

|                               |                       |                              |                    |
|-------------------------------|-----------------------|------------------------------|--------------------|
| WELL NAME<br>WAW Fruitland PC | POOL SLOPE<br>n = .85 | FORMATION<br>Pictured Cliffs | COUNTY<br>San Juan |
|-------------------------------|-----------------------|------------------------------|--------------------|

|                                             |                               |                                        |                                           |                                               |                                   |
|---------------------------------------------|-------------------------------|----------------------------------------|-------------------------------------------|-----------------------------------------------|-----------------------------------|
| IMPORT<br>Merrion & Bayless                 |                               |                                        | WELL NAME AND NUMBER<br>Chaco #1          |                                               |                                   |
| UNIT LETTER<br>F                            | SECTION<br>18                 | TOWNSHIP<br>26N                        | RANGE<br>12W                              | PURCHASING PIPELINE<br>Western Gas Interstate |                                   |
| CASING O.D. - INCHES<br>2.875               | CASING I.D. - INCHES<br>2.441 | SET AT DEPTH - FEET<br>1340            | TUBING O.D. - INCHES<br>1.315             | TUBING I.D. - INCHES<br>1.049                 | TOP - TUBING PERF. - FEET<br>1120 |
| GAS PAY ZONE<br>FROM 1113 TO 1139           |                               | WELL PRODUCING THRU<br>CASING TUBING X |                                           | GAS GRAVITY<br>.645                           | GRAVITY X LENGTH<br>722           |
| DATE OF FLOW TEST<br>FROM 9-9-79 TO 9-17-79 |                               |                                        | DATE SHUT-IN PRESSURE MEASURED<br>9-25-79 |                                               |                                   |

PRESSURE DATA - ALL PRESSURES IN PSIA

|                                            |                                                |                                          |                                          |                                               |                                            |                                                              |
|--------------------------------------------|------------------------------------------------|------------------------------------------|------------------------------------------|-----------------------------------------------|--------------------------------------------|--------------------------------------------------------------|
| (a) Flowing Casing Pressure (DWI)<br>57    | (b) Flowing Tubing Pressure (DWI)<br>42        | (c) Flowing Meter Pressure (DWI)<br>41   | (d) Flow Chart Static Reading<br>40      | (e) Meter Error (Item c - Item d)<br>1        | (f) Friction Loss (a - c) or (b - c)<br>1  | (g) Average Meter Pressure (Integr.)<br>37                   |
| (h) Corrected Meter Pressure (g + e)<br>38 | (i) Avg. Wellhead Press. $P_i = (h + f)$<br>39 | (j) Shut-in Casing Pressure (DWI)<br>172 | (k) Shut-in Tubing Pressure (DWI)<br>159 | (l) $P_c =$ higher value of (j) or (k)<br>172 | (m) Del. Pressure $P_d = 80 \% P_c$<br>138 | (n) Separator or Dehydrator Pr. (DWI) for critical flow only |

FLOW RATE CORRECTION (METER ERROR)

|                                 |                                                            |                                                       |                                  |
|---------------------------------|------------------------------------------------------------|-------------------------------------------------------|----------------------------------|
| Integrated Volume - MCF/D<br>71 | Quotient of $\frac{\text{Item c}}{\text{Item d}}$<br>1.025 | $\sqrt{\frac{\text{Item c}}{\text{Item d}}}$<br>1.012 | Corrected Volume<br>Q = 72 MCF/D |
|---------------------------------|------------------------------------------------------------|-------------------------------------------------------|----------------------------------|

WORKING PRESSURE CALCULATION

|                         |                               |                                                |                 |                               |                            |
|-------------------------|-------------------------------|------------------------------------------------|-----------------|-------------------------------|----------------------------|
| $(1 - e^{-x})$<br>.0511 | $(F_c Q_m)^2 (1000)$<br>13168 | $R^2 = (1 - e^{-x}) (F_c Q_m)^2 (1000)$<br>673 | $P_i^2$<br>1521 | $P_w^2 = P_i^2 + R^2$<br>2194 | $P_w = \sqrt{P_w^2}$<br>47 |
|-------------------------|-------------------------------|------------------------------------------------|-----------------|-------------------------------|----------------------------|

DELIVERABILITY CALCULATION

|                                                                      |                                                                                         |                 |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------|
| $D = Q \left[ \frac{P_c^2 - P_d^2}{P_c^2 - P_w^2} \right]^n =$<br>72 | $\left[ \left( \frac{10540}{27390} \right)^n \left( .3848 \right)^n \right] =$<br>.4440 | $=$<br>32 MCF/D |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------|

REMARKS:

Retest

SUMMARY

|        |     |       |
|--------|-----|-------|
| Item h | 38  | Psia  |
| $P_c$  | 172 | Psia  |
| Q      | 72  | MCF/D |
| $P_w$  | 47  | Psia  |
| $P_d$  | 138 | Psia  |
| D      | 32  | MCF/D |

Company Merrion & Bayless  
By John Anderson  
Title Production Supervisor  
Witnessed By Bob Harris  
Company Fizz's Pumping Service



**MEXICO OIL CONSERVATION COMMISSION**  
**WELL DELIVERABILITY TEST REPORT FOR 19 78**

Form C122-A  
 Revised 1-1-66

|                         |                              |                                   |                           |
|-------------------------|------------------------------|-----------------------------------|---------------------------|
| POOL NAME<br><b>WAW</b> | POOL SLOPE<br>n= <b>0.85</b> | FORMATION<br><b>Picture Cliff</b> | COUNTY<br><b>San Juan</b> |
|-------------------------|------------------------------|-----------------------------------|---------------------------|

|                                                           |                                      |                                                |                                                  |                                                         |                                          |
|-----------------------------------------------------------|--------------------------------------|------------------------------------------------|--------------------------------------------------|---------------------------------------------------------|------------------------------------------|
| COMPANY<br><b>Merrion &amp; Bayless</b>                   |                                      |                                                | WELL NAME AND NUMBER<br><b>Chaco #1</b>          |                                                         |                                          |
| UNIT LETTER<br><b>F</b>                                   | SECTION<br><b>18</b>                 | TOWNSHIP<br><b>26N</b>                         | RANGE<br><b>13W</b>                              | PURCHASING PIPELINE<br><b>Southern Union Supply Co.</b> |                                          |
| CASING O.D. - INCHES<br><b>2.875</b>                      | CASING I.D. - INCHES<br><b>2.441</b> | SET AT DEPTH - FEET<br><b>1340</b>             | TUBING O.D. - INCHES<br><b>1.315</b>             | TUBING I.D. - INCHES<br><b>1.049</b>                    | TOP - TUBING PERF. - FEET<br><b>1120</b> |
| GAS PAY ZONE<br>FROM <b>1113</b> TO <b>1139</b>           |                                      | WELL PRODUCING THRU<br>CASING TUBING <b>XX</b> |                                                  | GAS GRAVITY<br><b>0.640</b>                             | GRAVITY X LENGTH<br><b>717</b>           |
| DATE OF FLOW TEST<br>FROM <b>8-2-78</b> TO <b>8-10-78</b> |                                      |                                                | DATE SHUT-IN PRESSURE MEASURED<br><b>8-18-78</b> |                                                         |                                          |

**PRESSURE DATA - ALL PRESSURES IN PSIA**

|                                                        |                                                            |                                                    |                                                 |                                                      |                                                          |                                                              |
|--------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------|-------------------------------------------------|------------------------------------------------------|----------------------------------------------------------|--------------------------------------------------------------|
| (a) Flowing Casing Pressure (DWt)<br><b>70 PSIA</b>    | (b) Flowing Tubing Pressure (DWt)<br><b>69 PSIA</b>        | (c) Flowing Meter Pressure (DWt)<br><b>68 PSIA</b> | (d) Flow Chart Static Reading<br><b>68 PSIA</b> | (e) Meter Error (Item c - Item d)<br><b>0</b>        | (f) Friction Loss (a - c) or (b - c)<br><b>1 PSIA</b>    | (g) Average Meter Pressure (Integr.)<br><b>71 PSIA</b>       |
| (h) Corrected Meter Pressure (g + e)<br><b>71 PSIA</b> | (i) Avg. Wellhead Press. $P_i = (h + f)$<br><b>72 PSIA</b> | (j) Shut-in Casing Pressure (DWt)<br><b>185</b>    | (k) Shut-in Tubing Pressure (DWt)<br><b>183</b> | (l) $P_c$ = higher value of (j) or (k)<br><b>185</b> | (m) Del. Pressure $P_d = \frac{80}{\%P_c}$<br><b>148</b> | (n) Separator or Dehydrator Pr. (DWt) for critical flow only |

**FLOW RATE CORRECTION (METER ERROR)**

|                                        |                                                                 |                                                            |                                         |
|----------------------------------------|-----------------------------------------------------------------|------------------------------------------------------------|-----------------------------------------|
| Integrated Volume - MCF/D<br><b>61</b> | Quotient of $\frac{\text{Item c}}{\text{Item d}}$<br><b>1.0</b> | $\sqrt{\frac{\text{Item c}}{\text{Item d}}}$<br><b>1.0</b> | Corrected Volume<br>Q = <b>61</b> MCF/D |
|----------------------------------------|-----------------------------------------------------------------|------------------------------------------------------------|-----------------------------------------|

**WORKING PRESSURE CALCULATION**

|                                |                                      |                                                       |                        |                                      |                                   |
|--------------------------------|--------------------------------------|-------------------------------------------------------|------------------------|--------------------------------------|-----------------------------------|
| $(1 - e^{-R})$<br><b>.0508</b> | $(F_c Q_m)^2 (1000)$<br><b>9,452</b> | $R^2 = (1 - e^{-R}) (F_c Q_m)^2 (1000)$<br><b>480</b> | $P_i^2$<br><b>5184</b> | $P_w^2 = P_i^2 + R^2$<br><b>5664</b> | $P_w = \sqrt{P_w^2}$<br><b>75</b> |
|--------------------------------|--------------------------------------|-------------------------------------------------------|------------------------|--------------------------------------|-----------------------------------|

**DELIVERABILITY CALCULATION**

|                                                                          |                                                       |                  |                     |
|--------------------------------------------------------------------------|-------------------------------------------------------|------------------|---------------------|
| $D = Q \left[ \frac{P_c^2 - P_d^2}{P_c^2 - P_w^2} \right]^n =$ <b>61</b> | $\left[ \frac{12321}{28600} \right]^n =$ <b>.4308</b> | $=$ <b>.4888</b> | $=$ <b>30</b> MCF/D |
|--------------------------------------------------------------------------|-------------------------------------------------------|------------------|---------------------|

REMARKS:

SUMMARY

Item h 71 Psia  
 $P_c$  185 Psia  
 Q 61 MCF/D  
 $P_w$  75 Psia  
 $P_d$  148 Psia  
 D 30 MCF/D

Company Merrion & Bayless  
 By [Signature]  
 Title Engineer  
 Witnessed By Merle Ellsaeser  
 Company Fizz's Pumping Service

# MEXICO OIL CONSERVATION COMMISS. WELL DELIVERABILITY TEST REPORT FOR 19 77

Form C122-A  
Revised 1-1-66

|                          |                              |                                   |                           |
|--------------------------|------------------------------|-----------------------------------|---------------------------|
| POOL NAME<br><b>NIPP</b> | POOL SLOPE<br>n= <b>0.85</b> | FORMATION<br><b>Picture Cliff</b> | COUNTY<br><b>San Juan</b> |
|--------------------------|------------------------------|-----------------------------------|---------------------------|

|                                                            |                                       |                                               |                                                 |                                                         |                                               |
|------------------------------------------------------------|---------------------------------------|-----------------------------------------------|-------------------------------------------------|---------------------------------------------------------|-----------------------------------------------|
| COMPANY<br><b>Merrion &amp; Bayless</b>                    |                                       |                                               | WELL NAME AND NUMBER<br><b>Chaco #1</b>         |                                                         |                                               |
| UNIT LETTER<br><b>F</b>                                    | SECTION<br><b>18</b>                  | TOWNSHIP<br><b>26N</b>                        | RANGE<br><b>12W</b>                             | PURCHASING PIPELINE<br><b>Southern Union Supply Co.</b> |                                               |
| CASING O.D. - INCHES<br><b>2.875"</b>                      | CASING I.D. - INCHES<br><b>2.441"</b> | SET AT DEPTH - FEET<br><b>1340</b>            | TUBING O.D. - INCHES<br><b>no tubing</b>        | TUBING I.D. - INCHES<br><b>no tubing</b>                | TOP - TUBING PERF. - FEET<br><b>no tubing</b> |
| GAS PAY ZONE<br>FROM <b>1113</b> TO <b>1139</b>            |                                       | WELL PRODUCING THRU<br>CASING <b>X</b> TUBING |                                                 | GAS GRAVITY<br><b>.640</b>                              | GRAVITY X LENGTH<br><b>720.64</b>             |
| DATE OF FLOW TEST<br>FROM <b>7-17-77</b> TO <b>7-25-77</b> |                                       |                                               | DATE SHUT-IN PRESSURE MEASURED<br><b>8-1-77</b> |                                                         |                                               |

## PRESSURE DATA - ALL PRESSURES IN PSIA

| (a) Flowing Casing Pressure (DWt)    | (b) Flowing Tubing Pressure (DWt)        | (c) Flowing Meter Pressure (DWt)  | (d) Flow Chart Static Reading     | (e) Meter Error (Item c - Item d)      | (f) Friction Loss (a - c) or (b - c)              | (g) Average Meter Pressure (Integr.)                         |
|--------------------------------------|------------------------------------------|-----------------------------------|-----------------------------------|----------------------------------------|---------------------------------------------------|--------------------------------------------------------------|
| <b>72 PSIA</b>                       | <b>none</b>                              | <b>70 PSIA</b>                    | <b>70 PSIA</b>                    | <b>0</b>                               | <b>2 PSIA</b>                                     | <b>74 PSIA</b>                                               |
| (h) Corrected Meter Pressure (g + e) | (i) Avg. Wellhead Press. $P_t = (h + f)$ | (j) Shut-in Casing Pressure (DWt) | (k) Shut-in Tubing Pressure (DWt) | (l) $P_c$ = higher value of (j) or (k) | (m) Del. Pressure $P_d = \frac{80}{185.6} \% P_c$ | (n) Separator or Dehydrator Pr. (DWt) for critical flow only |
| <b>74 PSIA</b>                       | <b>76 PSIA</b>                           | <b>232 PSIA</b>                   | <b>none</b>                       | <b>232 PSIA</b>                        | <b>185.6</b>                                      |                                                              |

## FLOW RATE CORRECTION (METER ERROR)

| Integrated Volume - MCF/D | Quotient of $\frac{\text{Item c}}{\text{Item d}}$ | $\sqrt{\frac{\text{Item c}}{\text{Item d}}}$ | Corrected Volume    |
|---------------------------|---------------------------------------------------|----------------------------------------------|---------------------|
| <b>89</b>                 | <b>1.0</b>                                        | <b>1.0</b>                                   | Q = <b>89</b> MCF/D |

## WORKING PRESSURE CALCULATION

| $(1 - e^{-x})$ | $(F_c Q_m)^2 (1000)$ | $R^2 = (1 - e^{-x}) (F_c Q_m)^2 (1000)$ | $P_t^2$      | $P_w^2 = P_t^2 + R^2$ | $P_w = \sqrt{P_w^2}$ |
|----------------|----------------------|-----------------------------------------|--------------|-----------------------|----------------------|
| <b>.0524</b>   | <b>244.07</b>        | <b>12.79</b>                            | <b>5,776</b> | <b>5,789</b>          | <b>76.1</b>          |

## DELIVERABILITY CALCULATION

$$D = Q \left[ \frac{P_c^2 - P_d^2}{P_c^2 - P_w^2} \right]^n = \frac{89}{\left[ \frac{19376.64}{48032.79} \right]^n \left( \frac{.4034}{.4623} \right)^n} = \frac{41}{\text{MCF/D}}$$

REMARKS:

## SUMMARY

Item h 74 Psia  
 $P_c$  232 Psia  
 Q 89 MCF/D  
 $P_w$  76.1 Psia  
 $P_d$  185.6 Psia  
 D 41 MCF/D

Company Merrion & Bayless  
 By Steven J. Harris  
 Title Engineer  
 Witnessed By J. C. Harris  
 Company Fizz's Pumping Service

| SUGGESTED FIELD DATA SHEET (Not Required To File) |  |                                                                                                              |  |                               |  |                          |  |
|---------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------|--|-------------------------------|--|--------------------------|--|
| Type Test                                         |  | <input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special |  | Test Date                     |  | Lease No. or Serial No.  |  |
| Company                                           |  | Connection                                                                                                   |  |                               |  | Allottee                 |  |
| Field                                             |  | Reservoir                                                                                                    |  | Location                      |  | Unit                     |  |
| MEERION & BAYLES                                  |  | PICTURE CLIFF                                                                                                |  |                               |  |                          |  |
| Completion Date                                   |  | Total Depth                                                                                                  |  | Plug Back TD                  |  | Elevation                |  |
|                                                   |  |                                                                                                              |  |                               |  |                          |  |
| Csq. Size                                         |  | Wt.                                                                                                          |  | Set At                        |  | Perforations: From To    |  |
| 2 7/8"                                            |  | 6.5 lb/ft                                                                                                    |  |                               |  |                          |  |
| Tbq. Size                                         |  | Wt.                                                                                                          |  | Set At                        |  | Perforations: From To    |  |
|                                                   |  |                                                                                                              |  |                               |  |                          |  |
| Type Completion (Describe)                        |  |                                                                                                              |  | Packer Set At                 |  | Farm or Lease Name       |  |
| NATURAL                                           |  |                                                                                                              |  |                               |  | CHACO                    |  |
| Producing Thru                                    |  |                                                                                                              |  | Reservoir Temp. F             |  | Well No.                 |  |
|                                                   |  |                                                                                                              |  |                               |  | CHACO #1                 |  |
| Mean Annual Temp. F                               |  |                                                                                                              |  | Baro. Press. - P <sub>a</sub> |  | Sec. Twp.-Blk. Rge.-Sur. |  |
|                                                   |  |                                                                                                              |  |                               |  | 18 26N 12W               |  |
|                                                   |  |                                                                                                              |  |                               |  | County or Parish         |  |
|                                                   |  |                                                                                                              |  |                               |  | SAN JUAN                 |  |
|                                                   |  |                                                                                                              |  |                               |  | State                    |  |
|                                                   |  |                                                                                                              |  |                               |  | NEW MEXICO               |  |
| L                                                 |  | H                                                                                                            |  | G <sub>g</sub>                |  | % CO <sub>2</sub>        |  |
|                                                   |  |                                                                                                              |  |                               |  |                          |  |
|                                                   |  |                                                                                                              |  |                               |  | % N <sub>2</sub>         |  |
|                                                   |  |                                                                                                              |  |                               |  | % H <sub>2</sub> S       |  |
|                                                   |  |                                                                                                              |  |                               |  | Prover                   |  |
|                                                   |  |                                                                                                              |  |                               |  | 2"                       |  |
|                                                   |  |                                                                                                              |  |                               |  | Meter Run                |  |
|                                                   |  |                                                                                                              |  |                               |  | Taps                     |  |

| DATE  | ELAP. TIME | Wellhead Working Pressure |            |         | METER OR PROVER |       |         |         | REMARKS                                                         |
|-------|------------|---------------------------|------------|---------|-----------------|-------|---------|---------|-----------------------------------------------------------------|
|       |            | Tbq. Psig.                | Csq. Psig. | Temp. F | Pressure Psig.  | Diff. | Temp. F | Orifice |                                                                 |
|       |            |                           |            |         |                 |       |         |         | (Include liquid production data:)<br>Type—A.P.I. Gravity—Amount |
|       |            | WELL SHUT-IN 7 DAYS       |            |         |                 |       |         |         |                                                                 |
| 11:35 |            |                           | 231        |         |                 |       |         |         | SHUT IN PRESSURE                                                |
|       |            | 2" PROVER INSTALLED       |            |         |                 |       |         |         |                                                                 |
| 11:48 | 0          | —                         |            |         | 220             | —     | 58°     | 3/8"    | SHUT-IN PRESSURE                                                |
| 12:03 | .25        |                           |            |         | 89              |       | 58°     | "       | GAS DRY                                                         |
| 12:18 | .50        |                           |            |         | 83              |       | 58°     | "       | DRY                                                             |
| 12:33 | .75        |                           |            |         | 81              |       | 58°     | "       | 1ST PT.                                                         |
| 12:33 |            |                           |            |         |                 |       |         | 1/2"    | SHUT-IN TO CHNG. PLATE                                          |
| 12:35 | 0          |                           |            |         | —               |       | 58.5    | "       | OPEN                                                            |
| 12:50 | .25        |                           |            |         | 47              |       | 58.5    | "       | GAS DRY                                                         |
| 1:05  | .50        |                           |            |         | 46              |       | 59°     | "       | 2ND PT                                                          |
| 1:09  |            |                           |            |         |                 |       |         | 3/4"    | SHUT-IN TO CHNG. PLATE                                          |
| 1:11  | 0          |                           |            |         | —               |       | 59°     | "       | OPEN                                                            |
| 1:26  | .25        |                           |            |         | 19              |       | 59°     | "       | GAS DRY                                                         |
| 1:41  | .50        |                           |            |         | 18.5            |       | 59°     | "       | 3RD PT                                                          |
| 1:41  |            |                           |            |         |                 |       |         | 1/4"    | SHUT-IN TO CHNG. PLATE                                          |
| 1:42  | 0          |                           |            |         |                 |       | 59.5    | "       | OPEN                                                            |
| 1:57  | .25        |                           |            |         | 131             |       | 60°     | "       | GAS DRY                                                         |
| 2:12  | .50        |                           |            |         | 131             |       | 60°     |         | 4TH PT                                                          |
| 2:13  |            |                           |            |         |                 |       |         |         | OPEN TO CONDITION FOR BUILD-UP.                                 |
|       |            |                           | SIP        |         |                 |       |         |         |                                                                 |
| 2:15  | 0          |                           | 0          |         |                 |       | 60°     |         | SHUT-IN                                                         |
| 2:16  |            |                           | 80         |         |                 |       | 60°     |         |                                                                 |
| 17    |            |                           | 130        |         |                 |       | 60°     |         |                                                                 |
| 18    |            |                           | 161        |         |                 |       | 60°     |         |                                                                 |
| 19    |            |                           | 179        |         |                 |       | 60°     |         |                                                                 |

| SUGGESTED FIELD DATA SHEET (Not Required To File)                                                              |     |                   |                   |                     |                         |                                          |
|----------------------------------------------------------------------------------------------------------------|-----|-------------------|-------------------|---------------------|-------------------------|------------------------------------------|
| Type Test<br><input type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special |     |                   | Test Date         |                     | Lease No. or Serial No. |                                          |
| Company                                                                                                        |     |                   | Connection        |                     |                         | Allottee                                 |
| Field                                                                                                          |     | Reservoir         |                   | Location            |                         | Unit                                     |
| Completion Date                                                                                                |     | Total Depth       |                   | Plug Back TD        |                         | Elevation                                |
| Farm or Lease Name                                                                                             |     |                   |                   |                     |                         |                                          |
| Csg. Size                                                                                                      | Wt. | d                 | Set At            | Perforations: From  | To                      | Well No.                                 |
| Tbq. Size                                                                                                      | Wt. | d                 | Set At            | Perforations: From  | To                      | Sec. <i>CHACD #1</i> Twp.-Blk. Rge.-Sur. |
| Type Completion (Describe)                                                                                     |     |                   |                   |                     | Packer Set At           | County or Parish                         |
| Producing Thru                                                                                                 |     | Reservoir Temp. F |                   | Mean Annual Temp. F |                         | Baro. Press. - P <sub>a</sub>            |
| State                                                                                                          |     |                   |                   |                     |                         |                                          |
| L                                                                                                              | H   | G <sub>g</sub>    | % CO <sub>2</sub> | % N <sub>2</sub>    | % H <sub>2</sub> S      | Prover      Meter Run      Taps          |

Page \_\_\_\_\_ of \_\_\_\_\_ Data By \_\_\_\_\_

**MEXICO OIL CONSERVATION COMMISSION**  
**MULTIPOINT ONE POINT BACK PRESSURE TEST FOR GAS WELL**

Form C-122  
Revised 9-1-65

|                                                                                                                                                                                                                                                                |                          |                                   |                            |                                        |                                                                                                                                                                                                                                                                                                      |                                                       |                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------------------------|----------------------------|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-------------------------|
| Type Test<br><input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special                                                                                                                                      |                          |                                   |                            |                                        |                                                                                                                                                                                                                                                                                                      | Test Date<br>03-30-77                                 |                         |
| Company<br>Merrion & Bayless                                                                                                                                                                                                                                   |                          |                                   |                            | Connection                             |                                                                                                                                                                                                                                                                                                      |                                                       |                         |
| Pool<br>N.I.I.P.                                                                                                                                                                                                                                               |                          |                                   |                            | Formation<br>Picture Cliff             |                                                                                                                                                                                                                                                                                                      | Unit                                                  |                         |
| Completion Date<br>03-03-77                                                                                                                                                                                                                                    |                          | Total Depth<br>1350'              |                            | Plug Back TD<br>1187'                  |                                                                                                                                                                                                                                                                                                      | Elevation<br>5989'                                    |                         |
| Csg. Size<br>2-7/8"                                                                                                                                                                                                                                            |                          | Wt.<br>6.5#/ft.                   |                            | Set At<br>1340'                        |                                                                                                                                                                                                                                                                                                      | Perforations:<br>From 1113' To 1139'                  |                         |
| Tbg. Size                                                                                                                                                                                                                                                      |                          | Wt.                               |                            | Set At                                 |                                                                                                                                                                                                                                                                                                      | Perforations:<br>From To                              |                         |
| Type Well - Single - Bradenhead - G.C. or G.O. Multiple<br>Single (no tubing)                                                                                                                                                                                  |                          |                                   |                            |                                        |                                                                                                                                                                                                                                                                                                      | Packer Set At                                         |                         |
| Producing Thru<br>Casing                                                                                                                                                                                                                                       |                          | Reservoir Temp. °F<br>76.9° 1126' |                            | Mean Annual Temp. °F<br>50°F           |                                                                                                                                                                                                                                                                                                      | Baro. Press. - P <sub>g</sub><br>12.2 PSIA            |                         |
| L<br>1126                                                                                                                                                                                                                                                      |                          | H<br>1126                         |                            | G <sub>g</sub><br>0.65 est.            |                                                                                                                                                                                                                                                                                                      | % CO <sub>2</sub> % N <sub>2</sub> % H <sub>2</sub> S |                         |
|                                                                                                                                                                                                                                                                |                          |                                   |                            |                                        |                                                                                                                                                                                                                                                                                                      | Prover<br>2"                                          |                         |
|                                                                                                                                                                                                                                                                |                          |                                   |                            |                                        |                                                                                                                                                                                                                                                                                                      | Meter Run    Taps                                     |                         |
| FLOW DATA                                                                                                                                                                                                                                                      |                          |                                   |                            | TUBING DATA                            |                                                                                                                                                                                                                                                                                                      | CASING DATA                                           |                         |
| NO.                                                                                                                                                                                                                                                            | Prover<br>Line<br>Size   | X                                 | Orifice<br>Size            | Press.<br>p.s.i.g.                     | Diff.<br>h <sub>w</sub>                                                                                                                                                                                                                                                                              | Temp.<br>°F                                           | Press.<br>p.s.i.g.      |
| SI                                                                                                                                                                                                                                                             | 7 days                   |                                   |                            |                                        |                                                                                                                                                                                                                                                                                                      |                                                       |                         |
| 1.                                                                                                                                                                                                                                                             | 2"                       |                                   | 3/4"                       | 16 PSIG                                |                                                                                                                                                                                                                                                                                                      |                                                       |                         |
| 2.                                                                                                                                                                                                                                                             |                          |                                   |                            |                                        |                                                                                                                                                                                                                                                                                                      |                                                       |                         |
| 3.                                                                                                                                                                                                                                                             |                          |                                   |                            |                                        |                                                                                                                                                                                                                                                                                                      |                                                       |                         |
| 4.                                                                                                                                                                                                                                                             |                          |                                   |                            |                                        |                                                                                                                                                                                                                                                                                                      |                                                       |                         |
| 5.                                                                                                                                                                                                                                                             |                          |                                   |                            |                                        |                                                                                                                                                                                                                                                                                                      |                                                       |                         |
| RATE OF FLOW CALCULATIONS                                                                                                                                                                                                                                      |                          |                                   |                            |                                        |                                                                                                                                                                                                                                                                                                      |                                                       |                         |
| NO.                                                                                                                                                                                                                                                            | Coefficient<br>(24 Hour) | $\sqrt{h_w P_m}$                  | Pressure<br>P <sub>m</sub> | Flow Temp.<br>Factor<br>F <sub>t</sub> | Gravity<br>Factor<br>F <sub>g</sub>                                                                                                                                                                                                                                                                  | Super<br>Compress.<br>Factor, F <sub>pv</sub>         | Rate of Flow<br>Q, Mcfd |
| 1.                                                                                                                                                                                                                                                             | 9.453                    |                                   | 29.2                       | 1.0005                                 | 1.240                                                                                                                                                                                                                                                                                                | 1.003                                                 | 344                     |
| 2.                                                                                                                                                                                                                                                             |                          |                                   |                            |                                        |                                                                                                                                                                                                                                                                                                      |                                                       |                         |
| 3.                                                                                                                                                                                                                                                             |                          |                                   |                            |                                        |                                                                                                                                                                                                                                                                                                      |                                                       |                         |
| 4.                                                                                                                                                                                                                                                             |                          |                                   |                            |                                        |                                                                                                                                                                                                                                                                                                      |                                                       |                         |
| 5.                                                                                                                                                                                                                                                             |                          |                                   |                            |                                        |                                                                                                                                                                                                                                                                                                      |                                                       |                         |
| NO.                                                                                                                                                                                                                                                            | P <sub>r</sub>           | Temp. °R                          | T <sub>r</sub>             | Z                                      | Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.<br>A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.<br>Specific Gravity Separator Gas _____ X X X X X X X X<br>Specific Gravity Flowing Fluid _____ X X X X X<br>Critical Pressure _____ P.S.I.A. _____ P.S.I.A.<br>Critical Temperature _____ R _____ R |                                                       |                         |
| 1.                                                                                                                                                                                                                                                             |                          |                                   |                            |                                        |                                                                                                                                                                                                                                                                                                      |                                                       |                         |
| 2.                                                                                                                                                                                                                                                             |                          |                                   |                            |                                        |                                                                                                                                                                                                                                                                                                      |                                                       |                         |
| 3.                                                                                                                                                                                                                                                             |                          |                                   |                            |                                        |                                                                                                                                                                                                                                                                                                      |                                                       |                         |
| 4.                                                                                                                                                                                                                                                             |                          |                                   |                            |                                        |                                                                                                                                                                                                                                                                                                      |                                                       |                         |
| 5.                                                                                                                                                                                                                                                             |                          |                                   |                            |                                        |                                                                                                                                                                                                                                                                                                      |                                                       |                         |
| P <sub>c</sub> 243.2    P <sub>c</sub> <sup>2</sup> 59146<br>NO    P <sub>r</sub> <sup>2</sup> P <sub>w</sub> P <sub>w</sub> <sup>2</sup> P <sub>c</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup><br>1    942    34.2    1,167    57,979<br>2<br>3<br>4<br>5 |                          |                                   |                            |                                        | (1) $\frac{P_c^2}{P_c^2 - P_w^2} = \frac{59,146}{57,979} = 1.020 \left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.017$<br><br>AOF = Q $\left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 350 \text{ MCF/day}$                                                                                           |                                                       |                         |
| Absolute Open Flow _____ 350 _____ Mcfd @ 15.025                                                                                                                                                                                                               |                          |                                   |                            |                                        | Angle of Slope θ _____                                                                                                                                                                                                                                                                               |                                                       | Slope, n _____ 0.85     |
| Remarks: _____                                                                                                                                                                                                                                                 |                          |                                   |                            |                                        |                                                                                                                                                                                                                                                                                                      |                                                       |                         |
| Approved By Commission:                                                                                                                                                                                                                                        |                          | Conducted By:<br>Steven S. Dunn   |                            | Calculated By:<br>Steven S. Dunn       |                                                                                                                                                                                                                                                                                                      | Checked By:<br>Robert L. Bayless                      |                         |

Log-0212177



# BIRDWELL

## Electric Log

COMPANY MERRION & BAYLESS

WELL CHACO #1

FIELD NIIP - PICTURED CLIFFS

COUNTY SAN JUAN STATE NEW MEXICO

LOCATION: 1846' FNL  
1806' FWL

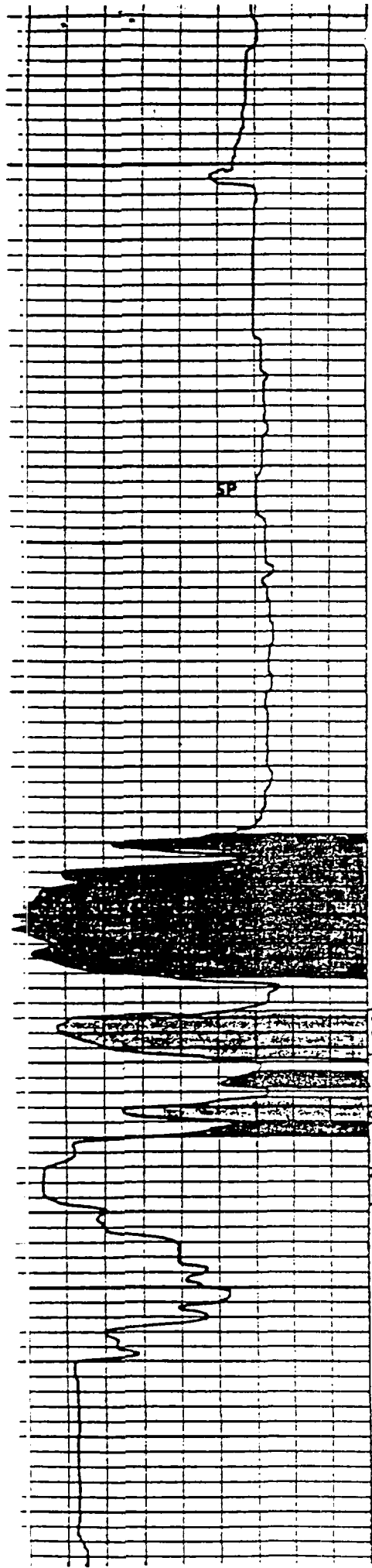
OTHER SERVICES:  
GR-  
FDL V3D

SEC. 18 TWP. 26N RGE. 12W

PERMANENT DATUM GROUND LEVEL ELEV. 5989'  
LOG MEASURED FROM GL 0 FT. ABOVE PERM. DATUM  
DRILLING MEASURED FROM GROUND LEVEL

ELEV. K.B. N/A  
D.F. N/A  
G.L. 5989'

|                    |                 |        |      |      |      |
|--------------------|-----------------|--------|------|------|------|
| DATE               | 22 FEB. 77      |        |      |      |      |
| RUN NO.            | ONE             |        |      |      |      |
| DEPTH-DRILLER      | 1350'           |        |      |      |      |
| DEPTH-LOGGER       | 1341'           |        |      |      |      |
| BTM. LOG INTER.    | 1338'           |        |      |      |      |
| TOP LOG INTER.     | 100'            |        |      |      |      |
| CASING-DRILLER     | 5-1/2@ 40       | @      | @    | @    | @    |
| CASING-LOGGER      | 40              |        |      |      |      |
| BIT SIZE           | 4-3/4"          |        |      |      |      |
| TYPE FLUID IN HOLE | WATER           |        |      |      |      |
| LIQUID LEVEL       | 100             |        |      |      |      |
| DENS.              | VISC.           | 14.8   |      |      |      |
| pH                 | FLUID LOSS      | 18.6ml | ml   | ml   | ml   |
| SOURCE OF SAMPLE   | PIT             |        |      |      |      |
| Rm@MEAS.TEMP.      | 6.0 @ 54 °F     | @ °F   | @ °F | @ °F | @ °F |
| Rmf@MEAS.TEMP.     | 4.5 @ 56 °F     | @ °F   | @ °F | @ °F | @ °F |
| Rmc@MEAS.TEMP.     | 2.2 @ 64 °F     | @ °F   | @ °F | @ °F | @ °F |
| SOURCE Rmf. Rmc    | PRESS           |        |      |      |      |
| Rm @ B.H.T.        | 4.2 @ 79 °F     | @ °F   | @ °F | @ °F | @ °F |
| TIME SINCE CIRC.   | 2 HOURS         |        |      |      |      |
| MAX. REC. TEMP.    | 78 °F           | °F     | °F   | °F   | °F   |
| EQUIP. LOCATION    | 3005 FARMINGTON |        |      |      |      |
| RECORDED BY        | MARTIN          |        |      |      |      |
| WITNESSED BY       | MR. DUNN        |        |      |      |      |

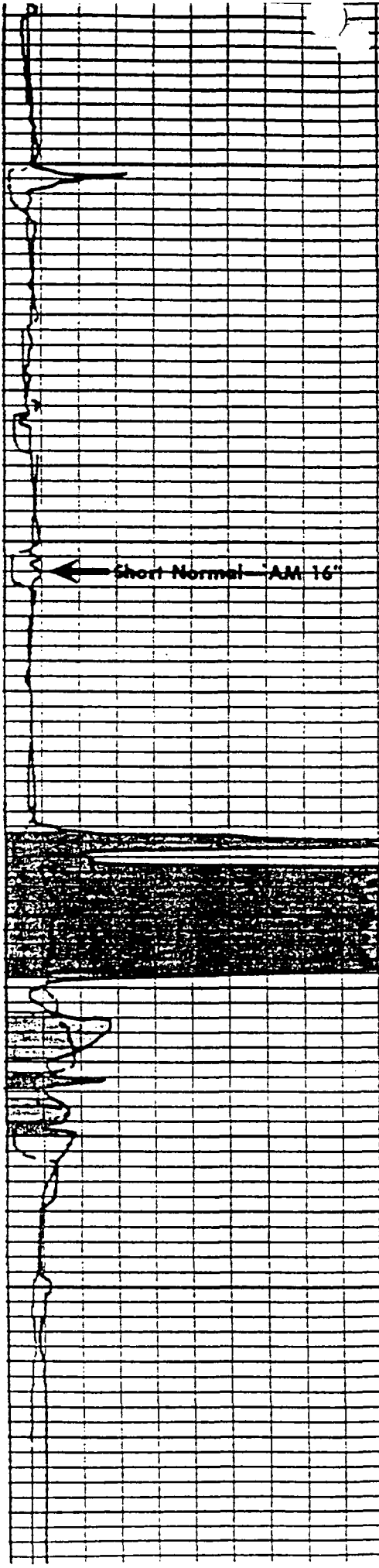


1000

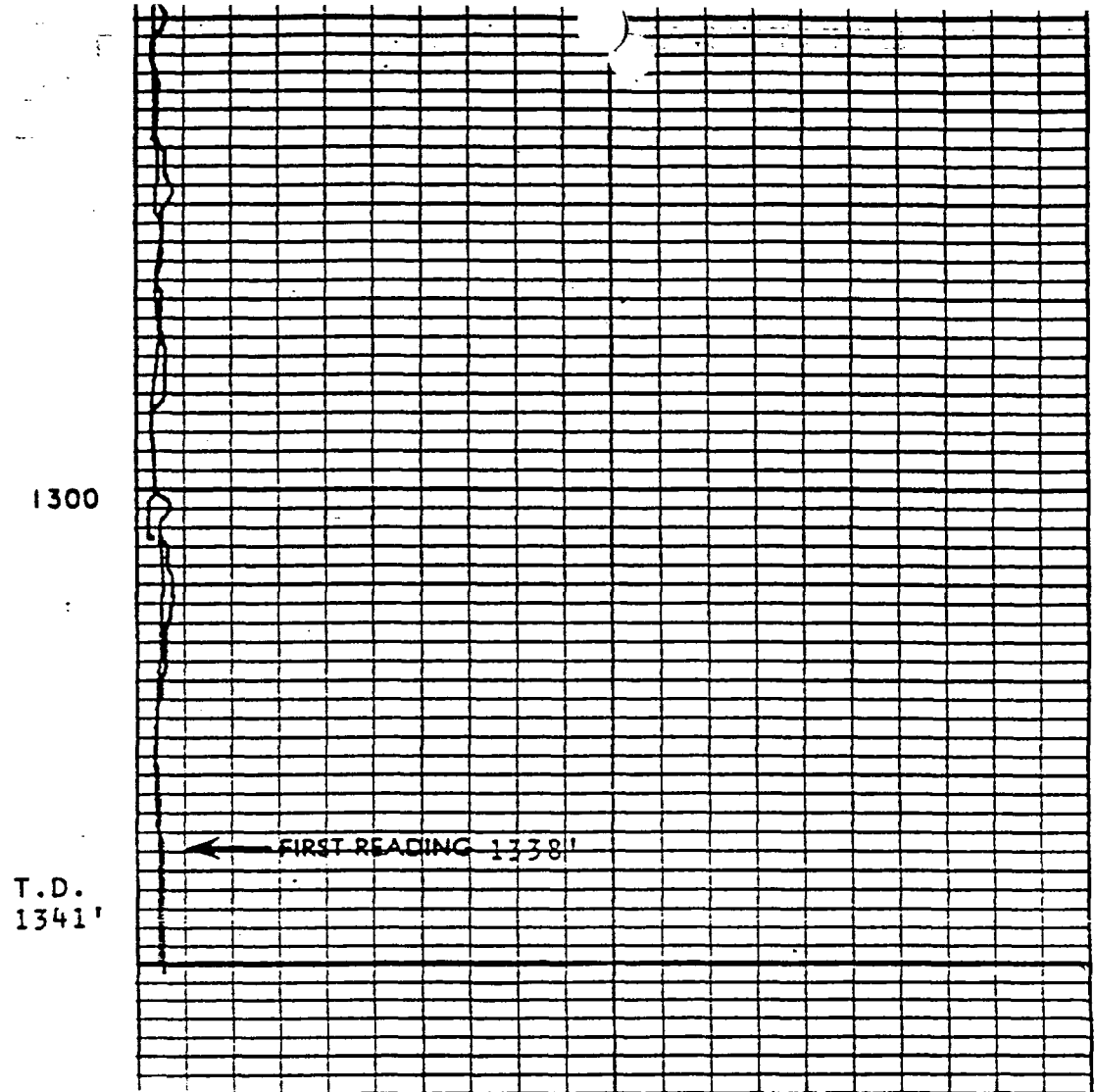
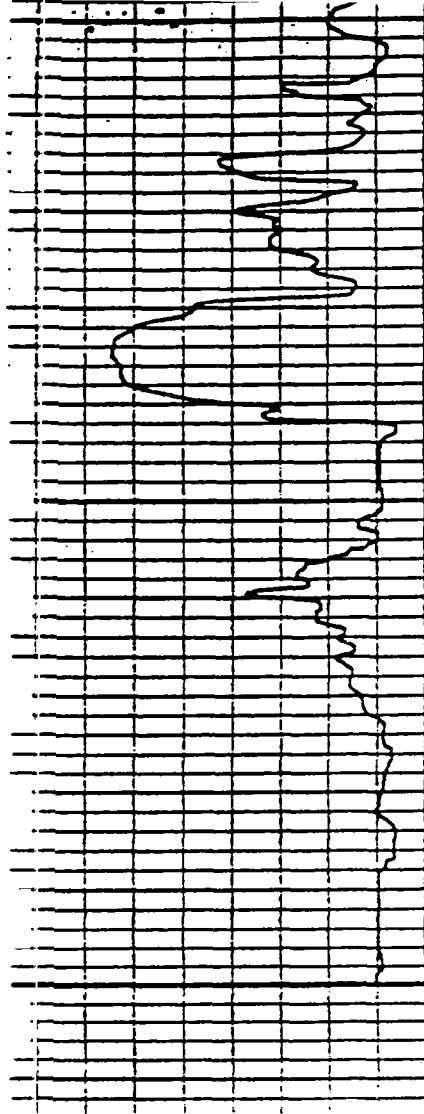
SP

IPF  
312mcf  
NAT.

1100



← Short Normal - AM 16



| <p>10</p> <p>-   ↔   +</p>          |       | <p>0 ----- 100</p> <p>0 ----- 1000</p> <p>0 ----- 100</p> <p>0 ----- 1000</p> |                                       |
|-------------------------------------|-------|-------------------------------------------------------------------------------|---------------------------------------|
| SPONTANEOUS-POTENTIAL<br>MILLIVOLTS | DEPTH | RESISTIVITY<br>OHMS M <sup>2</sup> /M                                         | RESISTIVITY<br>OHMS M <sup>2</sup> /M |

CALIBRATION DATA



**CALIBRATION BEFORE SURVEY**



# BIRDWELL

## Gamma-Ray Density

COMPANY MERRION & BAYLESS

WELL CHACO #1

FIELD NIIP - PICTURED CLIFFS

COUNTY SAN JUAN STATE NEW MEXICO

LOCATION:

1846' FNL

1806' FWL

OTHER SERVICES

IES V3D

SEC. 18

TWP. 26N

RGE. 12W

PERMANENT DATUM GROUND LEVEL, ELEV. 5989'

ELEV. K.B. N/A

LOG MEASURED FROM GL, 0 Ft. Above Perm. Datum

D.F. N/A

DRILLING MEASURED FROM GROUND LEVEL

G.L. 5989'

DATE

22 FEB. 77

RUN NO.

ONE

TYPE LOG

GR-FDL

DEPTH - DRILLER

1350'

DEPTH - LOGGER

1341'

BTM. LOG. INTER.

1338'

TOP LOG. INTER.

40'

TYPE FLUID IN HOLE

WATER

SALINITY PPM CL

N/A

DENSITY LB./GAL

N/A

LEVEL

100'

MAX. REC. TEMP. - °F

79°

OPER. RIG TIME

3 HOURS

RECORDED BY

MARTIN

WITNESSED BY

MR. DUNN

LOCATION

FARMINGTON

RUN NO.

BORE HOLE RECORD

CASING RECORD

ONE

BIT

FROM

TO

SIZE

WGT.

FROM

TO

ONE

4-3/4"

40'

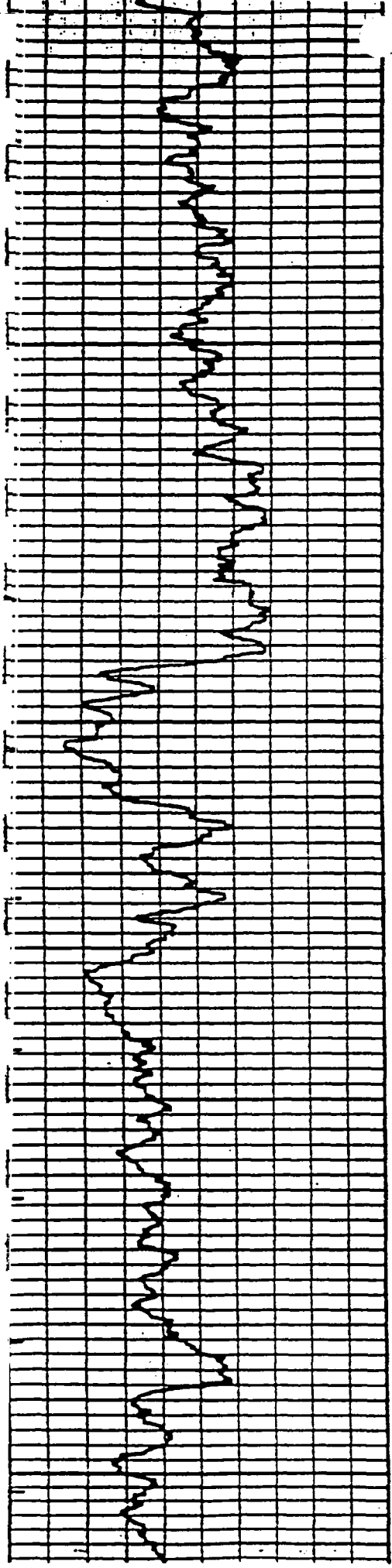
1350'

5-1/2"

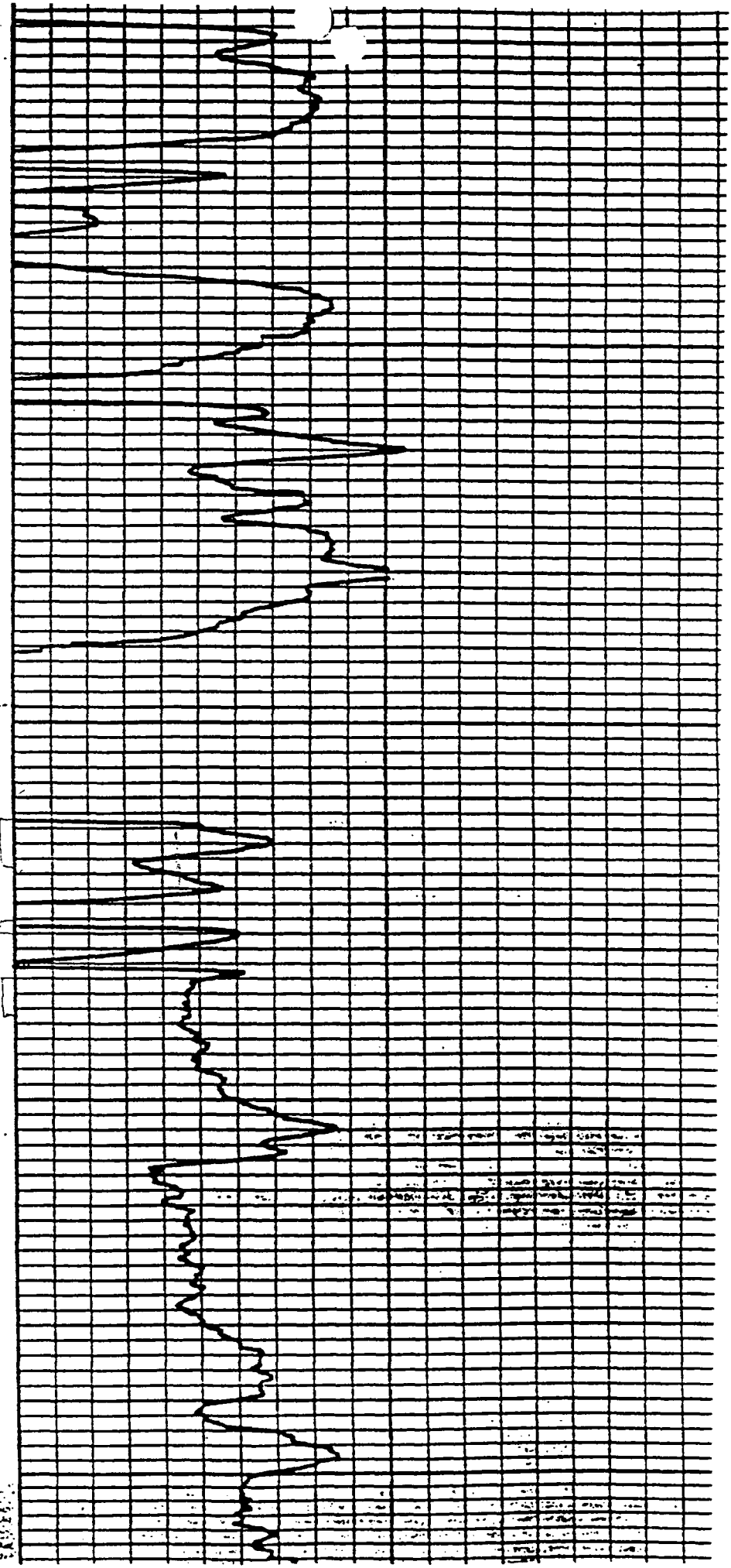
N/A

SURFACE

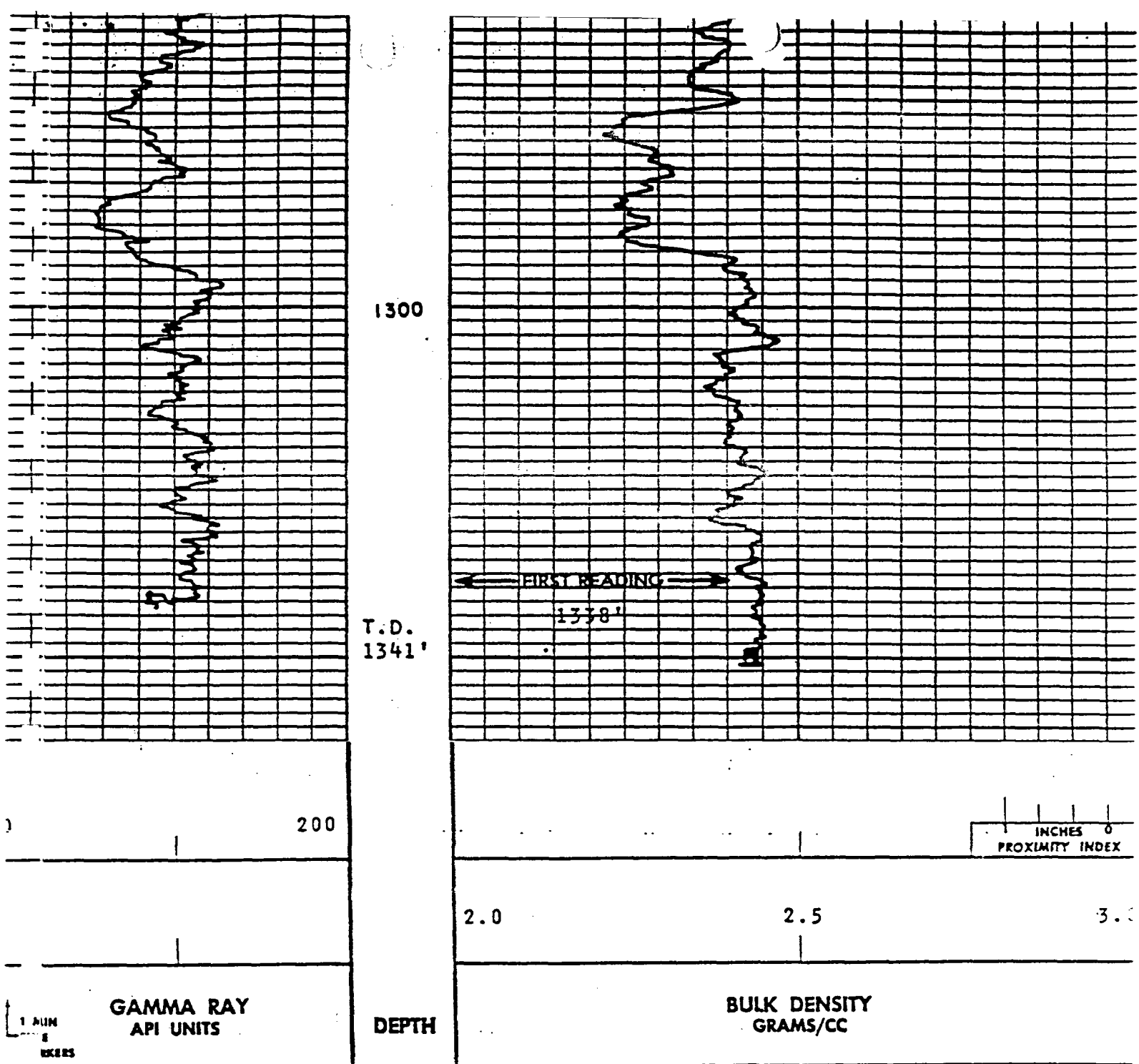
40'



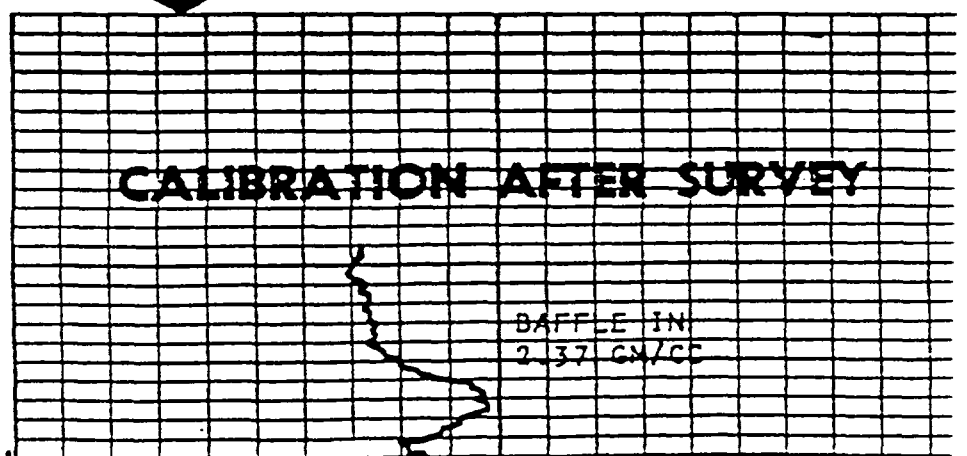
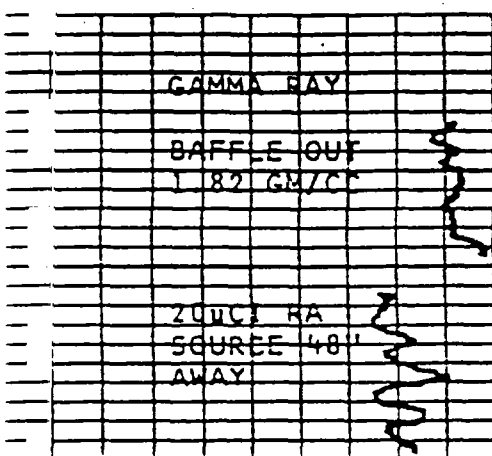
1100



1200



### CALIBRATION DATA



**DUANE**

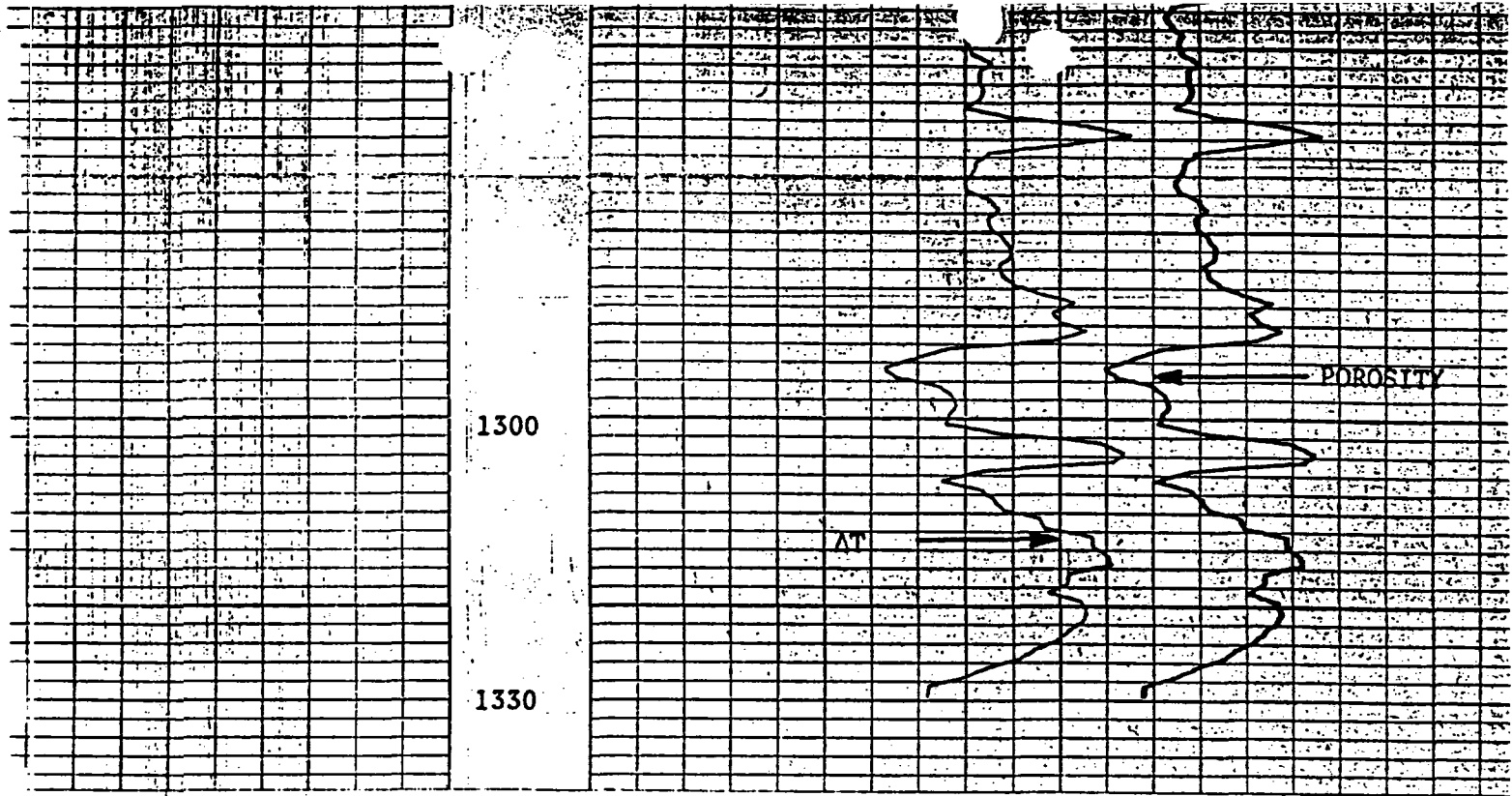
**G.I. 598**

[illegible][illegible]

**TULSA, OKLA**

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|  |  |  |  |

[illegible]



**Fracturing  
Information**

CHAD - 1  
SENM, Sp. IN - 120N - RLEM

Fracturing Information

**PostHoc  
Treatment Study** /

# THE WESTERN COMPANY

## POSTFRAC TREATMENT SUMMARY

J. K. EDWARDS  
CHACO #1  
SEC.18,T26N,R12W  
SAN JUAN COUNTY, NM  
*PICTURED CLIFFS FORMATION*

JANUARY 27, 1995  
FARMINGTON, NM  
(505) 327-6222

1995 WCNA STIMULATION SERVICES

DATE: January 27, 1995

J.K. Edwards (Walsh Eng.)  
1331 17th St.  
Denver, Colo. 80202

Re: Treatment Summary  
Chaco #1  
Sec.18,T26N,R12W  
San Juan County, NM  
Pictured Cliffs Formation

This Treatment Summary contains information that was gathered through The Western Company's real time data acquisition system. The stimulation treatment on the above referenced well was performed by our Farmington District.

The information presented consists of the well data, proposed vs actual treatment, treatment graphs, and treatment data.

Thank you for giving us the opportunity to evaluate this treatment. If you have any questions or comments, please call me at (505) 327-6222.

Sincerely,

  
Loren L. Dieder  
District Engineer

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# SECTION 1

WELL DATA

WELL DATA  
\*\*\*\*\*

|                                |                                   |
|--------------------------------|-----------------------------------|
| Operator:                      | J.K. Edwards (Walsh Eng.)         |
| Well:                          | Chaco #1                          |
| Formation:                     | Pictured Cliffs                   |
| Location:                      | Sec.18,T26N,R12W                  |
| Perforated Interval:           | 1,113'- 1,139'                    |
| Depth to Middle Perforation:   | 1,126'                            |
| Number of Perforations:        | 52                                |
| Perforation Size:              | .50"                              |
| Tubing/Casing:                 | 2 7/8" 6.5# / 4 1/2" 10.5# CASING |
| Frac Gradient:                 | 0.65 PSI/FT                       |
| Bottom Hole Fracture Pressure: | 732 PSI                           |
| Bottom Hole Temperature:       | 90 DEG. F.                        |
| Net Fracture Height:           | 26' (Estimated)                   |

## SECTION 2

PROPOSED VS ACTUAL  
TREATMENT

PROPOSED TREATMENT  
\*\*\*\*\*

TREATING CONDUCTOR: 2 7/8" 6.5# TUBING

INJECTION RATE: 30 BPM

EXPECTED SURFACE TREATING PRESSURE: 1,650 PSI (Average on pad)

FLUID VOLUMES:  
\*\*\*\*\*

TREATING FLUID VOLUME: 28,667 GALLONS 70Q FOAM

FLUSH FLUID VOLUME: 260 GALLONS 70Q FOAM

PROPPANT:  
\*\*\*\*\*

5,000 POUNDS 40/70 MESH BRADY

25,000 POUNDS 20/40 MESH ARIZONA

5,000 POUNDS 12/20 MESH BRADY

ADDITIVES PER 1000 GALLONS:  
\*\*\*\*\*

TREATING\FLUSH FLUID:

|       |    |              |               |
|-------|----|--------------|---------------|
| 0.38  | LB | FRAC-CIDE 20 | BACTERIACIDE  |
| 5.00  | GL | FRAC-FOAM 1  | FOAMING AGENT |
| 20.00 | LB | J-4          | GELLING AGENT |
| 3.00  | LB | P-4          | PH CONTROL    |
| 1.00  | LB | B-11         | GEL BREAKER   |

PROPOSED TREATMENT SCHEDULE  
 \*\*\*\*\*

| No.<br>** | Volume<br>***** | Fluid<br>***** | Proppant<br>***** |
|-----------|-----------------|----------------|-------------------|
| 1         | 7,000           | 70Q FOAM       | 0.00 ppg. PAD     |
| 2         | 5,000           | 70Q FOAM       | 1.00 ppg. 40/70   |
| 3         | 5,000           | 70Q FOAM       | 1.00 ppg. 20/40   |
| 4         | 10,000          | 70Q FOAM       | 2.00 ppg. 20/40   |
| 5         | 1,667           | 70Q FOAM       | 3.00 ppg. 12/20   |
| 6         | 260             | 70Q FOAM       | 0.00 ppg. FLUSH   |

ACTUAL TREATMENT  
\*\*\*\*\*

TREATING CONDUCTOR: 2 7/8" 6.5# TUBING

INJECTION RATE: 30 BPM

SURFACE TREATING PRESSURE: 1,280 psi (Average)

FLUID VOLUMES:  
\*\*\*\*\*

TREATING FLUID VOLUME: 26,700 GALLONS 70Q FOAM

FLUSH FLUID VOLUME: 252 GALLONS 20# J-4

PROPPANT:  
\*\*\*\*\*

5,000 POUNDS 40/70 MESH BRADY

25,000 POUNDS 20/40 MESH ARIZONA

5,000 POUNDS 12/20 MESH BRADY

ADDITIVES PER 1000 GALLONS:  
\*\*\*\*\*

TREATING FLUID:

|       |    |              |               |
|-------|----|--------------|---------------|
| 0.38  | LB | FRAC-CIDE 20 | BACTERIACIDE  |
| 5.00  | GL | FRAC-FOAM 1  | FOAMING AGENT |
| 20.00 | LB | J-4          | GELLING AGENT |
| 3.00  | LB | P-4          | PH CONTROL    |
| 1.00  | LB | B-11         | GEL BREAKER   |

ACTUAL TREATMENT SCHEDULE  
 \*\*\*\*\*

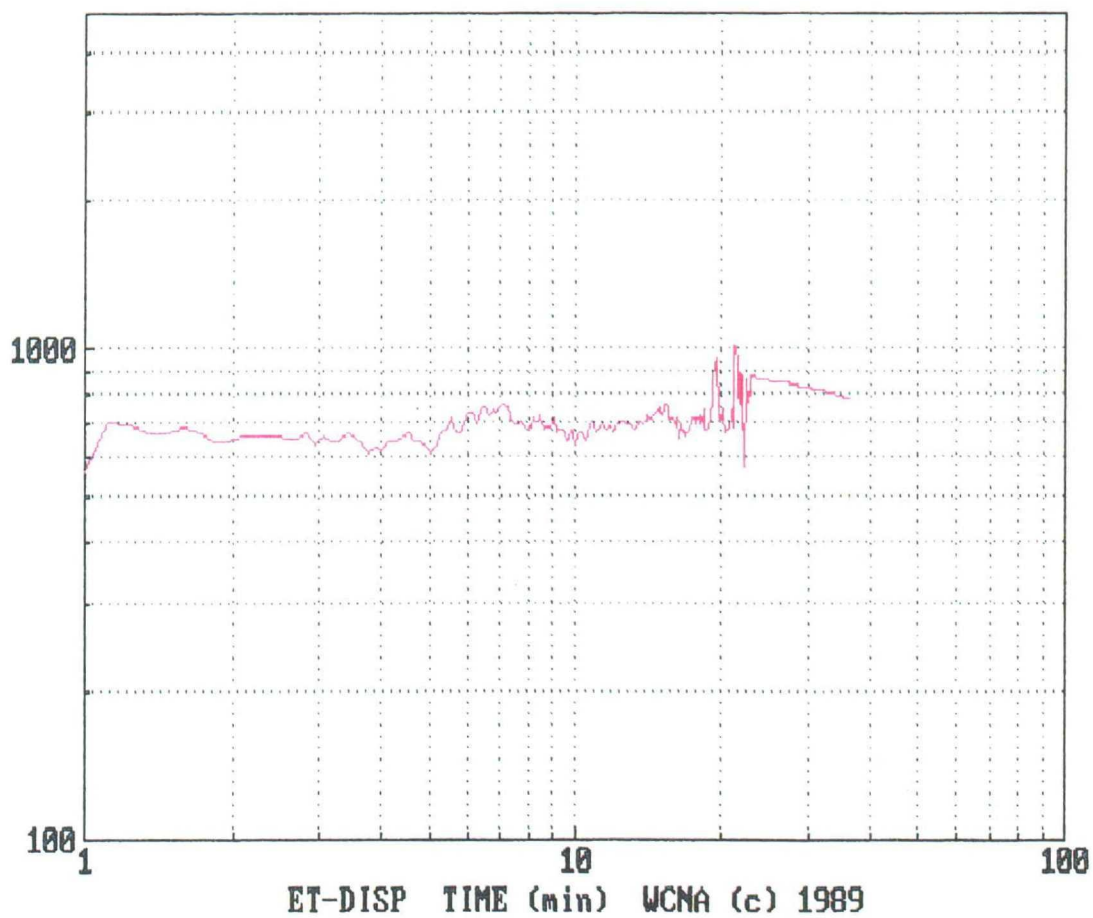
| No.<br>** | Volume<br>***** | Fluid<br>***** | Proppant<br>***** |
|-----------|-----------------|----------------|-------------------|
| 1         | 7,000           | 70Q FOAM       | 0.00 ppg. PAD     |
| 2         | 3,500           | 70Q FOAM       | 1.00 ppg. 40/70   |
| 3         | 5,000           | 70Q FOAM       | 1.00 ppg. 20/40   |
| 4         | 9,380           | 70Q FOAM       | 2.00 ppg. 20/40   |
| 5         | 1,820           | 70Q FOAM       | 3.00 ppg. 12/20   |
| 6         | 252             | 20# GEL        | 0.00 ppg. FLUSH   |

## SECTION 3

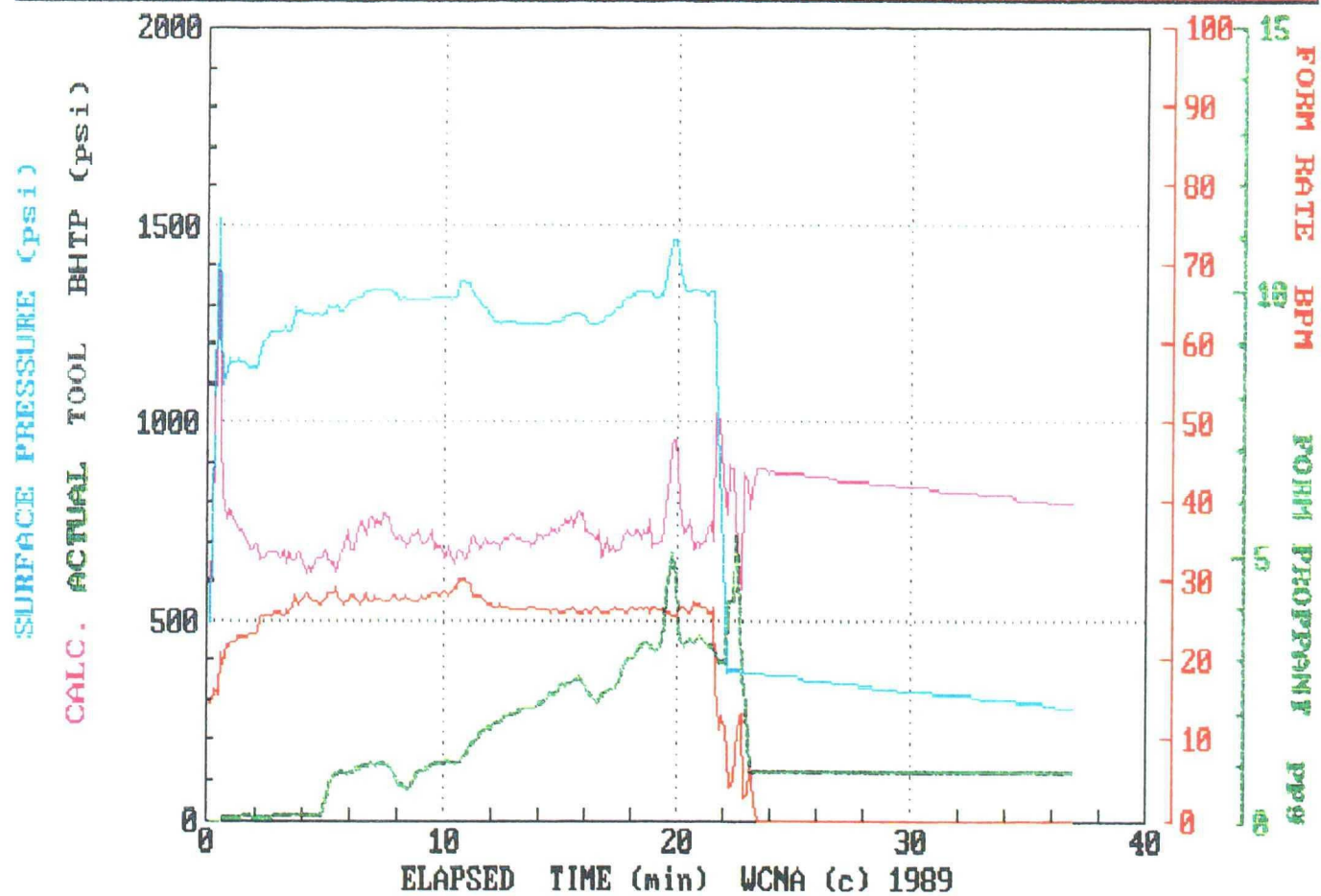
TREATMENT GRAPHS

J.K.EDWARDS (WALSH ENG.) CHACO #1 PICTURED CLIFFS 70Q FOAM FRAC 1-27-95

CALC. ACTUAL TOOL NET PRESSURE (psi)



J.K. EDWARDS (WALSH ENG.) CHACO #1 PICTURED CLIFFS 70Q FOAM FRAC 1-27-95



## SECTION 4

TREATMENT DATA

[illegible]

Date: 1-27-95  
JKEDWARD

[illegible]

# WATER BASED FRAC FLUID QUALITY CONTROL

## (Attachment to Treatment Report)

|                    |                            |
|--------------------|----------------------------|
| DATE: 1-27-95      | OPERATOR: JK EDWARDS       |
| FIELD RECEIPT NO.: | WELL INFORMATION: CHACO #1 |

|                                                                                                                                          |                                                                                                  |   |   |   |   |   |   |   |   |
|------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|---|
| I. Tank/Transport No.                                                                                                                    | 1                                                                                                |   |   |   |   |   |   |   |   |
| A. Tank/Transport Condition                                                                                                              | FAIR                                                                                             |   |   |   |   |   |   |   |   |
| B. Sampling Location                                                                                                                     | VALVE                                                                                            |   |   |   |   |   |   |   |   |
| II. Water Quality                                                                                                                        |                                                                                                  |   |   |   |   |   |   |   |   |
| Answer all water source questions elsewhere on this form. Date water sampled? 1-27-95 Tanks filled?                                      |                                                                                                  |   |   |   |   |   |   |   |   |
| A. Clarity, Color, Odor                                                                                                                  | CLEAR                                                                                            |   |   |   |   |   |   |   |   |
| B. Sample Temperature, °F(°C)                                                                                                            | 40                                                                                               |   |   |   |   |   |   |   |   |
| C. Specific Gravity                                                                                                                      | 1.00                                                                                             |   |   |   |   |   |   |   |   |
| D. Initial p.H.                                                                                                                          | 7                                                                                                |   |   |   |   |   |   |   |   |
| E. Iron II/Iron III, ppm                                                                                                                 | 0 / 0                                                                                            | / | / | / | / | / | / | / | / |
| F. Reducing Agent                                                                                                                        | No                                                                                               |   |   |   |   |   |   |   |   |
| G. Phosphate, ppm                                                                                                                        | NA                                                                                               |   |   |   |   |   |   |   |   |
| H. Bacteria                                                                                                                              | Attach appropriate forms from Field Procedures manual. Date biocide added: 1-27-95 Before water? |   |   |   |   |   |   |   |   |
| 1) Aerobic ±/time                                                                                                                        | /                                                                                                | / | / | / | / | / | / | / | / |
| 2) Anaerobic ±/time                                                                                                                      | /                                                                                                | / | / | / | / | / | / | / | / |
| III. Base Gel Quality (Field Blend) Use additional copies of this form for each series of tests @ 24 hr. intervals and prior to pumping. |                                                                                                  |   |   |   |   |   |   |   |   |
| A. Name of Product System Mixed                                                                                                          | 20# J-4                                                                                          |   |   |   |   |   |   |   |   |
| B. Fish Eyes:                                                                                                                            | Visually inspect the fluid in each tank via the top hatch.                                       |   |   |   |   |   |   |   |   |
| 1) Thickness of Layer                                                                                                                    | NONE                                                                                             |   |   |   |   |   |   |   |   |
| 2) Partical Size                                                                                                                         | NONE                                                                                             |   |   |   |   |   |   |   |   |
| C. Sampling Location/Time                                                                                                                | BLENDER                                                                                          | / | / | / | / | / | / | / | / |
| D. Sample Temperature, °F(°C)                                                                                                            | 44                                                                                               |   |   |   |   |   |   |   |   |
| E. pH                                                                                                                                    | 5                                                                                                |   |   |   |   |   |   |   |   |
| F. Viscosity                                                                                                                             | 16                                                                                               |   |   |   |   |   |   |   |   |
| 1) Funnel Time, sec/700cc                                                                                                                |                                                                                                  |   |   |   |   |   |   |   |   |
| 2) Fann Reading @ 300 rpm                                                                                                                |                                                                                                  |   |   |   |   |   |   |   |   |
| 600 rpm                                                                                                                                  |                                                                                                  |   |   |   |   |   |   |   |   |
| G. Calculate, lb polymer/100                                                                                                             |                                                                                                  |   |   |   |   |   |   |   |   |
| H. Complex Time, sec.                                                                                                                    |                                                                                                  |   |   |   |   |   |   |   |   |
| I. Appearance of Sample                                                                                                                  |                                                                                                  |   |   |   |   |   |   |   |   |
| IV. Frac Fluid Quality These measurements are made as the job is pumped.                                                                 |                                                                                                  |   |   |   |   |   |   |   |   |
| A. Pad, 2 lb, Flush, etc.                                                                                                                |                                                                                                  |   |   |   |   |   |   |   |   |
| B. Time Pumped                                                                                                                           |                                                                                                  |   |   |   |   |   |   |   |   |
| C. Sample Temperature, °F(°C)                                                                                                            |                                                                                                  |   |   |   |   |   |   |   |   |
| D. XL time @ Blender, sec.                                                                                                               |                                                                                                  |   |   |   |   |   |   |   |   |
| E. Appearance of Sample                                                                                                                  |                                                                                                  |   |   |   |   |   |   |   |   |

**THE WESTERN COMPANY**  
**QUALITY ASSURANCE OF PROPPANT/GRAVEL**  
 (Attachment to Treatment Report)

|                            |                                    |
|----------------------------|------------------------------------|
| DATE: 1-27-95              | CUSTOMER: JK EDWARDS               |
| FIELD RECEIPT NO.:         | COMPARTMENT:                       |
| WELL INFORMATION: CHACO #1 | DISTRICT PROPPANT SILO: FARMINGTON |

**PRODUCT DESCRIPTION: PROPPANT**

|                                                          |                      |     |  |  |
|----------------------------------------------------------|----------------------|-----|--|--|
| Truck Number                                             |                      |     |  |  |
| Trucking Company                                         | WCNA                 |     |  |  |
| Weight Slip Available? Attach all.                       | Yes                  |     |  |  |
| Net Weight Delivered                                     | 5000                 |     |  |  |
| Nominal Size from list below                             | 12/20 BRADY          |     |  |  |
| Is the content of the Truck proper?                      | Color right          | Yes |  |  |
|                                                          | Low dust             | Yes |  |  |
|                                                          | Appearance right     | Yes |  |  |
|                                                          | No contamination     | Yes |  |  |
| Is the Manufacturer's Sieve Analysis proper? Attach all. | Oversize < 0.1%      |     |  |  |
|                                                          | Fines < 1.0% (2.0%+) |     |  |  |
|                                                          | In Size > 90% (96%+) |     |  |  |
| Sample Taken?                                            | Yes                  |     |  |  |
| Is the truck content acceptable?                         | Yes                  |     |  |  |

Total Weight, each size:                      Size                      Weight                      lb                      Size                      Weight                      lb

Is total weight for each size appropriate for job requirements?

Are the above answers appropriate and sufficient as compared to job requirements?

If not appropriate, correct problem before sieve analysis. If appropriate but insufficient, do sieve analysis.

| SIEVE ANALYSIS                 | <--- combine samples --->     |                                      | <--- combine samples ---> |          |
|--------------------------------|-------------------------------|--------------------------------------|---------------------------|----------|
| Initial sample weight          | 53.17 gram<br>Amount Retained |                                      | gram<br>Amount Retained   |          |
|                                | Sieve Mesh 12/20              | gram    %                            | gram    %                 |          |
|                                | 8                             | 0    0    Oversize                   |                           | Oversize |
|                                | 12                            | 2.01   3.78                          |                           |          |
|                                | 16                            | 29.29   55.0    Total                |                           | Total    |
|                                | 18                            | 16.46   30.9    In size% <u>93.7</u> |                           | In size% |
|                                | 20                            | 4.11   7.72                          |                           |          |
|                                | 30                            | 1.29   2.42                          |                           |          |
|                                | Pan                           | .01   .018   Fines                   |                           | Fines    |
|                                | Total Weight, grams           | 53.17                                |                           |          |
| Cleanliness of Proppant/Gravel | Turbidity                     | Pass                                 |                           |          |
|                                | pH                            | Pass                                 |                           |          |



## THE WESTERN COMPANY OF NORTH AMERICA - N2 FOAM ANALYSIS MODEL

C.K.EDWARDS (WALSH ENG.) CHACO #1 PICTURED CLIFFS 70Q FOAM FRAC 1-27-95

| ET<br>min. | STP<br>psi. | BHTP<br>psi. | NET P<br>psi. | SLOPE | RATE<br>Fm bpm | PROP<br>Fm ppg | Cumm<br>Wh vol | Cumm<br>Wh Prop | Fm Qual<br>mich/slry |
|------------|-------------|--------------|---------------|-------|----------------|----------------|----------------|-----------------|----------------------|
| 0.1        | 500         | 572          | 100           | 0.1   | 14.5           | 0.0            | 3              | 0               | 0.0/ 0.0             |
| 0.2        | 716         | 719          | 709           | 0.1   | 15.0           | 0.0            | 3              | 0               | 0.0/ 0.0             |
| 0.3        | 1069        | 972          | 962           | 0.1   | 16.4           | 0.0            | 3              | 0               | 0.0/ 0.0             |
| 0.5        | 1520        | 1443         | 1433          | 0.1   | 15.6           | 0.0            | 3              | 0               | 0.0/ 0.0             |
| 0.5        | 1247        | 959          | 949           | 0.1   | 20.9           | 0.0            | 3              | 0               | 58.8/58.8            |
| 0.7        | 1098        | 825          | 815           | 0.1   | 19.5           | 0.1            | 8              | 0               | 49.5/49.6            |
| 0.8        | 1133        | 754          | 744           | 0.1   | 21.9           | 0.0            | 9              | 0               | 56.8/56.9            |
| 0.9        | 1157        | 778          | 768           | 0.1   | 21.8           | 0.0            | 10             | 0               | 53.0/53.1            |
| 1.0        | 1150        | 751          | 741           | 0.1   | 22.2           | 0.0            | 11             | 0               | 58.5/58.6            |
| 1.2        | 1152        | 745          | 735           | 0.1   | 22.4           | 0.0            | 12             | 0               | 58.4/58.5            |
| 1.3        | 1160        | 733          | 723           | 0.1   | 22.8           | 0.0            | 13             | 0               | 58.3/58.4            |
| 1.4        | 1154        | 725          | 715           | 0.1   | 22.8           | 0.0            | 14             | 0               | 59.1/59.1            |
| 1.5        | 1150        | 711          | 701           | -0.2  | 23.0           | 0.1            | 15             | 0               | 59.9/60.0            |
| 1.6        | 1143        | 701          | 691           | -0.2  | 23.0           | 0.1            | 16             | 0               | 60.3/60.4            |
| 1.8        | 1140        | 680          | 670           | -0.4  | 23.4           | 0.1            | 18             | 0               | 59.9/60.1            |
| 1.9        | 1140        | 681          | 671           | 0.0   | 23.3           | 0.1            | 19             | 0               | 60.6/60.8            |
| 2.0        | 1143        | 694          | 684           | 0.3   | 23.1           | 0.0            | 20             | 0               | 61.1/61.2            |
| 2.1        | 1152        | 677          | 667           | -0.4  | 23.7           | 0.0            | 21             | 0               | 61.0/61.1            |
| 2.3        | 1185        | 649          | 639           | -0.8  | 25.2           | 0.0            | 22             | 0               | 60.7/60.7            |
| 2.4        | 1205        | 654          | 644           | 0.1   | 25.5           | 0.0            | 23             | 0               | 61.9/61.9            |
| 2.5        | 1217        | 666          | 656           | 0.3   | 25.6           | 0.0            | 24             | 0               | 64.1/64.1            |
| 2.6        | 1227        | 670          | 660           | 0.1   | 25.7           | 0.0            | 25             | 0               | 64.4/64.5            |
| 2.7        | 1230        | 672          | 662           | 0.1   | 25.7           | 0.0            | 26             | 0               | 64.7/64.8            |
| 2.9        | 1230        | 668          | 658           | -0.1  | 26.0           | 0.1            | 28             | 0               | 64.9/65.0            |
| 3.0        | 1230        | 662          | 652           | -0.3  | 26.0           | 0.1            | 29             | 0               | 64.9/65.0            |
| 3.1        | 1231        | 661          | 651           | -0.0  | 26.0           | 0.1            | 30             | 0               | 65.0/65.1            |
| 3.2        | 1240        | 681          | 671           | 0.8   | 25.8           | 0.1            | 31             | 0               | 65.3/65.4            |
| 3.3        | 1230        | 643          | 633           | -1.6  | 26.5           | 0.1            | 32             | 0               | 65.4/65.6            |
| 3.5        | 1231        | 671          | 661           | 1.2   | 25.9           | 0.1            | 33             | 0               | 65.1/65.2            |
| 3.6        | 1250        | 651          | 641           | -0.9  | 26.9           | 0.1            | 34             | 0               | 62.9/63.0            |
| 3.7        | 1294        | 649          | 639           | -0.1  | 27.9           | 0.1            | 35             | 0               | 64.2/64.3            |
| 3.8        | 1286        | 675          | 665           | 1.3   | 27.1           | 0.1            | 36             | 0               | 66.1/66.2            |
| 3.9        | 1282        | 667          | 657           | -0.4  | 27.2           | 0.1            | 37             | 0               | 67.9/68.0            |
| 4.1        | 1280        | 646          | 636           | -1.1  | 27.7           | 0.1            | 39             | 0               | 66.7/66.8            |
| 4.2        | 1280        | 619          | 609           | -1.5  | 28.3           | 0.1            | 40             | 0               | 67.0/67.1            |
| 4.3        | 1276        | 635          | 625           | 0.9   | 27.9           | 0.1            | 41             | 0               | 67.0/67.1            |
| 4.4        | 1270        | 625          | 615           | -0.6  | 27.8           | 0.1            | 42             | 0               | 66.0/66.1            |
| 4.5        | 1275        | 649          | 639           | 1.4   | 27.5           | 0.1            | 43             | 0               | 66.4/66.5            |
| 4.7        | 1275        | 655          | 645           | 0.3   | 27.4           | 0.1            | 44             | 0               | 65.6/65.7            |
| 4.8        | 1270        | 657          | 647           | 0.1   | 27.2           | 0.1            | 45             | 0               | 66.4/66.5            |
| 4.9        | 1274        | 678          | 668           | 0.9   | 27.6           | 0.4            | 47             | 100             | 67.6/68.2            |
| 5.1        | 1300        | 652          | 642           | -1.6  | 28.5           | 0.5            | 48             | 200             | 66.9/67.6            |
| 5.2        | 1293        | 650          | 640           | -0.2  | 28.3           | 0.7            | 49             | 300             | 65.2/66.3            |
| 5.3        | 1291        | 644          | 634           | -0.4  | 28.4           | 0.8            | 51             | 400             | 65.8/67.0            |
| 5.4        | 1296        | 621          | 611           | -1.6  | 29.0           | 0.8            | 52             | 500             | 66.1/67.4            |
| 5.6        | 1283        | 636          | 626           | 1.2   | 28.2           | 0.8            | 53             | 700             | 66.1/67.4            |
| 5.7        | 1284        | 675          | 665           | 2.8   | 27.3           | 0.9            | 54             | 800             | 65.4/66.8            |
| 5.8        | 1293        | 689          | 679           | 1.0   | 27.2           | 0.9            | 55             | 900             | 67.2/68.5            |
| 6.0        | 1305        | 723          | 713           | 1.8   | 27.3           | 0.9            | 57             | 1000            | 69.1/70.2            |
| 6.1        | 1310        | 676          | 666           | -3.4  | 28.0           | 0.9            | 58             | 1100            | 69.0/70.2            |
| 6.2        | 1310        | 682          | 672           | 0.4   | 28.0           | 0.9            | 59             | 1300            | 69.0/70.2            |
| 6.3        | 1319        | 717          | 707           | 2.6   | 27.6           | 1.0            | 60             | 1400            | 67.0/68.4            |
| 6.4        | 1320        | 747          | 737           | 2.2   | 27.1           | 1.0            | 62             | 1500            | 67.2/68.6            |
| 6.6        | 1326        | 747          | 737           | 0.0   | 27.2           | 1.0            | 63             | 1700            | 68.9/70.3            |

## THE WESTERN COMPANY OF NORTH AMERICA - N2 FOAM ANALYSIS MODEL

C.K.EDWARDS (WALSH ENG.) CHACO #1 PICTURED CLIFFS 70Q FOAM FRAC 1-27-95

| ET<br>min. | STP<br>psi. | BHTP<br>psi. | NET P<br>psi. | SLOPE | RATE<br>Fm bpm | PROP<br>Fm ppg | Cumm<br>Wh vol | Cumm<br>Wh Prop | Fm Qual<br>mich/slry |
|------------|-------------|--------------|---------------|-------|----------------|----------------|----------------|-----------------|----------------------|
| 6.7        | 1330        | 709          | 699           | -2.9  | 28.4           | 1.0            | 64             | 1800            | 69.1/70.5            |
| 6.8        | 1331        | 755          | 745           | 3.5   | 27.3           | 1.0            | 65             | 2000            | 69.1/70.5            |
| 6.9        | 1339        | 760          | 750           | 0.4   | 27.4           | 1.1            | 66             | 2100            | 67.3/68.8            |
| 7.1        | 1340        | 733          | 723           | -2.2  | 28.0           | 1.0            | 67             | 2200            | 68.9/70.3            |
| 7.2        | 1340        | 754          | 744           | 1.7   | 27.6           | 1.0            | 69             | 2300            | 69.1/70.5            |
| 7.3        | 1340        | 743          | 733           | -0.9  | 27.8           | 1.1            | 70             | 2500            | 68.1/69.5            |
| 7.4        | 1340        | 766          | 756           | 1.8   | 27.4           | 1.0            | 71             | 2600            | 69.2/70.6            |
| 7.5        | 1340        | 770          | 760           | 0.4   | 27.3           | 1.0            | 72             | 2700            | 68.7/70.1            |
| 7.7        | 1338        | 759          | 749           | -0.9  | 27.4           | 1.0            | 73             | 2900            | 68.9/70.3            |
| 7.8        | 1330        | 728          | 718           | -2.7  | 27.7           | 1.0            | 74             | 2900            | 68.7/70.1            |
| 7.9        | 1325        | 709          | 699           | -1.8  | 27.9           | 0.8            | 75             | 3000            | 68.0/69.2            |
| 8.0        | 1315        | 704          | 694           | -0.4  | 27.7           | 0.7            | 77             | 3100            | 67.0/68.0            |
| 8.1        | 1315        | 713          | 703           | 0.8   | 27.5           | 0.7            | 78             | 3200            | 66.3/67.3            |
| 8.3        | 1318        | 700          | 690           | -1.3  | 27.8           | 0.6            | 79             | 3300            | 66.8/67.7            |
| 8.4        | 1315        | 684          | 674           | -1.6  | 28.0           | 0.6            | 80             | 3400            | 67.9/68.8            |
| 8.5        | 1311        | 699          | 689           | 1.6   | 27.6           | 0.6            | 81             | 3400            | 68.0/68.9            |
| 8.6        | 1310        | 720          | 710           | 2.1   | 27.2           | 0.7            | 82             | 3500            | 67.2/68.1            |
| 8.7        | 1310        | 711          | 701           | -0.9  | 27.4           | 0.7            | 83             | 3700            | 67.4/68.4            |
| 8.9        | 1310        | 729          | 719           | 1.4   | 27.4           | 0.9            | 85             | 3800            | 68.3/69.5            |
| 9.0        | 1310        | 690          | 680           | -4.2  | 28.0           | 0.9            | 86             | 3900            | 68.6/69.8            |
| 9.1        | 1311        | 693          | 683           | 0.3   | 27.8           | 0.9            | 87             | 4100            | 68.6/69.8            |
| 9.3        | 1311        | 700          | 690           | 0.7   | 27.7           | 1.0            | 88             | 4200            | 67.5/68.9            |
| 9.5        | 1317        | 727          | 717           | 1.8   | 28.5           | 1.0            | 90             | 4400            | 68.1/69.5            |
| 9.6        | 1320        | 680          | 670           | -5.2  | 28.3           | 1.1            | 92             | 4600            | 68.1/69.5            |
| 9.7        | 1320        | 689          | 679           | 1.0   | 28.2           | 1.1            | 93             | 4700            | 68.5/70.0            |
| 9.8        | 1320        | 688          | 678           | -0.1  | 28.1           | 1.1            | 94             | 4800            | 68.5/70.0            |
| 9.9        | 1320        | 674          | 664           | -1.7  | 28.3           | 1.1            | 95             | 5000            | 68.9/70.3            |
| 10.1       | 1320        | 655          | 645           | -2.4  | 28.8           | 1.1            | 96             | 5100            | 68.9/70.4            |
| 10.2       | 1319        | 687          | 677           | 4.0   | 28.2           | 1.1            | 97             | 5300            | 67.6/69.2            |
| 10.3       | 1315        | 666          | 656           | -2.6  | 28.4           | 1.1            | 99             | 5400            | 68.8/70.3            |
| 10.4       | 1319        | 645          | 635           | -2.8  | 29.0           | 1.1            | 100            | 5500            | 68.5/69.9            |
| 10.5       | 1334        | 672          | 662           | 3.7   | 29.2           | 1.1            | 101            | 5700            | 67.7/69.2            |
| 10.7       | 1358        | 678          | 668           | 0.9   | 30.0           | 1.1            | 102            | 5800            | 67.4/68.9            |
| 10.8       | 1359        | 674          | 664           | -0.6  | 30.2           | 1.2            | 104            | 6000            | 65.8/67.5            |
| 10.9       | 1350        | 654          | 644           | -2.9  | 30.1           | 1.2            | 105            | 6200            | 66.2/68.0            |
| 11.0       | 1353        | 680          | 670           | 3.0   | 29.9           | 1.4            | 107            | 6400            | 66.6/68.6            |
| 11.2       | 1335        | 709          | 699           | 4.0   | 29.0           | 1.4            | 108            | 6600            | 66.7/68.7            |
| 11.3       | 1323        | 712          | 702           | 0.5   | 28.1           | 1.4            | 109            | 6800            | 66.7/68.7            |
| 11.4       | 1312        | 692          | 682           | -2.9  | 28.2           | 1.6            | 110            | 7000            | 65.3/67.6            |
| 11.5       | 1304        | 678          | 668           | -2.0  | 28.1           | 1.6            | 112            | 7200            | 64.8/67.2            |
| 11.6       | 1300        | 687          | 677           | 1.3   | 28.0           | 1.6            | 113            | 7500            | 64.8/67.2            |
| 11.8       | 1288        | 704          | 694           | 2.1   | 27.5           | 1.7            | 115            | 7700            | 64.4/66.9            |
| 11.9       | 1274        | 694          | 684           | -1.4  | 27.1           | 1.7            | 116            | 7900            | 63.9/66.6            |
| 12.0       | 1264        | 691          | 681           | -0.4  | 27.0           | 1.7            | 117            | 8200            | 63.9/66.6            |
| 12.1       | 1260        | 699          | 689           | 1.1   | 26.7           | 1.8            | 119            | 8400            | 63.0/65.7            |
| 12.3       | 1257        | 693          | 683           | -0.8  | 26.8           | 1.8            | 120            | 8600            | 62.8/65.6            |
| 12.4       | 1251        | 681          | 671           | -1.8  | 26.9           | 1.9            | 121            | 8800            | 62.9/65.8            |
| 12.5       | 1255        | 697          | 687           | 2.4   | 26.7           | 1.9            | 123            | 9100            | 62.8/65.8            |
| 12.6       | 1260        | 704          | 694           | 0.9   | 26.7           | 2.0            | 124            | 9300            | 62.4/65.5            |
| 12.7       | 1260        | 704          | 694           | 0.0   | 26.6           | 2.0            | 125            | 9600            | 62.9/65.9            |
| 12.9       | 1260        | 717          | 707           | 2.0   | 26.4           | 2.0            | 127            | 9800            | 63.3/66.3            |
| 13.0       | 1255        | 712          | 702           | -0.8  | 26.4           | 2.0            | 128            | 10100           | 63.4/66.4            |
| 13.1       | 1253        | 704          | 694           | -1.3  | 26.5           | 2.0            | 130            | 10300           | 63.1/66.2            |
| 13.2       | 1250        | 704          | 694           | 0.0   | 26.4           | 2.0            | 131            | 10600           | 63.1/66.2            |

## THE WESTERN COMPANY OF NORTH AMERICA - N2 FOAM ANALYSIS MODEL

J.K.EDWARDS (WALSH ENG.) CHACO #1 PICTURED CLIFFS 70Q FOAM FRAC 1-27-95

| ET<br>min. | STP<br>psi. | BHTP<br>psi. | NET P<br>psi. | SLOPE | RATE<br>Fm bpm | PROP<br>Fm ppg | Cumm<br>Wh vol | Cumm<br>Wh Prop | Fm Qual<br>mich/slry |
|------------|-------------|--------------|---------------|-------|----------------|----------------|----------------|-----------------|----------------------|
| 13.3       | 1250        | 702          | 692           | -0.4  | 26.4           | 2.1            | 132            | 10800           | 63.0/66.1            |
| 13.5       | 1250        | 701          | 691           | -0.1  | 26.5           | 2.1            | 134            | 11100           | 63.1/66.3            |
| 13.6       | 1251        | 698          | 688           | -0.5  | 26.6           | 2.1            | 135            | 11300           | 63.1/66.3            |
| 13.7       | 1250        | 688          | 678           | -1.6  | 26.8           | 2.1            | 136            | 11600           | 63.1/66.3            |
| 13.8       | 1250        | 695          | 685           | 1.0   | 26.7           | 2.1            | 138            | 11900           | 62.8/66.1            |
| 13.9       | 1250        | 718          | 708           | 3.8   | 26.2           | 2.2            | 139            | 12100           | 62.2/65.6            |
| 14.1       | 1250        | 711          | 701           | -1.2  | 26.3           | 2.2            | 140            | 12400           | 62.0/65.4            |
| 14.2       | 1250        | 707          | 697           | -0.6  | 26.4           | 2.2            | 142            | 12700           | 62.9/66.3            |
| 14.3       | 1250        | 714          | 704           | 1.3   | 26.3           | 2.3            | 143            | 12900           | 62.8/66.2            |
| 14.4       | 1250        | 712          | 702           | -0.4  | 26.3           | 2.3            | 145            | 13200           | 62.3/65.9            |
| 14.6       | 1260        | 732          | 722           | 3.3   | 26.1           | 2.4            | 146            | 13500           | 62.2/65.9            |
| 14.7       | 1259        | 725          | 715           | -1.3  | 26.3           | 2.4            | 147            | 13800           | 62.6/66.2            |
| 14.8       | 1260        | 722          | 712           | -0.5  | 26.4           | 2.4            | 149            | 14100           | 63.0/66.6            |
| 14.9       | 1260        | 734          | 724           | 2.1   | 26.2           | 2.5            | 150            | 14400           | 62.5/66.3            |
| 15.0       | 1264        | 742          | 732           | 1.4   | 26.1           | 2.5            | 151            | 14700           | 62.2/66.1            |
| 15.2       | 1270        | 754          | 744           | 1.9   | 26.0           | 2.5            | 153            | 15000           | 62.8/66.6            |
| 15.3       | 1272        | 746          | 736           | -1.2  | 26.3           | 2.5            | 154            | 15300           | 63.1/66.9            |
| 15.4       | 1279        | 760          | 750           | 2.3   | 26.2           | 2.6            | 156            | 15600           | 63.2/67.1            |
| 15.5       | 1280        | 734          | 724           | -4.6  | 26.7           | 2.6            | 157            | 15900           | 62.7/66.7            |
| 15.7       | 1280        | 771          | 761           | 6.4   | 26.1           | 2.7            | 159            | 16200           | 63.0/66.9            |
| 15.8       | 1280        | 773          | 763           | 0.4   | 26.0           | 2.7            | 160            | 16500           | 62.0/66.1            |
| 15.9       | 1272        | 765          | 755           | -1.5  | 25.9           | 2.6            | 161            | 16800           | 63.1/66.9            |
| 16.0       | 1262        | 726          | 716           | -6.9  | 26.3           | 2.5            | 163            | 17100           | 63.1/66.8            |
| 16.1       | 1258        | 727          | 717           | 0.1   | 26.2           | 2.4            | 164            | 17400           | 63.1/66.7            |
| 16.3       | 1250        | 720          | 710           | -1.3  | 26.1           | 2.4            | 165            | 17600           | 62.6/66.2            |
| 16.4       | 1248        | 712          | 702           | -1.5  | 26.2           | 2.3            | 167            | 17900           | 62.8/66.3            |
| 16.5       | 1250        | 703          | 693           | -1.7  | 26.5           | 2.2            | 168            | 18200           | 63.2/66.5            |
| 16.6       | 1254        | 723          | 713           | 4.0   | 26.2           | 2.3            | 169            | 18500           | 62.4/65.9            |
| 16.7       | 1260        | 658          | 648           | -14.4 | 26.1           | 2.3            | 170            | 18700           | 62.2/65.9            |
| 16.8       | 1262        | 670          | 660           | 3.9   | 25.9           | 2.4            | 170            | 18700           | 63.3/66.8            |
| 17.0       | 1270        | 705          | 695           | 5.5   | 25.9           | 2.4            | 173            | 19300           | 63.3/66.9            |
| 17.1       | 1270        | 675          | 665           | -6.3  | 26.1           | 2.5            | 175            | 19600           | 63.3/67.0            |
| 17.2       | 1282        | 682          | 672           | 1.5   | 26.2           | 2.5            | 176            | 19900           | 63.3/67.0            |
| 17.3       | 1290        | 672          | 662           | -2.0  | 26.6           | 2.5            | 178            | 20200           | 63.0/66.8            |
| 17.5       | 1292        | 681          | 671           | 1.9   | 26.3           | 2.6            | 179            | 20500           | 62.9/66.8            |
| 17.6       | 1304        | 691          | 681           | 2.3   | 26.4           | 2.8            | 180            | 20900           | 62.6/66.7            |
| 17.7       | 1310        | 709          | 699           | 3.8   | 26.2           | 2.9            | 182            | 21200           | 63.5/67.7            |
| 17.8       | 1318        | 727          | 717           | 3.6   | 26.2           | 3.0            | 183            | 21600           | 63.4/67.8            |
| 17.9       | 1320        | 721          | 711           | -1.3  | 26.3           | 3.0            | 185            | 22000           | 63.8/68.2            |
| 18.1       | 1326        | 709          | 699           | -2.4  | 26.6           | 3.1            | 186            | 22300           | 64.1/68.5            |
| 18.2       | 1330        | 724          | 714           | 3.1   | 26.5           | 3.1            | 187            | 22700           | 64.0/68.5            |
| 18.3       | 1330        | 727          | 717           | 0.8   | 26.4           | 3.2            | 189            | 23100           | 63.6/68.2            |
| 18.4       | 1330        | 709          | 699           | -4.0  | 26.7           | 3.3            | 190            | 23500           | 63.6/68.3            |
| 18.5       | 1330        | 730          | 720           | 4.4   | 26.4           | 3.3            | 192            | 23800           | 63.1/67.9            |
| 18.7       | 1330        | 717          | 707           | -2.7  | 26.5           | 3.3            | 193            | 24300           | 63.2/68.0            |
| 18.8       | 1330        | 753          | 743           | 7.7   | 26.0           | 3.2            | 195            | 24600           | 64.1/68.7            |
| 18.9       | 1322        | 687          | 677           | -14.2 | 26.8           | 3.3            | 196            | 25000           | 63.4/68.2            |
| 19.0       | 1318        | 691          | 681           | 0.9   | 26.6           | 3.2            | 198            | 25400           | 64.2/68.7            |
| 19.2       | 1319        | 695          | 685           | 0.9   | 26.4           | 3.3            | 199            | 25800           | 63.1/67.8            |
| 19.3       | 1324        | 697          | 687           | 0.5   | 26.3           | 3.4            | 200            | 26300           | 63.9/68.7            |
| 19.4       | 1349        | 736          | 726           | 8.8   | 26.1           | 3.8            | 202            | 26800           | 64.7/69.8            |
| 19.5       | 1388        | 782          | 772           | 9.8   | 26.3           | 4.4            | 203            | 27300           | 65.9/71.5            |
| 19.6       | 1434        | 872          | 862           | 17.8  | 26.0           | 4.8            | 205            | 27800           | 67.3/73.1            |
| 19.8       | 1466        | 946          | 936           | 13.4  | 25.8           | 5.0            | 206            | 28300           | 66.5/72.7            |

## THE WESTERN COMPANY 7 NORTH AMERICA - N2 FOAM ANALYSIS MODEL

J.K.EDWARDS (WALSH ENG.) CHACO #1 PICTURED CLIFFS 70Q FOAM FRAC 1-27-95

| ET<br>min. | STP<br>psi. | BHTP<br>psi. | NET P<br>psi. | SLOPE | RATE<br>Fm bpm | PROP<br>Fm ppg | Cumm<br>Wh vol | Cumm<br>Wh Prop | Fm Qual<br>mich/slry |
|------------|-------------|--------------|---------------|-------|----------------|----------------|----------------|-----------------|----------------------|
| 19.9       | 1464        | 957          | 947           | 1.8   | 25.8           | 4.6            | 207            | 28600           | 66.0/71.9            |
| 20.0       | 1431        | 897          | 887           | -11.3 | 26.1           | 3.7            | 209            | 29000           | 64.7/69.8            |
| 20.1       | 1380        | 794          | 784           | -20.4 | 26.5           | 3.4            | 210            | 29400           | 65.1/69.8            |
| 20.2       | 1341        | 718          | 708           | -16.9 | 26.7           | 3.3            | 211            | 29800           | 65.9/70.3            |
| 20.4       | 1330        | 723          | 713           | 1.2   | 26.3           | 3.3            | 213            | 30200           | 66.0/70.5            |
| 20.5       | 1335        | 755          | 745           | 7.4   | 25.9           | 3.4            | 214            | 30600           | 65.9/70.5            |
| 20.6       | 1340        | 721          | 711           | -7.8  | 26.6           | 3.4            | 216            | 30900           | 66.8/71.2            |
| 20.7       | 1340        | 678          | 668           | -10.7 | 27.3           | 3.3            | 217            | 31400           | 67.1/71.4            |
| 20.9       | 1339        | 697          | 687           | 4.8   | 27.0           | 3.4            | 218            | 31700           | 65.7/70.3            |
| 21.0       | 1331        | 687          | 677           | -2.6  | 26.9           | 3.5            | 220            | 32100           | 64.7/69.5            |
| 21.1       | 1329        | 702          | 692           | 3.8   | 26.7           | 3.4            | 221            | 32500           | 65.0/69.6            |
| 21.2       | 1323        | 699          | 689           | -0.8  | 26.6           | 3.3            | 223            | 32900           | 65.0/69.6            |
| 21.3       | 1327        | 733          | 723           | 8.4   | 26.1           | 3.3            | 224            | 33300           | 65.6/70.0            |
| 21.5       | 1330        | 749          | 739           | 4.0   | 25.9           | 3.3            | 225            | 33600           | 65.9/70.3            |
| 21.6       | 1330        | 698          | 688           | -12.6 | 26.8           | 3.2            | 227            | 34000           | 66.7/70.9            |
| 21.7       | 1165        | 1024         | 1014          | 68.8  | 17.1           | 3.1            | 228            | 34300           | 67.0/71.1            |
| 21.8       | 871         | 1010         | 1000          | -2.5  | 11.3           | 3.0            | 229            | 34500           | 64.6/68.8            |
| 21.9       | 786         | 927          | 917           | -15.9 | 12.8           | 3.0            | 231            | 34800           | 64.6/68.8            |
| 22.1       | 536         | 800          | 790           | -27.4 | 11.1           | 3.0            | 232            | 34900           | 64.6/68.8            |
| 22.2       | 370         | 771          | 761           | -6.9  | 7.9            | 4.1            | 233            | 34900           | 40.1/49.5            |
| 22.3       | 375         | 892          | 882           | 27.2  | 4.0            | 4.1            | 234            | 35000           | 40.1/49.5            |
| 22.4       | 378         | 886          | 876           | -1.3  | 4.7            | 4.1            | 234            | 35000           | 40.1/49.5            |
| 22.5       | 377         | 770          | 760           | -28.2 | 8.4            | 5.4            | 235            | 35000           | 0.0/19.5             |
| 22.7       | 374         | 597          | 587           | -48.2 | 12.9           | 3.9            | 237            | 35100           | 0.0/15.0             |
| 22.8       | 370         | 579          | 569           | -6.1  | 13.1           | 2.6            | 238            | 35100           | 0.0/10.4             |
| 22.9       | 373         | 874          | 864           | 73.3  | 2.4            | 2.6            | 239            | 35100           | 0.0/10.4             |
| 23.0       | 370         | 853          | 843           | -4.8  | 3.3            | 1.6            | 239            | 35100           | 0.0/ 6.6             |
| 23.1       | 370         | 780          | 770           | -17.3 | 6.4            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 23.3       | 370         | 827          | 817           | 11.5  | 4.3            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 23.4       | 370         | 884          | 874           | 13.1  | 0.5            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 23.5       | 370         | 884          | 874           | 0.0   | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 23.6       | 370         | 884          | 874           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 23.7       | 369         | 883          | 873           | -0.2  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 23.8       | 365         | 879          | 869           | -1.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 24.0       | 360         | 874          | 864           | -1.2  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 24.1       | 361         | 875          | 865           | 0.2   | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 24.2       | 360         | 874          | 864           | -0.2  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 24.3       | 360         | 874          | 864           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 24.4       | 360         | 874          | 864           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 24.6       | 360         | 874          | 864           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 24.7       | 360         | 874          | 864           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 24.8       | 360         | 874          | 864           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 24.9       | 360         | 874          | 864           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 25.0       | 360         | 874          | 864           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 25.1       | 360         | 874          | 864           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 25.3       | 356         | 870          | 860           | -1.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 25.4       | 355         | 869          | 859           | -0.2  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 25.5       | 350         | 864          | 854           | -1.3  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 25.6       | 350         | 864          | 854           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 25.7       | 350         | 864          | 854           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 25.9       | 350         | 864          | 854           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 26.0       | 350         | 864          | 854           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 26.1       | 350         | 864          | 854           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 26.2       | 350         | 864          | 854           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |

## THE WESTERN COMPANY OF NORTH AMERICA - N2 FOAM ANALYSIS MODEL

J.K.EDWARDS (WALSH ENG.) CHACO #1 PICTURED CLIFFS 70Q FOAM FRAC 1-27-95

| ET<br>min. | STP<br>psi. | BHTP<br>psi. | NET P<br>psi. | SLOPE | RATE<br>Fm bpm | PROP<br>Fm ppg | Cumm<br>Wh vol | Cumm<br>Wh Prop | Fm Qual<br>mich/slry |
|------------|-------------|--------------|---------------|-------|----------------|----------------|----------------|-----------------|----------------------|
| 26.3       | 350         | 864          | 854           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 26.5       | 350         | 864          | 854           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 26.6       | 345         | 859          | 849           | -1.3  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 26.7       | 342         | 856          | 846           | -0.8  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 26.8       | 341         | 855          | 845           | -0.3  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 26.9       | 340         | 854          | 844           | -0.3  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 27.0       | 340         | 854          | 844           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 27.2       | 340         | 854          | 844           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 27.3       | 340         | 854          | 844           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 27.4       | 340         | 854          | 844           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 27.5       | 340         | 854          | 844           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 27.6       | 340         | 854          | 844           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 27.8       | 340         | 854          | 844           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 27.9       | 336         | 850          | 840           | -1.1  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 28.0       | 335         | 849          | 839           | -0.3  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 28.1       | 336         | 850          | 840           | 0.3   | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 28.2       | 331         | 845          | 835           | -1.4  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 28.4       | 331         | 845          | 835           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 28.5       | 330         | 844          | 834           | -0.3  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 28.6       | 330         | 844          | 834           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 28.7       | 330         | 844          | 834           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 28.8       | 330         | 844          | 834           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 28.9       | 330         | 844          | 834           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 29.1       | 327         | 841          | 831           | -0.9  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 29.2       | 328         | 842          | 832           | 0.3   | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 29.3       | 327         | 841          | 831           | -0.3  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 29.4       | 324         | 838          | 828           | -0.9  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 29.5       | 321         | 835          | 825           | -0.9  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 29.7       | 320         | 834          | 824           | -0.3  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 29.8       | 320         | 834          | 824           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 29.9       | 320         | 834          | 824           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 30.0       | 320         | 834          | 824           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 30.1       | 320         | 834          | 824           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 30.3       | 320         | 834          | 824           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 30.4       | 320         | 834          | 824           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 30.5       | 320         | 834          | 824           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 30.6       | 320         | 834          | 824           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 30.7       | 320         | 834          | 824           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 30.8       | 317         | 831          | 821           | -0.9  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 31.0       | 316         | 830          | 820           | -0.3  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 31.1       | 313         | 827          | 817           | -1.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 31.2       | 310         | 824          | 814           | -0.8  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 31.3       | 310         | 824          | 814           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 31.5       | 310         | 824          | 814           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 31.6       | 310         | 824          | 814           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 31.7       | 310         | 824          | 814           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 31.8       | 310         | 824          | 814           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 31.9       | 310         | 824          | 814           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 32.1       | 310         | 824          | 814           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 32.2       | 310         | 824          | 814           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 32.3       | 310         | 824          | 814           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 32.4       | 310         | 824          | 814           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 32.5       | 310         | 824          | 814           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 32.6       | 309         | 823          | 813           | -0.4  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |

## THE WESTERN COMPANY OF NORTH AMERICA - N2 FOAM ANALYSIS MODEL

J.K.EDWARDS (WALSH ENG.) CHACO #1 PICTURED CLIFFS 70Q FOAM FRAC 1-27-95

| ET<br>min. | STP<br>psi. | BHTP<br>psi. | NET P<br>psi. | SLOPE | RATE<br>Fm bpm | PROP<br>Fm ppg | Cumm<br>Wh vol | Cumm<br>Wh Prop | Fm Qual<br>mich/slry |
|------------|-------------|--------------|---------------|-------|----------------|----------------|----------------|-----------------|----------------------|
| 32.7       | 307         | 821          | 811           | -0.7  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 32.9       | 304         | 818          | 808           | -1.1  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 33.0       | 303         | 817          | 807           | -0.3  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 33.1       | 300         | 814          | 804           | -1.1  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 33.2       | 300         | 814          | 804           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 33.3       | 300         | 814          | 804           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 33.4       | 300         | 814          | 804           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 33.6       | 300         | 814          | 804           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 33.7       | 300         | 814          | 804           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 33.8       | 300         | 814          | 804           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 33.9       | 300         | 814          | 804           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 34.0       | 300         | 814          | 804           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 34.1       | 300         | 814          | 804           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 34.3       | 300         | 814          | 804           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 34.4       | 297         | 811          | 801           | -1.2  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 34.5       | 290         | 804          | 794           | -2.5  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 34.6       | 290         | 804          | 794           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 34.8       | 290         | 804          | 794           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 34.9       | 290         | 804          | 794           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 35.0       | 290         | 804          | 794           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 35.1       | 290         | 804          | 794           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 35.2       | 290         | 804          | 794           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 35.3       | 290         | 804          | 794           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 35.5       | 290         | 804          | 794           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 35.6       | 290         | 804          | 794           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 35.7       | 289         | 803          | 793           | -0.4  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 35.8       | 284         | 798          | 788           | -2.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 35.9       | 285         | 799          | 789           | 0.4   | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 36.0       | 285         | 799          | 789           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 36.1       | 281         | 795          | 785           | -1.6  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 36.3       | 280         | 794          | 784           | -0.4  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 36.4       | 280         | 794          | 784           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 36.5       | 280         | 794          | 784           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 36.6       | 280         | 794          | 784           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 36.7       | 280         | 794          | 784           | -0.0  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |
| 36.9       | 279         | 793          | 783           | -0.4  | 0.0            | 0.9            | 240            | 35100           | 0.0/ 3.9             |

## SECTION 5

PROCEDURE AND  
MISCELLANEOUS



J.K. EDWARDS (WALSH ENG.)

CHACO #1

NHP PICTURED CLIFFS FIELD

SEC.18,T26N,R12W

SAN JUAN COUNTY, NM

PICTURED CLIFFS FORMATION



The Western Company

## STIMULATION RECOMMENDATION

PREPARED FOR

MR. PAUL THOMPSON  
WALSH ENGINEERING

SERVICE POINT  
FARMINGTON, NM  
(505) 327-6222

PREPARED BY  
MIKE MCNEESE  
TECH REP II  
FARMINGTON

JANUARY 24, 1995

FM050248

SALES REPRESENTATIVE  
MIKE MCNEESE  
TECH REP II

THE WESTERN COMPANY

OPERATOR: J.K. EDWARDS (WALSH ENG.)  
WELL: CHACO #1  
FORMATION: PICTURED CLIFFS

WELL DATA

|                             |                                                                  |
|-----------------------------|------------------------------------------------------------------|
| Net Pay                     | 26 ft                                                            |
| Depth to Middle Perforation | 1,126 ft <i>6.5</i>                                              |
| Tubing                      | 2 7/8", 6.5#<br>2 7/8" SLIM HOLE                                 |
| Fracture Gradient           | .65 psi/ft                                                       |
| Bottom Hole Frac Pressure   | 732 psi                                                          |
| Bottom Hole Temperature     | 90 deg F <i>6.5</i>                                              |
| Perforated Interval         | <i>6.4</i> 1113'-1139' (2 JSPF)<br>TOTAL OF 52 HOLES @<br>0.50". |

THE WESTERN COMPANYTreatment Requirements for: CHACO #1

**FRAC/FLUSH:** 28,927 GALLONS 70Q N2 FOAM-20

*Pumped Volumes:*  
8,677 Gallons 20# J-4

*Mixed Volumes:*  
9,677 Gallons 20# J-4

*Containing per 1000 Gallons:*  
0.38 Pounds FRAC-CIDE 20, BACTERIACIDE  
20.00 Pounds J-4, GELLING AGENT  
3.00 Pounds P-4, PH CONTROL  
1.00 Pounds B-11, GEL BREAKER  
5.00 Gallons FRAC-FOAM 1, FOAMING AGENT

THE MIXED VOL. CONTAINS 1,000 GAL. FOR TANK BOTTOM.  
LOWER PH = 4.0-4.5 WITH P-4 AS NEEDED. MAX STP IS 3,000 PSI.

**PROPPANTS:** 5,000 Pounds BRADY 40/70 MESH  
25,000 Pounds ARIZONA 20/40 MESH  
5,000 Pounds BRADY 12/20 MESH

**THE WESTERN COMPANY**  
**NITROGEN FOAM PUMPING SCHEDULE**

|               |                           |
|---------------|---------------------------|
| OPERATOR      | J.K. EDWARDS (WALSH ENG.) |
| WELL          | CHACO #1                  |
| FIELD         | NIIP PICTURED CLIFFS      |
| LOCATION      | SEC.18,T26N,R12W          |
| COUNTY, STATE | SAN JUAN, NM              |
| FORMATION     | PICTURED CLIFFS           |
| PREPARED BY   | MIKE MCNEESE              |
| DATE          | JANUARY 24, 1995          |

**WELL AND RESERVOIR PARAMETERS**

|                                |          |
|--------------------------------|----------|
| Depth (mid perforation)        | 1126 ft  |
| Bottom Hole Frac Pressure      | 732 psi  |
| Bottom Hole Static Temperature | 90 deg F |

**TREATMENT PARAMETERS**

|                               |           |
|-------------------------------|-----------|
| Treating Conductor I.D.       | 2.441 in  |
| Fluid Specific Gravity        | 1.000     |
| Gel Temperature in Tanks      | 60 deg F  |
| Temperature of N2 at surface  | 100 deg F |
| Foam Injection Rate           | 30.0 bpm  |
| Total Slurry Treatment Volume | 30514 gal |

Foam Quality and Injection Rate are held constant downhole.

**CALCULATED TEMPERATURES**

|                 | Low      | High     |
|-----------------|----------|----------|
| Foam at Surface | 61 deg F | 61 deg F |
| Foam at Perfs   | 83 deg F | 83 deg F |

Average Formation Pumping Temperature 89 deg F

THE WESTERN COMPANY

## NITROGEN FOAM PUMPING SCHEDULE

PROCEDURE

| STAGE | DOWNHOLE<br>FOAM<br>VOLUME<br>(GALS) | DOWNHOLE<br>FOAM<br>QUALITY | DOWNHOLE<br>FOAM<br>RATE<br>(BPM) | PROPPANT        |       |      |       | CLEAN<br>GEL<br>VOLUME<br>(BBLs) | N2<br>VOLUME<br>(MSCF) |
|-------|--------------------------------------|-----------------------------|-----------------------------------|-----------------|-------|------|-------|----------------------------------|------------------------|
|       |                                      |                             |                                   | CONC.<br>LB/GAL | MESH  | TYPE | (LBS) |                                  |                        |
| 1     | 7000                                 | 70.0                        | 30.0                              | 0.00            |       |      | 0     | 50.0                             | 30.57                  |
| 2     | 5000                                 | 70.0                        | 30.0                              | 1.00            | 40/70 | SAND | 5000  | 35.7                             | 21.84                  |
| 3     | 5000                                 | 70.0                        | 30.0                              | 1.00            | 20/40 | SAND | 5000  | 35.7                             | 21.84                  |
| 4     | 10000                                | 70.0                        | 30.0                              | 2.00            | 20/40 | SAND | 20000 | 71.4                             | 43.68                  |
| 5     | 1667                                 | 70.0                        | 30.0                              | 3.00            | 12/20 | SAND | 5001  | 11.9                             | 7.28                   |
| FLUSH | 260                                  | 70.0                        | 30.0                              | 0.00            | FLUSH |      | 0     | 1.9                              | 1.14                   |
|       | 28927                                |                             |                                   |                 |       |      | 35001 | 206.6                            | 126.35                 |

TREATMENT SCHEDULE

| STAGE            | PROPPANT<br>CONC.<br>(LB/GAL) |       | CLEAN<br>GEL<br>RATE<br>(BPM) | BLEND<br>SLURRY<br>RATE<br>(BPM) | SLURRY VOLUME<br>(WITHOUT N2) |        |             | N2<br>RATE<br>SCFM | PROP<br>RATE<br>LB/MIN | STAGE<br>PUMP<br>TIME<br>HH:MM:SS |
|------------------|-------------------------------|-------|-------------------------------|----------------------------------|-------------------------------|--------|-------------|--------------------|------------------------|-----------------------------------|
|                  | PERF.                         | BLNDR |                               |                                  | (BBLs)                        | (CUM.) | ON<br>PERFS |                    |                        |                                   |
| 1                | 0.00                          | 00.0  | 9.00                          | 9.00                             | 50.0                          | 50     | 2           | 5503               | 0                      | 00:05:33                          |
| 2                | 1.00                          | 3.33  | 8.61                          | 9.91                             | 41.1                          | 91     | 52          | 5265               | 1205                   | 00:04:08                          |
| 3                | 1.00                          | 3.33  | 8.61                          | 9.91                             | 41.1                          | 132    | 93          | 5265               | 1205                   | 00:04:08                          |
| 4                | 2.00                          | 6.67  | 8.25                          | 10.75                            | 93.0                          | 225    | 134         | 5046               | 2310                   | 00:08:39                          |
| 5                | 3.00                          | 10.00 | 7.92                          | 11.51                            | 17.3                          | 243    | 228         | 4844               | 3327                   | 00:01:30                          |
| FLUSH            | 0.00                          | 00.0  | 9.00                          | 9.00                             | 1.9                           | 244    | 244         | 5504               | 0                      | 00:00:12                          |
| TOTAL PUMP TIME: |                               |       |                               |                                  |                               |        |             |                    |                        | 00:24:13                          |

**THE WESTERN COMPANY**  
**FOAM PRESSURE/VOLUME ANALYSIS**

|               |                           |
|---------------|---------------------------|
| OPERATOR      | J.K. EDWARDS (WALSH ENG.) |
| WELL          | CHACO #1                  |
| FIELD         | NIIP PICTURED CLIFFS      |
| LOCATION      | SEC.18,T26N,R12W          |
| COUNTY, STATE | SAN JUAN, NM              |
| FORMATION     | PICTURED CLIFFS           |
| PREPARED BY   | MIKE MCNEESE              |
| DATE          | JANUARY 24, 1995          |

**INPUT PARAMETERS**

|                                |                     |
|--------------------------------|---------------------|
| Treatment via                  | 2 7/8", 6.5 lb pipe |
| Number of Perforations         | 52                  |
| Perforation Diameter           | 0.500 in            |
| Total Treatment Volume         | 28667 gals          |
| Flush Volume                   | 274 gals            |
| Bottom Hole Frac Pressure      | 732 psi             |
| Foam Injection Rate            | 30.0 bpm            |
| Foam Quality                   | 70.0 percent        |
| Temperature of N2 at Surface   | 100 deg F           |
| Design Formation Temperature   | 88 deg F            |
| Specific Gravity of Base Fluid | 1.00                |
| Well Depth                     | 1126 ft             |
| I.D. of Treating Conductor     | 2.441 in            |
| Friction Pressure              | 1000 psi/1000 ft    |

**PREDICTED PRESSURES**

|                           |           |
|---------------------------|-----------|
| Fluid Rate                | 9.0 bpm   |
| Perforation Pressure Drop | 4.7 psi   |
| Foam Friction Pressure    | 1126 psi  |
| Surface Treating Pressure | 1650 psi  |
| ISDP with Nitrogen        | 706 psi   |
| ISDP with Foam            | 605 psi   |
| Nitrogen Rate             | 5594 scfm |

**VOLUME REQUIREMENTS**

|                    | USING NITROGEN AS FLUSH |               | USING FOAM AS FLUSH |               |
|--------------------|-------------------------|---------------|---------------------|---------------|
|                    | NITROGEN<br>SCF         | FLUID<br>GALS | NITROGEN<br>SCF     | FLUID<br>GALS |
| TREATMENT<br>FLUSH | 127279<br>1671          | 8600<br>0     | 127279<br>1118      | 8600<br>82    |
| TOTALS             | 128950                  | 8600          | 128397              | 8682          |

**THE WESTERN COMPANY****COST ESTIMATE**

CHACO #1

| QTY            | UNIT  | PRODUCT DESCRIPTION                      | UNIT PRICE | GROSS AMOUNT       | DISC (%) | NET AMOUNT         |
|----------------|-------|------------------------------------------|------------|--------------------|----------|--------------------|
| 9              | LBS   | B-11, GEL BREAKER                        | 12.75      | 114.75             | 35.0     | 74.59              |
| 6              | LBS   | FRAC-CIDE 20, BACTERIACIDE               | 37.00      | 222.00             | 35.0     | 144.30             |
| 44             | GAL   | FRAC-FOAM 1, FOAMING AGENT               | 26.95      | 1,185.80           | 35.0     | 770.77             |
| 200            | LBS   | J-4, GELLING AGENT                       | 4.85       | 970.00             | 35.0     | 630.50             |
| 50             | LBS   | P-4, PH CONTROL                          | 3.05       | 152.50             | 35.0     | 99.13              |
| 40             | MILES | CHEMICALS DELIVERY, LIGHT VEHICLE, LIGHT | 1.80       | 72.00              | 35.0     | 46.80              |
| 50             | CWT   | MOD SGTH 12/20,16/20 P CH (GAS)          | 1.30       | 65.00              | 35.0     | 42.25              |
| 300            | CWT   | MODERATE SGTH 20/40 PUMP CHG (GAS)       | 0.42       | 126.00             | 35.0     | 81.90              |
| 2999           | GAL   | PROP CONC PUMP CHG(FOAM)6.1-9 PPG        | 0.13       | 389.87             | 35.0     | 253.42             |
| 500            | GAL   | PROP CONC PUMP CHG(FOAM)9.1-12 PPG       | 0.20       | 100.00             | 35.0     | 65.00              |
| 50             | CWT   | BRADY 40/70 MESH                         | 9.98       | 499.00             | 35.0     | 324.35             |
| 250            | CWT   | ARIZONA 20/40 MESH                       | 7.54       | 1,885.00           | 35.0     | 1,225.25           |
| 50             | CWT   | BRADY 12/20 MESH                         | 11.57      | 578.50             | 35.0     | 376.02             |
| 350            | T-M   | DELIVERY CHARGE, 20 MILES                | 1.00       | 350.00             | 35.0     | 227.50             |
| 1              | UNIT  | MASTER MIXER 0 TO 10 BPM (GAS)           | 995.00     | 995.00             | 35.0     | 646.75             |
| 404            | HHP   | FRAC PUMP (GAS) (10 BPM, 1650 PSI)       | 6.05       | 2,444.20           | 35.0     | 1,588.73           |
| 40             | MILES | LIGHT EQUIPMENT 2 VEH. 20 MILES          | 1.80       | 72.00              | 35.0     | 46.80              |
| 120            | MILES | HEAVY EQUIPMENT 6 VEH. 20 MILES          | 2.95       | 354.00             | 35.0     | 230.10             |
| 1              | UNIT  | BLENDING CHARGE 1 HRS                    | 500.00     | 500.00             | 35.0     | 325.00             |
| 1              | EACH  | DENSIOMETER                              | 575.00     | 575.00             | 35.0     | 373.75             |
| 1              | USE   | LIQUID ADD PUMP                          | 750.00     | 750.00             | 35.0     | 487.50             |
| 1              | EACH  | TREATMENT MONITORING VAN (T.M.V.)        | 1,965.00   | 1,965.00           | 0.0      | 1,965.00           |
| 1              | EACH  | 5,000 PSI FRAC VALVE, PER JOB            | 655.00     | 655.00             | 0.0      | 655.00             |
| 500            | C-SCF | NITROGEN                                 | 1.89       | 945.00             | 35.0     | 614.25             |
| 764            | C-SCF | NITROGEN > 50000 SCF                     | 1.84       | 1,404.84           | 35.0     | 913.15             |
| 20             | MILES | LIGHT EQUIPMENT 1 VEH. 20 MILES          | 1.80       | 36.00              | 35.0     | 23.40              |
| 60             | MILES | HEAVY EQUIPMENT 3 VEH. 20 MILES          | 2.95       | 177.00             | 35.0     | 115.05             |
| 2              | UNIT  | NITROGEN PUMPING 0-4000 SCFM             | 1,110.00   | 2,220.00           | 35.0     | 1,443.00           |
| 1              | EACH  | N2 TARGET FLOWMETER                      | 290.00     | 290.00             | 35.0     | 188.50             |
| 1              | EACH  | SERVICE CHARGE, VALVE ON N2              | 390.00     | 390.00             | 35.0     | 253.50             |
| <b>TOTALS:</b> |       |                                          |            | <b>\$20,483.46</b> |          | <b>\$14,231.25</b> |

TECHNICAL DATA CONTAINED IN THIS PROPOSAL IS BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME OF WRITING AND IS SUBJECT TO FURTHER ANALYSIS AND TESTING. THE PRICING DATA CONTAINED IN THIS PROPOSAL ARE ESTIMATES ONLY AND MAY VARY DEPENDING ON THE WORK ACTUALLY PERFORMED. PRICING DOES NOT INCLUDE FEDERAL, STATE AND LOCAL TAXES OR ROYALTIES. THIS QUOTATION IS BASED ON THE WESTERN COMPANY BEING AWARDED THE WORK ON A FIRST CALL BASIS AND WITHIN THIRTY (30) DAYS OF THE PROPOSAL DATE. THESE PRICES WILL BE SUBJECT TO REVIEW IF THE WORK IS DONE AFTER THIRTY (30) DAYS FROM THE PROPOSAL DATE, OR ON A SECOND OR THIRD CALL BASIS. CUSTOMER WILL BE CHARGED FOR ALL 'SPECIAL PROPPANTS' DELIVERED TO LOCATION, WHETHER THEY ARE PUMPED OR NOT. ALL PROPPANTS OTHER THAN STANDARD GRADE FRAC SAND ARE CONSIDERED 'SPECIAL PROPPANTS'.

**THE WESTERN COMPANY****COST ESTIMATE****CHACO #1**

| QTY            | UNIT  | PRODUCT DESCRIPTION                        | NET AMOUNT         |
|----------------|-------|--------------------------------------------|--------------------|
| 9              | LBS   | B-11, GEL BREAKER                          | 74.59              |
| 6              | LBS   | FRAC-CIDE 20, BACTERIACIDE                 | 144.30             |
| 44             | GAL   | FRAC-FOAM 1, FOAMING AGENT                 | 770.77             |
| 200            | LBS   | J-4, GELLING AGENT                         | 630.50             |
| 50             | LBS   | P-4, PH CONTROL                            | 99.13              |
| 40             | MILES | CHEMICALS DELIVERY, LIGHT VEHICLE, LIGHT V | 46.80              |
| 50             | CWT   | MOD SGTH 12/20,16/20 P CH (GAS)            | 42.25              |
| 300            | CWT   | MODERATE SGTH 20/40 PUMP CHG (GAS)         | 81.90              |
| 2999           | GAL   | PROP CONC PUMP CHG(FOAM)6.1-9 PPG          | 253.42             |
| 500            | GAL   | PROP CONC PUMP CHG(FOAM)9.1-12 PPG         | 65.00              |
| 50             | CWT   | BRADY 40/70 MESH                           | 324.35             |
| 250            | CWT   | ARIZONA 20/40 MESH                         | 1,225.25           |
| 50             | CWT   | BRADY 12/20 MESH                           | 376.02             |
| 350            | T-M   | DELIVERY CHARGE, 20 MILES                  | 227.50             |
| 1              | UNIT  | MASTER MIXER 0 TO 10 BPM (GAS)             | 646.75             |
| 404            | HHP   | FRAC PUMP (GAS) (10 BPM, 1650 PSI)         | 1,588.73           |
| 40             | MILES | LIGHT EQUIPMENT 2 VEH. 20 MILES            | 46.80              |
| 120            | MILES | HEAVY EQUIPMENT 6 VEH. 20 MILES            | 230.10             |
| 1              | UNIT  | BLENDING CHARGE 1 HRS                      | 325.00             |
| 1              | EACH  | DENSIOMETER                                | 373.75             |
| 1              | USE   | LIQUID ADD PUMP                            | 487.50             |
| 1              | EACH  | TREATMENT MONITORING VAN (T.M.V.)          | 1,965.00           |
| 1              | EACH  | 5,000 PSI FRAC VALVE, PER JOB              | 655.00             |
| 500            | C-SCF | NITROGEN                                   | 614.25             |
| 764            | C-SCF | NITROGEN > 50000 SCF                       | 913.15             |
| 20             | MILES | LIGHT EQUIPMENT 1 VEH. 20 MILES            | 23.40              |
| 60             | MILES | HEAVY EQUIPMENT 3 VEH. 20 MILES            | 115.05             |
| 2              | UNIT  | NITROGEN PUMPING 0-4000 SCFM               | 1,443.00           |
| 1              | EACH  | N2 TARGET FLOWMETER                        | 188.50             |
| 1              | EACH  | SERVICE CHARGE, VALVE ON N2                | 253.50             |
| <b>TOTALS:</b> |       |                                            | <b>\$14,231.25</b> |

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CUSTOMER WILL BE CHARGED FOR ALL 'SPECIAL PROPPANTS' DELIVERED TO LOCATION, WHETHER THEY ARE PUMPED OR NOT. ALL PROPPANTS OTHER THAN STANDARD GRADE FRAC SAND ARE CONSIDERED 'SPECIAL PROPPANTS'.

## **PRODUCT DESCRIPTIONS**

### **B-11 (Gel Breaker)**

A solid enzyme breaker designed for use in neutral or slightly acidic pH fracturing fluids to sufficiently reduce the gel viscosity allowing for clean-up of the treatment system. B-11 is used primarily at low temperatures below 120 Degrees Fahrenheit.

### **FRAC-CIDE 20 (Bactericide)**

An extremely effective biocide for the inhibitory control of aerobic and anaerobic (sulfate-reducing) bacteria in well treatment fluids. It is packaged as a dry powder for safety and easy of handling in all weather conditions.

### **FRAC FOAM-1 (Foaming Agent)**

An amphoteric (cationic and anionic) surfactant used as a foaming agent for water and acid-base fracturing fluids.

### **J-4 (Gelling Agent)**

A guar gum gelling agent blended with a buffering system. It is used in gelled water, gelled acid and crosslinked water-base fluids. The polymer residue is 6% to 9% by weight.

### **P-4 (pH Control)**

A granular sulfamic acid used to lower the pH of various water-base fracturing fluids.

**THE WESTERN COMPANY**  
**FIELD RECEIPT WORKSHEET**

CHACO #1

| PRODUCT CODE | QUANTITY | UNIT  | PRODUCT DESCRIPTION                      | UNIT PRICE |
|--------------|----------|-------|------------------------------------------|------------|
| H0936        | 9        | LBS   | B-11, GEL BREAKER                        | 12.75      |
| H0356        | 6        | LBS   | FRAC-CIDE 20, BACTERIACIDE               | 37.00      |
| H2186        | 44       | GAL   | FRAC-FOAM 1, FOAMING AGENT               | 26.95      |
| H0846        | 200      | LBS   | J-4, GELLING AGENT                       | 4.85       |
| H1096        | 50       | LBS   | P-4, PH CONTROL                          | 3.05       |
| J7416        | 40       | MILES | CHEMICALS DELIVERY, LIGHT VEHICLE, LIGHT | 1.80       |
| E118BB       | 50       | CWT   | MOD SGTH 12/20,16/20 P CH (GAS)          | 1.30       |
| E118AB       | 300      | CWT   | MODERATE SGTH 20/40 PUMP CHG (GAS)       | 0.42       |
| J4626B       | 2999     | GAL   | PROP CONC PUMP CHG(FOAM)6.1-9 PPG        | 0.13       |
| J4636B       | 500      | GAL   | PROP CONC PUMP CHG(FOAM)9.1-12 PPG       | 0.20       |
| NOTPR        | 50       | CWT   | BRADY 40/70 MESH                         | 9.98       |
| NOTPR        | 250      | CWT   | ARIZONA 20/40 MESH                       | 7.54       |
| NOTPR        | 50       | CWT   | BRADY 12/20 MESH                         | 11.57      |
| J4016        | 350      | T-M   | DELIVERY CHARGE, 20 MILES                | 1.00       |
| F3016B       | 1        | UNIT  | MASTER MIXER 0 TO 10 BPM (GAS)           | 995.00     |
| F2016B       | 404      | HHP   | FRAC PUMP (GAS) (10 BPM, 1650 PSI)       | 6.03       |
| J3916        | 40       | MILES | LIGHT EQUIPMENT 2 VEH. 20 MILES          | 1.80       |
| J3906        | 120      | MILES | HEAVY EQUIPMENT 6 VEH. 20 MILES          | 2.95       |
| J2186        | 1        | UNIT  | BLENDING CHARGE 1 HRS                    | 500.00     |
| J3216        | 1        | EACH  | DENSIOMETER                              | 575.00     |
| J0556        | 1        | USE   | LIQUID ADD PUMP                          | 750.00     |
| J3006        | 1        | EACH  | TREATMENT MONITORING VAN (T.M.V.)        | 1965.00    |
| NOTPR        | 1        | EACH  | 5,000 PSI FRAC VALVE, PER JOB            | 655.00     |
| N023E        | 500      | C-SCF | NITROGEN                                 | 1.89       |
| N003E        | 764      | C-SCF | NITROGEN > 50000 SCF                     | 1.84       |
| J3916        | 20       | MILES | LIGHT EQUIPMENT 1 VEH. 20 MILES          | 1.80       |
| J3906        | 60       | MILES | HEAVY EQUIPMENT 3 VEH. 20 MILES          | 2.95       |
| N2006        | 2        | UNIT  | NITROGEN PUMPING 0-4000 SCFM             | 1110.00    |
| N1686        | 1        | EACH  | N2 TARGET FLOWMETER                      | 290.00     |
| H4456        | 1        | EACH  | SERVICE CHARGE, VALVE ON N2              | 390.00     |

Walsh Engineering and Production

Completion Prognosis for  
J. K. Edwards  
Chaco #1

Location: NW/4 Sec 18 T26N R12W  
San Juan County, NM

Date: January 22, 1995

Field: NIIP Pictured Cliffs  
Minerals: BLM NM-22046

Elev: GL 5989  
PBD 1137'GL  
Perfs 1113-1139

Procedure:

1. MOL and RU completion rig. Hold safety meeting.
2. Blow well down and kill with water if necessary.
3. ND tubing head and NU BOP. NU 2-3/8" relief line.
4. Pick up extra joints of 1-1/4" tubing and TIH and check for fill. TOH and lay down 1-1/4" tubing. Tally tubing. Clean out well with sand bailer if necessary.
5. Install 5000# frac valve on 2-7/8" tubing. Rig up frac equipment and pressure test surface lines.
6. Fracture with 5,000# of 40/70 sand, 25,000# of 20/40 sand, and 5000# of 12/20 sand in a 70 % quality N2 foam. Fluid is 20# guar gel. Pump rate at 30 BPM and expected treating pressure is 1750 psig. Max treating pressure is 3000 psig. Treat with the following schedule:

| Stage         | Foam Vol.<br>( Gals.) | Gel Vol.<br>(Gals.) | Sand Vol.<br>(lbs.) |
|---------------|-----------------------|---------------------|---------------------|
| Pad           | 7,000                 | 2,100               | 0                   |
| 1.0 ppg 40/70 | 5,000                 | 1,500               | 5,000               |
| 1.0 ppg 20/40 | 5,000                 | 1,500               | 5,000               |
| 2.0 ppg 20/40 | 10,000                | 3,000               | 20,000              |
| 3.0 ppg 12/20 | 1,666                 | 500                 | 5,000               |
| Flush         | 260                   | 80                  | 0                   |
| Total         | 28,926                | 8,680               | 35,000              |

9. Close frac valve. RD frac company and install flowline with 1/4" ceramic choke. Flow well back to pit overnight.
10. When well dies, remove frac valve and install tubing head. NU BOPs.
11. TIH with sand bailer on 1-1/2" tubing and clean out to PBTD at 1137'GL. TOH.
12. Set 1-1/2" near top PC perf at approximately 1113'GL. ND BOPs and nipple up wellhead.
13. Rig down and release rig. Set separator and return well to production.

Paul C. Thompson

Paul C. Thompson, P.E.

CHACO #1, 01/27/95, L282950

|                 |              |  |           |    |                  |         |      |               |                 |  |                   |
|-----------------|--------------|--|-----------|----|------------------|---------|------|---------------|-----------------|--|-------------------|
| District        | Farmington   |  | Dist. No. |    |                  | Job No. | 1508 |               | Same As Job No. |  |                   |
| Field Receipt   | 1282950      |  | 2.        | 3. |                  | 4.      | 5.   |               | 6.              |  |                   |
| Order Taken By  | M. Knight    |  |           |    | Time             | 12:30   |      | Date          | 1-24-95         |  | Operator P.O. No. |
| Order Placed By | P. Thompson  |  |           |    | Phone            |         |      | Credit Number |                 |  |                   |
| Company         | J.K. Edwards |  |           |    | Lease Name & No. | CHAD #1 |      |               |                 |  |                   |

Job Instructions

12-Frac.

|                                             |                                            |                                            |                                  |                                          |                                           |                                     |  |              |  |
|---------------------------------------------|--------------------------------------------|--------------------------------------------|----------------------------------|------------------------------------------|-------------------------------------------|-------------------------------------|--|--------------|--|
| <b>Fluid Type:</b>                          |                                            | <b>Proppant:</b>                           |                                  | <b>Press (PSI)</b>                       |                                           | <b>Vol (Gall):</b>                  |  | <b>Well:</b> |  |
| 11 <input type="checkbox"/> Oil-Water Emul. | 08 <input type="checkbox"/> Gelled Oil     | 15 <input type="checkbox"/> Clay Stab.     | 1 <input type="checkbox"/> Sand  | 1 <input type="checkbox"/> 0 - 3000      | 1 <input type="checkbox"/> 0 - 1500       | 1 <input type="checkbox"/> New      |  |              |  |
| 12 <input type="checkbox"/> Oil-Acid Emul.  | 09 <input type="checkbox"/> Other Oil      | 16 <input type="checkbox"/> Flow Control   | 2 <input type="checkbox"/> Beads | 2 <input type="checkbox"/> 3001 - 6000   | 2 <input type="checkbox"/> 1501 - 5000    | 2 <input type="checkbox"/> Rework   |  |              |  |
| 03 <input type="checkbox"/> Acid 0 - 10%    | 10 <input type="checkbox"/> X-Linked Water | 17 <input type="checkbox"/> Super Frac     | 3 <input type="checkbox"/> Other | 3 <input type="checkbox"/> 5001 - 8000   | 3 <input type="checkbox"/> 5001 - 20000   | 3 <input type="checkbox"/> New Zone |  |              |  |
| 04 <input type="checkbox"/> Acid 10.1 - 20% | 11 <input type="checkbox"/> Gelled Water   | 18 <input type="checkbox"/> Misc.          | 4 <input type="checkbox"/> None  | 4 <input type="checkbox"/> 6001 - 8000   | 4 <input type="checkbox"/> 20001 - 80000  | 4 <input type="checkbox"/> Other    |  |              |  |
| 5 <input type="checkbox"/> Acid 20.1% & up  | 12 <input type="checkbox"/> Other Water    |                                            |                                  | 5 <input type="checkbox"/> 8001 - 10000  | 5 <input type="checkbox"/> 60001 - 100000 |                                     |  |              |  |
| 6 <input type="checkbox"/> Gelled Acid      | 13 <input type="checkbox"/> Foam           | <b>Gas:</b>                                |                                  | 6 <input type="checkbox"/> 10001 - 15000 | 6 <input type="checkbox"/> 100001 & up    |                                     |  |              |  |
| 07 <input type="checkbox"/> Other Acid      | 14 <input type="checkbox"/> Scale Treat.   | 1 <input type="checkbox"/> CO <sub>2</sub> | 3 <input type="checkbox"/> OTH   | 7 <input type="checkbox"/> 15001 & up    |                                           |                                     |  |              |  |
|                                             |                                            | 2 <input type="checkbox"/> N <sub>2</sub>  | 4 <input type="checkbox"/> None  |                                          |                                           |                                     |  |              |  |

|                     |                 |                 |       |                               |                    |
|---------------------|-----------------|-----------------|-------|-------------------------------|--------------------|
| ate & Time Wanted   | 1-27-95         | Total Depth     | 1126  | Type & Amount Material Needed | 1 Nitrogen = 19476 |
| Casing Size & Wgt.  |                 | Oper. Max Press | 3,000 | 2                             | 126.35             |
| tubing Size & Wgt.  | 2 7/8 - 6.5     | Hole Size       |       | 3                             |                    |
| Flush In            | LOC.            |                 |       | 4                             |                    |
| op connection       | 2 7/8 EUE / WSE |                 |       | 5                             |                    |
| Directions to Well: | SEC MAP.        |                 |       |                               |                    |

Miscellaneous Information:

| NAME      | Yard Time | Unit 1 | Unit 2 | Service Engineer              | Empl. No. | Unit                         | Act. Hrs. |
|-----------|-----------|--------|--------|-------------------------------|-----------|------------------------------|-----------|
| Wilson R. |           | 3.3106 |        | Martinez R.                   |           | 0854                         |           |
| ASPAS R.  |           | 3.3118 |        |                               |           |                              |           |
| Culver M. |           | 6.060  | 24.715 |                               |           |                              |           |
|           |           |        |        | <b>Rented Services</b>        |           | <b>Left Last Job/Yard</b>    |           |
|           |           |        |        |                               |           | Date                         | Time      |
|           |           |        |        |                               |           |                              |           |
|           |           |        |        |                               |           | <b>Arrived Job</b>           |           |
|           |           |        |        |                               |           | Date                         | Time      |
|           |           |        |        |                               |           |                              |           |
|           |           |        |        | <b>Total Off-road Mileage</b> |           |                              |           |
|           |           |        |        |                               |           |                              |           |
|           |           |        |        | <b>BORROWED EQUIPMENT</b>     |           | <b>Start Service</b>         |           |
|           |           |        |        |                               |           | Date                         | Time      |
|           |           |        |        |                               |           |                              |           |
|           |           |        |        |                               |           | <b>Stop Service</b>          |           |
|           |           |        |        |                               |           | Date                         | Time      |
|           |           |        |        |                               |           |                              |           |
|           |           |        |        |                               |           | <b>Arrived Next Job/Yard</b> |           |
|           |           |        |        |                               |           | Date                         | Time      |
|           |           |        |        |                               |           |                              |           |
|           |           |        |        |                               |           | <b>Speedometer Reading</b>   |           |
|           |           |        |        |                               |           | End                          |           |
|           |           |        |        |                               |           | Start                        |           |

|                 |              |    |           |                  |          |         |               |         |                 |                   |  |  |
|-----------------|--------------|----|-----------|------------------|----------|---------|---------------|---------|-----------------|-------------------|--|--|
| District        | Farmington   |    | Dist. No. |                  |          | Job No. | 1508          |         | Same As Job No. |                   |  |  |
| Field Receipt   | 1.           | 2. | 3.        | 4.               | 5.       | 6.      |               |         |                 |                   |  |  |
| Order Taken By  | M. Knight    |    |           | Time             | 12:30    |         | Date          | 1/24/95 |                 | Operator P.O. No. |  |  |
| Order Placed By | P. Thompson  |    |           | Phone            |          |         | Credit Number |         |                 |                   |  |  |
| Company         | J.K. Edwards |    |           | Lease Name & No. | CHACO #1 |         |               |         |                 |                   |  |  |

## Job Instructions

70 Q N2 FARM-20

40/70 B - 5,000 lbs.

20/40 A - 25,000 lbs.

12/20 B - 5,000 lbs.

|                                             |                                            |                                            |                                  |                                          |                                           |                                     |  |             |  |             |  |       |  |
|---------------------------------------------|--------------------------------------------|--------------------------------------------|----------------------------------|------------------------------------------|-------------------------------------------|-------------------------------------|--|-------------|--|-------------|--|-------|--|
| Fluid Type:                                 |                                            | 08 <input type="checkbox"/> Gelled Oil     |                                  | 15 <input type="checkbox"/> Clay Stab.   |                                           | Proppant:                           |  | Press (PSI) |  | Vol (Gall): |  | Well: |  |
| 01 <input type="checkbox"/> Oil-Water Emul. | 09 <input type="checkbox"/> Other Oil      | 16 <input type="checkbox"/> Flow Control   | 1 <input type="checkbox"/> Sand  | 1 <input type="checkbox"/> 0 - 3000      | 1 <input type="checkbox"/> 0 - 1500       | 1 <input type="checkbox"/> New      |  |             |  |             |  |       |  |
| 02 <input type="checkbox"/> Oil-Acid Emul.  | 10 <input type="checkbox"/> X-Linked Water | 17 <input type="checkbox"/> Super Frac     | 2 <input type="checkbox"/> Beads | 2 <input type="checkbox"/> 3001 - 5000   | 2 <input type="checkbox"/> 1501 - 5000    | 2 <input type="checkbox"/> Rework   |  |             |  |             |  |       |  |
| 03 <input type="checkbox"/> Acid 0 - 10%    | 11 <input type="checkbox"/> Gelled Water   | 18 <input type="checkbox"/> Misc.          | 3 <input type="checkbox"/> Other | 3 <input type="checkbox"/> 5001 - 6000   | 3 <input type="checkbox"/> 5001 - 20000   | 3 <input type="checkbox"/> New Zone |  |             |  |             |  |       |  |
| 04 <input type="checkbox"/> Acid 10.1 - 20% | 12 <input type="checkbox"/> Other Water    |                                            | 4 <input type="checkbox"/> None  | 4 <input type="checkbox"/> 6001 - 8000   | 4 <input type="checkbox"/> 20001 - 60000  | 4 <input type="checkbox"/> Other    |  |             |  |             |  |       |  |
| 05 <input type="checkbox"/> Acid 20.1% & up | 13 <input type="checkbox"/> Foam           | Gas:                                       |                                  | 5 <input type="checkbox"/> 8001 - 10000  | 5 <input type="checkbox"/> 60001 - 100000 |                                     |  |             |  |             |  |       |  |
| 06 <input type="checkbox"/> Gelled Acid     | 14 <input type="checkbox"/> Scale Treat.   | 1 <input type="checkbox"/> CO <sub>2</sub> | 3 <input type="checkbox"/> OTH   | 6 <input type="checkbox"/> 10001 - 15000 | 6 <input type="checkbox"/> 100001 & up    |                                     |  |             |  |             |  |       |  |
| 07 <input type="checkbox"/> Other Acid      |                                            | 2 <input type="checkbox"/> N <sub>2</sub>  | 4 <input type="checkbox"/> None  | 7 <input type="checkbox"/> 15001 & up    |                                           |                                     |  |             |  |             |  |       |  |

|                    |                 |                 |       |                               |                  |
|--------------------|-----------------|-----------------|-------|-------------------------------|------------------|
| Date & Time Wanted | 1-27-95         | Total Depth     | 1126' | Type & Amount Material Needed | 1 Fracide 20 = 6 |
| Casing Size & Wgt. |                 | Oper. Max Press | 3,000 | 2 J-4 =                       | 336              |
| Tubing Size & Wgt. | 2 7/8 - 6.5     | Hole Size       | ✓     | 3 P-4 =                       | 50               |
| Flush In           | LOC.            |                 |       | 4 B-11 =                      | 16               |
| Top Connection     | 2 7/8 EUC / WSI |                 |       | 5 Fracform-1 =                | 84               |

Directions to Well: Hwy 44 to CHACO plant road, go towards plant, go 1.7 mi. T/R, see map.

## Miscellaneous Information:

2nd well -

| NAME        | Yard Time | Unit 1  | Unit 2 | Service Engineer      | Empl. No. | Unit  | Act. Hrs. |
|-------------|-----------|---------|--------|-----------------------|-----------|-------|-----------|
| Sheffield   |           | 7.34.14 |        | C. R. G. B.           |           | 2643  | :         |
| Fitzpatrick |           | 7.43.33 |        | Nipper                |           | 31426 | :         |
| Bolby P.    |           | 1.21.59 |        | Rented Services       |           |       |           |
| Smith L.    |           | 1.23.5  |        | Left Last Job/Yard    |           |       |           |
| Mae G.      |           | 4.61.17 |        | Date                  |           |       |           |
| Schmitt G.  |           | 4.05.5  |        | Time                  |           |       |           |
| Sakine S.   |           | 4.06.3  |        | Arrived Job           |           |       |           |
| Pigman J.   |           | 4.07.1  |        | Date                  |           |       |           |
|             |           |         |        | Time                  |           |       |           |
|             |           |         |        | Start Service         |           |       |           |
|             |           |         |        | Date                  |           |       |           |
|             |           |         |        | Time                  |           |       |           |
|             |           |         |        | Stop Service          |           |       |           |
|             |           |         |        | Date                  |           |       |           |
|             |           |         |        | Time                  |           |       |           |
|             |           |         |        | Arrived Next Job/Yard |           |       |           |
|             |           |         |        | Date                  |           |       |           |
|             |           |         |        | Time                  |           |       |           |
|             |           |         |        | Speedometer Reading   |           |       |           |
|             |           |         |        | End                   |           |       |           |
|             |           |         |        | Start                 |           |       |           |

COMPANY: J.A. EdwardsLEASE: CHACO #1STAGE: 1

TYPE OF SAND

WEIGHT

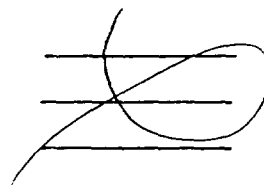
UNIT

DRIVER

|          |        |      |           |
|----------|--------|------|-----------|
| 40/70B   | 5,120  | 4071 | J. PIGMAN |
| 20/40 AC | 26,080 | 4063 | S. SALINE |
| 12/20B   | 6,340  | 4071 | J. PIGMAN |
|          |        |      |           |
|          |        |      |           |
|          |        |      |           |
|          |        |      |           |

DISPATCH NUMBER: 150814DATE: 1-24-95

SAND TRANSFERRED FROM OTHER LOCATION



TOTAL SAND ORDERED

TYPE: 40/70BAMOUNT: 5,000 lbs20/40 AC25,000 lbs.12/20B5,000 lbs.

SIGNED

Gleeson

# TRI-CITY TRANSFER & STORAGE, INC.

33 EAST ANIMAS  
FARMINGTON, NEW MEXICO 87401

3 8659

TRUCK NO.

4063

CUSTOMER'S NAME

Western Co.

ADDRESS

J.H. Edwards - ~~Bentley~~ Chaco

COMMODITY

20/40 AZ

DATE

TIME

1-26-95

9:31AM

53700

lb GROSS

DRIVER

ON

OFF

X

lb TARE

27,620

lb NET

26,080

SHIPPER

6340

FEE

500

DRIVER

Tommy Ward

John Melvin  
CERTIFIED WEIGHER

TRI-CITY TRANSFER & STORAGE, INC.

403 EAST ANIMAS  
FARMINGTON, NEW MEXICO 87401

8665

TRUCK NO. 4071

CUSTOMER'S NAME Western Co

ADDRESS J.K. Edwards - Bengal ? Chaco

COMMODITY 12/20 B.

DATE 1-26-95 TIME 10:46AM 50080  
37,400  
12,680

lb GROSS

lb TARE

lb NET

DRIVER ON        OFF   /  

SHIPPER       

DRIVER John M. Rignani

FEE 5.00  
M. Graham  
CERTIFIED WEIGHER

TRI-CITY TRANSFER & STORAGE, INC.

403 EAST ANIMAS  
FARMINGTON, NEW MEXICO 87401

8653

TRUCK NO. 4071

CUSTOMER'S NAME Western Co

ADDRESS J.K. Edwards - Bengal ? Chaco

COMMODITY 40/70 B.

DATE 1-26-95 TIME 8:30AM 37400  
27,160  
10,240

lb GROSS

lb TARE

lb NET

DRIVER ON        OFF   /  

SHIPPER       

DRIVER John M. Rignani

FEE 5.00  
M. Graham  
CERTIFIED WEIGHER

TRK# 4071 = Front - 12/20 B

Rear - 40/70 B

---

TRK# 4063 = Front - 20/40 AZ

25,000 lbs

Rear - 20/40 AZ

---

TRK# 4055 = Front - 20/40 AZ

25,000 lbs

rear - 20/40 AZ

---

**FARMINGTON DISTRICT  
PRE-STIMULATION CHECKLIST-ENGINEERING**

**DISPATCH:**

CO. J.M. Edwards RTS Date w/c  
Well CHMOO #1 RTS Time w/c

Water Samples

Sand Samples

Engineer(s) notified Name \_\_\_\_\_

Dispatcher

check Y/N

**ENGINEERING:**

WPS Engineer \_\_\_\_\_ Eng-on-loc(time) \_\_\_\_\_

Verify Procedure .

Verify Chemical Loading (chemicals & amounts)

Type of Chem-Ad acceptable?

Q.C. Van Needed?

Driver

TMV Required?

Driver

Stregs Info Complete?

Other

Engineer \_\_\_\_\_

THE WESTERN COMPANY  
FARMINGTON DISTRICT

POST JOB LOCATION CONDITION / CLEANLINESS

WAS ALL TRASH PICKED UP

YES ☒ NO ☐

WERE ALL SPILLS CLEANED UP

YES ☒ NO ☐

WERE ALL SAND PILES KNOCKED  
DOWN AND SPREAD OUT

YES ☒ NO ☐

WAS LOCATION LEFT IN AN ACCEPTABLE  
CONDITION THAT MEETS OR EXCEEDS  
YOUR COMPANY GUIDELINES

YES ☒ NO ☐

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SERVICE SUPERVISOR: J. McCubb

CUSTOMER: J. K. Edwards

44

Chaco Plain

Pavement



Chaco Plain

117 mi

← FMGT

Yellow Paper Box



**SERVICE ORDER AND  
FIELD RECEIPT NO.**

FIELD RECEIPT NO. **L 282950**

[illegible]



The Western Company  
of North America

REMIT TO: P.O. BOX 911543  
DALLAS, TX 75391-1543

J. K. EDWARDS ASSOCIATES, INC.  
1401 17TH STREET, SUITE 1400  
DENVER CO 80202

|             |                 |                |
|-------------|-----------------|----------------|
| INVOICE NO. | OUR RECEIPT NO. | DATE           |
| 465307      | 222550          | 01/27/95       |
| 27390       | 1314            | YOUR ORDER NO. |

|                      |  |             |               |
|----------------------|--|-------------|---------------|
| OUR ENGINEER         |  | OUR STATION | YOUR STATION  |
| FARMINGTON STIMULANT |  | NARINEZ     | PAUL THOMPSON |
| CHACO #1             |  | SAN JUAN    | NM 30         |

FEDERAL ID. NO. G-75-076044

| PRODUCT CODE | DESCRIPTION                        | UNIT OF MEASURE | QUANTITY | UNIT PRICE | GROSS AMOUNT | PERCENT DISC | NET AMOUNT |
|--------------|------------------------------------|-----------------|----------|------------|--------------|--------------|------------|
| 00112        | REURADE, HEAVY VEHICLE, PER UNIT   | MILE            | 9.0      | 2.950      | 26.55        | 35.00        | 17.26      |
| 00112        | TIFFAGE, AUTO/PICK-UP/TREATING VAN | MILE            | 3.0      | 1.800      | 5.40         | 35.00        | 3.51       |
| 00112        | 100 GPM, AUTO/PICK-UP/TREATING VAN | MILE            | 2.0      | 1110.000   | 2220.00      | 35.00        | 1,443.00   |
| 00112        | 100 GPM, AUTO/PICK-UP/TREATING VAN | MILE            | 1.0      | 390.000    | 390.00       | 35.00        | 253.50     |
| 00112        | 100 GPM, AUTO/PICK-UP/TREATING VAN | MILE            | 1.0      | 240.000    | 240.00       | 35.00        | 156.00     |
| 00112        | 100 GPM, AUTO/PICK-UP/TREATING VAN | MILE            | 500.0    | 1.890      | 945.00       | 35.00        | 614.25     |
| 00112        | 100 GPM, AUTO/PICK-UP/TREATING VAN | MILE            | 890.0    | 1.840      | 1619.20      | 35.00        | 1,052.48   |
| 00112        | SUB TOTAL                          |                 |          |            | 5496.15      |              | 3,572.50   |

NEW MEXICO SALES TAX 4.5%  
NEW MEXICO, SAN JUAN SALES TAX 2.5%  
NEW MEX., FARMINGTON SALES TAX 1.184%

PAY THIS AMOUNT

| LINE | QTY   | DESCRIPTION                            | UNIT PRICE | AMOUNT   |
|------|-------|----------------------------------------|------------|----------|
| 1    | 1.0   | RELEASE, HEAVY VEHICLE, FEA LAL        | 2,950      | 2,950.00 |
| 2    | 1.0   | MILEAGE, 5070/PICK-UP/TREATING VAN     | 1.80       | 1,800.00 |
| 3    | 1.0   | LOW RATE N2 PUMP, 0 - 5000 PSI         | 1110.000   | 1,110.00 |
| 4    | 1.0   | SERVICE CHARGE, HEADER AND VALVE       | 370.000    | 370.00   |
| 5    | 1.0   | N2 TARGEL FLOWMETER                    | 290.000    | 290.00   |
| 6    | 500.0 | N2/100 SCF.1ST 50000 SCF.FARMINGTON.NM | 1.890      | 945.00   |
| 7    | 880.0 | NITROGEN CHARGES-FARMINGTON NM         | 1.840      | 1,619.20 |

\*\*\*\*\*  
 08=FORWARD      PF07=FIRST PAGE ENTER=UPDATE (STATUS=S SUMMARY)      PAGE: 1  
 1111

\*\*\*\*\* FIELD RECEIPT SUMMARY \*\*\*\*\*  
 CUST # 27340 - 000      CC #: 1314    FR#: L282950    STATUS: S  
 NAME: J. K. EDWARDS ASSOCIATES, INC.    WELL: CHACO #1  
 PRD REVENUE: 2564.20    PURCHASE ORDER #:  
 EQUIP REVENUE: 2931.95    PROPOSAL NUMBER :  
 GROSS REVENUE: 5496.15    HOW TO PRINT?...: E EXTENDED  
                                  LINE DISCOUNTS APPLY? N    === ACCRUED DISCOUNTS ===  
 SALES CON: 1923.65    35.00    REG: .00    .00  
 JO CON: .00    .00    JO: .00    .00  
 BID CON: .00    .00  
 DIST CON: .00    .00  
 TOTAL CON: 1923.65    35.00  
 NET REVENUE: 3572.50  
 TAX AMOUNT: 212.14  
 ROY AMOUNT: .00  
 TOTAL: 3784.64  
 =====  
 ===== WARRANTY INFORMATION =====  
 WERE WE READY TO PUMP .....?  
 WERE WE PROFESSIONAL .....?  
 DID EQUIPMENT PERFORM OK .....?  
 DID WE DO WHAT WE AGREED TO .....?  
 AMOUNT OF CREDIT REQUESTED...  
 ===== BILLING INSTRUCTIONS =====



# JOB PERFORMANCE REPORT

District 100 Date 10/10/01 Field Receipt Number 100  
Customer Name S. V. Edwards Well Name Chico

Stimulation: ☒ Fracture ☐ Acid ☐ Sand Control ☐ Misc. Pump ☐ Cement: ☐ Land ☐ Offshore ☐ Marine ☐ T.O.B.  
Gas: ☒ N<sub>2</sub> ☐ CO<sub>2</sub> ☐ Binary ☐ Tools ☐ Surface ☐ Int./Long ☐ Squeeze ☐ Other \_\_\_\_\_  
Customer Rep. Reaction: ☒ Pleased ☐ Neutral ☐ Displeased ☐ Not on Job  
Was there a problem on this job? ☐ Yes ☒ No (If NO checked, do not complete form further)

## RTS PERFORMANCE

- 01 ☐ Under 1 Hour Late  
02 ☐ 1-4 Hours Late - No. Hours \_\_\_\_\_  
03 ☐ Over 4 Hours Late - No. Hours \_\_\_\_\_  
Cause:  
04 ☐ Borrowed Equip/Labor Late  
05 ☐ Delay on Prior Job  
06 ☐ District Personnel Late on Yard  
07 ☐ Equipment Failure on Location  
08 ☐ Equipment Failure on Way to Location  
09 ☐ Equipment Failure on Yard  
10 ☐ Hotshot Trip  
11 ☐ Lost Way to Location  
12 ☐ Outside Service Late  
13 ☐ Poor Communications  
14 ☐ Products Problem  
15 ☐ Road/Location Conditions  
16 ☐ Wait on Customer Rep  
17 ☐ Other \_\_\_\_\_

## B. PRODUCT PERFORMANCE

- 01 ☐ Additive Incorrect/Not Used  
02 ☐ Bad Water  
03 ☐ Contamination  
04 ☐ Defective Material  
05 ☐ Freezing  
06 ☐ Incorrect Base Material  
07 ☐ Incorrect Mixture  
08 ☐ PH  
09 ☐ Total Sand Does Not Match  
What Was Pumped  
10 ☐ Viscosity  
11 ☐ Volume of Fluid/Additives  
Recorded Does Not Match  
What Was Pumped  
12 ☐ Product Code \_\_\_\_\_  
13 ☐ Other \_\_\_\_\_

## C. JOB PROCEDURE

- 01 ☐ Cemented Csg/Tbg  
02 ☐ HP/Rate Requirements  
03 ☐ Improper Slurry Density  
04 ☐ Job Interruption  
05 ☐ No Returns  
06 ☐ Plug Not Bumped  
07 ☐ Screenout  
08 ☐ Other \_\_\_\_\_  
Cause:  
09 ☐ Equipment Failure  
10 ☐ Human Error  
11 ☐ Inadequate Job Design  
12 ☐ Insufficient Material  
13 ☐ Product Failure  
14 ☐ Well Conditions  
15 ☐ Other \_\_\_\_\_

## D. EQUIPMENT

- 01 ☐ Acid Frac/Pump  
02 ☐ Batch Mixer  
03 ☐ Blender  
04 ☐ Bulk Truck  
05 ☐ Cement Pump  
06 ☐ Chem Add  
07 ☐ Field Bin  
08 ☐ Frac Pump  
09 ☐ Goose  
10 ☐ Line Truck  
11 ☐ N<sub>2</sub> Pump  
12 ☐ N<sub>2</sub> Transport  
13 ☐ Q.C. Lab Van  
14 ☐ SPC/CMG  
15 ☐ Sand Conveyor  
16 ☐ Sandmaster  
17 ☐ Sand Truck/Air Can  
18 ☐ TMV  
19 ☐ Tractor  
20 ☐ Transport Cement  
21 ☐ Transport Liquid  
22 ☐ Van/Pickup  
23 ☐ Other \_\_\_\_\_

## E. EQUIPMENT PERFORMANCE

- Problem Unit(s) \_\_\_\_\_  
Fluid End:  
01 ☐ Fluid End Block  
02 ☐ Manifold  
03 ☐ Packing  
04 ☐ Valve  
05 ☐ Other \_\_\_\_\_  
Pumping Equipment:  
06 ☐ Engine  
07 ☐ Hydraulics  
08 ☐ Power End  
09 ☐ Supercharge/Mix Pump  
10 ☐ Transmission  
11 ☐ Vaporizer  
12 ☐ Other \_\_\_\_\_  
Mixing Equipment:  
13 ☐ Agitator  
14 ☐ Chemical Pump  
15 ☐ Dry Chemical Feed  
16 ☐ Electrical  
17 ☐ Engine  
18 ☐ Hydraulic/Air Hoses  
19 ☐ Hydraulics  
20 ☐ OSHA Air Valves  
21 ☐ Recirculating Cement Mixer  
22 ☐ Sand Ramp  
23 ☐ Sandscrews  
24 ☐ Suction/Supercharge Pump  
25 ☐ Transmission  
26 ☐ Tub Level  
27 ☐ Other \_\_\_\_\_

## Instrumentation/Monitoring:

- 28 ☐ Cables/Connections  
29 ☐ Closed Loop Controllers  
30 ☐ Densimeter  
31 ☐ Flow Meter  
32 ☐ Martin Decker  
33 ☐ Model "C"  
34 ☐ Modem Data Line  
35 ☐ Printer/Plotter  
36 ☐ Software  
37 ☐ Transducer  
38 ☐ Viscometer  
39 ☐ WestComp  
40 ☐ WestFrac III  
41 ☐ WestFrac IV  
42 ☐ WestView  
43 ☐ Other \_\_\_\_\_

## Miscellaneous:

- 44 ☐ Air Blower  
45 ☐ Ball Injector  
46 ☐ Cement Head  
47 ☐ CO<sub>2</sub> Booster  
48 ☐ Failed Line/Fitting  
49 ☐ Hydraulic Power Pack  
50 ☐ Pressure Relief Valve  
51 ☐ Stake Bed  
52 ☐ Suction Manifold Trailer  
53 ☐ Wellhead Protector  
54 ☐ Other \_\_\_\_\_

## F. OTHER PROBLEMS

- 01 ☐ Accident  
02 ☐ Communications System  
03 ☐ Connection/Valve Leak  
04 ☐ No Ball Out  
05 ☐ Personal Injury  
06 ☐ Remote Data Transmission  
07 ☐ Other \_\_\_\_\_

Brief Explanation of Problem(s):

If product failure, list the trade name of the fluid used. Forward complete description, samples, and test data as per FIELD PROCEDURES MANUAL to WPS Research, Technical Lab Services

Service Supervisor: [Signature]

District Manager: [Signature]

## JOB REPORT

### PURPOSE:

To identify the areas within a service procedure which need to be corrected. It will serve as a vehicle to quantify the types of problems experienced and allow responses to be directed for correction.

### PROCEDURE:

A Job Report is to be completed on each job performed by The Western Company.

### JOB REPORT INSTRUCTION SHEET

- 1 PRINT DISTRICT NAME.
- 2 LIST DATE OF JOB.
- 3 LIST FIELD RECEIPT NUMBER.
- 4 PRINT CUSTOMER'S NAME.
- 5 PRINT WELL NAME.
- 6 CHECK BOX SHOWING TYPE OF JOB FOR THIS JOB REPORT (I.E. TYPE OF STIMULATION, GAS, CEMENT).
- 7 CHECK BOX CORRESPONDING TO CUSTOMER'S REACTION TO JOB.
- 8 CHECK EITHER YES OR NO BOX; IF NO BOX IS CHECKED, DO NOT COMPLETE FORM FURTHER (FOLLOW INSTRUCTIONS AT THE END OF THIS PAGE FOR DISTRIBUTION.)
- 9 CHECK CORRESPONDING BOX IF YES TO ANY OF THESE PROBLEMS.
- 10 PRINT A BRIEF EXPLANATION OF ANY PROBLEM(S). IF PRODUCT FAILURE, FOLLOW INSTRUCTIONS AS OUTLINED IN THIS AREA.
- 11 HAVE SERVICE SUPERVISOR SIGN.
- 12 HAVE DISTRICT MANAGER SIGN.

FOLLOWING COMPLETION OF THIS FORM, SEND:

WHITE COPY TO EQUIPMENT, MAINTENANCE AND STANDARDS IN FORT WORTH

KEEP YELLOW COPY FOR YOUR DISTRICT FILES

# Well-Site Quality Control and Blend Schedule for Energized Fluids

(attachment to treatment report)

Operator: J. K. Edwards  
Lease Name & Well No.: Chaco #1

Date: 1-27-95  
Field Receipt No.: 1282950

Note: Use additional copies of this form for more transports.

Liquid Phase: attach appropriate blend schedule(s), Q.C. report(s) and list type(s) \_\_\_\_\_

Type of liquified gas (circle one)? CO<sub>2</sub> EN<sub>2</sub>

Liquified Gas:

|                                         | 1                          | 2             | 3 | 4 | 5 | 6 | Quantity<br>SCF(sft <sup>3</sup> ) |
|-----------------------------------------|----------------------------|---------------|---|---|---|---|------------------------------------|
| transport/tank number                   | <u>3318</u>                | <u>3306</u>   |   |   |   |   |                                    |
| SCF (sft <sup>3</sup> ) loaded          | <u>50</u><br><u>204642</u> | <u>204642</u> |   |   |   |   | <u>409684</u>                      |
| minus SCF (sft <sup>3</sup> ) after job | <u>135842</u>              | <u>135842</u> |   |   |   |   | <u>271684</u><br><u>138000</u>     |
| SCF (sft <sup>3</sup> ) used            | <u>69000</u>               | <u>69000</u>  |   |   |   |   | <u>138000</u><br><u>271684</u>     |

|                                              |        |  |  |  |  |  |  |
|----------------------------------------------|--------|--|--|--|--|--|--|
| pressure, psig(kPa)                          | before |  |  |  |  |  |  |
|                                              | after  |  |  |  |  |  |  |
| tank cap., gal(m <sup>3</sup> )              | before |  |  |  |  |  |  |
|                                              | after  |  |  |  |  |  |  |
| fraction containing liq.                     | before |  |  |  |  |  |  |
|                                              | after  |  |  |  |  |  |  |
| volume available,<br>gallon(m <sup>3</sup> ) | before |  |  |  |  |  |  |
|                                              | after  |  |  |  |  |  |  |
| temperature, °F(°C)                          | before |  |  |  |  |  |  |
|                                              | after  |  |  |  |  |  |  |
|                                              |        |  |  |  |  |  |  |
| weight used, lb <sub>m</sub> (kg)            |        |  |  |  |  |  |  |

Foaming Agent used?

Yes/No

list foaming agent tradename  
loading

\_\_\_\_\_ gal/100 gal. liq. phase

Foamer dilution required?

Yes/No

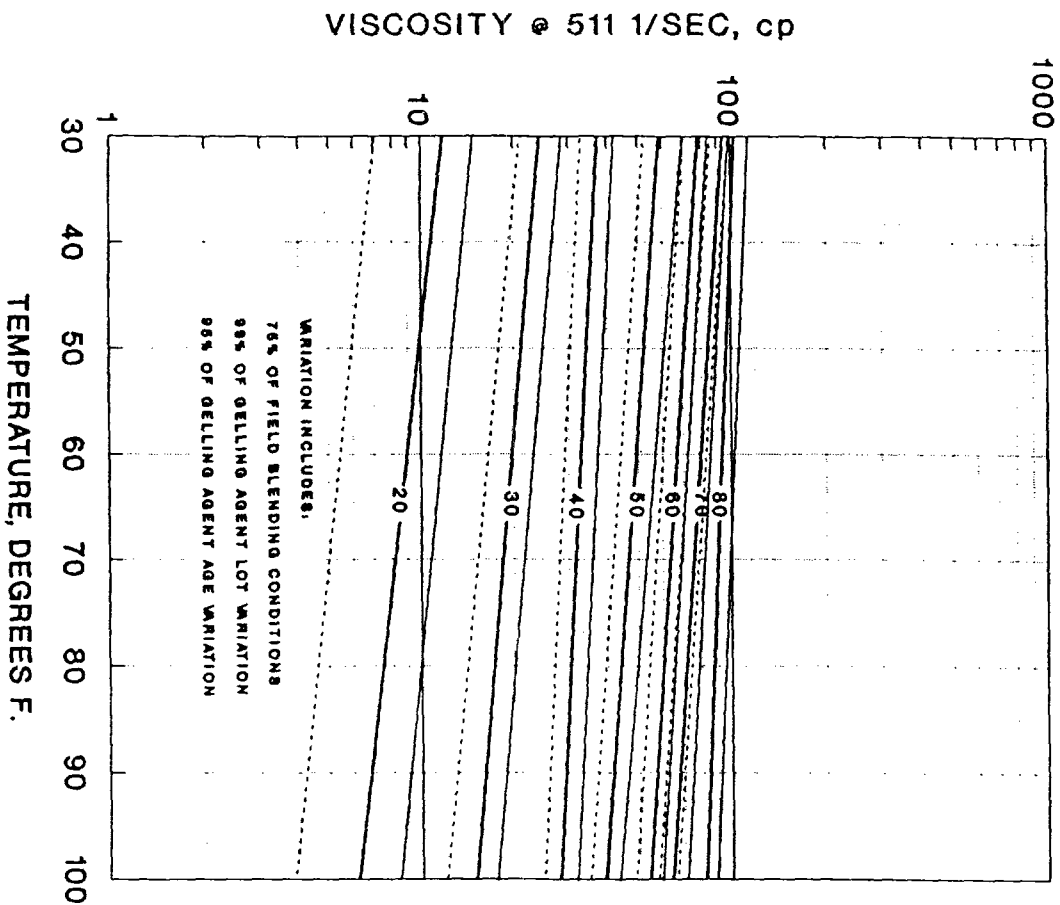
volume of foamer available  
volume of diluent used  
volume of diluted foamer  
expected liquid phase pumping rate  
pump rate for foamer

\_\_\_\_\_ gallon or \_\_\_\_\_ m<sup>3</sup>  
\_\_\_\_\_ gallon or \_\_\_\_\_ m<sup>3</sup>  
\_\_\_\_\_ gallon or \_\_\_\_\_ m<sup>3</sup>  
\_\_\_\_\_ bbl/min or \_\_\_\_\_ m<sup>3</sup>/min  
\_\_\_\_\_ gal/min or \_\_\_\_\_ m<sup>3</sup>/min

Attachments:

Blend Schedule and Q.C. Report for liquid phase

# PROPERTIES OF BASE GELS FOR USE IN CROSSLINKED AND NON-CROSSLINKED FRACTURING FLUID SYSTEMS PROPERTIES OF BASE GELS FOR USE IN CROSSLINKED AND LINEAR GEL SYSTEMS



| GELLING AGENT | LOADING lbm/mgal | pH RANGE | VISCOSITY, cp AT 511 1/SEC 70 DEGREES F. |
|---------------|------------------|----------|------------------------------------------|
| J-4/J-4L      | 20               | 5.5-10.5 | 8 +/- 3                                  |
|               | 30               | 5.5-10.5 | 19 +/- 3                                 |
|               | 40               | 5.5-10.5 | 32 +/- 4                                 |
|               | 50               | 5.5-10.5 | 47 +/- 6                                 |
|               | 60               | 5.5-10.5 | 64 +/- 7                                 |
|               | 70               | 5.5-10.5 | 76 +/- 8                                 |
|               | 80               | 5.5-10.5 | 91 +/- 9                                 |
| J-20/J-20L    | 20               | 5.5-10.5 | 8 +/- 3                                  |
|               | 30               | 5.5-10.5 | 19 +/- 3                                 |
|               | 40               | 5.5-10.5 | 32 +/- 4                                 |
|               | 50               | 5.5-10.5 | 47 +/- 6                                 |
|               | 60               | 5.5-10.5 | 64 +/- 7                                 |
|               | 70               | 5.5-10.5 | 76 +/- 8                                 |
|               | 80               | 5.5-10.5 | 91 +/- 9                                 |
| J-22/J-22L    | 20               | 5.5-10.5 | 8 +/- 3                                  |
|               | 30               | 5.5-10.5 | 19 +/- 3                                 |
|               | 40               | 5.5-10.5 | 32 +/- 4                                 |
|               | 50               | 5.5-10.5 | 47 +/- 6                                 |
|               | 60               | 5.5-10.5 | 64 +/- 7                                 |
|               | 70               | 5.5-10.5 | 76 +/- 8                                 |
|               | 80               | 5.5-10.5 | 91 +/- 9                                 |
| GEL SYSTEM    | GELLING AGENT    | pH RANGE | RANGE OF GEL LOADINGS lbm/mgal           |
| APOLLO        | J-20/J-20L       | 6-7.5    | 20-80                                    |
| POLARIS       | J-20/J-20L       | 6-7.5    | 20-80                                    |
| SATURN        | J-20/J-20L       | 8.5-9.75 | 30-80                                    |
| MINI MAX IIB  | J-20/J-20L       | 8.5-9.0  | 20-40                                    |
| MAXI FRAC     | J-4/J-4L         | 6-7.5    | 20-60                                    |
| MINI MAX IB   | J-4/J-4L         | 8-8.5    | 20-40                                    |
| ATLAS         | J-4/J-4L         | 8.5-9.75 | 40                                       |
| GEMINI        | J-22/J-22L       | 4-5.5    | 20-40                                    |
| GEMINI II     | J-22/J-22L       | 4-5.5    | 20-40                                    |
| TAURUS        | J-22/J-22L       | 6-6.5    | 40                                       |

\* SPECIFICATIONS FOR J-22 AND J-22L ARE CURRENTLY BEING DEFINED BY RESEARCH IN ORDER TO IDENTIFY THE MATERIAL THAT IS MOST DESIRABLE TO MEET THE RHEOLOGICAL NEEDS OF FLUID SYSTEMS THAT ARE CURRENTLY UNDER INVESTIGATION.

DISTRICT Farmington DISPATCH SHEET NO. 10815 WELL NAME Cisco #1  
CUSTOMER J. H. Edwards. DATE OF JOB 1-27-95  
ACCOUNT [ ] FIELD RECEIPT NO. L28295D FIELD RECEIPT DATE 1-27-95

[illegible]

**ISSUED BY**

DATE \_\_\_\_\_

RECEIVED BY

DATE \_\_\_\_\_

APPROVAL

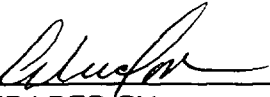
OPERATIONS SUPERVISOR

**VOLUME CALCULATIONS**  
(SHOW ALL JOB CALCULATIONS BELOW)

A Supervisor must either prepare or verify this form

*Nitrogen*

*184.76 SCF.*  
*126.35*

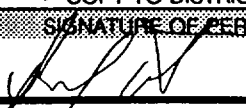
  
\_\_\_\_\_  
PREPARED BY

\_\_\_\_\_  
TITLE

\_\_\_\_\_  
VERIFIED BY

\_\_\_\_\_  
TITLE

# PRE-TREATMENT SAFETY REPORT

|                                                                                                                                                     |     |                                   |     |                                        |  |                      |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----------------------------------|-----|----------------------------------------|--|----------------------|--|
| CUSTOMER NAME                                                                                                                                       |     | CUSTOMER LEASE                    |     | CONDUCTED ON LOCATION                  |  | FIELD RECEIPT NUMBER |  |
| J.K. Edwards                                                                                                                                        |     | Chaco #1                          |     | DATE<br>1-27-95                        |  | AM/PM<br>AM          |  |
| DISTRICT IN WHICH MEETING IS HELD                                                                                                                   |     | NAME OF PERSON CONDUCTING MEETING |     |                                        |  | TYPE OF JOB          |  |
| Fwy & Am/Loc                                                                                                                                        |     | R. Martinez                       |     |                                        |  | W2 from Fac          |  |
| EMPLOYEES PRESENT (INCLUDE ALL PERSONS ON LOCATION)                                                                                                 |     |                                   |     |                                        |  |                      |  |
| 1. Rowlin Aspaas                                                                                                                                    | 10. | 19.                               | 28. |                                        |  |                      |  |
| 2. Ron Wilson                                                                                                                                       | 11. | 20.                               | 29. |                                        |  |                      |  |
| 3. Mike Collier                                                                                                                                     | 12. | 21.                               | 30. |                                        |  |                      |  |
| 4.                                                                                                                                                  | 13. | 22.                               | 31. |                                        |  |                      |  |
| 5.                                                                                                                                                  | 14. | 23.                               | 32. |                                        |  |                      |  |
| 6.                                                                                                                                                  | 15. | 24.                               | 33. |                                        |  |                      |  |
| 7.                                                                                                                                                  | 16. | 25.                               | 34. |                                        |  |                      |  |
| 8.                                                                                                                                                  | 17. | 26.                               | 35. |                                        |  |                      |  |
| 9.                                                                                                                                                  | 18. | 27.                               | 36. |                                        |  |                      |  |
| TOPIC DISCUSSED (ITEMS SPECIFIC TO THIS JOB, I.E. WEATHER, MSDS)                                                                                    |     |                                   |     |                                        |  |                      |  |
| Directions to 2nd well, inclement weather, work conditions, hazards of Winter Driving                                                               |     |                                   |     |                                        |  |                      |  |
| CHECK EACH BOX (NORMAL ITEMS FOR EACH SAFETY MEETING)                                                                                               |     |                                   |     |                                        |  |                      |  |
| 1. EVERYONE PRESENT                                                                                                                                 |     |                                   |     | 7. FIRE FIGHTING EQUIPMENT ASSIGNED    |  |                      |  |
| 2. OUTLINE JOB                                                                                                                                      |     |                                   |     | 8. PERSONAL PROTECTIVE EQUIPMENT       |  |                      |  |
| 3. JOB ASSIGNMENTS                                                                                                                                  |     |                                   |     | 9. CAUTION BYSTANDERS                  |  |                      |  |
| 4. PRESSURE LIMITS                                                                                                                                  |     |                                   |     | 10. ESCAPE ROUTES                      |  |                      |  |
| 5. INSTRUCTIONS ON PRESSURE TEST                                                                                                                    |     |                                   |     | 11. CHECK FOR CUSTOMER COMMENTS        |  |                      |  |
| 6. DISCUSS HAZARDS                                                                                                                                  |     |                                   |     | 12. SMOKING AREA ESTABLISHED           |  |                      |  |
| EXPLANATION OF INCIDENT                                                                                                                             |     |                                   |     |                                        |  |                      |  |
| THIS AREA FOR EMPLOYEE WRITE-UPS, BAD IRON, SYSTEM CHANGES, ETC.; FOR JOB PROBLEM, REFER TO JOB REPORT.                                             |     |                                   |     |                                        |  |                      |  |
| None Noted                                                                                                                                          |     |                                   |     |                                        |  |                      |  |
| THERE MUST BE ONE REPORT FOR EACH DAY AT A LOCATION, I.E. MISCELLANEOUS PUMP, SQUEEZE JOB, ETC. ALTHOUGH THERE MAY ONLY BE ONE FIELD RECEIPT NUMBER |     |                                   |     |                                        |  |                      |  |
| DISTRIBUTION                                                                                                                                        |     |                                   |     |                                        |  |                      |  |
| • COPY TO DISTRICT WELL FILE      • COPY TO SAFETY & REGULATORY COMPLIANCE IF AN UNSAFE ACT IS NOTED                                                |     |                                   |     |                                        |  |                      |  |
| SIGNATURE OF PERSON CONDUCTING MEETING                                                                                                              |     |                                   |     | PRINTED NAME OF COMPANY REPRESENTATIVE |  |                      |  |
|                                                                  |     |                                   |     | Paul Thompson                          |  |                      |  |

CHACO #1, 01/27/95, L309660

05/10/95  
Treatment Report