

KTECH

WELL SITE GEOLOGY - MUD LOGGING - CONSULTING

2913 HERMOSA CT., GRAND JUNCTION, COLORADO 81504. (303) 241-9351

COMPANY: SIRGO BROTHERS ENERGY CORPORATION

WELL NO.: NW CHA CHA #32

LOCATION: (SW/SW) SECTION 22, T29N, R14W, SAN JUAN Co., NM

ZONE OF INTEREST 6 FORMATION GALLUP B (LOWER HORSESHOE)

INTERVAL FROM 5219' TO 5226'

DRILL RATE: ABV 9.5 MIN/FT THRU 5.2 MIN/FT BELOW 8 MIN/FT

TOTAL GAS & CHROMATOGRAPH

	TOTAL	C1	C2	C3	C4	C5	OTHER
BEFORE	210	65	48	43	15		
DURING	330	115	80	70	18		
AFTER	140	58	30	27	10		

TYPE GAS INCREASE: ☒ GRADUAL ☐ SHARP HOLE CONDITIONS: ☒ WASHED ☐ FAIR ☐ SMOOTH

GAS VARIATION WITHIN ZONE: ☒ STEADY ☐ ERRATIC ☐ INCREASING ☐ DECREASING

FLOUR: ☐ MINERAL ☐ NONE ☒ POOR ☐ FAIR ☐ GOOD ☐ EVEN ☒ SPOTTY

FLOUR COLOR: DULL YEL % IN SHOW LITHOLOGY 30%

CUT: ☐ NONE ☒ CRUSH ☐ POOR ☐ FAIR ☒ GOOD STREAMING: ☐ SLOW ☐ MOD ☒ FAST

CUT COLOR: YEL

STAIN: ☐ NONE ☒ POOR ☐ FAIR ☐ GOOD ☒ LIVE ☐ DEAD ☐ RESIDUE ☐ EVEN ☒ SPOTTY ☒ LT ☐ DARK

POROSITY: ☒ POOR ☒ FAIR ☐ GOOD TYPE POROSITY: INTERSTITIAL

LITHOLOGY: SS lt gy,lt brn,clr ip,sl glsy,f-mgr,sbang-rnd,calc,fri-frn,tt ip

SAMPLE QUALITY: FAIR

REMARKS: 30% DULL YEL SPOTTY FLUOR, GOOD FAST CRUSH CUT-STN. DRILL RATE

AFFECTED BY WORN KELLY BUSHINGS - LOTS OF DRAG.

NOTIFIED: MANNY SIRGO

DATE 6/28/94 @ 14:00 HRS.

ZONE DESCRIBED BY: JOHN KUYKENDALL

KTECH

WELL SITE GEOLOGY - MUD LOGGING - CONSULTING

2913 HERMOSA CT., GRAND JUNCTION, COLORADO 81504. (303) 241-9351

COMPANY: SIRGO BROTHERS ENERGY CORPORATION

WELL NO.: NW CHA CHA #32

LOCATION: (SW/SW) SECTION 22, T29N, R14W, SAN JUAN Co., NM.

ZONE OF INTEREST 5 FORMATION GALLUP-A (UPPER HORSESHOE)

INTERVAL FROM 5168' TO 5178'

DRILL RATE: ABV 4.9 MIN/FT THRU 3.5 MIN/FT BELOW 5.8 MIN/FT

TOTAL GAS & CHROMATOGRAPH

	TOTAL	C1	C2	C3	C4	C5	OTHER
BEFORE	80	27	17	13	4		
DURING	210	65	58	55	20		
AFTER	115	42	29	24	7		

TYPE GAS INCREASE: ☐ GRADUAL ☒ SHARP HOLE CONDITIONS: ☒ WASHED ☐ FAIR ☐ SMOOTH

GAS VARIATION WITHIN ZONE: ☒ STEADY ☐ ERRATIC ☐ INCREASING ☐ DECREASING

FLOUR: ☐ MINERAL ☐ NONE ☒ POOR ☐ FAIR ☐ GOOD ☐ EVEN ☒ SPOTTY

FLOUR COLOR: YEL % IN SHOW LITHOLOGY 70%

CUT: ☐ NONE ☐ CRUSH ☐ POOR ☒ FAIR ☐ GOOD STREAMING: ☐ SLOW ☐ MOD ☒ FAST

CUT COLOR: YEL

STAIN: ☐ NONE ☐ POOR ☒ FAIR ☐ GOOD ☒ LIVE ☐ DEAD ☐ RESIDUE ☐ EVEN ☒ SPOTTY ☒ LT ☐ DARK

POROSITY: ☒ POOR ☐ FAIR ☐ GOOD

TYPE POROSITY: INTERSTITIAL

LITHOLOGY: SS lt gy,clr,sl glsy,tr glauc,f-cgr,sbang-rnd,calc,frm,tt ip

SAMPLE QUALITY: FAIR

REMARKS: YEL FLUOR, FAST-SLOW STRM CUT

NOTIFIED: MANNY SIRGO

DATE 6/28/94 @ 00:00 HRS.

ZONE DESCRIBED BY: JOHN KUYKENDALL

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WELL SITE GEOLOGY - MUD LOGGING - CONSULTING

2913 HERMOSA CT., GRAND JUNCTION, COLORADO 81504. (303) 241-9351

COMPANY: SIRGO BROTHERS ENERGY CORPORATION

WELL NO.: NW CHA CHA #32

LOCATION: (SW/SW) SECTION 22, T29N, R14W, SAN JUAN Co., NM

ZONE OF INTEREST 4 FORMATION GALLUP

INTERVAL FROM 4893' TO 4906'

DRILL RATE: ABV 10.3 MIN/FT THRU 5.1 MIN/FT BELOW 24 MIN/FT

TOTAL GAS & CHROMATOGRAPH

	TOTAL	C1	C2	C3	C4	C5	OTHER
BEFORE	15	22	3	1	TR		
DURING	26	26	8	6	1		
AFTER	7	6	2	1	TR		

TYPE GAS INCREASE: ☒ GRADUAL ☐ SHARP HOLE CONDITIONS: ☒ WASHED ☐ FAIR ☐ SMOOTH

GAS VARIATION WITHIN ZONE: ☒ STEADY ☐ ERRATIC ☒ INCREASING ☐ DECREASING

FLOUR: ☐ MINERAL ☒ NONE ☐ POOR ☐ FAIR ☐ GOOD ☐ EVEN ☐ SPOTTY

FLOUR COLOR: _____ % IN SHOW LITHOLOGY _____

CUT: ☒ NONE ☐ CRUSH ☐ POOR ☐ FAIR ☐ GOOD STREAMING: ☐ SLOW ☐ MOD ☐ FAST

CUT COLOR: _____

STAIN: ☒ NONE ☐ POOR ☐ FAIR ☐ GOOD ☐ LIVE ☐ DEAD ☐ RESIDUE ☐ EVEN ☐ SPOTTY ☐ LT ☐ DARK

POROSITY: ☒ POOR ☒ FAIR ☐ GOOD

TYPE POROSITY: INTERSTITIAL

LITHOLOGY: SS wh,lt gy,vfgr-slt,sbrnd-rnd,calc,fri-frn,sl tt

SAMPLE QUALITY: EXCELLENT

REMARKS: CORED THIS INTERVAL. OIL SEEPS IN CORE FROM HORIZONTAL FRACTURES IN

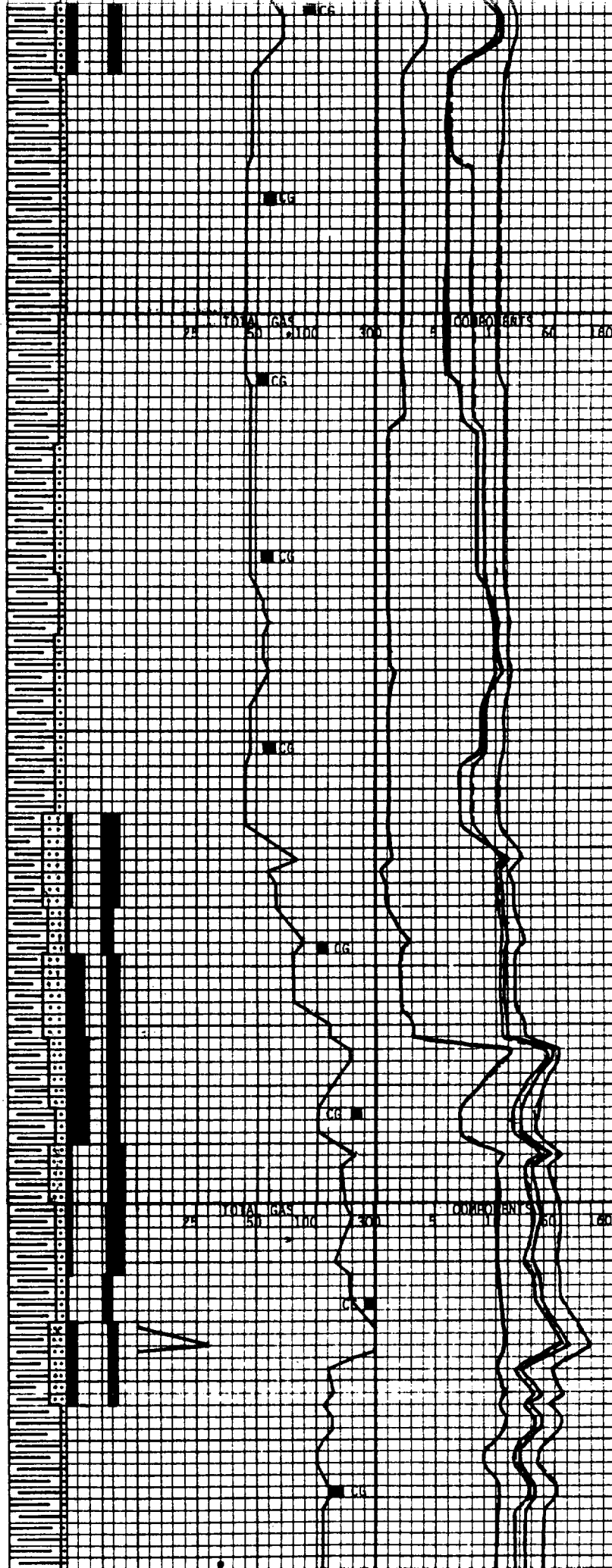
SH. AFTER CORING CONN GAS WAS NOTED PROBABLY FROM THIS ZONE.

NOTIFIED: MANNY SIRGO

DATE 6/26/94 @ 00:00 HRS.

ZONE DESCRIBED BY: JOHN KUYKENDALL

5000
20
40
60
80
5100
20
40
60
80
5200
20
40
60



SS offwh,lt gy,lt brn,sl arg mtr
sl glsy,sbrnd-rnd,calc,fri,sl
tt,DULL YEL FLUOR, SLOW STRM CUT

SS lt brn,lt gy,drty,vf-fgr,sbrnd-
rnd,calc,fri-fm

SS lt brn,lt gy,drty,vf-fgr,
sbrnd-rnd,calc,fri-fm,YEL FLUOR
IP, NO CUT

SH m-dk brn,sl pyr spcs,sl slty,
calc,blky,frm

SS lt gy,offwh,lt brn,pyr spcs
ip,ang mtr,vf-fgr,sbang-nd,sl-
calc,fri-fm,tt ip

SH m-dk brn,sl slty,tr pyr spcs,
sl slty,calc,blky,frm

SS lt brn-offwh,lt gy,ang mtr
ip,vf-fgr,sbrnd-rnd,calc,frm,tt
ip

SS offwh-lt brn,lt gy,sl glsy,
sl arg mtr,vf-fgr,sbang-nd,lm
frm,tt,DULL YEL FLUOR, NO CUT

SH dk brn,dk gy,tr pyr spcs,sl
slty,lm,blky,frm-hd

SS lt gy,offwh,tr arg mtr,vf-fgr
sbrnd-rnd,calc,fri-fm,sl tt,
DULL YEL FLUOR, NO CUT

SS lt gy,offwh,d-tr,ang mtr,sl
glsty,vf-fgr,sbrnd-rnd,calc,frm
tt

SH m-dk brn,dk gy,sl slty,tr pyr
spcs,lm,plty-blky,frm-hd

SS lt gy-vlt brn,lt,sl glsy,
vf-fgr,sbrnd-rnd,calc,fri-fm

SS lt gy,clr ip,glsty,th glauc,
f-mgr,gr ip,sbang-nd,calc,frm
tt ip,DULL YEL SPOTTY FLUOR,V
SLOW STRM CUT

SS lt gy,clr,lt-m brn,glsty,tr
glauc,vf-fgr,sbang-nd,calc,frm,
tt,DULL YEL FLUOR, SL STN

SS lt gy,lt,sl glsty,tr glauc,
f-cgr,sbang-nd,calc,frm,tt,DULL
YEL SPOTTY FLUOR, GOOD SLOW STRM
CUT

SS aa,YEL FLUOR, FAST-SLOW STRM
CUT

SH m-dk gy,tr pyr spcs,sl slty,
calc,blky,frm-hd

SS lt gy,clr,lt-m brn,sl oil stn
shly ip,tr glauc,f-cgr,sbang-nd
YEL FLUOR, SLOW STRM CUT-STN

SS lt brn,lt gy,tr glauc,sl glsty
sl arg mtr,f-mgr,sbang-nd,calc,
f-i-fm,sl tt,YEL FLUOR, SLOW
STRM CUT IP-STN

SS lt brn,lt gy ip,glsty,tr glauc
f-mgr,sbang-nd,calc,frm,tt,DULL
YEL FLUOR, STN

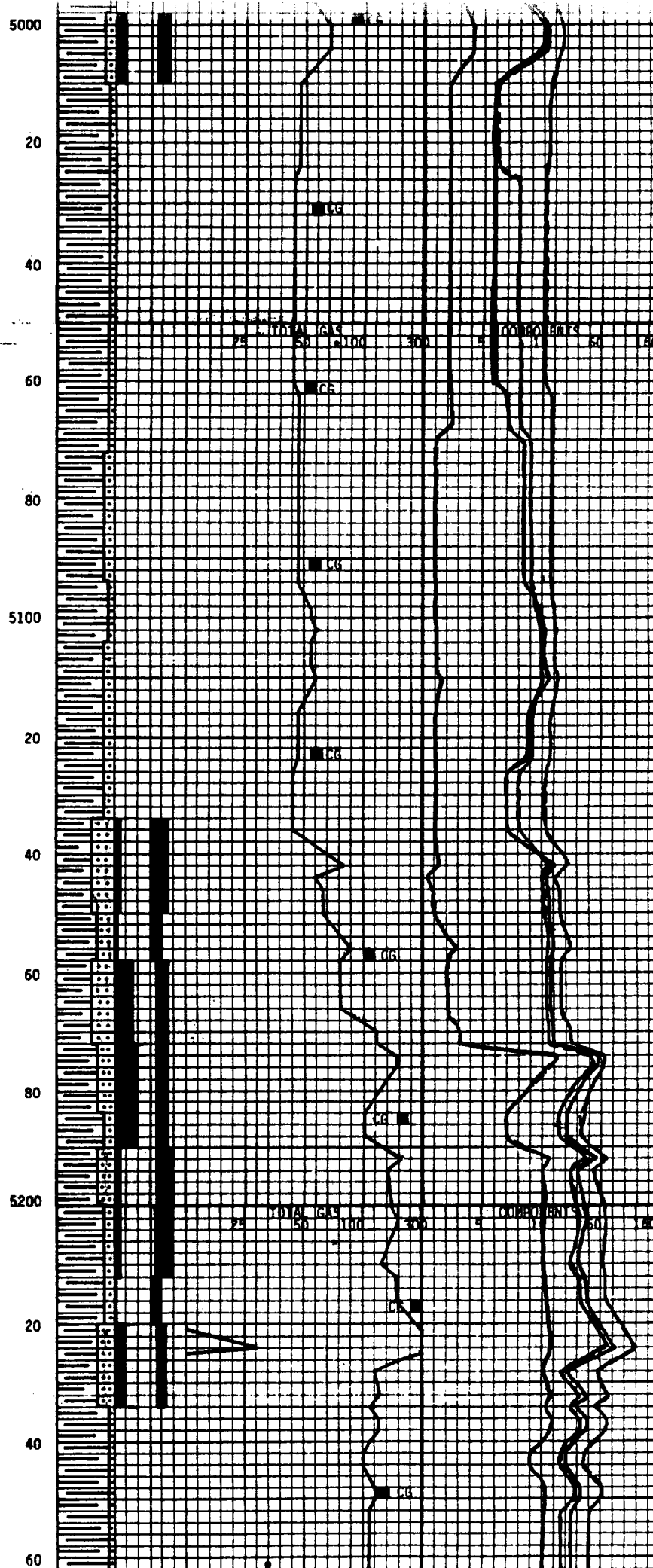
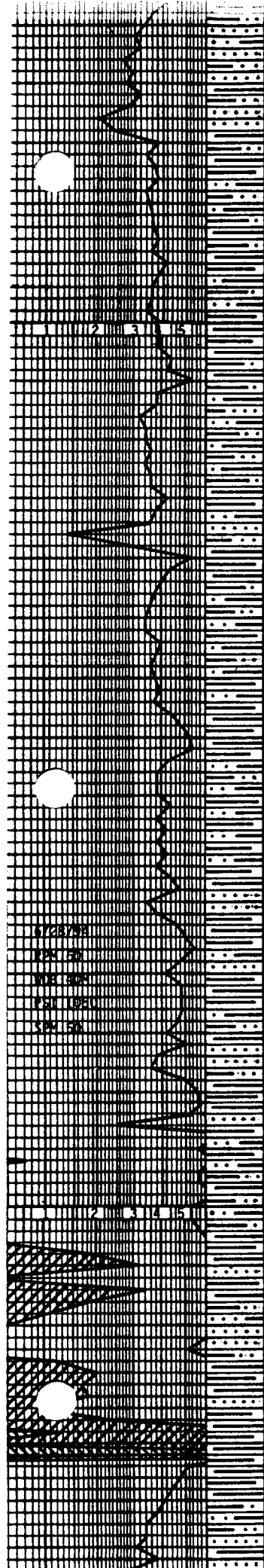
SS lt gy,lt brn,clr ip,sl glsty,
f-mgr,sbang-nd,calc,fri-fm,
tt ip,DULL YEL SPOTTY FLUOR,
FAST CRUSH CUT-STN

KELLY BUSHING WORN OUT - DRAGGING
SLOWING PENETRATION RATE DOWN

SH m-dk brn,m gy,sl slty,tr pyr
spcs,calc,plty-blky,frm-hd

SS lt gy,lt,glsty,f-mgr,sbang-
nd,calc,frm,tt

6/28/94
RPM 50
WOB 200
FSD 1000
SPW 50



SS offwh, lt gy, lt brn, sl arg mtx
sl glsy, sbnd-rnd, calc, fri, sl
tt, DULL YEL FLUOR, SLOW STRM CUT

SS lt brn, lt gy, drty, vf-fgr, sbnd-
rnd, calc, fri-fm

SS lt brn, lt gy, drty, vf-fgr,
sbnd-rnd, calc, fri-fm, YEL FLUOR
IP, NO CUT

SH m-dk brn, sl pyr spcs, sl slty,
calc, blk, fm

SS lt gy, offwh, lt brn, pyr spcs
ip, arg mtx, vf-fgr, sbang-rnd, sl-
calc, fri-fm, tt ip

SH m-dk brn, sl slty, tr pyr spcs,
sl slty, calc, blk, fm

SS lt crm-offwh, lt gy, arg mtx
ip, vf-fgr, sbnd-rnd, calc, fm, tt
ip

SS offwh-lt crm, lt gy, sl glsy,
sl arg mtx, vf-fgr, sbang-rnd, lmy
frm, tt, VDULL YEL FLUOR, NO CUT

SH dk brn, dk gy, tr pyr spcs, sl
sly, lmy, blk, fm-hd

SS lt gy, offwh, tr arg mtx, vf-fgr
sbnd-rnd, calc, fri-fm, sl tt,
VDULL YEL FLUOR, NO CUT

SS lt gy, offwh, dk, arg mtx, sl
glsy, vf-fgr, sbnd-rnd, calc, fm
tt

SH m-dk brn, dk gy, sl slty, tr pyr
spcs, lmy, plty-blky, fm-hd

SS lt gy, vlt brn, calc, sl glsy,
vf-fgr, sbnd-rnd, calc, fri-fm

SS lt gy, calc ip, glsy, tr glauc,
f-mgr, gr ip, sbang-rnd, calc, fm
tt ip, DULL YEL SPOTTY FLUOR, Y
SLOW STRM CUT

SS lt gy, calc, lt-m brn, glsy, tr
glauc, vf-fgr, sbang-rnd, calc, fm,
tt, VDULL YEL FLUOR, SL STN

SS lt gy, calc, sl glsy, tr glauc,
f-cgr, sbang-rnd, calc, fm, tt, DULL
YEL SPOTTY FLUOR, GOOD SLOW STRM
CUT

SS aa, YEL FLUOR, FAST-SLOW STRM
CUT

SH m-dk gy, tr pyr spcs, sl slty,
calc, blk, fm-hd

SS lt gy, calc, lt-m brn, sl oil stn
shly ip, tr glauc, f-cgr, sbang-rnd
YEL FLUOR, SLOW STRM CUT-STN

SS lt brn, lt gy, tr glauc, sl glsy,
sl arg mtx, f-mgr, sbang-rnd, calc,
fri-fm, sl tt, YEL FLUOR, SLOW
STRM CUT IP-STN

SS lt brn, lt gy, ip, glsy, tr glauc,
f-mgr, sbang-rnd, calc, fm, tt, DULL
YEL FLUOR, STN

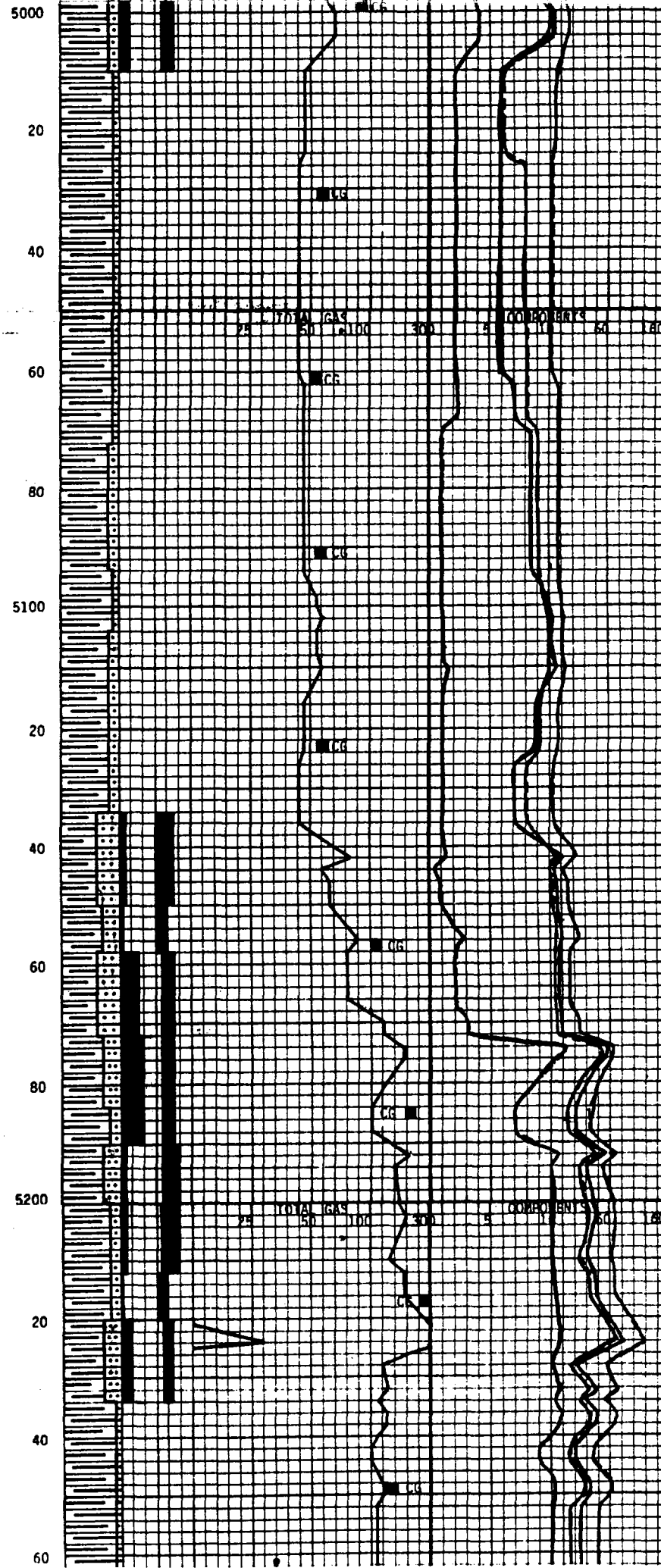
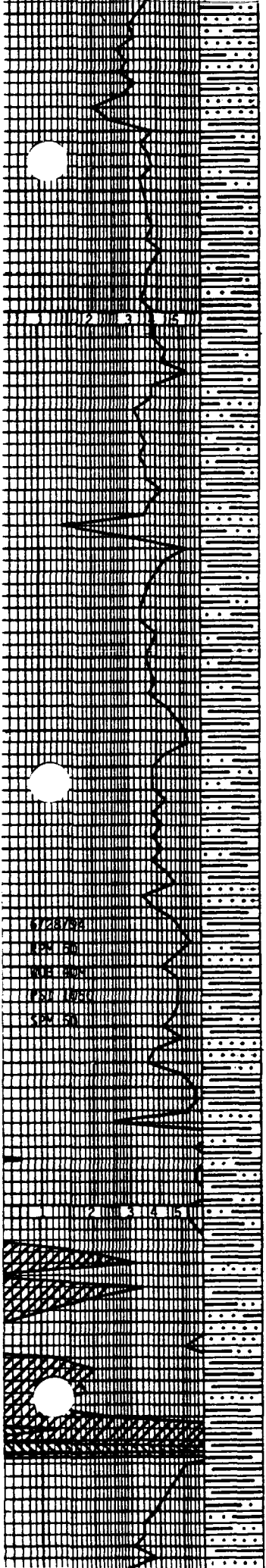
SS lt gy, lt brn, calc ip, sl glsy,
f-mgr, sbang-rnd, calc, fri-fm,
tt ip, DULL YEL SPOTTY FLUOR,
FAST CRUSH CUT-STN

KELLY BUSHING WORN OUT - DRAGGING
SLOWING PENETRATION RATE DOWN

SH m-dk brn, m gy, sl slty, tr pyr
spcs, calc, plty-blky, fm-hd

SS lt gy, calc, glsy, f-mgr, sbang-
rnd, calc, fm, tt

LOGGING UNIT RELEASED 6/28/94



SS offwh, lt gy, drty, vf-fgr, sbnd-rnd, calc, fri, sl
sl glsy, sbnd-rnd, calc, fri, sl
tt, DULL YEL FLUOR, SLOW STRM CUT

SS lt brn, lt gy, drty, vf-fgr, sbnd-rnd, calc, fri-fm

SS lt brn, lt gy, drty, vf-fgr, sbnd-rnd, calc, fri-fm, YEL FLUOR
IP, NO CUT
SH m-dk brn, sl pyr spcs, sl slty, calc, blk, frm

SS lt gy, offwh, lt brn, pyr spcs
ip, arg mtx, vf-fgr, sbang-nd, sl-calc, fri-fm, tt ip
SH m-dk brn, sl slty, tr pyr spcs, sl slty, calc, blk, frm
SS lt brn-offwh, lt gy, arg mtx
ip, vf-fgr, sbnd-rnd, calc, frm, tt ip

SS offwh-lt brn, lt gy, sl glsy, sl arg mtx, vf-fgr, sbang-nd, lmy frm, tt, VDULL YEL FLUOR, NO CUT
SH dk brn, dk gy, tr pyr spcs, sl slty, lmy, blk, frm-hd
SS lt gy, offwh, tr arg mtx, vf-fgr, sbnd-rnd, calc, fri-fm, sl tt, VDULL YEL FLUOR, NO CUT
SS lt gy, offwh, d-t, arg mtx, sl glsy, vf-fgr, sbnd-rnd, calc, frm, tt

SH m-dk brn, dk gy, sl slty, tr pyr spcs, lmy, plty-blk, frm-hd
SS lt gy-vlt brn, rlr, sl glsy, vf-fgr, sbnd-rnd, calc, fri-fm

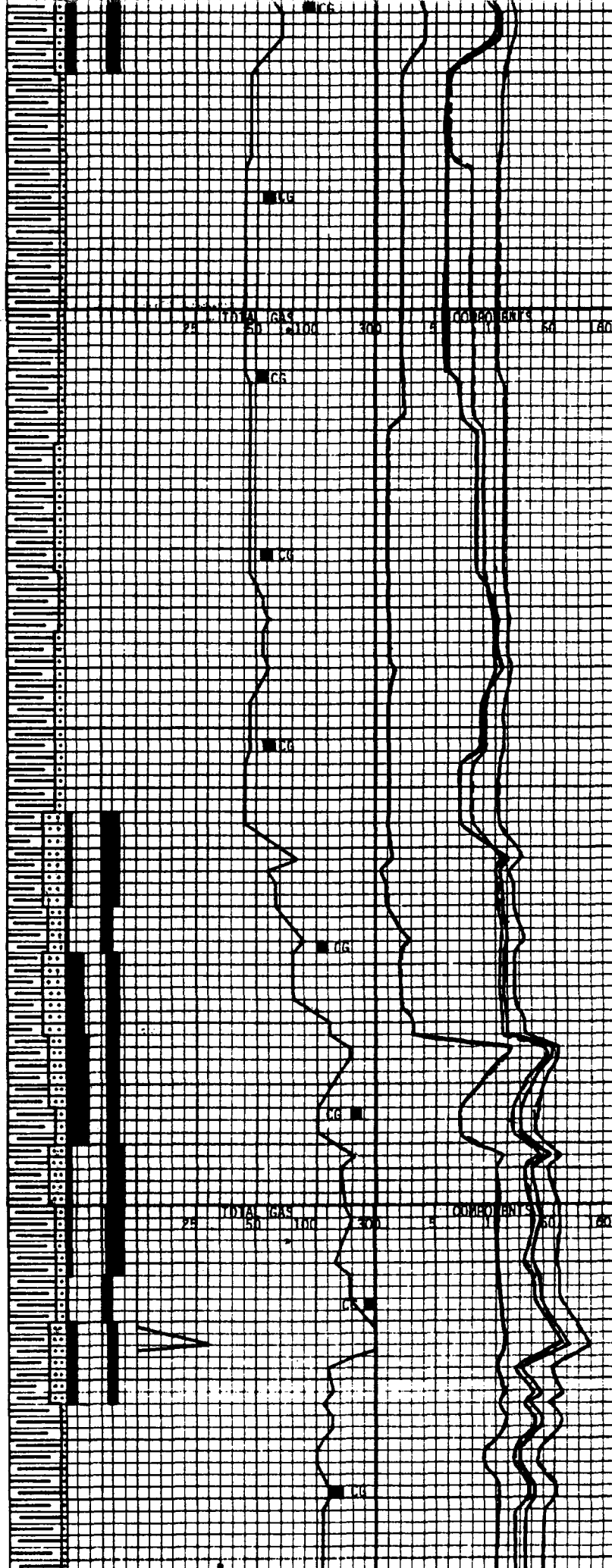
SS lt gy, rlr ip, glsy, tr glauc, f-mgr, rgr ip, sbang-nd, calc, frm, tt ip, DULL YEL SPOTTY FLUOR, V SLOW STRM CUT
SS lt gy, clt, lt-m brn, glsy, tr glauc, vf-fgr, sbang-nd, calc, frm, tt, VDULL YEL FLUOR, SL STN

SS lt gy, rlr, sl glsy, tr glauc, f-cgr, sbang-nd, calc, frm, tt, DULL YEL SPOTTY FLUOR, GOOD SLOW STRM CUT
SS aa, YEL FLUOR, FAST-SLOW STRM CUT
SH m-dk gy, tr pyr spcs, sl slty, calc, blk, frm-hd
SS lt gy, clt, lt-m brn, sl oil stn shly ip, tr glauc, f-cgr, sbang-nd YEL FLUOR, SLOW STRM CUT-STN

SS lt brn, lt gy, tr glauc, sl glsy, sl arg mtx, f-mgr, sbang-nd, calc, fri-fm, sl tt, YEL FLUOR, SLOW STRM CUT IP-STN
SS lt brn, lt gy ip, glsy, tr glauc, f-mgr, sbang-nd, calc, frm, tt, DULL YEL FLUOR, STN
SS lt gy, lt brn, rlr ip, sl glsy, f-mgr, sbang-nd, calc, fri-fm, tt ip, DULL YEL SPOTTY FLUOR, FAST CRUSH CUT-STN
KELLY BUSHING WORN OUT - DRAGGING SLOWING PENETRATION RATE DOWN
SH m-dk brn, m gy, sl slty, tr pyr spcs, calc, plty-blk, frm-hd
SS lt gy, rlr, glsy, f-mgr, sbang-nd, calc, frm, tt

LOGGING UNIT RELEASED 6/28/94

5000
20
40
60
80
5100
20
40
60
80
5200
20
40
60



SS offwh, lt gy, lt brn, sl arg mtz
sl glsy, sbnd-rnd, calc, fri, sl
tt, DULL YEL FLUOR, SLOW STRM CUT

SS lt brn, lt gy, drty, vf-fgr, sbnd-
rnd, calc, fri-fm

SS lt brn, lt gy, drty, vf-fgr,
sbnd-rnd, calc, fri-fm, YEL FLUOR
IP, NO CUT

SH m-dk brn, sl pyr spcs, sl slty,
calc, blk, frm

SS lt gy, offwh, lt brn, pyr spcs
ip, arg mtz, vf-fgr, sbang-nd, sl-
calc, fri-fm, tt ip

SH m-dk brn, sl slty, tr pyr spcs,
sl slty, calc, blk, frm

SS lt brn-offwh, lt gy, arg mtz
ip, vf-fgr, sbnd-rnd, calc, frm, tt
ip

SS offwh-lt brn, lt gy, sl glsy,
sl arg mtz, vf-fgr, sbang-rnd, lmy
frm, tt, VDULL YEL FLUOR, NO CUT

SH dk brn, dk gy, tr pyr spcs, sl
sly, lmy, blk, frm-hd

SS lt gy, offwh, tr arg mtz, vf-fgr,
sbnd-rnd, calc, fri-fm, sl tt,
VDULL YEL FLUOR, NO CUT

SS lt gy, offwh, drty, arg mtz, sl
glsy, vf-fgr, sbnd-rnd, calc, frm
tt

SH m-dk brn, dk gy, sl slty, tr pyr
spcs, lmy, plty-blky, frm-hd

SS lt gy-vlt brn, lt, sl glsy,
vf-fgr, sbnd-rnd, calc, fri-fm

SS lt gy, drt ip, glsy, th glauc,
f-mgr, gr ip, sbang-rnd, calc, frm
tt ip, DULL YEL SPOTTY FLUOR, V
SLOW STRM CUT

SS lt gy, drt, lt-m brn, glsy, tr
glauc, vf-fgr, sbang-rnd, calc, frm,
tt, VDULL YEL FLUOR, SL STN

SS lt gy, drt, sl glsy, tr glauc,
f-cgr, sbang-rnd, calc, frm, tt, DULL
YEL SPOTTY FLUOR, GOOD SLOW STRM
CUT

SS aa, YEL FLUOR, FAST-SLOW STRM
CUT

SH m-dk gy, tr pyr spcs, sl slty,
calc, blk, frm-hd

SS lt gy, drt, lt-m brn, sl oil stn
shly ip, tr glauc, f-cgr, sbang-rnd
YEL FLUOR, SLOW STRM CUT-STN

SS lt brn, lt gy, tr glauc, sl glsy,
sl arg mtz, f-mgr, sbang-rnd, calc,
fri-fm, sl tt, YEL FLUOR, SLOW
STRM CUT IP-STN

SS lt brn, lt gy ip, glsy, tr glauc,
f-mgr, sbang-rnd, calc, frm, tt, DULL
YEL FLUOR, STN

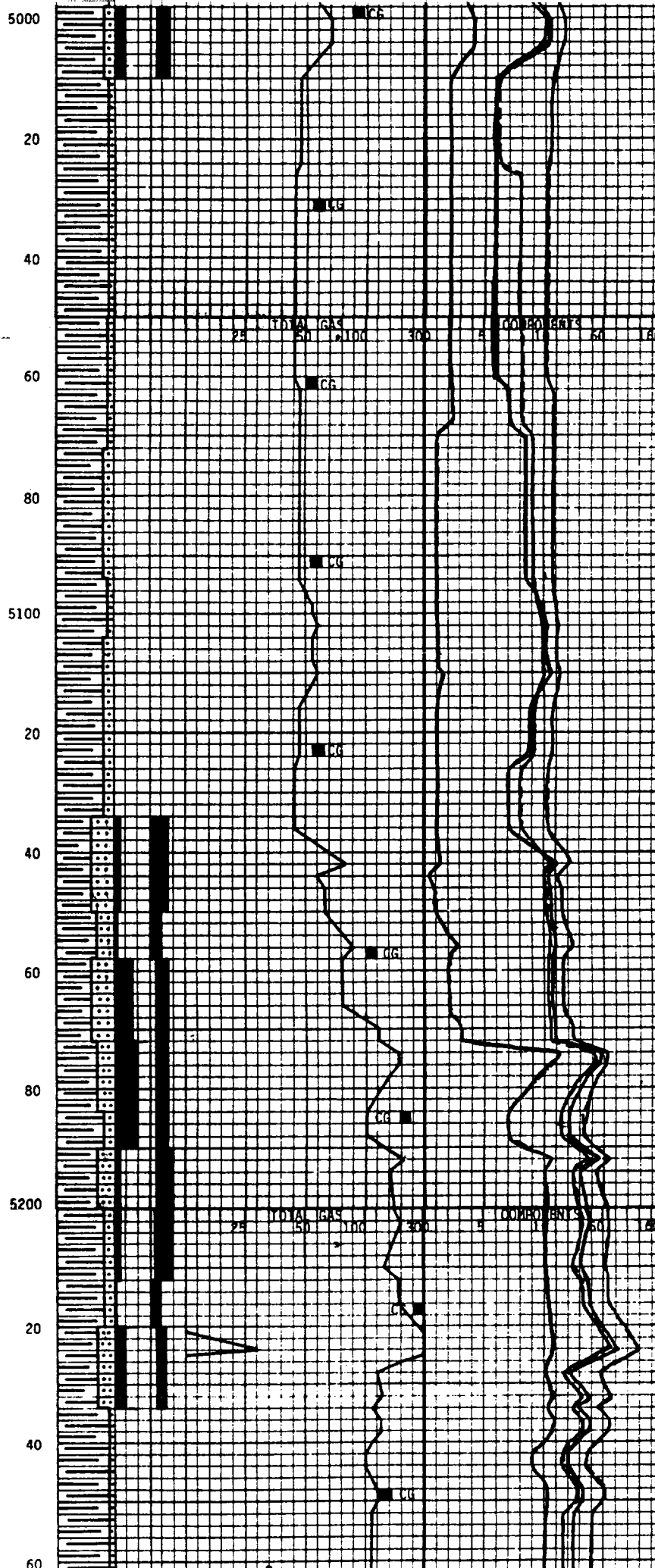
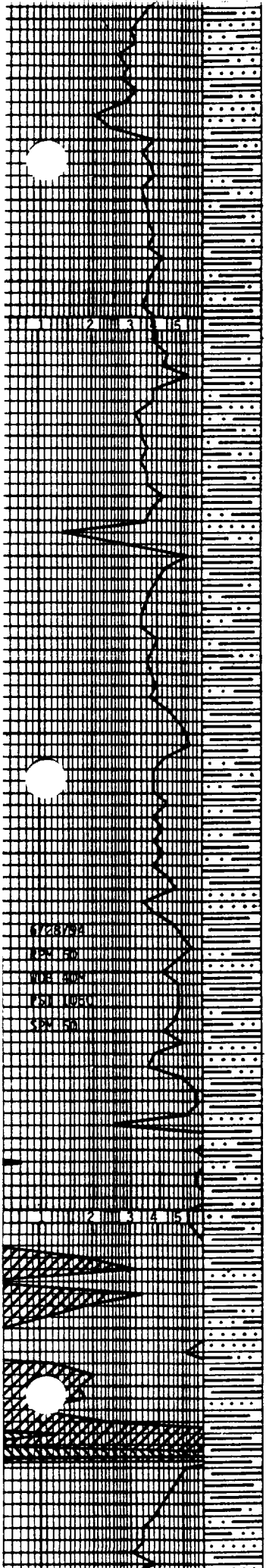
SS lt gy, lt brn, drt ip, sl glsy,
f-mgr, sbang-rnd, calc, fri-fm,
tt ip, DULL YEL SPOTTY FLUOR,
FAST CRUSH CUT-STN

KELLY BUSHING WORN OUT - DRAGGING
SLOWING PENETRATION RATE DOWN

SH m-dk brn, m gy, sl slty, tr pyr
spcs, calc, plty-blky, frm-hd

SS lt gy, drt, glsy, f-mgr, sbang-
rnd, calc, frm, tt

6728705
WOB 100
WOB 100
WOB 100
WOB 100



SS offwh, lt gy, lt brn, sl arg mtx
sl glsy, sbnd-rnd, calc, fri, sl
tt, DULL YEL FLUOR, SLOW STRM CUT

SS lt brn, lt gy, drty, vf-fgr, sbnd-rnd, calc, fri-fm

SS lt brn, lt gy, drty, vf-fgr, sbnd-rnd, calc, fri-fm, YEL FLUOR, IP, NO CUT

SH m-dk brn, sl pyr spcs, sl slty, calc, blk, fm

SS lt gy, offwh, lt brn, pyr spcs, ip, arg mtx, vf-fgr, sbang-rnd, sl, calc, fri-fm, tt ip

SH m-dk brn, sl slty, tr pyr spcs, sl slty, calc, blk, fm

SS lt brn-offwh, lt gy, arg mtx, ip, vf-fgr, sbnd-rnd, calc, fm, tt ip

SS offwh-lt brn, lt gy, sl glsy, sl arg mtx, vf-fgr, sbang-rnd, lmy, frm, tt, VDULL YEL FLUOR, NO CUT

SH dk brn, dk gy, tr pyr spcs, sl slty, lmy, blk, fm-hd

SS lt gy, offwh, tr arg mtx, vf-fgr, sbnd-rnd, calc, fri-fm, sl tt, VDULL YEL FLUOR, NO CUT

SS lt gy, offwh, drty, arg mtx, sl glsy, vf-fgr, sbnd-rnd, calc, fm, tt

SH m-dk brn, dk gy, sl slty, tr pyr spcs, lmy, plty, blk, fm-hd

SS lt gy, vit brn, calc, sl glsy, vf-fgr, sbnd-rnd, calc, fri-fm

SS lt gy, calc, ip, glsy, tr glauc, f-mgr, arg ip, sbang-rnd, calc, fm, tt ip, DULL YEL SPOTTY FLUOR, V SLOW STRM CUT

SS lt gy, calc, lt-m brn, glsy, tr glauc, vf-fgr, sbang-rnd, calc, fm, tt, VDULL YEL FLUOR, SL STN

SS lt gy, calc, sl glsy, tr glauc, f-cgr, sbang-rnd, calc, fm, tt, DULL YEL SPOTTY FLUOR, GOOD SLOW STRM CUT

SS aa, YEL FLUOR, FAST-SLOW STRM CUT

SH m-dk gy, tr pyr spcs, sl slty, calc, blk, fm-hd

SS lt gy, calc, lt-m brn, sl oil stn shly ip, tr glauc, f-cgr, sbang-rnd YEL FLUOR, SLOW STRM CUT-STN

SS lt brn, lt gy, tr glauc, sl glsy, sl arg mtx, f-mgr, sbang-rnd, calc, fri-fm, sl tt, YEL FLUOR, SLOW STRM CUT IP-STN

SS lt brn, lt gy, ip, glsy, tr glauc, f-mgr, sbang-rnd, calc, fm, tt, DULL YEL FLUOR, STN

SS lt gy, lt brn, calc, ip, sl glsy, f-mgr, sbang-rnd, calc, fri-fm, tt ip, DULL YEL SPOTTY FLUOR, FAST CRUSH CUT-STN

KELLY BUSHING WORN OUT - DRAGGING SLOWING PENETRATION RATE DOWN

SH m-dk brn, m gy, sl slty, tr pyr spcs, calc, plty, blk, fm-hd

SS lt gy, calc, glsy, f-mgr, sbang-rnd, calc, fm, tt

SIRGO BROTHERS ENERGY CORP.

NORTH WEST CHA CHA #32

CHA CHA FIELD

SEC.22,T29N,R14W

SAN JUAN COUNTY, NM

GALLUP A & B FORMATION



The Western Company

HUFF & PUFF ON GALLUP SANDS

PREPARED FOR

MR. MANNY SIRGO

OWNER

MR. DREW BATES - PROTOCOM

SERVICE POINT

FARMINGTON, NM

(505) 327-6222

PREPARED BY

MIKE MCNEESE

TECH REP II

FARMINGTON

OCTOBER 6, 1994

FM040132

SALES REPRESENTATIVE

MIKE MCNEESE

TECH REP II

THE WESTERN COMPANY

OPERATOR: SIRGO BROTHERS ENERGY CORP.
WELL: NORTH WEST CHA CHA #32
FORMATION: GALLUP A & B

WELL DATA

Net Pay	38 ft
Depth to Middle Perforation	5,148 ft
Reservoir Pressure	2,250 psi
Permeability	4 md
Porosity	15 percent
Casing	5 1/2", 15.5#, J-55
Gross Fracture Height	100 ft
Net Fracture Height	45 ft
Fracture Gradient	.65 psi/ft
Bottom Hole Frac Pressure	3,346 psi
Bottom Hole Temperature	130 deg F
Perforated Interval	5126'-5138'
	5144'-5170'
	TOTAL OF 38 HOLES @
	0.50"

THE WESTERN COMPANY**Treatment Requirements for: HUFF & PUFF**

PRE-PAD: 2,000 GALLONS 2% KCL W/ FOAMER PUMPED VOLUME
3,000 GALLONS TO BE MIXED

Containing per 1000 Gallons:
0.38 Pounds FRAC-CIDE 20, BACTERIACIDE
3.00 Gallons FRAC-FOAM 1, FOAMING AGENT

PUMP 2,000 GALLONS OF 2% KCL WATER WITH 3 GPT OF FRAC FOAM 1 ON
THE FLY AHEAD OF THE NITROGEN PUMP-IN.

FLUSH WATER: 3,900 GALLONS 2% KCL WATER

Containing per 1000 Gallons:
0.38 Pounds FRAC-CIDE 20, BACTERIACIDE

USE THIS WATER TO DISPLACE THE NITROGEN FROM THE 3 1/2" TUBING/
PACKER ASSEMBLY AND DIPLACE N2 INTO THE FORMATION.

NORTH WEST CHA CHA #32 HUFF & PUFF PROCEDURE

1. PUMP 2,000 GALLONS OF 2% KCL WATER WITH FRAC FOAM 1 ON THE FLY AT 6 BPM AS PRE-PAD.
 2. PUMP 4,200 GALLONS OF 100 Q NITROGEN AT 6,000 SCF/MIN.
 3. PUMP 1,900 GALLONS OF 2% KCL WATER AS FLUSH AT 6 BPM.
 4. SHUT DOWN AND FLOW THE WELL BACK TO THE PIT WITH NO CKOKE AND ALLOW WELL TO CLEAN UP.
 5. PUMP PUMP 4,200 GALLONS OF 100 Q NITROGEN AT 6,000 SCF/MIN.
 6. PUMP 2,000 GALLONS OF 2% KCL WATER AS FLUSH AT 6 BPM.
 7. SHUT DOWN AND RIG DOWN WCNA AND FLOW WELL BACK TO PIT AND ALLOW THE WELL TO CLEAN UP REGULATING THE MATERIAL WHICH FLOWS BACK.
- **** BE SURE THE WELL HAS A VALVE ASSEMBLY SET TO PREVENT THE WELL FROM COMING IN AS THE NITROGEN IS FLOWED BACK.

THE WESTERN COMPANY**NITROGEN FOAM PUMPING SCHEDULE**

OPERATOR	SIRGO BROTHERS ENERGY CORP.
WELL	NORTH WEST CHA CHA #32
FIELD	CHA CHA
LOCATION	SEC.22,T29N,R14W
COUNTY, STATE	SAN JUAN, NM
FORMATION	GALLUP A & B
PREPARED BY	MIKE MCNEESE
DATE	OCTOBER 6, 1994

WELL AND RESERVOIR PARAMETERS

Depth (mid perforation)	5148 ft
Bottom Hole Frac Pressure	3346 psi
Bottom Hole Static Temperature	130 deg F

TREATMENT PARAMETERS

Treating Conductor I.D.	2.992 in
Fluid Specific Gravity	1.010
Gel Temperature in Tanks	70 deg F
Temperature of N2 at surface	100 deg F
Foam Injection Rate	6.0 bpm
Total Slurry Treatment Volume	14300 gal

Foam Quality and Injection Rate are held constant downhole.

CALCULATED TEMPERATURES

	Low	High
Foam at Surface	70 deg F	100 deg F
Foam at Perfs	75 deg F	208 deg F

Average Formation Pumping Temperature 119 deg F

THE WESTERN COMPANY

NITROGEN FOAM PUMPING SCHEDULE

PROCEDURE

STAGE	DOWNHOLE FOAM VOLUME (GALS)	DOWNHOLE FOAM QUALITY	DOWNHOLE FOAM RATE (BPM)	PROPPANT				CLEAN GEL VOLUME (BBLs)	N2 VOLUME (MSCF)
				CONC. LB/GAL	MESH	TYPE	(LBS)		
PP1	2000	0.0	6.0	0.00			0	47.6	0.00
1	4200	100.0	6.7	0.00	20/40		0	0.0	89.17
2	1900	0.0	6.0	0.00	20/40		0	45.2	0.00
3	4200	100.0	6.7	0.00	20/40		0	0.0	89.20
FLUSH	2000	0.0	6.0	0.00	FLUSH		0	47.6	0.00
	14300						0	140.5	178.38

TREATMENT SCHEDULE

STAGE	PROPPANT CONC. (LB/GAL)		CLEAN GEL RATE (BPM)	BLEND SLURRY RATE (BPM)	SLURRY VOLUME (WITHOUT N2)			N2 RATE SCFM	PROP RATE LB/MIN	STAGE PUMP TIME HH:MM:SS
	PERF.	BLNDR			(BBLs)	(CUM.)	ON PERFS			
PP1	0.00	00.0	6.00	6.00	47.6	48	48	0	0	00:07:56
1	0.00	00.0	0.00	0.00	0.0	48	48	5975	0	00:14:55
2	0.00	00.0	6.00	6.00	45.2	93	95	0	0	00:07:32
3	0.00	00.0	0.00	0.00	0.0	93	93	5977	0	00:14:55
FLUSH	0.00	00.0	6.00	6.00	47.6	140	140	0	0	00:07:56
TOTAL PUMP TIME:										00:53:15

THE WESTERN COMPANY**NITROGEN PRESSURE ANALYSIS**

OPERATOR	SIRGO BROTHERS ENERGY CORP.
WELL	NORTH WEST CHA CHA #32
FIELD	CHA CHA
LOCATION	SEC.22,T29N,R14W
COUNTY, STATE	SAN JUAN, NM
FORMATION	GALLUP A & B
PREPARED BY	MIKE MCNEESE
DATE	OCTOBER 6, 1994

INPUT PARAMETERS

Nitrogen Injection Rate	6000 scfm
Bottom Hole Fracture Pressure	3346 psi
Tubing I.D.	2.992 in
Depth (Mid-perforation)	5148 ft

CALCULATED VALUES

Friction Pressure	51 psi
Hydrostatic Head	515 psi
Nitrogen Pressure at Wellhead	2882 psi

THE WESTERN COMPANY**COST ESTIMATE**

N.W. CHA CHA #32 - HUFF & PUFF

QTY	UNIT	PRODUCT DESCRIPTION	UNIT PRICE	GROSS AMOUNT	DISC (%)	NET AMOUNT
6	LBS	FRAC-CIDE 20, BACTERIACIDE	37.00	222.00	38.0	137.64
6	GAL	FRAC-FOAM 1, FOAMING AGENT	26.95	161.70	38.0	100.25
1	UNIT	ACID PUMP 2501-5000 PSI	820.00	820.00	38.0	508.40
20	MILES	LIGHT EQUIPMENT 1 VEH. 20 MILES	1.80	36.00	38.0	22.32
20	MILES	HEAVY EQUIPMENT 1 VEH. 20 MILES	2.95	59.00	38.0	36.58
500	C-SCF	NITROGEN	1.89	945.00	34.0	623.70
1284	C-SCF	NITROGEN > 50000 SCF	1.84	2,362.19	34.0	1,559.05
20	MILES	LIGHT EQUIPMENT 1 VEH. 20 MILES	1.80	36.00	34.0	23.76
20	MILES	HEAVY EQUIPMENT 1 VEH. 20 MILES	2.95	59.00	34.0	38.94
1	UNIT	NITROGEN PUMPING 0-4000 SCFM	1,110.00	1,110.00	34.0	732.60
TOTALS:				\$5,810.89		\$3,783.24

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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.

THE WESTERN COMPANY**COST ESTIMATE****N.W. CHA CHA #32 - HUFF & PUFF**

QTY	UNIT	PRODUCT DESCRIPTION	NET AMOUNT
6	LBS	FRAC-CIDE 20, BACTERIACIDE	137.64
6	GAL	FRAC-FOAM 1, FOAMING AGENT	100.25
1	UNIT	ACID PUMP 2501-5000 PSI	508.40
20	MILES	LIGHT EQUIPMENT 1 VEH. 20 MILES	22.32
20	MILES	HEAVY EQUIPMENT 1 VEH. 20 MILES	36.58
500	C-SCF	NITROGEN	623.70
1284	C-SCF	NITROGEN > 50000 SCF	1,559.05
20	MILES	LIGHT EQUIPMENT 1 VEH. 20 MILES	23.76
20	MILES	HEAVY EQUIPMENT 1 VEH. 20 MILES	38.94
1	UNIT	NITROGEN PUMPING 0-4000 SCFM	732.60
TOTALS:			\$3,783.24

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PRODUCT DESCRIPTIONS

FRAC-CIDE 20 (Bacteriacide)

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.

THE WESTERN COMPANY
FIELD RECEIPT WORKSHEET

N.W. CHA CHA #32 - HUFF & PUFF

PRODUCT CODE	QUANTITY	UNIT	PRODUCT DESCRIPTION	UNIT PRICE
H0356	6	LBS	FRAC-CIDE 20, BACTERIACIDE	37.00
H2186	6	GAL	FRAC-FOAM 1, FOAMING AGENT	26.95
F7026	1	UNIT	ACID PUMP 2501-5000 PSI	820.00
J3916	20	MILES	LIGHT EQUIPMENT 1 VEH. 20 MILES	1.80
J3906	20	MILES	HEAVY EQUIPMENT 1 VEH. 20 MILES	2.95
N023E	500	C-SCF	NITROGEN	1.89
N003E	1284	C-SCF	NITROGEN > 50000 SCF	1.84
J3916	20	MILES	LIGHT EQUIPMENT 1 VEH. 20 MILES	1.80
J3906	20	MILES	HEAVY EQUIPMENT 1 VEH. 20 MILES	2.95
N2006	1	UNIT	NITROGEN PUMPING 0-4000 SCFM	1110.00

SIRGO BROTHERS ENERGY CORP.

NORTH WEST CHA CHA #32

CHA CHA FIELD

SAN JUAN COUNTY, NM

GALLUP A & B FORMATION



The Western Company

RE-FRAC ON N.W. CHA CHA #32

PREPARED FOR

**MR. MANNY SIRGO - OWNER
MR. SAM BILLINGTON**

**SERVICE POINT
FARMINGTON, NM
(505) 327-6222**

**PREPARED BY
MIKE MCNEESE
TECH REP II
FARMINGTON**

JANUARY 17, 1995

FM050240

**SALES REPRESENTATIVE
MIKE MCNEESE
TECH REP II**

THE WESTERN COMPANY

**OPERATOR: SIRGO BROTHERS ENERGY CORP.
WELL: NORTH WEST CHA CHA #32
FORMATION: GALLUP A & B**

WELL DATA

Net Pay	23 ft
Depth to Middle Perforation	5,182 ft
Reservoir Pressure	2,250 psi
Permeability	4 md
Porosity	15 percent
Casing	5 1/2", 15.5#, J-55
Gross Fracture Height	50 ft
Net Fracture Height	23 ft
Fracture Gradient	.65 psi/ft
Bottom Hole Frac Pressure	3,368 psi
Bottom Hole Temperature	130 deg F
Perforated Interval	5129'-5234' (3 JSPF)
	TOTAL OF 69 HOLES @
	0.50".

THE WESTERN COMPANY**Treatment Requirements for: RE-FRAC ON #32**

**PAD FLUID: 15,000 GALLONS SLICK WATER PUMPED VOLUME
 16,000 GALLONS TO BE MIXED**

Containing per 1000 Gallons:
0.38 Pounds FRAC-CIDE 20, BACTERIACIDE
0.75 Gallons FR-30, FRICTION REDUCER
0.50 Gallons NINE-40, SURFACTANT

THE ABOVE VOL INCLUDES 1,000 GAL FOR TANK BOTTOMS-1.

**0.5 - 1.5 PPG: 20,000 GALLONS SLICK WATER PUMPED VOLUME
 22,000 GALLONS TO BE MIXED**

Containing per 1000 Gallons:
0.38 Pounds FRAC-CIDE 20, BACTERIACIDE
0.75 Gallons FR-30, FRICTION REDUCER
0.50 Gallons NINE-40, SURFACTANT

THE ABOVE VOLUME INCLUDES 1,000 GALLONS FOR TANK BOTTOMS-2.

**2.0 PPG - FLUSH: 21,000 GALLONS SLICK WATER PUMPED VOLUME
 22,000 GALLONS TO BE MIXED**

Containing per 1000 Gallons:
0.38 Pounds FRAC-CIDE 20, BACTERIACIDE
0.75 Gallons FR-30, FRICTION REDUCER

CUT THE NINE 40 AT THE END OF THE 1.5 PPG SAND STAGE.

ADDITIONAL MATERIALS:

55.00 Gallons TECHNI-SOL 155

**PROPPANTS: 60,500 Pounds 20/40 MESH OTTAWA
 60,500 Pounds 20/40 MESH OTTAWA**

NORTH WEST CHA CHA #32 RE-FRAC PROCEDURE

1. PUMP 15,000 GALLONS OF SLICK 2% KCL WATER AT 40 BPM AS PAD.
2. PUMP 10,000 GALLONS OF SLICK 2% KCL WATER AT 40 BPM WITH SAND RAMPED FROM 0.50 PPG TO 1.0 PPG OF 20/40 MESH OTTAWA SAND.
3. PUMP 10,000 GALLONS OF SLICK 2% KCL WATER AT 40 BPM WITH 1.5 PPG 20/40 MESH OTTAWA SAND.
4. PUMP 10,000 GALLONS OF SLICK 2% KCL WATER AT 40 BPM WITH 2.0 PPG 20/40 MESH OTTAWA SAND.
5. PUMP 6,000 GALLONS OF SLICK 2% KCL WATER AT 40 BPM WITH SAND RAMPED FROM 2.5 PPG TO 3.5 PPG OF 20/40 MESH OTTAWA SAND.
6. PUMP 5,000 GALLONS OF SLICK WATER AS FLUSH - RE-CALCULATE FLUSH ON LOCATION.

*** BRING ENOUGH FRAC PUMPS TO PUMP AT 50 BPM IF NEEDED ***

*** RUN 55 GALLONS OF TECHNI-SOLV 155 IN PRE-PAD (1,000 GALLONS) PRIOR TO THE FRAC ***

THE WESTERN COMPANY**FRAC CALCULATIONS**

OPERATOR: SIRGO BROTHERS ENERGY CORP.
WELL: NORTH WEST CHA CHA #32
FORMATION: GALLUP A & B

DEFINITIONS

BHFP = Bottom Hole Frac Pressure
 HH = Hydrostatic Head
 PF = Friction Loss in 5 1/2", 15.5# CASING
 PFP = Perforation Friction Pressure
 = $[2.93 \times (\text{rate/perfs})^2 / (\text{perf diam})^4] \times \text{spec gravity}$
 ISDP = Instantaneous Shut Down Pressure
 = BHFP - HH
 STP = Surface Treating Pressure
 = BHFP - HH + PF + PF + PFP
 HHP = Hydraulic Horsepower
 = STP x Rate / 40.80

CALCULATIONS

BHFP = 0.650 psi/ft x 5182 ft = 3368 psi
 HH = 0.433 psi/ft x 5182 ft = 2244 psi
 PF = 40 psi/1000 ft x 5182 ft = 207 psi
 PFP = $\frac{[2.93 \times (40.0 \text{ bpm} / 96)^2]}{(0.500 \text{ in})^4} \times 1.00 = 8 \text{ psi}$
 ISDP = 3368 psi - 2244 psi = 1124 psi
 STP = 3368 psi - 2244 psi + 207 psi + 8 psi = 1340 psi
 HHP = (1340 psi x 40.0 bpm) / 40.80 = 1313 hhp

* Surface treating pressure (STP) estimated using a 0.650 psi/ft frac gradient. The frac gradient should be verified by ISDP calculation during prepad or pad.

THE WESTERN COMPANY

OPERATOR: SIRGO BROTHERS ENERGY CORP.
WELL: NORTH WEST CHA CHA #32
FORMATION: GALLUP A & B

FLUID & PROPPANT PUMPING SCHEDULE

FLUID TYPE	FLUID VOLUME (GALS)	PROPPANT				VOLUME		
		CONC. (LB/GAL)	TOTAL (LBS)	MESH SIZE	TYPE	FLUID (BBLs)	SLURRY (BBLs)	CUM (BBLs)
SLICK H2O	15000	0.00	0			357	357	357
SLICK H2O	10000	0.75	7500	20/40	SAND	238	246	603
SLICK H2O	10000	1.50	15000	20/40	SAND	238	254	857
SLICK H2O	10000	2.00	20000	20/40	SAND	238	260	1117
SLICK H2O	6000	3.00	18000	20/40	SAND	143	162	1279
FLUSH	5000	0.00	0			119	119	1398
TOTALS	56000		60500			1333	1398	1398

RATE SCHEDULE

FLUID TYPE	FLUID VOLUME (GALS)	PROPPANT CONC. (LB/GAL)	SLURRY RATE (BPM)	FLUID RATE (BPM)	PROPPANT RATE (LBS/MIN)	SLURRY VOLUME (BBLs)	PUMP TIME HH:MM:SS
SLICK H2O	15000	0.00	40.0	40.0	0.0	357	00:08:55
SLICK H2O	10000	0.75	40.0	38.7	1218.6	246	00:06:09
SLICK H2O	10000	1.50	40.0	37.5	2359.5	254	00:06:21
SLICK H2O	10000	2.00	40.0	36.7	3080.6	260	00:06:29
SLICK H2O	6000	3.00	40.0	35.2	4436.4	162	00:04:03
FLUSH	5000	0.00	40.0	40.0	0.0	119	00:02:58
TOTAL PUMP TIME							00:34:57

THE WESTERN COMPANY

COST ESTIMATE

N.W. CHA CHA #32 - RE-FRAC

QTY	UNIT	PRODUCT DESCRIPTION	UNIT PRICE	GROSS AMOUNT	DISC (%)	NET AMOUNT
42	GAL	FR-30, FRICTION REDUCER	37.70	1,583.40	42.0	918.37
24	LBS	FRAC-CIDE 20, BACTERIACIDE	37.00	888.00	42.0	515.04
18	GAL	NINE-40, SURFACTANT	36.25	652.50	42.0	378.45
40	MILES	CHEMICALS DELIVERY, LIGHT VEHICLE, LIGHT	1.80	72.00	42.0	41.76
55	GAL	TECHNI-SOLV 155	24.15	1,328.25	42.0	770.39
605	CWT	20/40 MESH OTTAWA	12.60	7,623.00	42.0	4,421.34
605	T-M	DELIVERY CHARGE, 20 MILES	1.00	605.00	42.0	350.90
40	MILES	HEAVY EQUIPMENT 2 VEH. 20 MILES	2.95	118.00	42.0	68.44
TOTALS:				\$12,870.15		\$7,464.69

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THE WESTERN COMPANY**COST ESTIMATE****N.W. CHA CHA #32 - RE-FRAC**

QTY	UNIT	PRODUCT DESCRIPTION	NET AMOUNT
42	GAL	FR-30, FRICTION REDUCER	918.37
24	LBS	FRAC-CIDE 20, BACTERIACIDE	515.04
18	GAL	NINE-40, SURFACTANT	378.45
40	MILES	CHEMICALS DELIVERY, LIGHT VEHICLE, LIGHT V	41.76
55	GAL	TECHNI-SOLV 155	770.39
605	CWT	20/40 MESH OTTAWA	4,421.34
605	T-M	DELIVERY CHARGE, 20 MILES	350.90
40	MILES	HEAVY EQUIPMENT 2 VEH. 20 MILES	68.44
TOTALS:			\$7,464.69

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PRODUCT DESCRIPTIONS

FR-30 (Friction Reducer)

An anionic polymeric friction reducer used in water and light brines. Friction reduction of up to 80% can be achieved.

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.

NINE-40 (Surfactant)

A nonionic non-emulsifier with excellent load recovery capabilities in some reservoirs.

THE WESTERN COMPANY
FIELD RECEIPT WORKSHEET

N.W. CHA CHA #32 - RE-FRAC

PRODUCT CODE	QUANTITY	UNIT	PRODUCT DESCRIPTION	UNIT PRICE
H0596	42	GAL	FR-30, FRICTION REDUCER	37.70
H0356	24	LBS	FRAC-CIDE 20, BACTERIACIDE	37.00
H0146	18	GAL	NINE-40, SURFACTANT	36.25
J7416	40	MILES	CHEMICALS DELIVERY, LIGHT VEHICLE, LIGHT	1.80
NOTPR	55	GAL	TECHNI-SOLV 155	24.15
NOTPR	605	CWT	20/40 MESH OTTAWA	12.60
J4016	605	T-M	DELIVERY CHARGE, 20 MILES	1.00
J3906	40	MILES	HEAVY EQUIPMENT 2 VEH. 20 MILES	2.95

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE

(See other instructions on reverse side)

RECEIVED

FORM APPROVED
OMB NO. 1004-0137
Expires: February 28, 1995

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1. TYPE OF WELL:		OIL WELL ☒ GAS WELL ☐ DRY ☐ Other ☐		94 OCT 25 PM			
2. TYPE OF COMPLETION:		NEW WELL ☒ WORK OVER ☐ REPAIR ☐ PLUG BACK ☐ DIFF. CENVR. ☐ Other ☐		070 FARMINGTON			
3. NAME OF OPERATOR Sirgo Brothers Energy Corp Agent for Mountain States Petroleum Corp.							
4. ADDRESS AND TELEPHONE NO. P O Box 3531, Midland TX 79702 915/685-0878							
5. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)* At surface 849' FSL & 682' FWL Unit M At top prod. interval reported below Same At total depth Same							
14. PERMIT NO.		DATE ISSUED					
15. DATE SPUDDED		16. DATE T.D. REACHED		17. DATE COMPL. (Ready to prod.)			
6-18-94		6-30-94		8-18-94			
18. ELEVATIONS (OF. RKB, RT. GE, ETC.)*		19. ELEV. CASINGHEAD					
5627' RKB		5615' GR					
20. TOTAL DEPTH, MD & TVD		21. PLUG BACK T.D., MD & TVD		22. IF MULTIPLE COMPL., HOW MANY*			
5300'		5286'		None			
23. INTERVALS DRILLED BY		ROTARY TOOLS		CABLE TOOLS			
→		X					
24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)* Cha Cha Gallup 5129-5242'					25. WAS DIRECTIONAL SURVEY MADE No		
26. TYPE ELECTRIC AND OTHER LOGS RUN Cased hole GR Neutron, CCL, Open hole mud log					27. WAS WELL CORED yes		
28. CARING RECORD (Report all strings set in well)							
CASING SIZE/GRADE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	TOP OF CEMENT, CEMENTING RECORD	AMOUNT PULLED		
8-5/8" J55	24#	217'	12-1/4"	Surface 115 sx			
5-1/2" J55	15.5#	5300'	7-7/8"	Circ to Surf 550 sx			
29. LINER RECORD			30. TUBING RECORD				
SIZE	TOP (MD)	BOTTOM (MD)	BACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
					2-7/8"	5236'	
31. PERFORATION RECORD (Interval, size and number) Gallup 5129-5242' 29 holes 0.5"			32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.				
DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED						
5129-5242'	A 700 gals 15% acetic acid w/ additives						
	F 81,000 gals nitrogen foam w/ 164,000# sd						
33. PRODUCTION							
DATE FIRST PRODUCTION 7-12-94		PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump) Pumping			WELL STATUS (Producing or shut-in) Producing		
DATE OF TEST 8-18-94	HOURS TESTED 24	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL. 63	GAS—MCF. 101	WATER—BBL. 58	
FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL. 63	GAS—MCF. 101	WATER—BBL. 58	OIL GRAVITY-API (CORR.) 40	
34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) Used for fuel on lease					TEST WITNESSED BY M. A. Sirgo III		
35. LIST OF ATTACHMENTS GR Neutron Log, Core Analysis, Deviation Survey							
36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records							
SIGNED <u>M. A. Sirgo III</u>		TITLE <u>Agent</u>		ACCEPTED FOR RECORD DATE <u>10-21-94</u>			

*(See Instructions and Spaces for Additional Data on Reverse Side)

OCT 26 1994

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within the jurisdiction of such department or agency.

OPERATOR

FARMINGTON DISTRICT OFFICE

SIRGO BROTHERS ENERGY CORP.
N. W. CHA CHA # 32
SAN JUAN COUNTY, NEW MEXICO

CORE ANALYSIS

SIRGO BROTHERS ENERGY CORP.

N.W. CHA # 32

SAN JUAN COUNTY, NEW MEXICO

CONVENTIONAL PLUG ANALYSIS

Date: 06-28-94
Analyst: DAVID FLOYD
Mud: FRESHWATER GEL

SAMPLE NO.	DEPTH	Kplug (mD)	POR %	GRAIN DENS	% FLUIDS H2O OIL	ROP	LITHOLOGY
	4885						
	4886						
1	4887	1.11	4.5	2.68	43.6 0.0	8	SH SL SDY SL - MOD SLTY
2	4888	0.40	4.3	2.66	51.5 0.0	15	SH SL SDY SL - MOD SLTY
3	4889	TBFA	4.7	2.65	44.7 0.0	16	SH SL - MOD SDY SL SLTY
4	4890	12.22	4.4	2.67	43.2 0.0	23	SH MOD SDY SL - MOD SLTY
5	4891	0.06	2.9	2.70	38.8 0.0	16	SH MOD SDY SL - MOD SLTY
6	4892	0.06	3.0	2.70	45.1 0.0	13	SH MOD SDY SL SLTY FRAC
7	4893	0.08	2.7	2.70	41.8 0.0	6	SH SL SDY SL - MOD SLTY
8	4894	1.59	3.3	2.68	47.5 0.0	8	SH SL SDY SL - MOD SLTY
9	4895	0.14	3.8	2.68	45.0 0.0	5	SH SL - MOD SDY SL SLTY
10	4896	0.30	3.7	2.67	42.1 0.0	7	SH SL - MOD SDY SL SLTY
11	4897	0.06	3.9	2.68	38.1 0.0	7	SH SL - MOD SDY SL SLTY
12	4898	TBFA	3.6	2.69	42.5 0.0	6	SH SL - MOD SDY SL SLTY
13	4899	0.80	3.5	2.68	47.7 0.0	4	SH SL SDY SL SLTY
14	4900	0.11	3.5	2.69	41.5 0.0	6	SH SL - MOD SDY SL SLTY
15	4901	0.14	3.3	2.68	48.4 0.0	6	SH SL - MOD SDY SL SLTY
16	4902	0.18	3.3	2.69	44.7 0.0	5	SH SL - MOD SDY SL SLTY
17	4903	0.18	3.1	2.69	41.5 0.0	6	SH SL SDY SL SLTY
18	4904	0.30	3.9	2.68	48.0 0.0	7	SH SL SDY SL SLTY
19	4905	TBFA	4.1	2.68	34.8 0.0	7	SH SL - MOD SDY SL SLTY
	4906					6	SH SL - MOD SDY SL SLTY
	4907					11	SH SL SDY SL - MOD SLTY
	4908					13	SH SL SDY SL - MOD SLTY
	4909					16	SH SL SDY SL - MOD SLTY
	4910					20	SH SL SDY SL - MOD SLTY
	4911					24	SH SL SDY SL - MOD SLTY

AMENDED REPORT

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
BLM

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals.

01 JUL 26 PM 12:59
070 FARMINGTON, NM

5. Lease Designation and Serial No.
14-20-603-2199

6. If Indian, Allottee or Tribe Name
Navajo Nation

7. If Unit or CA, Agreement Designation
NW Cha Cha Unit

8. Well Name and No.

NW Cha Cha Unit #32

9. API Well No.

30-045-29121

10. Field and Pool, or Exploratory Area

Cha Cha (Gallup)

11. County or Parish, State

San Juan Co., NM

SUBMIT IN TRIPLICATE

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator Sirgo Brothers Energy Corp Agent for
Mountain States Petroleum Corp.

3. Address and Telephone No.

P. O. Box 3531, Midland, TX 79702 915/685-0878

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

849' FSL & 682' FWL Unit M
Sec. 22 T29N, R14W, NMPM

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

- ☐ Notice of Intent
☒ Subsequent Report
☐ Final Abandonment Notice

TYPE OF ACTION

- ☐ Abandonment
☐ Recompletion
☐ Plugging Back
☐ Casing Repair
☐ Altering Casing
☒ Other Spud & Run Casing

- ☐ Change of Plans
☐ New Construction
☐ Non-Routine Fracturing
☐ Water Shut-Off
☐ Conversion to Injection
☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

- 1) MI&RU United Drilling. Spud well at 1:00 p.m. 6-18-94.
- 2) Drilled to 234'. Ran 6 jts. 8-5/8" OD 24# J-55 casing, set at 234'. w/25 sx Class B Neat + 90 sx Class B + 2% CaCl2 + 1/4#/sx Celloseal. Slurry weight total 15.6 ppg, slurry yield 1.18 cu ft, slurry volume: 24 bbls.
- 3) Circulated 11 sx cement to surface. WOC 18-1/2 hrs. Tested casing to 1000# for 30 min, tested okay.
- 4) Drilled to 5300' TD 6-30-94. Ran 132 jts. 5-1/2" OD 15.5# J-55 casing set at 5300'. Cemented w/450 sx 65/35/12% gel + 1/4#/sx Celloseal + 2% CaCl. Slurry weight 11.8 ppg, slurry yield 2.36 cu ft, slurry volume 189 bbls. Tailed in w/100 sx Class B + 1/4#/sx Celloseal. Slurry weight 15.6 ppg, slurry yield 1.18 cu ft, slurry volume 21 bbls. WOC.
- 5) Waiting on completion unit.

****Cement circulated to surface****

Amended to show TOC 5-1/2" casing string.

Need top of cement on 5 1/2" casing string

14. I hereby certify that the foregoing is true and correct.

Signed L. A. Sirgo Title Agent

Date 10-21-94

(This space for Federal or State office use)

Approved by _____
Conditions of approval, if any:

Title _____

Date _____

ACCEPTED FOR RECORD

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

OPERATOR
OPERATOR

FARMINGTON DISTRICT OFFICE
BY Snr

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

A. TYPE OF WORK
DRILL ☒ DEEPEN ☐

B. TYPE OF WELL
OIL WELL ☒ GAS WELL ☐ OTHER ☐ SINGLE ZONE ☒ MULTIPLE ZONE ☐

C. NAME OF OPERATOR
~~SIRGO BROTHERS ENERGY CORP. AS AGENT~~
FOR MOUNTAIN STATES PETROLEUM CORP. 15-346

D. ADDRESS AND TELEPHONE NO.
P. O. BOX 3531, MIDLAND, TX 79702 (915) 685-0878

E. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)
At surface 849' FSL & 682' FWL Unit M
At proposed prod. zone Sec. 22, T29N, R14W, NMPM
Same

F. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
5 MILES SOUTHWEST OF FARMINGTON

G. DISTANCE FROM PROPOSED*
LOCATION TO NEAREST 44,824' from unit
PROPERTY OR LEASE LINE, FT. boundary
(Also to nearest drig. unit line, if any)

H. DISTANCE FROM PROPOSED LOCATION*
TO NEAREST WELL, DRILLING, COMPLETED, ON APPLIED FOR, ON THIS LEASE, FT. 1896' from Well #36

I. ELEVATIONS (Show whether DF, RT, GR, etc.)
5615' GR

J. 16. NO. OF ACRES IN LEASE 1632
17. NO. OF ACRES ASSIGNED TO THIS WELL 80
19. PROPOSED DEPTH 5370'
20. ROTARY OR CABLE TOOLS Rotary
22. APPROX. DATE WORK WILL START* March 20, 1994

5. LEASE DESIGNATION AND SERIAL NO.
14-20-603-2199

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
NAVAJO NATION

7. UNIT AGREEMENT NAME
N.W. CHA CHA UNIT

8. FARM OR LEASE NAME, WELL NO. 8095
N.W. CHA CHA UNIT #32

9. API WELL NO.
30-045-29121

10. FIELD AND POOL, OR WILDCAT
CHA CHA (GALLUP) 11580

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
M Sec. 22, T29N, R14W, NMPM

12. COUNTY OR PARISH SAN JUAN
13. STATE NM

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12-1/4"	J-55, 8-5/8"	24#	210'	165 sacks
7-7/8"	J-55, 5-1/2"	15.5#	5370'	860 sacks

1. Circulate cement to surface on 8-5/8" surface pipe.
2. Will two stage 5-1/2" casing to circulate cement back to surface pipe.
3. BOP Diagram attached.

RECEIVED
MAY 12 1994
OIL CON. DIV.
DIST. 3

RECEIVED
MAY 19 1994
OIL CON. DIV.
DIST. 3

070 FARMINGTON, NM

54 MAR -8 AM 10:04

RECEIVED
BLM

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

SIGNED M. A. Sirgo, III TITLE President DATE Feb. 17, 1994

PERMIT NO. _____ APPROVAL DATE _____
Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
CONDITIONS OF APPROVAL, IF ANY:

APPROVED BY NSL-3392 TITLE NMOC DATE MAY 09 1994
DISTRICT MANAGER

*See Instructions On Reverse Side

THE WESTERN COMPANY OF NORTH AMERICA

API WATER ANALYSIS

Company: SIRGO	W.C.N.A. Sample No.: S303294
Field:	Legal Description:
Well: NW CHA CHA #32	Lease or Unit:
Depth:	Water.B/D:
Formation: GALLUP	Sampling Point:
State:	Sampled By:
County:	Date Sampled: 08/14/94
Type of Water(Produced,Supply, ect.):	

PROPERTIES

pH: 7.78	Iron, Fe(total): 0
Specific Gravity: 1.001	Sulfide as H2S: 0
Resistivity (ohm-meter): .66	Total Hardness:
Temperature: 82F	(see below)

DISSOLVED SOLIDS

CATIONS	mg/l	me/l
Sodium, Na:	1932	: 84
Calcium, Ca:	160	: 8
Magnesium, Mg:	0	: 0
Barium, Ba:	N/A	: N/A
Potassium, K:	450	: 12

Sample(ml): 1.0 ml of EDTA:	.4
Sample(ml): 1.0 ml of EDTA:	.0

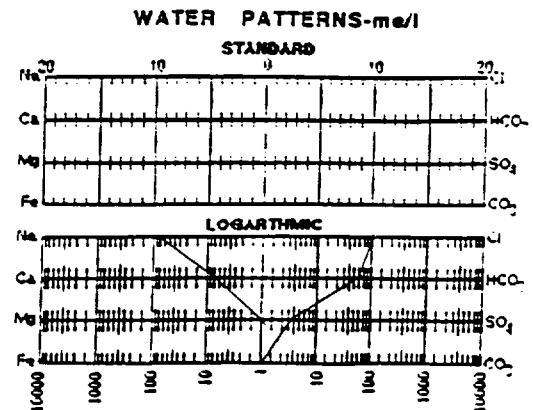
ANIONS	mg/l	me/l
N: .5000Chloride, Cl:	3545	: 100
Sulfate, SO4:	200	: 4
Carbonate, CO3:	0	: 0
Bicarbonate, HCO3:	4270	: 70

Sample(ml): 1.0 ml of AgNO3:	.2
Sample(ml): 1.0 ml of H2SO4:	.0
Sample(ml): 1.0 ml of H2SO4:	.7

Total Dissolved
Solids (calculated): 10557
Total Hardness:

Sample(ml): 1.4 ml of EDTA:

REMARKS AND RECOMMENDATIONS:



Analyst:
Date Analyzed: