RECEIVED
NOV 26 2008
HOBBS OCD

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240
DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
DISTRICT IV
1330 S. ST. FRANCIS DR., SANTA FE, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
1330 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

Form C-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
30-025-39242	9310	Caprock Wolfcamp East

Property Code	Property Name	Well Number
37458	MOORE COWBELL "23" STATE	1

OGRID No.	Operator Name	Elevation
249099	CAZA OPERATING, LLC	4335'

Surface Location

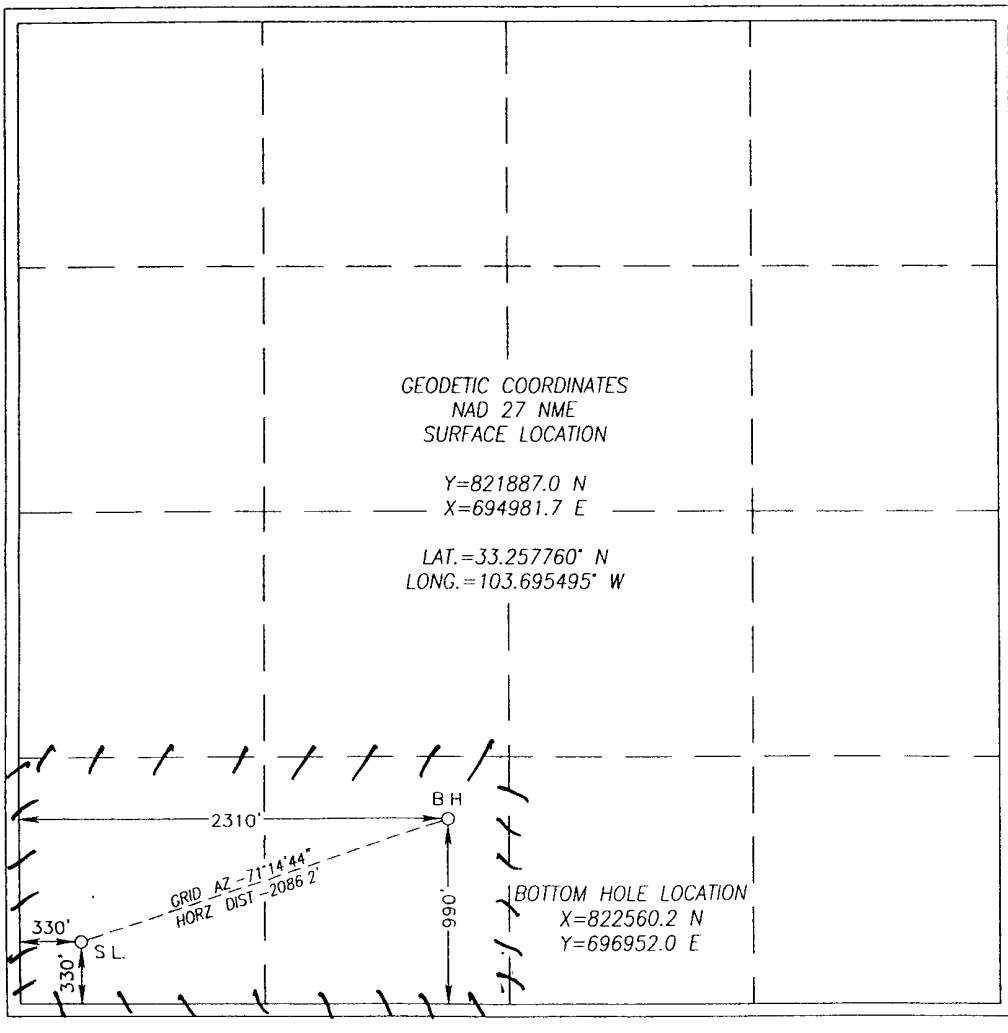
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	23	12-S	32-E		330	SOUTH	330	WEST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	23	12-S	32-E		990	SOUTH	2310	WEST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



OPERATOR CERTIFICATION

I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Richard L. Wright 11/30/08
Signature Date

Richard L. Wright
Printed Name

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

GARY G. EIDSON
OCTOBER 22, 2008
NEW MEXICO
12641
REGISTERED PROFESSIONAL SURVEYOR

Date Surveyed: LA

Signature & Seal of Professional Surveyor

Gary G. Eidson 11/4/08

08.13.1926

Certificate No. GARY G. EIDSON 12641
RONALD J. EIDSON 3239

MOORE-CAP PROSPECT

Moore Cowbell 23 State # 1 H

PRODUCTION CASING CEMENT PROPOSAL

WELL DATA:

JOB TYPE	PRIMARY PRODUCTION STRING CEMENT, **HORIZONTAL**
TOTAL MEASURED DEPTH	10,234 FT
TOTAL VERTICAL DEPTH	8350 FT
KOP	7875 FT
EOC	8625 FT
HOLE SIZE	8.5 INCHES THROUGH CURVE @ 8625. (7.875 TO 10,234 FT)
LAST CASING SIZE	9.625 40 LB N-80

SYSTEM DATA:

TOC CALCULATION	4500 FT FS
WASHOUT CALCULATION	50% or 1.5 times the volume
9.625 inch Csg X 5.5 inch Csg volume	.261 cu ft / ft
HYDRAULIC DIAMETER 8.5 INCH HOLE	.59 CU FT / FT
HYDRAULIC DIAMETER 7.875 INCH HOLE	.507 CU FT / FT
5.5 INCH CSG OD HYDRAULICS	.165 CU FT / FT
5.5 INCH CSG ID HYDRAULICS	.1305 CU FT/FT
9.625 csg X 5.5 inch Csg Volume	500 ft X .261 = 130.5 Cu Ft
8.5 inch hole X 5.5 inch Csg volume	3625 ft X (.59-.165) = 1541 Cu Ft
7.875 inch hole X 5.5 inch Csg Volume	1609 ft X (.507 - .165) = 550 Cu Ft
SHOE JOINT	45 ft X .1305 = 5.9 Cu Ft
TOTAL VOLUME NEEDED	(130.5 + 1541 + 550 + 5.9) = **2228 CU FT**

CEMENT DATA:

TYPE	TXI LIGHT
YIELD	1.25 CU FT/ SK
WEIGHT	13.5 PPG
MIX WTR	6.150 GAL/SK
THICKENING TIME EST	
12/72 HR COMPRESSIVE STRENGTH EST	
FREE WATER	
FLUID LOSS EST	
CEMENT NEED FOR 1 STAGE JOB =	**2228 cu ft / 1.25 cu ft/ Sk = 1782 Sacks Concrete**

Note: Stage tool may be necessary if Chronic Lost Returns are encountered.

LONG's METHOD OF SURVEY COMPUTATION

OBLIQUE CIRCULAR ARC INTERPOLATION

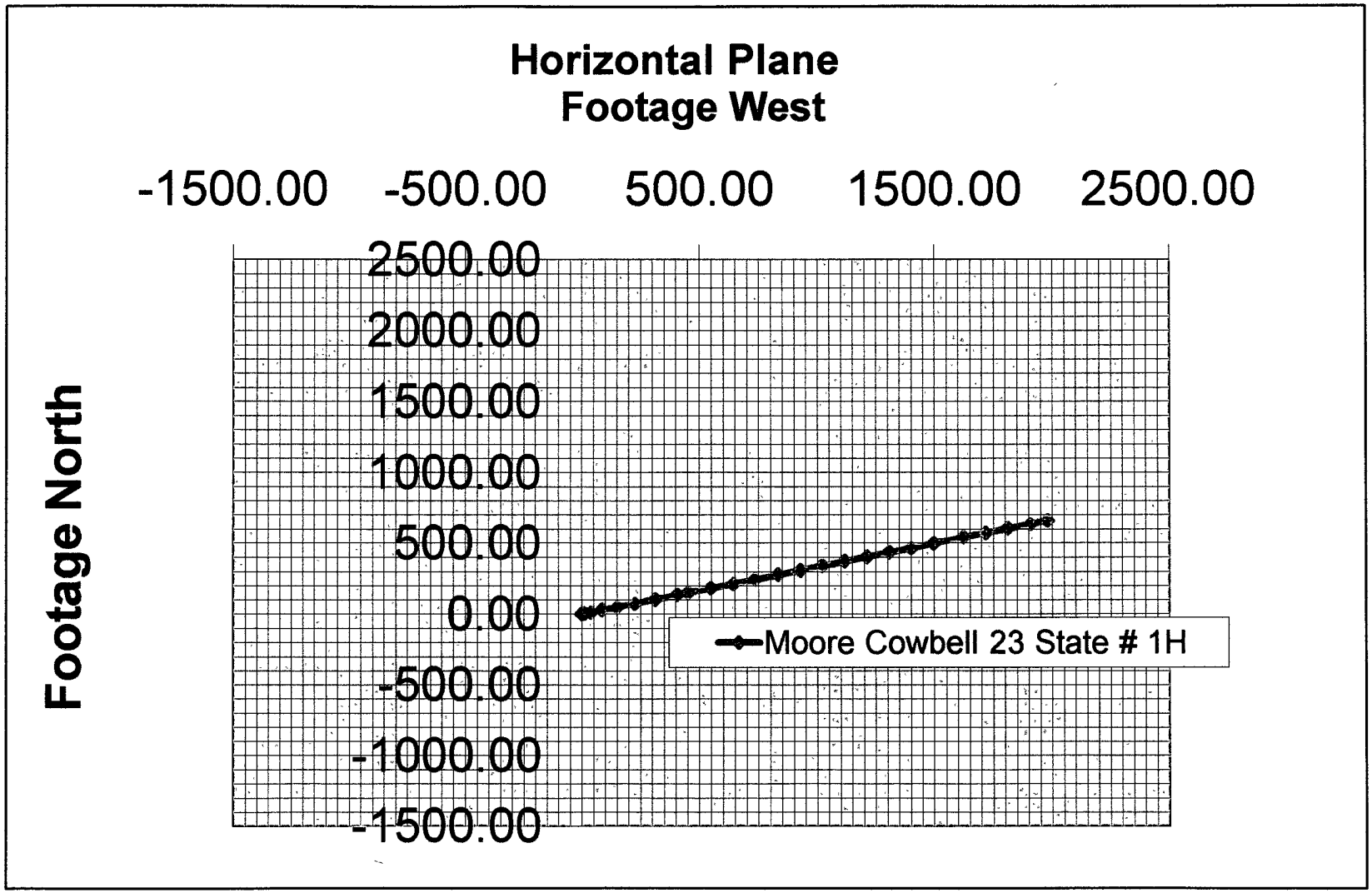
0	MD OF INTERPOLATION DEPTH,(feet)
#N/A	TVD COORDINATE OF THE DEPTH (feet)
#N/A	N/S COORDINATE OF DEPTH (feet)
#N/A	E/W COORDINATE OF DEPTH (feet)

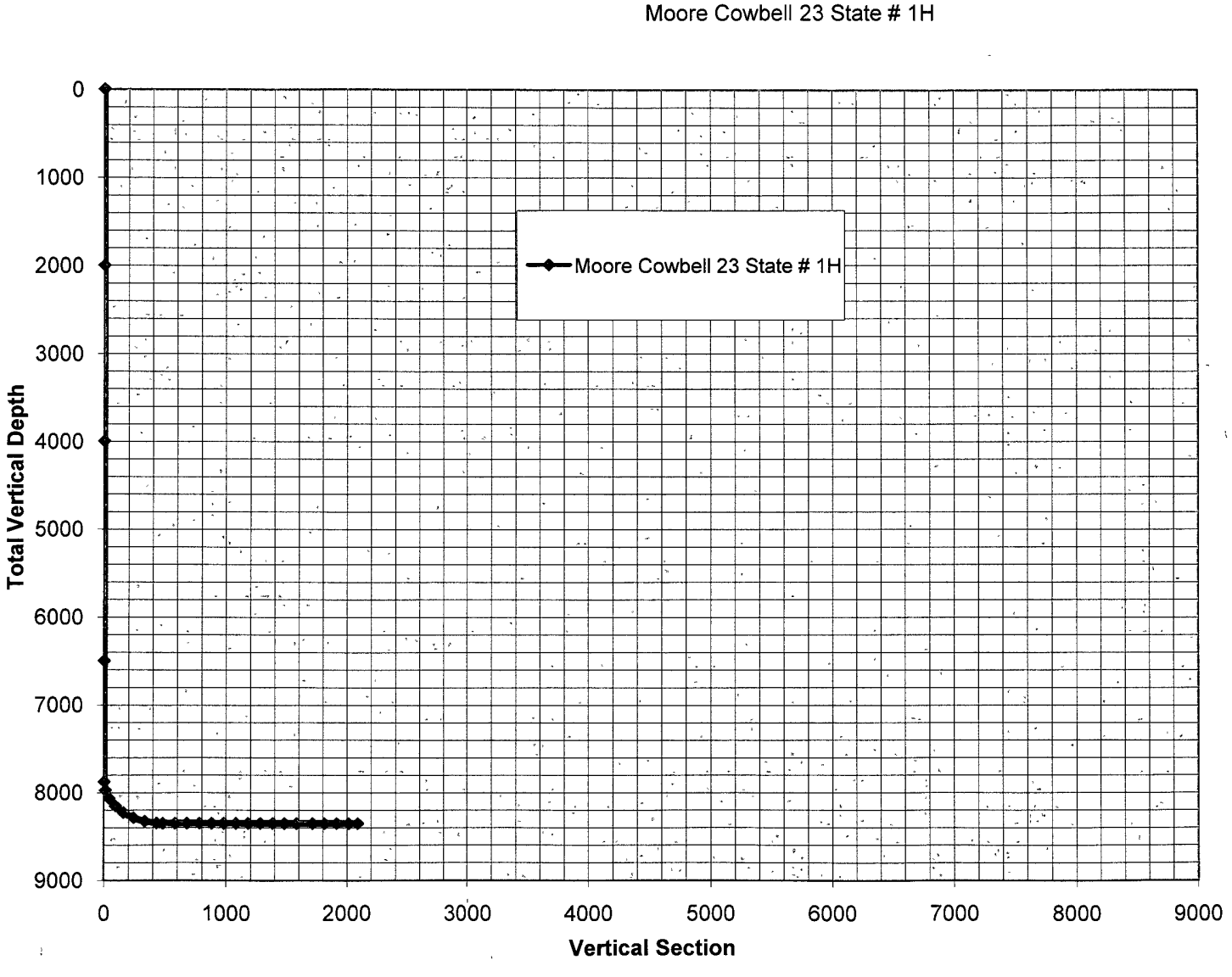
DISTANCE TABLE

STATION A	STATION B	
0.00	0.00	
0.00	0.00	
0.00	0.00	
3 D DISTANCE BETWEEN STATION A AND STATION B	0.00	ft
Calculator =		

TABLE OF SURVEY STATIONS

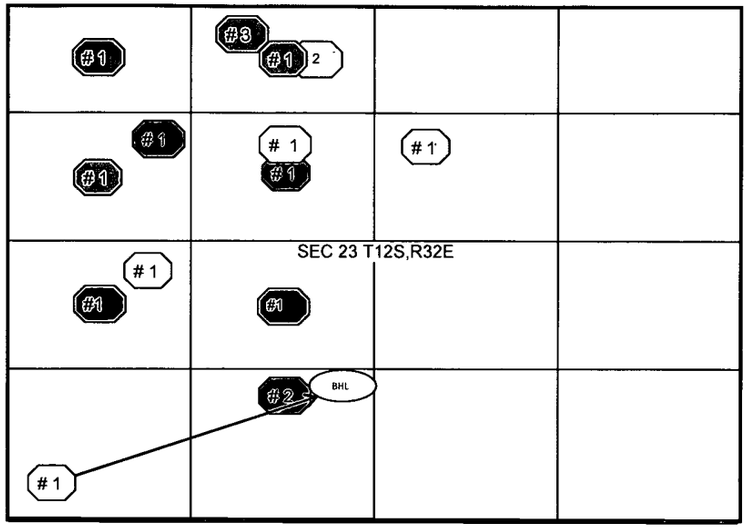
STA #	ΔMD ft	INCL deg	AZIM deg	MD ft	TVD ft	N+/S- ft	E+/W- ft	DLS deg/100FT
1	TIE POINT =>	0	0	7875.00	7875.00	0.00	0.00	-
2	100	12	71.5651	7975.00	7974.27	3.30	9.90	12.00
3	100	24	71.56505	8075.00	8069.20	13.05	39.16	12.00
4	100	36	71.56505	8175.00	8155.65	28.84	86.51	12.00
5	100	48	71.56505	8275.00	8229.83	49.96	149.87	12.00
6	100	60	71.56505	8375.00	8288.50	75.49	226.48	12.00
7	100	72	71.56505	8475.00	8329.10	104.33	312.99	12.00
8	100	84	71.56505	8575.00	8349.85	135.21	405.62	12.00
9	50	90	71.56505	8625.00	8352.46	150.99	452.96	12.00
10	100	90	71.56505	8725.00	8352.46	182.61	547.83	0.00
11	100	90	71.56505	8825.00	8352.46	214.23	642.70	0.00
12	100	90	71.56505	8925.00	8352.46	245.86	737.57	0.00
13	100	90	71.56505	9025.00	8352.46	277.48	832.44	0.00
14	100	90	71.56505	9125.00	8352.46	309.10	927.30	0.00
15	100	90	71.56505	9225.00	8352.46	340.72	1022.17	0.00
16	100	90	71.56505	9325.00	8352.46	372.35	1117.04	0.00
17	100	90	71.56505	9425.00	8352.46	403.97	1211.91	0.00
18	100	90	71.56505	9525.00	8352.46	435.59	1306.78	0.00
19	100	90	71.56505	9625.00	8352.46	467.22	1401.65	0.00
20	100	90	71.56505	9725.00	8352.46	498.84	1496.51	0.00
21	133	90	71.56505	9858.00	8352.46	540.90	1622.69	0.00
22	100	90	71.56505	9958.00	8352.46	572.52	1717.56	0.00
23	100	90	71.56505	10058.00	8352.46	604.14	1812.43	0.00
24	100	90	71.56505	10158.00	8352.46	635.76	1907.29	0.00
25	76	90	71.56505	10234.00	8352.46	659.80	1979.39	0.00
26								
27								


Horizontal Plane
Footage West
-1500.00
-500.00
500.00
1500.00
2500.00
Footage North
2500.00
2000.00
1500.00
1000.00
500.00
0.00
-500.00
-1000.00
-1500.00
Moore Cowbell 23 State # 1H


Moore Cowbell 23 State # 1H
Moore Cowbell 23 State # 1H
Total Vertical Depth
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
Vertical Section

Moore Cowbell 23 State # 1H Wolfcamp Horizontal

Sec 23, T-12-S, R-32-E, Lea County, New Mexico



Well Name	Surface Location	Depth and Strata	Current Prod Zone	Bottom Hole Location 8350 tvd	
Moore Cowbell 23 St # 1H	330 FSL & 330 FWL	TD = 8500 Wolfcamp Horiz	Proposed	990 FSL & 2310 FWL	Caza Operating Proposal
State AK # 1	1650 FNL & 2310 FEL	TD = 8697 Wolfcamp	P&A'd	Same	City Service Drilled
State EC "I" #1	1980 FNL & 660 FWL	TD = 11,500 Devonian	P&A'd	Same	Amerada Petroleum Corp
Mexico "S" #1	660 FNL & 1980 FWL	TD = 8696 Wolfcamp	P&A'd	Same	Skelly Oil Company was qn inj well
New Mexico "D" #1	660 FNL & 660 FWL	TD = 9029 Wolfcamp	P&A'd	Same	Magnolia Petro Drilled
Mexico "S" #3	330 FNL & 1650 FWL	TD = 3019 Queen	P&A'd	Same	Skelly Oil Company was qn inj well
Mexico "S" #2	1980 FNL & 1980 FWL	TD = 8650 Wolfcamp	P&A'd	Same	Skelly Oil Company was qn inj well
Soldier Hill St "AE" # 1 SWD	880 FNL & 1800 FWL	TD = 11290 Devonian	P&A'd	Same	Carper Drilling Co. 4.4 mmbw disposed '88 in devonian by Wagner & Brown
State 23 #1	1980 FSL & 1980 FWL	TD = 11264 Devonian	Atoka	Same	NuCore Energy Inc Drl'd_ Penroc Now Owns
State DV #1	2310 FSL & 990 FWL	TD = 10450 Devonian	Penn	Same	City Service Drilled _ Penroc operates
Citgo Stage #1	1980 FSL & 660 FWL	TD = 3518 Queen	P&A'd	Same	NuCore Energy Drilled & Plugged
Rob Clay State # 1	1650 FNL & 1980 FWL	TD = 11,210 Devonian	P&A'd	Same	Ronadero Drilled _ Southeastern Petro plugged '98
Caprock State # 1	1650 FNL & 990 FWL	TD = 11,276 Devonian	P&A'd	Same	Texas American Oil Drilled _ Bisco Inc Plugged
Caprock State # 2	990 FSL & 1980 FWL	Proposed Devonian	Not Drilled	N/A	Texas American Oil Drilled Permitted _ not drilled
Cleveland # 2	660 FNL & 2180 FWL	TD = 10500 Penn	P&A'd	Same	Wagner & Brown Drl'd & Plugged.

Well name:	**Moore Cowbell 23 # 1**
Operator:	**Caza Operating**
String type:	Surface
Location:	New Mexico, Lea County

Design parameters:

Collapse
Mud weight: 9.500 ppg
Design is based on evacuated pipe.

Burst
Max anticipated surface pressure: 215 psi
Internal gradient: 0.120 psi/ft
Calculated BHP 263 psi

No backup mud specified.

Minimum design factors:

Collapse:
Design factor 1.125

Burst:
Design factor 1.10

Tension:
8 Round STC: 1.80 (J)
8 Round LTC: 1.80 (J)
Buttress: 1.60 (J)
Premium: 1.50 (J)
Body yield: 1.50 (B)

Tension is based on buoyed weight.
Neutral point: 344 ft

Environment:
H2S considered? No
Surface temperature: 75 °F
Bottom hole temperature: 77 °F
Temperature gradient: 0.60 °F/100ft
Minimum section length: 400 ft
Minimum Drift: 2.250 in
Cement top: Surface

Non-directional string.

Re subsequent strings:
Next setting depth: 5,000 ft
Next mud weight: 10.000 ppg
Next setting BHP: 2,597 psi
Fracture mud wt: 11.500 ppg
Fracture depth: 450 ft
Injection pressure 269 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
1	400	13.375	48.00	H-40	ST&C	400	400	12.59	352.7

Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (Kips)	Tension Strength (Kips)	Tension Design Factor
1	197	740	3.749	263	1730	6.58	17	322	19.48 J

Prepared by: Richard Wright
Phillips
Phone: 432 682 7424
FAX: 432 682 7425
Date: September 18,2008
Midland, Texas

Remarks:
Collapse is based on a vertical depth of 400 ft, a mud weight of 9.5 ppg The casing is considered to be evacuated for collapse purposes.
Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Engineering responsibility for use of this design will be that of the purchaser.

Well name:	**Moore Cowbell 23 State # 1**
Operator:	**Caza Operating, LLC**
String type:	Intermediate
Location:	New Mexico, Lea County

Design parameters:

Collapse
Mud weight: 10.000 ppg
Design is based on evacuated pipe.

Burst
Max anticipated surface pressure: 2,626 psi
Internal gradient: 0.120 psi/ft
Calculated BHP 3,226 psi

No backup mud specified.

Minimum design factors:

Collapse:
Design factor 1.125

Burst:
Design factor 1.10

Tension:
8 Round STC: 1.80 (J)
8 Round LTC: 1.80 (J)
Buttress: 1.80 (J)
Premium: 1.50 (J)
Body yield: 1.50 (B)

Tension is based on buoyed weight.
Neutral point: 4,308 ft

Environment:
H2S considered? No
Surface temperature: 75 °F
Bottom hole temperature: 105 °F
Temperature gradient: 0.60 °F/100ft
Minimum section length: 1,500 ft
Minimum Drift: 8.500 in
Cement top: -500 ft

Non-directional string.

Re subsequent strings:
Next setting depth: 10,000 ft
Next mud weight: 9.500 ppg
Next setting BHP: 4,935 psi
Fracture mud wt: 11.500 ppg
Fracture depth: 5,500 ft
Injection pressure 3,286 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
2	3300	9.625	36.00	J-55	LT&C	3300	3300	8.796	1432.4
1	1700	9.625	40.00	N-80	LT&C	5000	5000	8.75	723.8

Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (Kips)	Tension Strength (Kips)	Tension Design Factor
2	1714	1981	1.156	3022	3520	1.16	159	453	2.85 J
1	2597	3090	1.190	3226	5750	1.78	40	737	18.29 J

Prepared by: Richard Wright
Phillips
Phone: 432 682 7424
FAX: 432 682 7425
Date: September 18,2008
Midland, Texas

Remarks:
Collapse is based on a vertical depth of 5000 ft, a mud weight of 10 ppg The casing is considered to be evacuated for collapse purposes.
Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Well name:	**Moore Cowbell 23 St # 1H**
Operator:	**Caza Operating, LLC**
String type:	Production: Frac
Location:	Lea County, New Mexico

Design parameters:

Collapse
Mud weight: 10.000 ppg
Design is based on evacuated pipe.

Burst
Max anticipated surface pressure: 5,446 psi
Internal gradient: 0.120 psi/ft
Calculated BHP 6,448 psi

No backup mud specified.

Minimum design factors:

Collapse:
Design factor 1.125

Burst:
Design factor 1.10

Tension:
8 Round STC: 1.80 (J)
8 Round LTC: 1.80 (J)
Buttress: 1.60 (J)
Premium: 1.50 (J)
Body yield: 1.50 (B)

Tension is based on buoyed weight.
Neutral point: 7,084 ft

Environment:
H2S considered? No
Surface temperature: 75 °F
Bottom hole temperature: 125 °F
Temperature gradient: 0.60 °F/100ft
Minimum section length: 1,500 ft
Minimum Drift: 4.750 in
Cement top: 4,435 ft

Directional Info - Build & Hold
Kick-off point 7875 ft
Departure at shoe: 2087 ft
Maximum dogleg: 12 °/100ft
Inclination at shoe: 90.09 °

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
2	7800	5.5	17.00	N-80	LT&C	7800	7800	4.767	1018.1
1	2435	5.5	17.00	N-80	Buttress	8350	10235	4.767	317.8

Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (Kips)	Tension Strength (Kips)	Tension Design Factor
2	4052	6290	1.552	6382	7740	1.21	120	348	2.89 J
1	4338	6290	1.450	6449	7740	1.20	-12	397	-32.61 B

Prepared by: Richard Wright Pillips
Phone: 432 682 7424
FAX: 432 682 7425
Date: November 13,2008
Midland, Texas

Remarks:
Collapse is based on a vertical depth of 8350 ft, a mud weight of 10 ppg The casing is considered to be evacuated for collapse purposes.
Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.
Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a tensile