

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Form C-101  
May 27, 2004

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Submit to appropriate District Office

☐ AMENDED REPORT

**APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE**

Operator Name and Address MAR Oil & Gas Corp PO Box 5155, Santa Fe, New Mexico 87502		OGRID Number 151228
Property Code 25104 33230	Property Name Eumont Hardy Unit	API Number 30 - 025-36755
Proposed Pool 1 Eumont		Well No. 102
Proposed Pool 2		

**7 Surface Location**

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	36	20 S	37 E		120'	South	2400	West	Lea

**8 Proposed 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

**Additional Well Information**

Work Type Code N	Well Type Code O	Cable/Rotary R	Lease Type Code S	Ground Level Elevation 3488
Multiple NA	Proposed Depth 3900'	Formation Queen	Contractor Paterson	Spud Date July 19, 2004
Depth to Groundwater 60'		Distance from nearest fresh water well 5280'		Distance from nearest surface water 10 miles
Pit: Liner: Synthetic Plastic 40 mils thick Clay <input type="checkbox"/> Pit Volume: 4500 bbls Drilling Method: Fresh Water <input checked="" type="checkbox"/> Brine <input checked="" type="checkbox"/>				
Closed-Loop System <input type="checkbox"/>				

**21 Proposed Casing and Cement Program**

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
12 1/4	8 5/8	20-24 #	1300'	620	Surface
7 7/8"	5 1/2"	15-15.5 #	3900'	447	500' in Surf Csg

22 Describe the proposed program. If this application is to DEEPEN or PLUG BACK, give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

Infill drill Queen well to proposed depth of 3900', Surface: drill 12 1/4" hole to 1300' or 25' into top of the Salt, no blow out preventer will be used while drilling surface hole, Run 8 5/8" surface casing and cement back to surface

NU BOP, drill 7 7/8" hole to proposed TD, Run Logs, Run 5 1/2" casing to surface, cement production casing 500' into bottom of surface casing.

Attachments: A - BOP Schematic

Attachment: B - Rig Layout

Attachment C - Cement Procedure

Attachment D - Mud Program

Attachment E - Location Plat

Attachment F - Map of Unit Boundary

Permit Expires 1 Year From Approval  
Date Unless Drilling Underway

23 I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify that the drilling pit will be constructed according to NMOCD guidelines <input checked="" type="checkbox"/> , a general permit <input type="checkbox"/> , or an (attached) alternative OCD-approved plan <input type="checkbox"/> .		OIL CONSERVATION DIVISION	
Printed name: Duane C. Winkler		Approved by:	
Title: V.P. Operations		Title: PETROLEUM ENGINEER	
E-mail Address: duanecwinkler@earthlink.net		Approval Date: JUL 13 2004	
Date: July 8, 2004		Expiration Date:	
Phone: 505-989-1977		Conditions of Approval Attached <input type="checkbox"/>	

DISTRICT I  
1625 N. FRENCH DR., HOBBES, NM 88240

DISTRICT II  
1301 W. GRAND AVENUE, ARTESIA, NM 88210

DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV  
1220 S. ST. FRANCIS DR., SANTA FE, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION  
1220 SOUTH ST. FRANCIS DR.  
Santa Fe, New Mexico 87505

Form C-102  
Revised JUNE 10, 2003  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-025-36255	Pool Code 22800	Pool Name Eumont 4-SR-DW
Property Code 33230	Property Name EUMONT HARDY UNIT	Well Number 102
OGRID No. 151228	Operator Name MAR OIL & GAS CORPORATION	Elevation 3474'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	36	20-S	37-E		120'	SOUTH	2400'	WEST	LEA

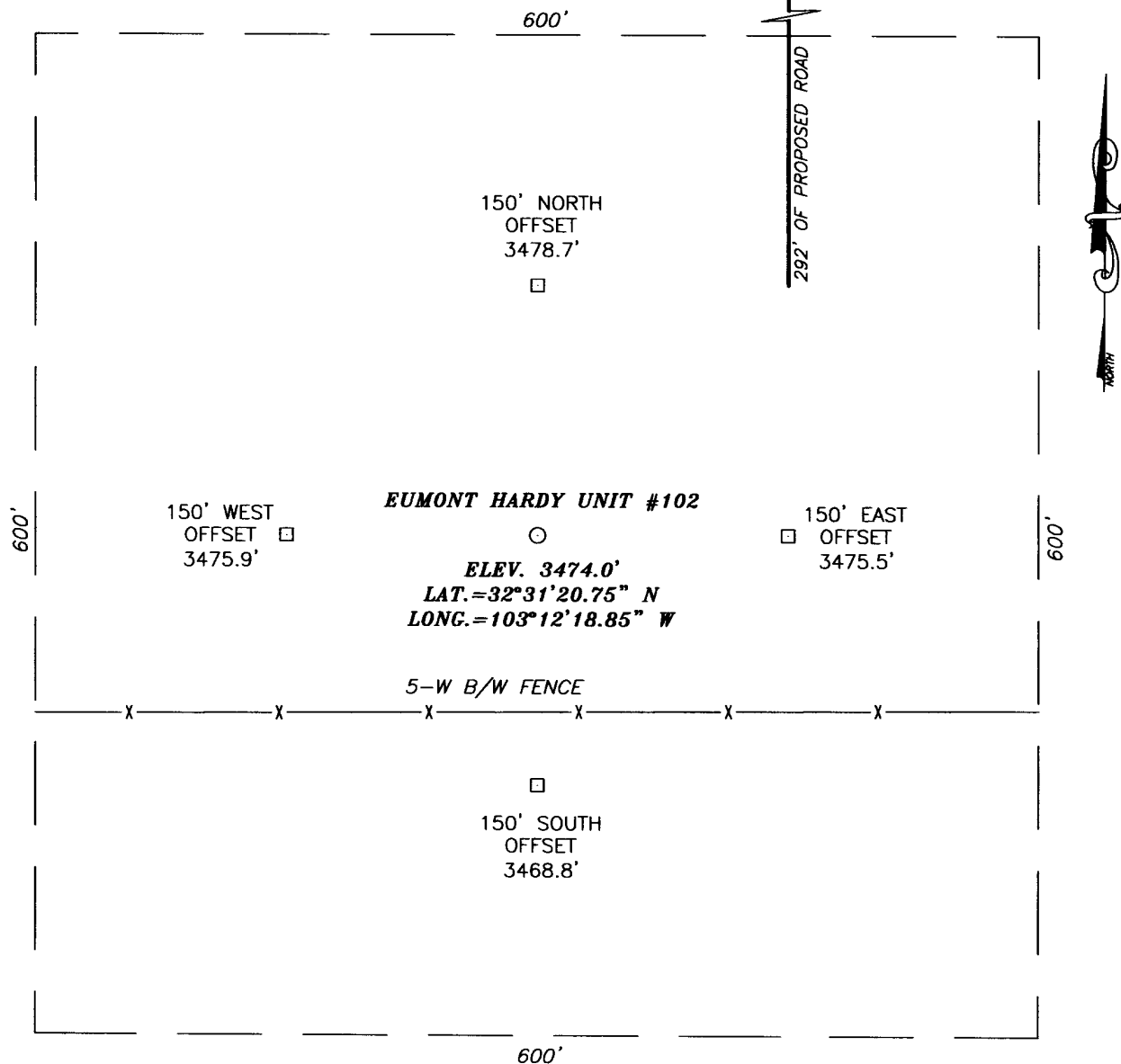
Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres 40	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

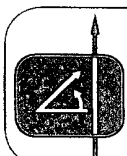
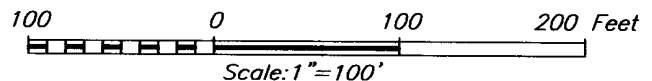
	<p><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.</p> <p><i>[Signature]</i> Signature Duane C Winkler Printed Name VP Operations Title 7/9/04 Date</p>
	<p><b>SURVEYOR CERTIFICATION</b></p> <p>I hereby 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.</p> <p>JUNE 23, 2004</p> <p>Date Surveyed Signature &amp; Seal of Professional Surveyor Professional Surveyor 7/13/04 04.11.0768 Certificate No. GARY EIDSON 12641</p>

**SECTION 36, TOWNSHIP 20 SOUTH, RANGE 37 EAST, N.M.P.M.,**  
LEA COUNTY, NEW MEXICO



**DIRECTIONS TO LOCATION**

AT MILEPOST 10.95 ON ST. HWY. #8 TURN LEFT (EAST) ONTO HILL RD. GO SOUTHEAST 3.1 MILES. TURN LEFT AND GO EAST APPROX. 0.6 MILES. PROPOSED LOCATION IS 300' SOUTH.



PROVIDING SURVEYING SERVICES  
SINCE 1946  
**JOHN WEST SURVEYING COMPANY**  
412 N. DAL PASO  
HOBBS, N.M. 88240  
(505) 393-3117

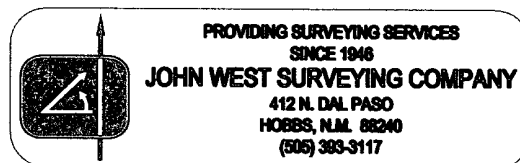
**MAR OIL & GAS CORPORATION**

EUMONT HARDY UNIT #102 WELL  
LOCATED 120 FEET FROM THE SOUTH LINE  
AND 2400 FEET FROM THE WEST LINE OF SECTION 36,  
TOWNSHIP 20 SOUTH, RANGE 37 EAST, N.M.P.M.,  
LEA COUNTY, NEW MEXICO.

Survey Date: 06/23/04	Sheet 1 of 1 Sheets
W.O. Number: 04.11.0768	Dr By: J. RIVERO Rev 1:N/A
Date: 04/28/04	Disk: CD#10 04110768 Scale: 1"=100'

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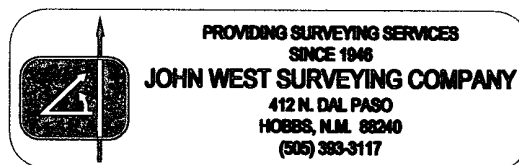
SEC. 36 TWP. 20-S RGE. 37-E  
SURVEY \_\_\_\_\_ N.M.P.M. \_\_\_\_\_  
COUNTY \_\_\_\_\_ LEA \_\_\_\_\_  
DESCRIPTION 120' FSL & 2400' FWL  
ELEVATION \_\_\_\_\_ 3474'  
OPERATOR \_\_\_\_\_ MAR OIL & GAS CORPORATION \_\_\_\_\_  
LEASE \_\_\_\_\_ EUMONT HARDY UNIT \_\_\_\_\_



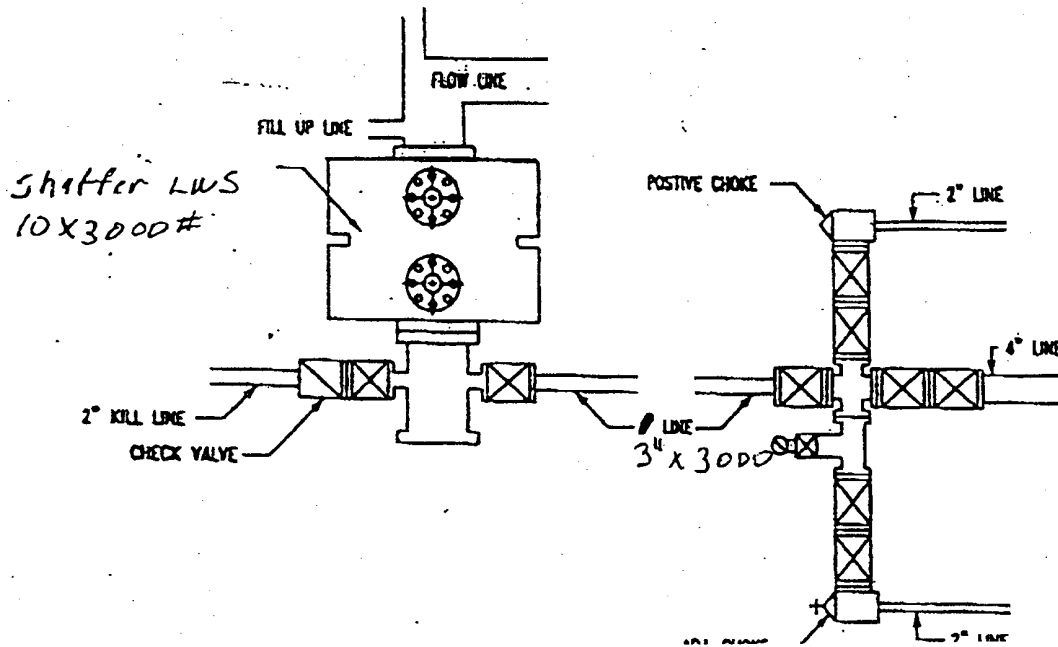
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CONTOUR INTERVAL:  
HOBBS SW, N.M. - 5'

U.S.G.S. TOPOGRAPHIC MAP  
HOBBS SW, N.M.



# Attachment A



8-01-02

## Patterson Drilling Company

Rig #65

8,000'

**DRAWWORKS**

Weiss W-45

**ENGINES**

Two Cat 3406 diesel, 375 HP with twin disc torque converters

**DERRICK**

Lee C. Moore 100', 280,000# Rated Capacity

**SUBSTRUCTURE**

12' high, 17' wide, 40' long, 380,000# Setback Capacity, Rotary Clearance - 9.4', KB - 13'

**MUD PUMPS**

Pump #1: Emsco D-550 w/Cat 379

Pump #2: Tri-service 500 w/Cat 353

**DRILL STRING**

8,000' 4-1/2" with X-hole

20 Drill Collars 6-1/4" with 4-1/4" X-hole

8 Drill Collars 8" with 6-5/8" reg

**BLOWOUT PREVENTERS**One Shaffer LWS 10" x 3000# with closing unit,  
Choke Manifold 3" x 3000#**MUD SYSTEM**

One 350 bbl pit (total) including a 60 bbl slug suction pit section.

**MUD HOUSE**

None

**COMMUNICATIONS**

Cellular Phone

**OTHER EQUIPMENT**

Blocks. Emsco 150 Ton

Hook. BJ 460 150 Ton

Swivel. Oilwell PC 150, 150 Ton

Rotary Table. BDW 17-1/2" x 44" 150 Ton

Shale Shaker. Single Screen

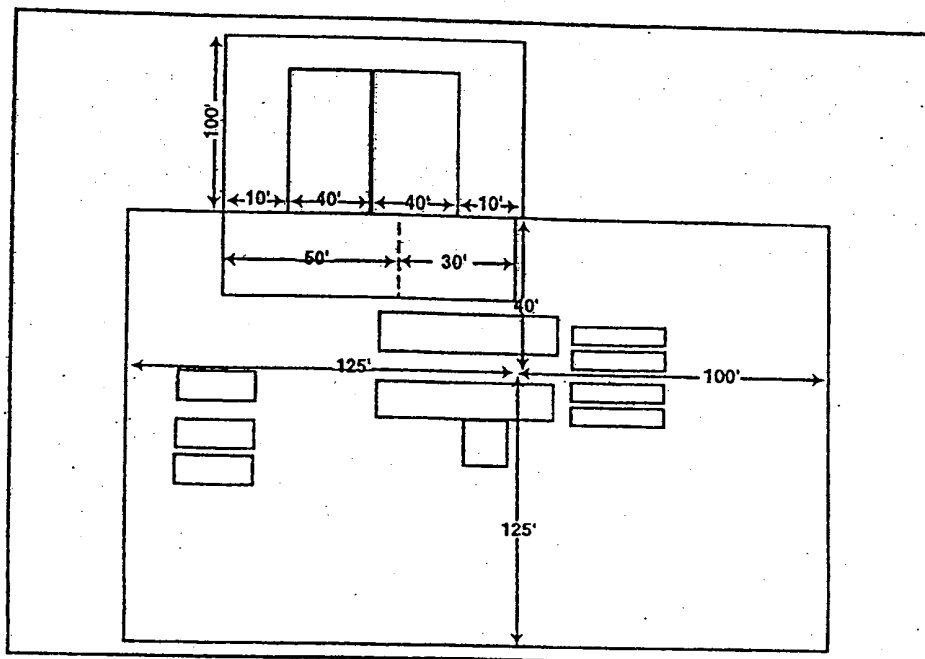
Electrical Power. One Cat 3406 w/234 kW

Generator &amp; One Cat 3306 w/100 kW Generator

Fresh Water Storage. 500 bbl tank

Housing.

"Hole Requirements will dictate actual Reserve Pit size (TOOLPUSHER SHOULD BE CONSULTED)"





**Mar Oil & Gas Corp**  
**P. O. Box 5155**  
**Santa Fe, New Mexico 87502**

Eumont Hardy Units #101, #102, #104, #105 & #106  
(5 Well Package)  
Lea County, New Mexico  
United States of America

## **Cementing Recommendation**

Prepared for: Duane Winkler  
July 8, 2004  
Version: 2

Submitted by:  
Paul Thornton

Halliburton Energy Services  
5801 Lovington Hwy.  
Hobbs, New Mexico  
505/392-9653/390-1010

**HALLIBURTON**



**HALLIBURTON****Job Information****Surface Casing**

Eumont Hardy Units

#101, #102, #104, #105 &amp; #106

Open Hole Section

0 - 1300 ft (MD)

Inner Diameter

12.250 in

Job Excess

100 %

Surface Casing

0 - 1300 ft (MD)

Outer Diameter

8.625 in

Inner Diameter

8.097 in

Linear Weight

24 lbm/ft

Thread

STC

Casing Grade

J-55

**Calculations**

Cement : (992.00 ft fill)

 $992.00 \text{ ft} * 0.4127 \text{ ft}^3/\text{ft} * 100 \%$  $= 818.85 \text{ ft}^3$ 

Total Lead Cement

 $= 818.85 \text{ ft}^3$  $= 145.84 \text{ bbl}$ 

Sacks of Cement

 $= 420 \text{ sks}$ 

Cement : (308.00 ft fill)

 $308.00 \text{ ft} * 0.4127 \text{ ft}^3/\text{ft} * 100 \%$  $= 254.24 \text{ ft}^3$ 

Tail Cement

 $= 254.24 \text{ ft}^3$  $= 45.28 \text{ bbl}$ 

Shoe Joint Volume: (40.00 ft fill)

 $40.00 \text{ ft} * 0.3576 \text{ ft}^3/\text{ft}$  $= 14.30 \text{ ft}^3$  $= 2.55 \text{ bbl}$ 

Tail plus shoe joint

 $= 268.54 \text{ ft}^3$  $= 47.83 \text{ bbl}$ 

Total Tail

 $= 200 \text{ sks}$

**HALLIBURTON****Job Recommendation****Surface Casing**

Install floating equipment, run casing to bottom, and circulate minimum of 2-3 hole volumes prior to cementing as follows:

**Fluid Instructions**

Fluid 1: Precede cement with 20 bbls  
Fresh Water

Fluid Volume: 20 bbl

Fluid 2: Lead with 420 sks  
Halliburton Light Premium Plus Cement  
0.25 lbm/sk Flocele (Lost Circulation Additive)

Fluid Weight 12.50 lbm/gal  
Slurry Yield: 1.95 ft<sup>3</sup>/sk  
Total Mixing Fluid: 10.80 Gal/sk  
Top of Fluid: 0 ft  
Calculated Fill: 992 ft  
Volume: 145.83 bbl  
Calculated Sacks: 419.68 sks  
Proposed Sacks: 420 sks  
Thickening Time: 5:0:0  
24:0:0 510 psi  
72:0:0 760 psi  
Free Water: 0.3 %  
Actual Fluid Loss: ± 500 cc

**Estimated Slurry Properties:**  
**Compressive Strengths @ 80 °F**

Fluid 3: Tail-in with 200 sks  
Premium Plus Cement  
94 lbm/sk Premium Plus Cement (Cement)  
2 % Calcium Chloride (Accelerator)

Fluid Weight 14.80 lbm/gal  
Slurry Yield: 1.34 ft<sup>3</sup>/sk  
Total Mixing Fluid: 6.34 Gal/sk  
Top of Fluid: 992 ft  
Calculated Fill: 308 ft  
Volume: 47.84 bbl  
Calculated Sacks: 200 sks  
Proposed Sacks: 200 sks  
Thickening Time: 2:45:0  
24:0:0 1800 psi  
72:0:0 3000 psi  
Free Water: 0.0 %

**Estimated Slurry Properties:**  
**Compressive Strengths @ 80 °F**

**HALLIBURTON****Job Information****Production Casing**

Eumont Hardy Units

#101, #102, #104, #105 &amp; #106

Surface Casing	0 - 1300 ft (MD)
Outer Diameter	8.625 in
Inner Diameter	8.097 in
Linear Weight	24 lbm/ft
Thread	STC
Casing Grade	J-55

Open Hole Section	1300 - 3900 ft (MD)
Inner Diameter	7.875 in
Job Excess	50 %

Production Casing	0 - 3900 ft (MD)
Outer Diameter	5.500 in
Inner Diameter	4.950 in
Linear Weight	15.50 lbm/ft
Thread	LTC
Casing Grade	J-55

**Calculations**

Cement : (2100.00 ft fill)	
500.00 ft * 0.1926 ft <sup>3</sup> /ft * 0 %	= 96.30 ft <sup>3</sup>
1600.00 ft * 0.1733 ft <sup>3</sup> /ft * 50 %	= 415.81 ft <sup>3</sup>
Total Lead Cement	= 512.11 ft <sup>3</sup>
	= 91.21 bbl
Sacks of Cement	= 246 sks

Cement : (1000.00 ft fill)	
1000.00 ft * 0.1733 ft <sup>3</sup> /ft * 50 %	= 259.88 ft <sup>3</sup>
Tail Cement	= 259.88 ft <sup>3</sup>
	= 46.29 bbl

Shoe Joint Volume: (40.00 ft fill)	
40.00 ft * 0.1336 ft <sup>3</sup> /ft	= 5.35 ft <sup>3</sup>
	= 0.95 bbl
Tail plus shoe joint	= 265.23 ft <sup>3</sup>
	= 47.24 bbl
Total Tail	= 201 sks

**HALLIBURTON****Job Recommendation****Production Casing**

Install floating equipment, run casing to bottom, and circulate minimum of 2-3 hole volumes prior to cementing as follows:

**Fluid Instructions**

**Fluid 1:** Precede cement with 20 bbls  
Fresh Water

Fluid Volume: 20 bbl

**Fluid 2:** Lead with 250 sks  
Halliburton Light Premium Plus Cement  
0.25 lbm/sk Flocele (Lost Circulation Additive)  
6 lbm/sk Salt (Accelerator)

Fluid Weight 12.50 lbm/gal  
Slurry Yield: 2.08 ft<sup>3</sup>/sk  
Total Mixing Fluid: 11.55 Gal/sk  
Top of Fluid: 800 ft  
Calculated Fill: 2100 ft  
Volume: 91.21 bbl  
Calculated Sacks: 245.97 sks  
Proposed Sacks: 250 sks

**Fluid 3:** Tail-in with 205 sks  
50/50 Poz Premium Plus Cement (2% Gel)  
3 lbm/sk Salt (Salt)  
0.3 % Halad(R)-322 (Low Fluid Loss Control)

Fluid Weight 14.20 lbm/gal  
Slurry Yield: 1.32 ft<sup>3</sup>/sk  
Total Mixing Fluid: 6.13 Gal/sk  
Top of Fluid: 2900 ft  
Calculated Fill: 1000 ft  
Volume: 47.24 bbl  
Calculated Sacks: 201.23 sks  
Proposed Sacks: 205 sks

**BULLDOG MUD**

Jerry Butts  
Post Office Box 203 Artesia, New Mexico 88211  
505-305-0093 (voice) 505-748-7396 (fax)

Attachment D

July 9, 2004

MAR Oil & Gas Corporation  
Post Office Box 5155  
Santa Fe, New Mexico 87502  
Attn: Mr. Duane Winkler

RE: Eumont Hardy Unit  
Well #101, #102, #104, #105, #106  
Estimated TD: 3900 ft

**Suggested Mud Program**

**Surface Interval**      0 -- 1300'      12 1/4" hole      8 5/8" casing  
Drill with spud mud of Gel:Lime  
Viscosity at 34+ sec/1000  
Will make viscosity as Red Bed is drilled  
Control viscosity, solids & weight with additions of Fresh Water  
Add 1 sx Paper every 50 -- 75' to help Red Bed  
At casing point, you may want to pump a 50 bbl sweep of 40 viscosity Gel mud to insure  
a clean hole for running 8 5/8" casing

**Production Interval**      1300' -- TD      7 7/8" hole      5 1/2" casing  
1300 -- 2500' Interval  
Drill with Brine (circulating reserve)  
Add Caustic Soda for pH at 10+  
Add Paper to control seepage  
  
2500' -- TD Interval  
Return to steel pits to reduce filtrate to 10 cc with addition of Starch  
Add Caustic Soda for pH at 10+  
Add Newcide as a preservative for the Starch

\*Note: Eventhough this well will not have Starch in the system for extended periods of  
time, we recommend Newcide as a safety factor in keeping the filtrate controlled.

continued...

Received Time Jul. 9. 11:01AM

**BULLDOG MUD**

MAR Oil & Gas Corporation  
Suggested Mud Program  
Eumont Hardy Wells  
July 9, 2004  
page 2

Attachment D

**Production Interval cont'**

This mud should be sufficient to drill to TD

At TD, pump a 50 bbl pill of 40 vis/10cc mud around while circulating, then spot another 50 bbl pill on bottom before you POH to log

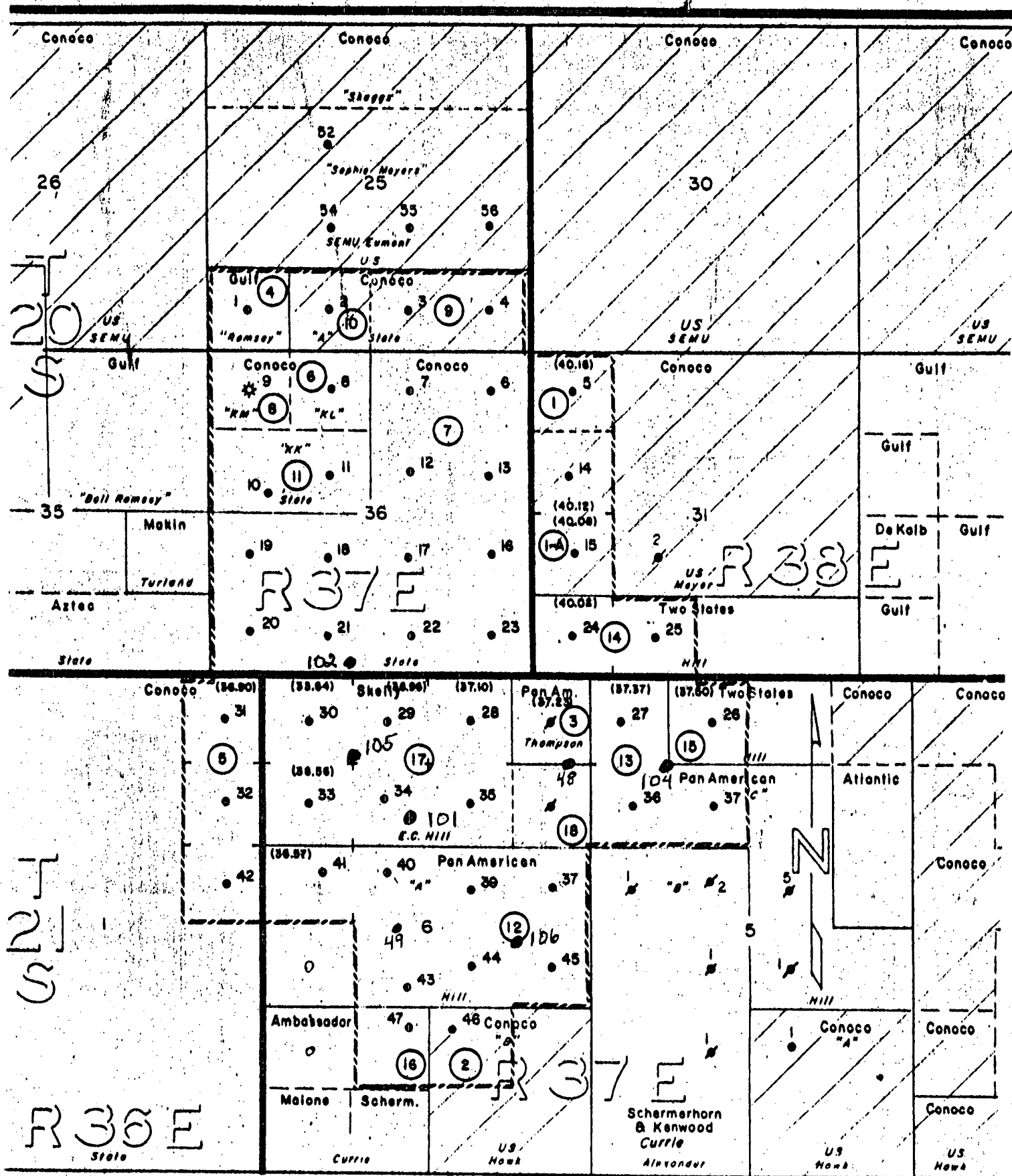
Estimated cost per well should not exceed: \$~~1000~~ (no abnormal hole conditions;  
i.e.: lost returns, waterflow, stuck  
pipe, etc...)

We offer a 10% discount on materials if paid within 10 days of receipt of invoice. We invoice only at the end of the well.

I appreciate your consideration of this Suggested Mud Program. Please do not hesitate to call me immediately with any questions, suggestions or concerns. Bulldog Mud looks forward to this opportunity to service your drilling fluid needs, and I look forward to hearing from you soon.

Respectfully,

Jerry D. Butts  
Bulldog Mud Company



— EUMONT HARDY UNIT BOUNDARY

② TRACT NUMBERS

(36.90) ACRES IN NON-STANDARD LOTS



P.O. BOX 5155 SANTA FE  
NEW MEXICO 87502-5155

Lea County, N.M.

SCALE  
0 1000' 2000'

EXHIBIT F