



STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION  
2040 S. PACHECO  
SANTA FE, NEW MEXICO 87505  
(505) 827-7131

May 3, 1996

**Amoco Production Company**  
**Southern Rockies Business Unit**  
**P. O. Box 800**  
**Denver, Colorado 80201**  
**Attention: J. W. Hawkins**

*Administrative Order DD-142*

Dear Mr. Hawkins:

Reference is made to Amoco Production Company's application dated April 10, 1996 for authorization to recomplete the existing Yager "LS" Well No. 1 (API No. 30-045-10052) by side tracking off of the vertical portion of the wellbore and drill a high angle slant hole to a pre-determined bottom-hole location in order to further develop the Blanco-Mesaverde Pool underlying its existing 322.90-acre non-standard gas spacing and proration unit ("GPU") comprising Lots 3 and 4, the E/2 SW/4, and the SE/4 (S/2 equivalent) of Section 31, Township 31 North, Range 11 West, NMPM, San Juan County, New Mexico.

**The Division Director Finds That:**

- (1) The application has been duly filed under the provisions of Rule 111.D and E of the General Rules and Regulations of the New Mexico Oil Conservation Division ("Division"), revised by Division Order No. R-10388, issued by the Oil Conservation Commission in Case 11,274 on June 13, 1995;
- (2) The Yager "LS" Well No. 1, located at a standard gas well location 990 feet from the South and West lines (Lot 4/Unit M) of said Section 31, was originally drilled and completed in 1953 as an initial Blanco-Mesaverde gas well, and was assigned the above-described 322.90-acre GPU;
- (3) By Order No. R-8170, as amended, the Division promulgated the "*General Rules For The Prorated Gas Pools of New Mexico/Special Rules and Regulations For The Blanco-Mesaverde Pool*", which includes provisions for 320-acre gas spacing and proration units and well location requirements whereby the initial well drilled on a GPU shall be located be no closer than 790 feet to the outer boundary of the quarter section on which the well is located and not closer than 130 feet to any quarter-quarter section line or subdivision inner boundary and the infill well drilled on an existing GPU shall be in the quarter section not containing a Mesaverde gas well and shall be located with respect to the restrictions as previously described;

- (4) Within this GPU Amoco is also producing Blanco-Mesaverde gas from its Thurston Com "A" Well No. 1-E (API No. 30-045-24700), located at a standard infill gas well location 1840 feet from the South line and 1100 feet from the East line (Unit I) of said Section 31;
- (5) A high angle slant hole drilled off of the existing vertical wellbore in the Yager "LS" Well No. 1 as proposed should provide Amoco a better opportunity to encounter the naturally occurring fracture system in the Mesaverde formation, which should result in a higher production rate and an increased ultimate recovery of gas from this well;
- (6) The applicant/operator proposes to kick-off from vertical at a depth of approximately 3,200 feet by milling a window in the existing production casing, drill in an easterly direction, build to an angle of approximately 20 degrees and continue drilling in such a manner as to bottom back into the Blanco-Mesaverde Pool, with total horizontal displacement of said wellbore to be approximately 400 feet;
- (7) The applicable drilling window or "producing area" for said wellbore should include that area within the SW/4 equivalent of said Section 31 that is no closer than 790 feet to the quarter section lines; and,
- (8) It appearing the applicant has satisfied all of the appropriate requirements prescribed in said Rule 111.D and E, the subject application should be approved and the well should be governed by the provisions contained within this order and all other applicable provisions of Division General Rule 111.

**IT IS THEREFORE ORDERED THAT:**

(1) The applicant, Amoco Production Company, is hereby authorized to recomplete its existing Yager "LS" Well No. 1 (API No. 30-045-10052), located at a standard gas well location 990 feet from the South and West lines (Lot 4/Unit M) of Section 31, Township 31 North, Range 11 West, NMPM, San Juan County, New Mexico, by milling a window in the existing production casing at a depth of approximately 3,200 feet, kick-off from vertical in an easterly direction, build to an angle of approximately 20 degrees and continue drilling in such a manner as to bottom back into the Blanco-Mesaverde Pool (total horizontal displacement of said wellbore to be approximately 400 feet) within a drilling window or "producing area" comprising the SW/4 equivalent of said Section 31 that is no closer than 790 feet to the quarter section lines.

**PROVIDED HOWEVER THAT** prior to commencing directional drilling operations in said wellbore, the applicant shall establish the location of the kick-off point by means of a directional survey acceptable to the Division.

**PROVIDED FURTHER THAT** during or upon completion of directional drilling operations, the applicant shall conduct an accurate wellbore survey from the kick-off point to total depth in order that the subsurface bottomhole location, as well as the wellbore's true depth and course, may be determined.

(2) The applicant shall notify the supervisor of the Aztec district office of the Division of the date and time said wellbore surveys are to be conducted so that they may be witnessed. The applicant shall further provide a copy of said wellbore surveys to the Santa Fe and Aztec offices of the Division upon completion.

(3) Blanco-Mesaverde gas production from both the existing Thurston Com "A" Well No. 1-E (API No. 30-045-24700), located at a standard infill gas well location 1840 feet from the South line and 1100 feet from the East line (Unit I) of said Section 31, and Yager "LS" Well No. 1, as described above, shall be attributed to the existing 322.90-acre non-standard gas spacing and proration unit ("GPU") comprising Lots 3 and 4, the E/2 SW/4, and the SE/4 (S/2 equivalent) of said Section 31.

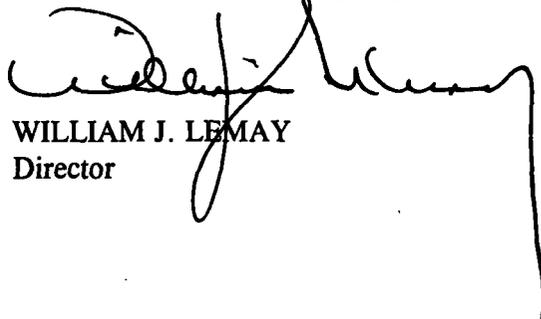
(4) The operator shall comply with all requirements and conditions set forth in Division General Rule 111.E(2) and any applicable requirements in 111.D and F and Order No. R-8170, as amended.

(5) Form C-105 shall be filed in accordance with Division Rule 1105 and the operator shall indicate thereon true vertical depth in addition to measured depths.

(6) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

  
WILLIAM J. LEMAY  
Director

S E A L

WJL/MES/kv

cc: Oil Conservation Division - Aztec  
U. S. Bureau of Land Management - Farmington

DD-AMOC.12

April 28, 1996

Rec. 4/12/96  
Susp. 5/2/96  
Released 5/2/96

**Amoco Production Company  
Southern Rockies Business Unit  
P. O. Box 800  
Denver, Colorado 80201**

**Attention: J. W. Hawkins**

Administrative Order DD-<sup>142</sup>~~\*\*\*\*\*~~

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STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY  
Director

S E A L

*Administrative Order DD-\*\*\*\**

*Amoco Production Company*

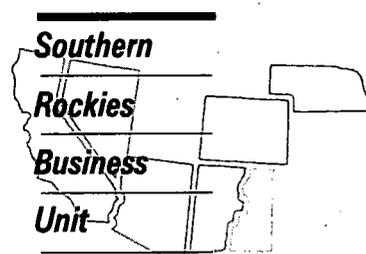
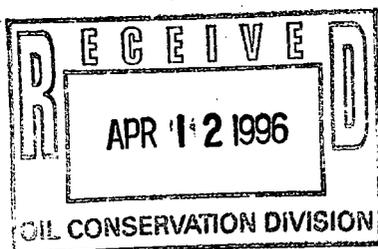
*April 28, 1996*

*Page No. 4*

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WJL/MES/kv

cc: Oil Conservation Division - Aztec  
U. S. Bureau of Land Management - Farmington



April 10, 1996

Mr. William J. LeMay, Director  
New Mexico Oil Conservation Division  
2040 S. Pacheco Street  
P.O. Box 6429  
Santa Fe, NM 87505

**Application to Drill a Directional Well  
Rule 111 as Amended by Order No. R-10388  
Yager LS #1 Well  
990' FSL, 990' FWL, Section 31-T31N-R11W  
Blanco Mesaverde Pool  
San Juan County, New Mexico**

Amoco Production Company hereby requests administrative approval to enter the existing wellbore in the Yager LS #1 well referenced above and directionally drill the well in the Blanco Mesaverde Pool. The well is currently completed as a shut-in well in the Blanco Mesaverde Pool. Directionally drilling the well will help place the wellbore away from the original openhole completion and provide an opportunity to encounter the naturally occurring fracture system in the Mesaverde formation which will increase the producing rate and ultimate recovery of gas for this well. We are requesting the Project Area for this well to be the Blanco Mesaverde gas proration unit consisting of S/2 Section 31, T31N-R11W with the Producing Area for the well to consist of a rectangle inside the gas proration unit that is not closer than 790' from the outer boundaries of the gas proration unit.

In accordance with Rule 111-D.(2), attached to aid in your review are:

- 1) a plat showing the well location, project area and producing area for the project well and the offset spacing units, their wells and operators;
- 2) a vertically oriented plan view for the project well showing top and bottom of the pool, degree of angle to be built, kickoff point, penetration point and lateral length;
- 3) a horizontal plan view for the project well showing the project area, producing area, estimated azimuth and maximum length of the lateral;
- 4) a type log section identifying the top and bottom of the pool.

As notification, a copy of this application will be sent by certified mail return receipt requested to the offset operators shown on the attached list advising them that if they have any objection, it must be filed in writing within twenty (20) days of the date notice was sent.

Sincerely,

*J. W. Hawkins*  
J. W. Hawkins

cc: Mike Kutas  
Patty Haefele  
Well File  
Proration File (986.511)

Frank Chavez, Supervisor  
NMOCD District III  
1000 Rio Brazos Road  
Aztec, NM 87410

**OFFSET OWNERS**

El Paso Production Co.  
Meridian Oil Inc.  
Attn: Alan Alexander  
PO Box 4289  
Farmington NM 87499

Four Star Oil and Gas Exploration  
PO Box 2100  
Denver CO 80201

13,394,667.38 FT. N  
36° 52' 38" N

108° 0' 15" W  
1,009,254.95 FT. E

22 EAST AZTEC O&G 300452179900

9-A EAST AZTEC O&G 300452285300

1 OLIVER AZTEC O&G 300451039500

8 HEATON EL PASO NATURAL GAS 300451036900

7-A HEATON EL PASO NATURAL GAS 300452371500

2A HEATON EL PASO NATURAL GAS 300452407200

4 HEATON EL PASO NATURAL GAS 300451034900

22-A EAST SOUTHLAND ROYALTY 300452286700

1-A OLIVER SOUTHLAND ROYALTY 300452288200

8-A HEATON EL PASO NATURAL GAS 300452387100

9 EAST AZTEC O&G 300451025900

2 HEATON EL PASO NATURAL GAS 300451027600

7 HEATON MDRN OIL P 300451025900

4-A HEATON EL PASO NATURAL GAS 300452371400

31N-12W

31N-11W

EL PASO Prod. Co.  
MERIDIAN  
AMOCO  
FOUR STAR O&G expl.

1A THURSTON SOUTHLAND ROYALTY 300452492200

1 THURSTON EL PASO NATURAL GAS 300451015100

9 HEATON EL PASO NATURAL GAS 300451017000

36 SAN JUAN

AMOCO  
AZ Project AREA  
Producing AREA

AMOCO  
YAGER POOLED UNIT  
EL PASO NATURAL GAS  
300451005200

1-E THURSTON COM-A AMOCO PROD 300452470000

HEATON LS TENNECO OIL 300451005500

9A HEATON COM L5 AMOCO PROD 300452498800

AMOCO

AMOCO  
YAGER COM AMOCO PROD 300452401500

AMOCO

AMOCO

1 ZACHERY COM AZTEC O&G 300450993900

MARPER GAS Com #1

2 YAGER POOL UNIT EL PASO NATURAL GAS 300450998100

3A BRUNTING LS AMOCO PROD 300452597000

3A STOREY B LS TENNECO OIL 300452702400

5 FEE C & E OPERATORS 300452377600

30N-12W

30N-11W

Bolack Federal #1

1-E TOMMY BOLACK SOUTHLAND ROYALTY 300452538900

3-B STOREY EL PASO NATURAL GAS 300451323100

3 UNITE B P EL PASO NATURAL GAS 300450986800

36° 50' 2" N  
13,378,844.39 FT. N

108° 0' 15" W  
1,009,260.19 FT. E

and geophysical data, including the interpretation of data on this map is the private and confidential property of the Company. The publication or reproduction thereof without the permission of said Company is strictly prohibited.

AMOCO PRODUCTION COMPANY  
PLAT MAP  
YAGER LS 1 Sec. 31-T31N-R11W  
Surrounding Mesaverde Wells  
SCALE 1 IN. = 2,000 FT. MAR 27, 1996

MERIDIAN - 108° 2' 9" W LON

HORIZONTAL DATUM NAD27

# Amoco Production Co.

Structure : Yager LS #1

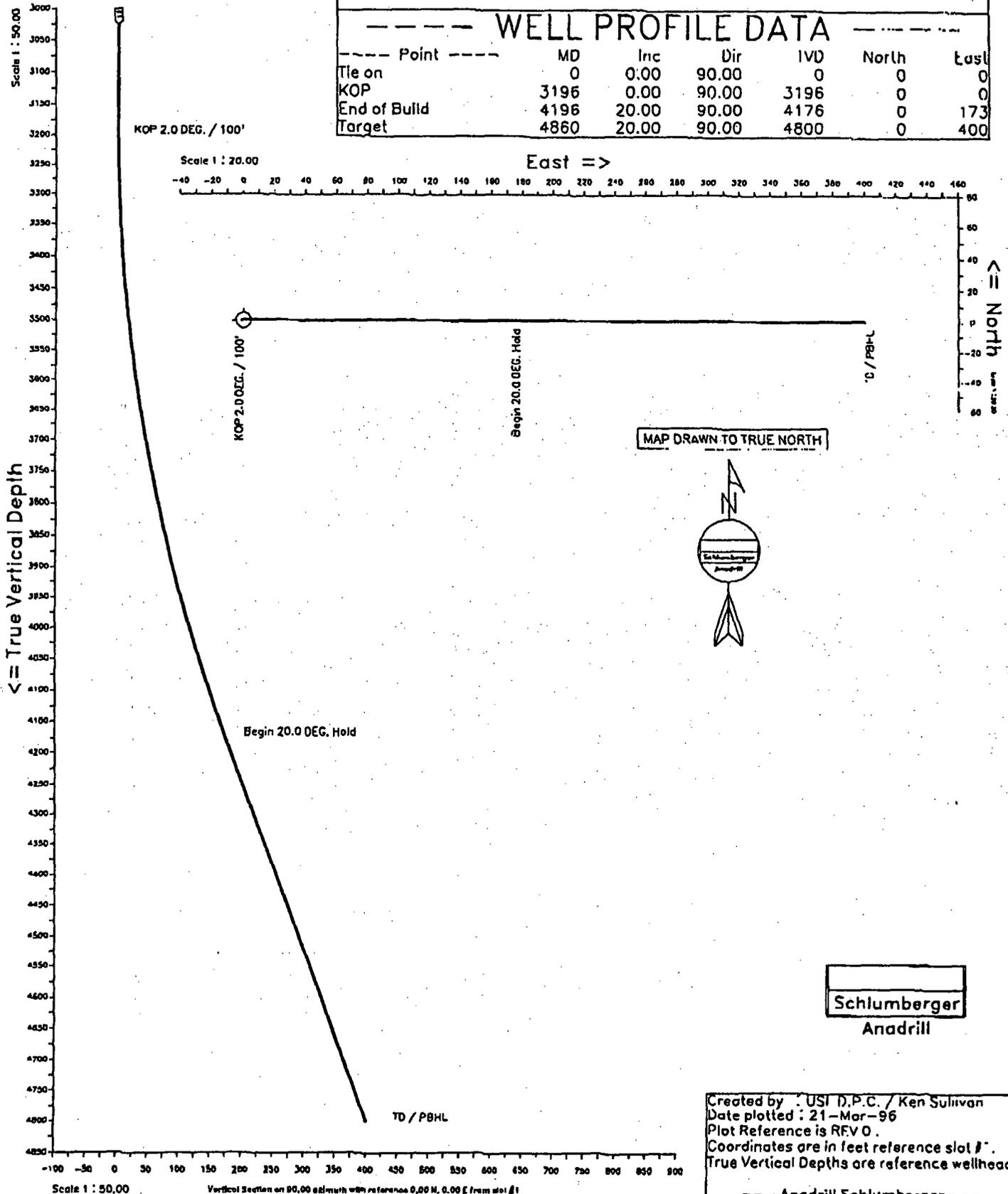
Well : #1

Field : San Juan

Location : New Mexico

## WELL PROFILE DATA

Point	MD	Inc	Dir	IVD	North	East
Tie on	0	0.00	90.00	0	0	0
KOP	3196	0.00	90.00	3196	0	0
End of Build	4196	20.00	90.00	4176	0	173
Target	4860	20.00	90.00	4800	0	400



Amoco Production Co.  
 Yager LS #1, #1  
 San Juan, New Mexico

PROPOSAL LISTING Page 1  
 Your ref : REV 0  
 Last revised : 21-Mar-96

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert. Depth	R E C T A N G U L A R C O O R D I N A T E S		Dogleg Deg/100Ft	Vert Sect
0.00	0.00	90.00	0.00	0.00 N	0.00 E	0.00	0.00
500.00	0.00	90.00	500.00	0.00 N	0.00 E	0.00	0.00
1000.00	0.00	90.00	1000.00	0.00 N	0.00 E	0.00	0.00
1500.00	0.00	90.00	1500.00	0.00 N	0.00 E	0.00	0.00
2000.00	0.00	90.00	2000.00	0.00 N	0.00 E	0.00	0.00
2500.00	0.00	90.00	2500.00	0.00 N	0.00 E	0.00	0.00
3000.00	0.00	90.00	3000.00	0.00 N	0.00 E	0.00	0.00
3195.87	0.00	90.00	3195.87	0.00 N	0.00 E	0.00	0.00
3295.87	2.00	90.00	3295.85	0.00 N	1.75 E	2.00	1.75
3395.87	4.00	90.00	3395.71	0.00 N	6.98 E	2.00	6.98
3495.87	6.00	90.00	3495.32	0.00 N	15.69 E	2.00	15.69
3595.87	8.00	90.00	3594.57	0.00 N	27.88 E	2.00	27.88
3695.87	10.00	90.00	3693.33	0.00 N	43.52 E	2.00	43.52
3795.87	12.00	90.00	3791.49	0.00 N	62.60 E	2.00	62.60
3895.87	14.00	90.00	3888.92	0.00 N	85.10 E	2.00	85.10
3995.87	16.00	90.00	3985.51	0.00 N	110.98 E	2.00	110.98
4095.87	18.00	90.00	4081.14	0.00 N	140.21 E	2.00	140.21
4195.87	20.00	90.00	4175.68	0.00 N	172.77 E	2.00	172.77
4500.00	20.00	90.00	4461.47	0.00 N	276.79 E	0.00	276.79
4860.25	20.00	90.00	4800.00	0.00 N	400.00 E	0.00	400.00

KOP 2.0 DEG. / 100'

Begin 20.0 DEG. Hold

TD / PBHL

All data is in feet unless otherwise stated.  
 Coordinates are from slot #1 and TVDs are from wellhead.  
 Vertical section is from wellhead on azimuth 90.00 degrees.  
 Calculation uses the minimum curvature method.

# SCHLUMBERGER WELL SURVEYING CORPORATION

DALLAS, TEXAS



ELECTRICAL LOG  
GAMMA RAY & INDUCTION LOG

COUNTY SAN JUAN FIELD of LA PLATA N.C. LOCATION LA PLATA N.C. WELL YAGER POOL UNIT #1 COMPANY EL PASO NATURAL GAS COMPANY	COMPANY	EL PASO NATURAL GAS COMPANY	Location of Well	990° FR S/L 990° FR W/L SEC. 31-31N-11W
	WELL	YAGER POOL UNIT #1		
	FIELD	LA PLATA N.C.		
	LOCATION	SEC. 31-31N-11W		
	COUNTY	SAN JUAN		
	STATE	NEW MEXICO		

U.S. GEOLOGICAL SURVEY  
FARMINGTON, N.M.

Elevation: D.F.: 5857  
K.B.:  
or G.L.: 5847

RUN No.	ONE-ES	ONE-GRL	ONE-IND
Date	3-13-53	3-17-53	3-17-53
First Reading	4170	4850	4948
Last Reading	250	3800	4170
Feet Measured	3920	1050	578
Csg. Schium.	---	4170	4170
Csg. Driller	170	4165	4165
Depth Reached	4170	4852	4852
Bottom Driller	4165	4850	4850
Depth Datum	RDB	RDB	RDB
Mud Nat.	AUGA-GEL	DRY GAS	DRY GAS DRILLED
Density	9.4		
Viscosity	42		
Resist.	5.0 in 48 F	(a) F	F
Res. BHT	2.3 in 114 F	(a) F	F
pH	in F	(a) F	F

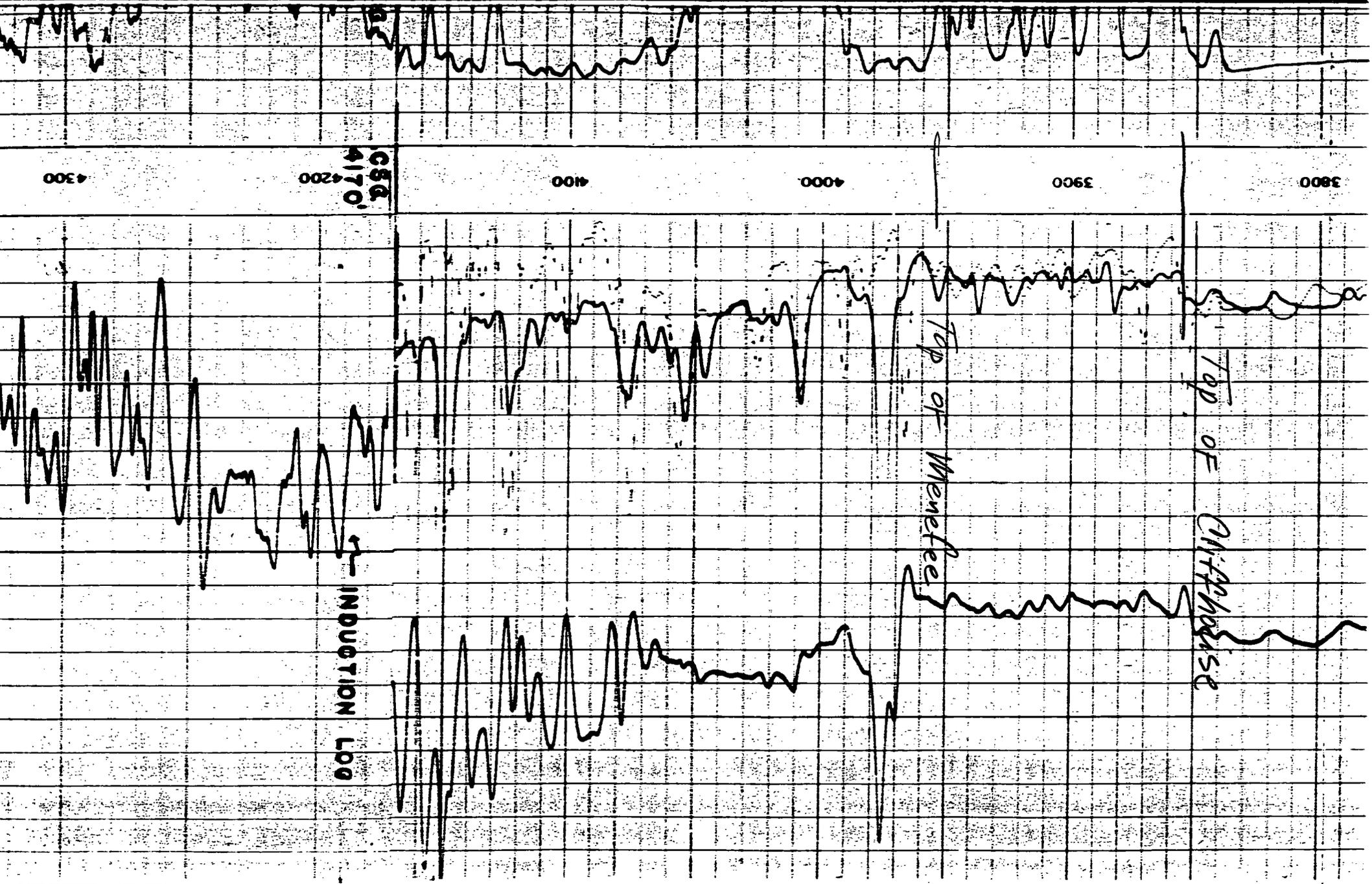
FOLD HERE

ONE MUD FROM FLOW LINE

FLUID LEVEL AT 250'

EMISSION FOR GAMMA RAY IS 3 DIVISIONS TO THE LEFT OF TRACK ONE  
READ FOR GRL-TYPE F IS 2000/HR

POTENTIAL		
DEPTH		
RESISTIVITY ohms.m <sup>2</sup> /m		
RESISTIVITY ohms.m <sup>2</sup> /in		
NORMAL	1000	1000
LONG NORMAL	100	1000



INDUCTION LOG

CSD  
4170  
4200

4300

4200

4100

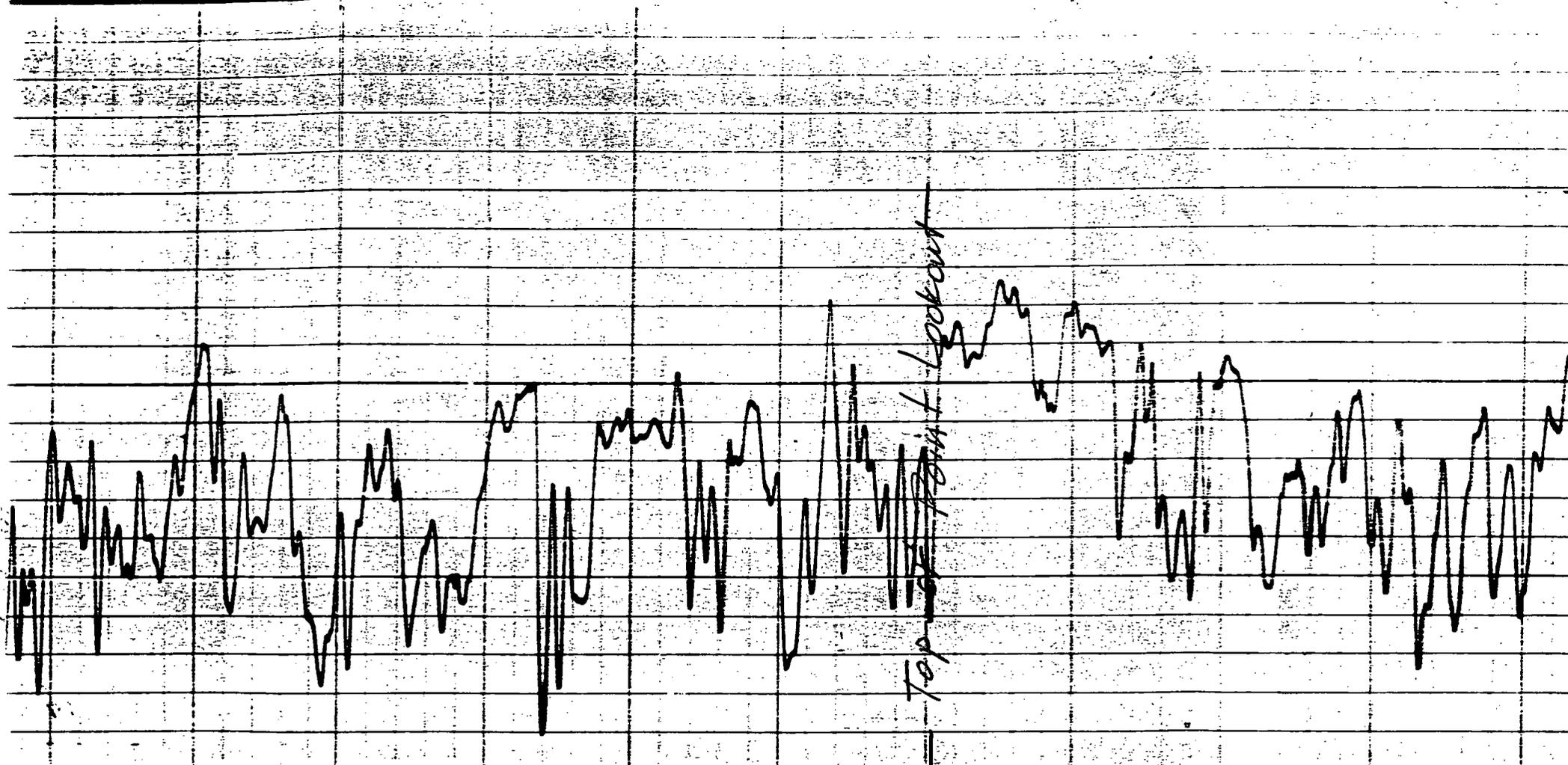
4000

3900

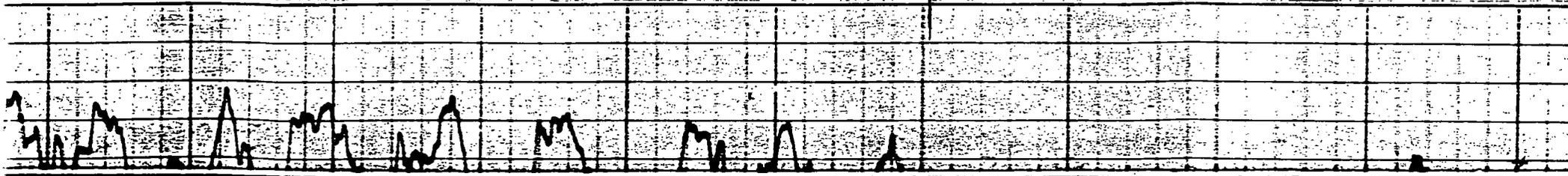
3800

Top of Menefee

Top of Antelope



4300                      4400                      4500                      4600                      4700                      4800

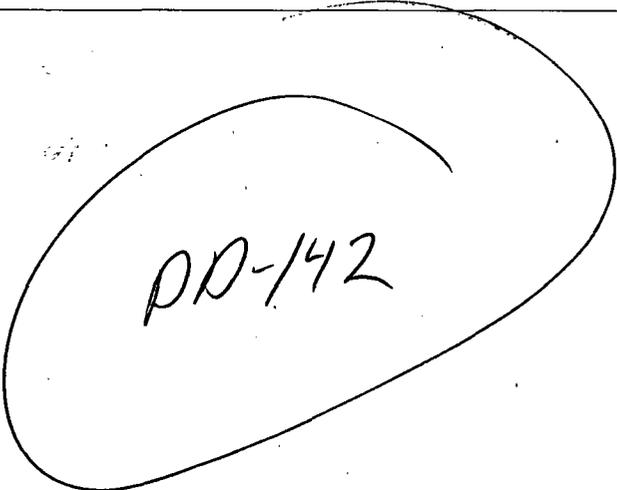


**Mike Stogner**

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**From:** Ernie Busch  
**To:** Mike Stogner  
**Subject:** AMOCO YAGER LS #1(DD)  
**Date:** Thursday, May 09, 1996 9:34AM  
**Priority:** High

YAGER LS #1  
M-31-31N-11W  
990' FSL; 990' FWL  
RECOMMEND: APPROVAL



PD-142

Sec : 31 Twp : 31N Rng : 11W Section Type : NORMAL

3 41.38  Federal owned	K 40.00  Federal owned	J 40.00  Federal owned	I 40.00  Federal owned A A
4 41.52  Federal owned A A	N 40.00  Federal owned	O 40.00  Federal owned	P 40.00  Federal owned

PF01 HELP    PF02            PF03 EXIT    PF04 GoTo    PF05            PF06  
PF07 BKWD   PF08 FWD      PF09 PRINT   PF10 SDIV     PF11            PF12

24  
82.90  

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322.90

Sec : 31 Twp : 31N Rng : 11W Section Type : NORMAL

1 41.08	C 40.00	B 40.00	A 40.00
Federal owned	Federal owned A	Fee owned	Fee owned A A
2 41.22	F 40.00	G 40.00	H 40.00
Federal owned A	Federal owned	Federal owned	Fee owned A

PF01 HELP    PF02            PF03 EXIT    PF04 GoTo    PF05            PF06  
PF07 BKWD   PF08 FWD      PF09 PRINT   PF10 SDIV     PF11            PF12