Form 3160-3
(December 1990)

Form approved.
Budget Bureau No. 1004-0136
Expires: December 31, 1991

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

5. LEASE DESIGNATION AND SERIAL NO.	NM - 013685
6. IF INDIAN, ALLOTTEE OR TRIBE NAME	
7. UNIT AGREEMENT NAME	
8. FARM OR LEASE NAME, WELL NO.	416 DAWSON LS # 1B
9. API WELL NO.	30-045-29479
10. FIELD AND POOL, OR WILDCAT	72319 BLANCO MESAVERDE
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA	K Section 31 Township 31N Range 8W
12. COUNTY OR PARISH	San Juan
13. STATE	New Mexico

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ]

b. TYPE OF WELL: OIL WELL [ ] GAS WELL [X] Other — SINGLE ZONE [X] MULTIPLE ZONE [ ]

2. NAME OF OPERATOR: AMOCO PRODUCTION COMPANY 778 — Attention: Nancy I. Whitaker

3. ADDRESS AND TELEPHONE NO.: P.O. BOX 800, DENVER, COLORADO 80201 — 303-830-5039

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 1890 FSL 520 FWL
At proposed prod. zone: 1144 FSL 1266 FWL

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 23.01 MILES TO AZTEC, NEW MEXICO

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	16. NO. OF ACRES IN LEASE: 771.18	17. NO. OF ACRES ASSIGNED TO THIS WELL: 326
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	19. PROPOSED DEPTH: 5700 FT	20. ROTARY OR CABLE TOOLS: Rotary
21. ELEVATIONS (Show whether DF, RT, GR., etc.): 6345 GL		22. APPROX. DATE WORK WILL START*: 09-29-1997

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4.

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
13.75	9 5/8" J-55	36#	120'	81 SXS STANDARD CEMENT 95 C.F.
8.75	7 J-55	20#	3350'	350 SXS 50/50 STND CMT, TAIL 100 SXS STND
6.25"	4.5" J-55	11.6#	5700	307 SXS 50/50 STD POZ A

NOTICE OF STAKING SUBMITTED 7-3-97 AS THE DAWSON LS # 1B

LEASE DESCRIPTION: FUL

T-31-N R-8-W:
SEC 31: LOTS 1-4, E/2 W/2

T-31-N R-9-W
SEC 27: LOT 1(38.99), 2(39.03), 3(39.06), 4(39.18), 5(39.15), 6(39.12), SE/4, N/2SW/4, SE/4SW/4, LOT 7(39.45 BEING SW/4SW/4)

DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS"

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AUG 13 1997
OIL CON. DIV.
DIST. 3

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.

24.

SIGNED Nancy Whitaker TITLE Staff Assistant DATE 07-23-1997

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE AUG 11 1997

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 _____ TITLE _____ DATE _____

Hold C-104 for NSL & DD

*See Instructions On Reverse Side

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.

NMOCD

PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

RECEIVED
BLM

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number	² Pool Code	³ Pool Name
30-045-29479	72319	BLANCO MESAVERDE GAS POOL

⁴ Property Code	⁵ Property Name	⁶ Well Number
416	DAWSON LS	# 1B

⁷ OGRID No.	⁸ Operator Name	⁹ Elevation
000778	AMOCO PRODUCTION COMPANY	6345

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	31	31 N	8W		1890	SOUTH	520	WEST	SAN JUAN

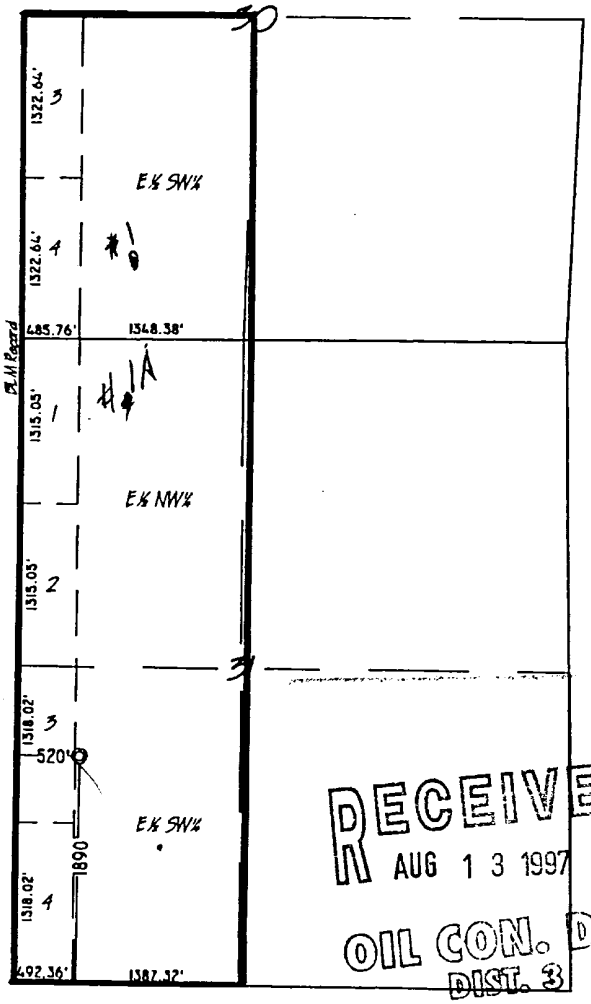
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	31	31N	8W		1144	SOUTH	1266	WEST	SAN JUAN

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
326			

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

16



RECEIVED
AUG 13 1997
OIL CON. DIV.
DIST. 3

¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief

Signature

Nancy I. Whitaker
Printed Name

Staff Assistant
Title

7-11-97
Date

¹⁸ 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.

June 16, 1997
Date of Survey

Signature and Seal of Professional Surveyor:

GARY D. VANN
NEW MEXICO
7016
REGISTERED PROFESSIONAL LAND SURVEYOR

7016
Certificate Number

DRAFT

AMOCO PRODUCTION COMPANY
DRILLING AND COMPLETION PROGRAM

File No.: Dawson46.xls
Date: 6/10/97

Lease:	Dawson LS	Well No.	# 1 B
County:	San Juan	Location:	D31-31N-8W 1980' FSL x 470' FWL
Former name:		Field:	Blanco Mesaverde

OBJECTIVE: Kick off and drill to predetermined depth and then directional drill, building high angle, towards bottom hole target.

METHOD OF DRILLING

TYPE OF TOOLS	DEPTH OF DRILLING

LOGGING PROGRAM

TYPE	DEPTH

REMARKS:

Although it is important to reach the bottom hole target as close as possible, it is more important to maintain the high angle in a South eastern to eastern direction.

APPROXIMATE DEPTHS OF GEOLOGICAL MARKER

Actual GL - 6349' Estimated KB 6349 6357

Marker	Depth (ft.)**	SS Elev. (ft.)
Ojo Alamo	1,861	4,496
Kirtland	2,016	4,341
Fruitland Coal *	2,800	3,557
PC *	3,146	3,211
Lewis Shale	3,265	3,092
Cliff House *	4,971	1,386
Menefee Shale *	5,035	1,322
Point Lookout *	5,379	978
Mancos		
TOTAL DEPTH		6,357

***NOTE: Natural factures may exist throught all depths, gas may be present at any depth, not just pay intervals!!!

* Possible pay

** True Vertical Depth - this does not account for deviation of well.

DRILL CUTTING SAMPLES		DRILLING TIME	
FREQUENCY	DEPTH	FREQUENCY	DEPTH

SPECIAL TESTS

TYPE	DEPTH INTERVAL, ETC

Remarks:

Remarks:
Mud Logging Program:

Coring Program:

MUD PROGRAM:

Approx. Interval	Type Mud	Weight, #/gal	Vis, sec/qt.	W/L, cc's/30 min.
0'-3350' (1) (2)	Water	8.6-9.2	Sufficient to clean hole	N/C
3350'-TD (3)	gas			

REMARKS:

1. The hole will require sweeps to keep unloaded while fresh water drilling. Let hole conditions dictate frequency.
2. If required to mud up, mud up with a LSND designed for good hole cleaning.
3. If required to mud up, mud up with a LSND designed for good hole cleaning. API WL between 10-15.

CASING PROGRAM:

Casing String	Estimated Depth	Casing Size	Hole Size	Landing Point, Cement, Etc
Conductor	120'	9-5/8"		
Surface	3350'	7"	8.75"	1, 2
Production	5700'	4-1/2"	6.25"	3

Remarks:

1. Circulate cement to surface.
2. Set casing a minimul of 150' into the Lewis Shale
3. Circulate cement a minimum of 300' into the surface casing overlap.

GENERAL REMARKS:

Completion will be determined while drilling. Be prepared to set 4-1/2" casing above Cliffhouse and allow for open hole completion.

Form 46 Reviewed by: Logging program reviewed by:

PREPARED BY:	APPROVED:	APPROVED:
Mark Rothenberg		
Form 46 7-84bw	For Production Dept	For Exploration Dept.
Date: 6/10/97	Revised Date:	

Version No. 1
7/2/97
CMTDAWS.XLS

CEMENTING PROGRAM
Dawson LS #1B

acz

Well Name:	Dawson LS #1B	Field:	Blanco Mesaverde
Location:	Sec D31, T31N, R8W	API No.	
County:	San Juan	Well Flac	
State:	New Mexico	Formation:	Mesa Verde
		KB Elev. (est.)	6357 ft.
		GL Elev. (est.)	6349 ft.

Casing Program:

Casing String	Est. Depth (ft.)	Hole Size (in.)	Casing Size (in.)	Thread	TOC (ft.)	Stage Tool Or TOL (ft.)	Cmt Circ. Out (bbl.)
Conductor	120	12.25	9.625	8R, ST&C	Surface	NA	
Surface	3,350	8.75	7.000	8R, ST&C	Surface	NA	
Production	5,700	6.25	4.500	8R, L T&C	2850	45 degree slant hole thru MV	

Casing Properties: (No Safety Factor Included)

Casing String	Size (in.)	Weight (lb/ft.)	Grade	Burst (psi.)	Collapse (psi.)	Joint St. (1000 lbs.)	Capacity (bbl/ft.)	Drift (in.)
Conductor	9.625	36	J-55	3520	2020	394	0.0773	8.765
Surface	7.000	20	J-55	4360	3270	172	0.0404	6.456
Production	4.500	11.6	J-55	5350	4960	154	0.0155	3.875

Mud Program:

Apx. Interval (ft.)	Mud Type	Mud Weight (lb/gal)
0 - SCP	Water/Spud	8.6-9.2
SCP - TD	Air/Mist	NA

Recommended Mud Properties Prior Cementing:

PV	<20
YP	<10
Fluid Loss	<15

Cementing Program:

	Conductor	Surface	Production
Excess %, Bit	100	60	30
Excess %, Caliper	NA	NA	20
BHST (est. deg. F)	60	120	148
Pipe Movement	NA	Rotate/Reciprocate	Rotate/Reciprocate
Rate, Max. (bpm)	6	6	6
Rate, Recommended (bpm)	6	6	6
Pressure, Max. (psi)	200	2000	2000
Shoe Joint	40	80	40
Batch Mix	NA	NA	NA
Circulating prior cmtng (hr.)	0.5	1.5	1
Time Between Stages,(hr.)	NA	NA	NA
Special Instructions	1,6,7	1,6,8	2,4,6

1 Do not wash pumps and lines
2 Wash pumps and lines.
3 Do not reverse out
4 Run Blend Test on Cement
5 Record Rate , Pressure, and Density on 3.5" disk
6 Confirm densometer with pressurized mud scales
7 1" cement to surface if cement is not circulated.
8 If cement is not circulated to the surface, run temp. survey 10-12 hr. after landing plug.

Notes:

*** Displace top plug on the production casing job with 0.2% Clay Fix II or 2% KCl water.
*** Do not wash up on top of plug. Wash pumps and lines. We want to do rig less completions.

CEMENTING PROGRAM
Dawson LS #1B

Conductor:

Preflush	10 bbl.	Fresh Water	
Slurry 1 TOC@Surface	81 sx	Standard Cement + 2% CaCl2 (not mixed) or 1.5 cu. yard Ready Mix	95 cu. ft.

Slurry Properties:	density (lb/gal)	yield (ft3/sk)	water (gal/sk)
slurry 1	15.60	1.18	5.20

Casing Equipment: (Halliburton) 9 5/8", 8R, ST&C

1 Top Wooden Plug

Surface:

Preflush	20 bbl. 20 bbl.	Mud Flush Fresh Water + dye marker	
Lead Slurry 1 TOC@Surface	350 sx	50/50 Standard Cement/Blended Silicalite + 02% gel (total) + 0.5% Versaset + 0.4% Halad-344 + 02% CaCl2 + 1/4 lb/sk flocele	683 cu. ft.
Tail slurry 2	100 sk	Standard Cement + 0.4% Halad-344 + 0.4% CFR-3 + 2.0% Microbond + 5 lb/sk gilsonite + 1/4 lb/sk flocele	129 cu. ft.

Slurry Properties:	density (lb/gal)	yield (ft3/sk)	water (gal/sk)
slurry 1	12.00	2.03	11.45
slurry 2	15.11	1.29	5.40

Casing Equipment: (Halliburton) 7", 8R, ST&C

1 Type Regular Guide Shoe
1 Super Seal II Float Collar
1 Weld A
14 S-4 Centralizer — 1 ea. on 1st 12 joints, 1 ea. above and below Ojo Alamo
1 Top Rubber Plug

Production:

Preflush	10 bbl.	Chemical Wash	
	5 bbl.	Fresh Water	
Lead Cement	307	sx 50/50 Std. Cmt/Poz A	405 cu. ft.
Slurry 1		+ 2% gel (total)	
TOC @ 2450 ft.		+ 5 lb/sk gilsonite	
		+ 0.4% Halad-344	
		+ 1/4 lb/sk flocele	

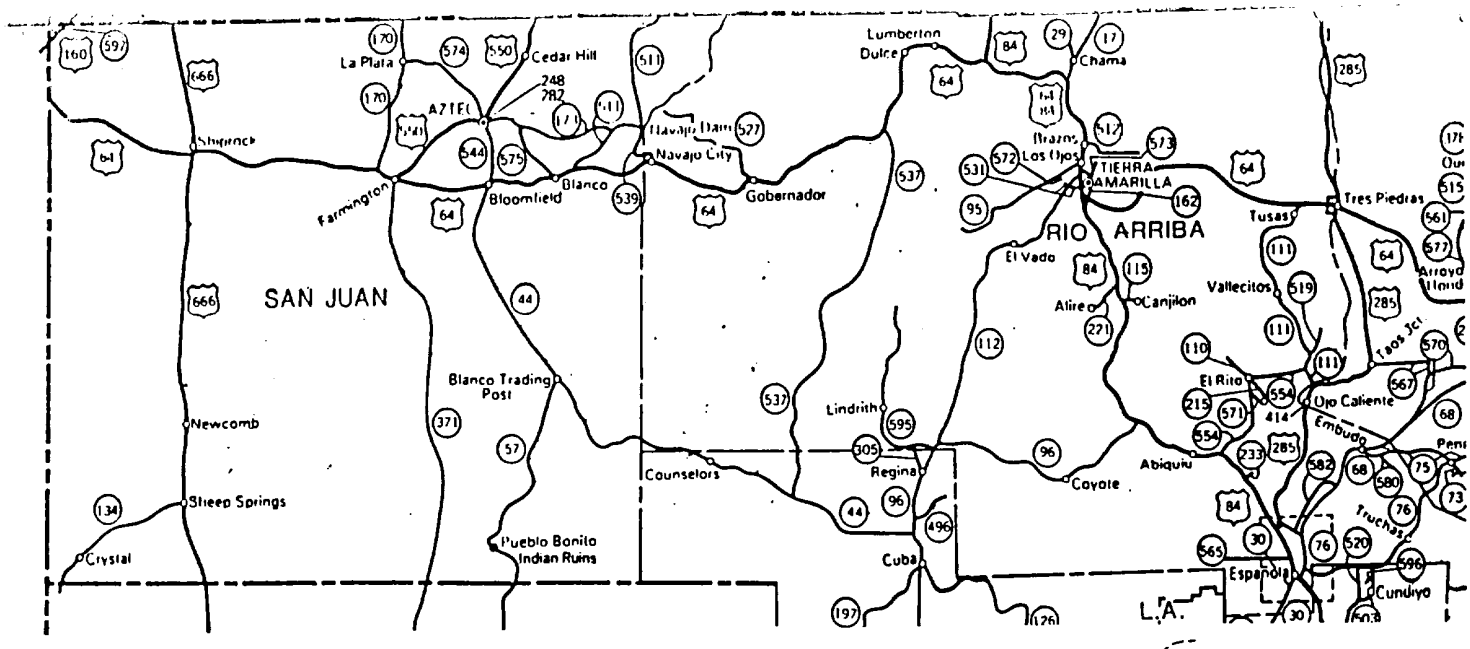
Cement volume and type may be modified due to well conditions to achieve cement fill back to surface, or for improved hydrostatic pressure and displacement using a foamed cement blend.

Slurry Properties:	density (lb/gal)	yield (ft3/sk)	water (gal/sk)
slurry 1	13.50	1.32	5.59

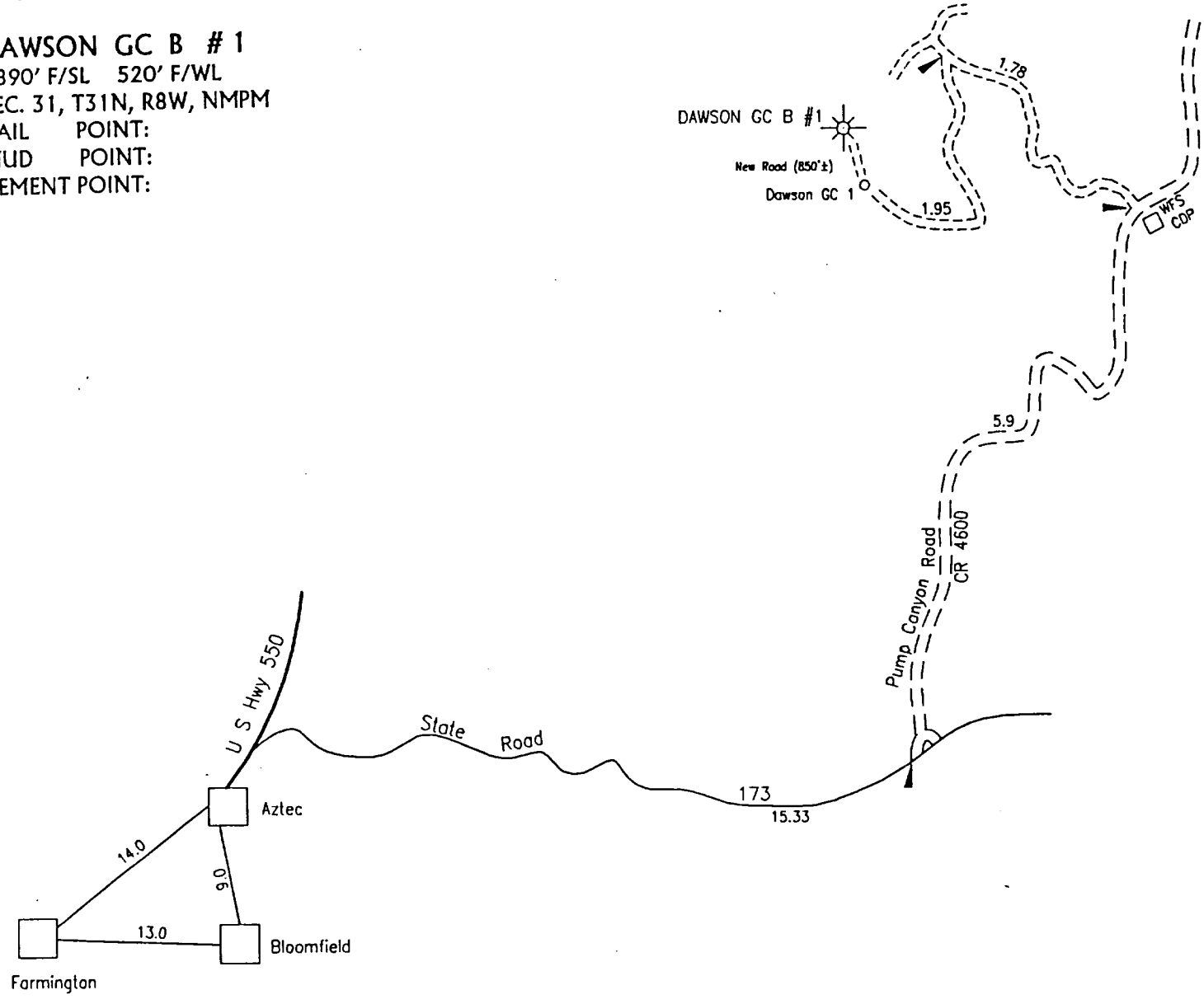
Note: The job should be pumped at 6 bpm max rate. Do not exceed 4 bpm on displacement. Slow to 2 bpm for the last 30 bbl displacement. Displace with 2% KCl or 0.2% Clay Fix II water. This is to be a rigless completion. Wash pumps and lines before displacing.

Casing Equipment: Halliburton 4 1/2", 8R, L T & C

1 Type Regular Guide Shoe
1 Super Seal II Float Collar
15 Rigid Centralizers (4 1/2" x 6 1/4") every 60 ft from bottom
10 S-4 Bow Centralizer (4 1/2" x 6 1/4") - every 200 ft from 2,000 to surface
1 Lock Clamp
1 Weld A
1 Top Rubber Plug



DAWSON GC B # 1
1890' F/SL 520' F/WL
SEC. 31, T31N, R8W, NMPM
RAIL POINT:
MUD POINT:
CEMENT POINT:




Minix Spring
GAS FIELD
Gas Wells
PUMP
Canyon
La Manga Canyon
GAS FIELD
Gas Wells
PUMP
Canyon
31
6
29
12
8
AMOCO PRODUCTION COMPANY
DAWSON GC B # 1
1890' F/SL 520' F/WL
SEC. 31, T31N, R8W, NMPM
SAN JUAN COUNTY, NEW MEXICO

Suggested procedure:

Surface casing: 24hr drilling rig.

1. MIRURT. NUBOPS.
2. PU DC, DP, Bit, etc.
3. Drill 13 3/4" hole to approximately 120' according to drilling plan (no direction or deviation). Drill using either mud, gas or air/mist.
4. TD. Circulate and prep for casing.
5. Run 9 5/8", 36#, J-55 casing and cement with at least 65 cuft of Class "B" neat cement, circulating to surface.
6. Drill 8 3/4" hole to approximately 3350' according to drilling plan (no direction or deviation), drilling with either mud, gas, or air/mist.
7. TD. Circulate and prep for casing.
8. Run 7", 23# or 26# J-55 casing and cement with 505 cuft of Class "B" neat cement, attempting to circulate to surface.
9. NDBOPS. NU for gas and directional drilling.

Directional drilling: 24hr drilling rig. Directional tools.

10. PU 6.25" bit, float, motor, MWD or other continuous survey, DC, DP. TIH and drill, building angle and orientation according to drilling plan. Drill to TD with natural gas. TOH.
11. Run 4.5" casing from TD to point determined from prep work and hang off as liner, approximately 3200'. (NOTE: If fractured zones are successfully intersected, casing may be landed above MV and leave MV open hole).
12. Cement 4.5" casing with appropriate volume of cement, approximately 345 cuft of Class "B" neat cement.
13. RDMORT.

Completion: daylight rig.

NOTE: If fractured zones are successfully intersected, completion may not be necessary.

14. MIRUSU.
15. Run cased hole logs (cbl/gr/ccl, neutron log for some wells).
16. Perforate Point Lookout/Menefee determined from above logs.
17. Acid breakdown and ball off perforations.
18. Frac Point Lookout/Menefee.
19. Flowback as soon as possible of 1/4" choke, changing to 1/2" or larger depending on activity of well, pressures, and sand production.
20. Set RBP above perforations
21. Perforate Cliffhouse/Menefee at depths determined from logs.
22. Acid breakdown and ball off perforations.
23. Frac Cliffhouse/Menefee.
24. Flowback as soon as possible of 1/4" choke, changing to 1/2" or larger depending on activity of well, pressures, and sand production
25. Cleanout to RBP. Retrieve RBP and clean out to PBTD.
26. RDMOSU.
27. Turn well over to production.

If problems are encountered, please contact:

Mark Rothenberg
(W) (303)830-5612
(H) (303)841-8503
(P) (303)553-6448

sperry-sun

DRILLING SERVICES

A DRESSER INDUSTRIES, INC. COMPANY

Amoco Production Co.
New Mexico
Re-Entry Wells
Sec 31-T31N-R8W
Dawson LS1B - Alternate Dawson LS1B

PROPOSAL REPORT

1 July, 1997

Proposal Ref: pro1717

Sperry-Sun Drilling Services

Proposal Report for Dawson LS1B - Alternate Dawson LS1B

Amoco Production Co.
New Mexico

Re-Entry Wells
Sec 31-T31N-R8W

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
0.00	0.000	0.000	0.00	0.00 N	0.00 E	0.00	
3200.00	0.000	0.000	3200.00	0.00 N	0.00 E	0.00	0.000
4350.00	0.000	0.000	4350.00	0.00 N	0.00 E	0.00	0.000
4732.19	43.219	135.000	4742.36	109.90 S	109.90 E	155.42	10.000
5095.94	43.219	135.000	4971.00	261.83 S	261.83 E	370.28	0.000
5655.82	43.219	135.000	5379.00	532.93 S	532.93 E	753.67	0.000
6084.93	43.219	135.000	5699.00	745.56 S	745.56 E	1054.38	0.000

All data is in feet unless otherwise stated. Directions and coordinates are relative to True North.
Vertical depths are relative to Well. Northings and Eastings are relative to Well.

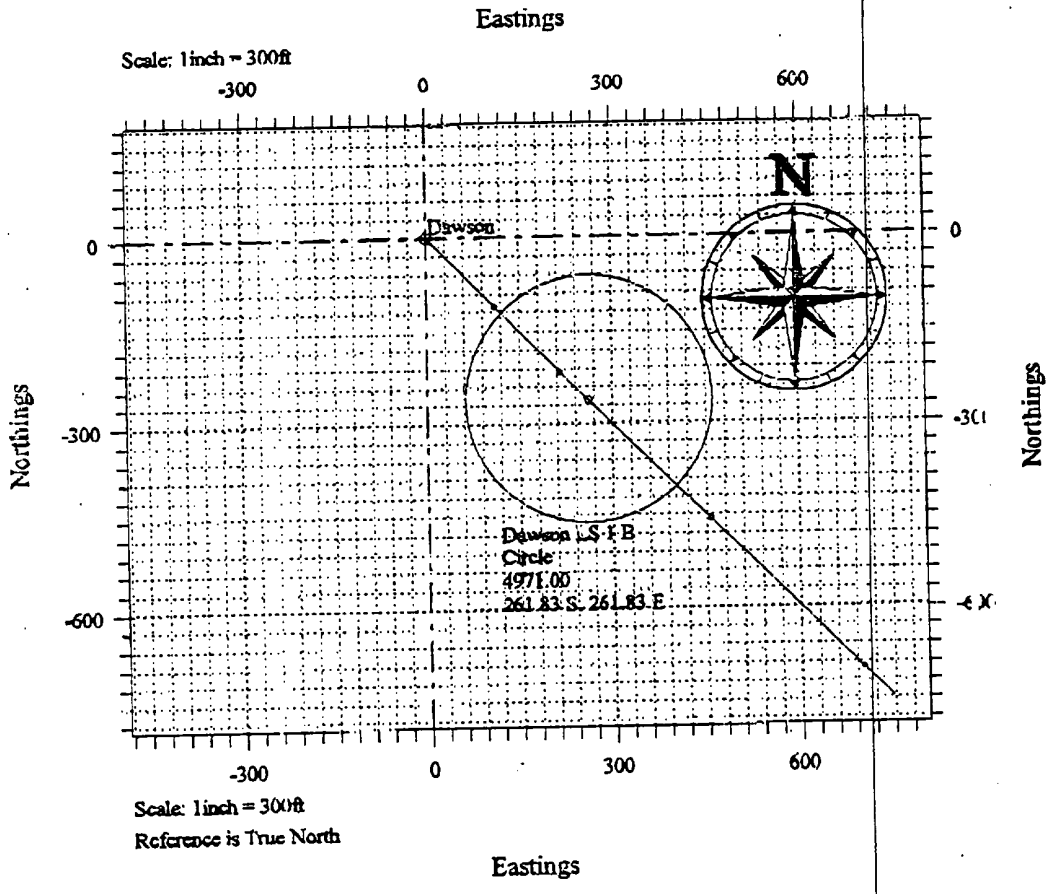
The Dogleg Severity is in Degrees per 100ft.
Vertical Section is from Well and calculated along an Azimuth of 135.000° (True).

Based Upon Minimum Curvature type calculations, at a Measured Depth of 6084.93ft.,
The Bottom Hole Displacement is 1054.38ft., in the Direction of 135.000° (True).

Well: Dawson LS1B

DrillQuest

Customer: Amoco Production Co.
Folder: Amoco Production Co.
Field: New Mexico
Project: Re-Entry Wells
Structure: Sec 31-T31N-R8W
Well: Dawson LS1B



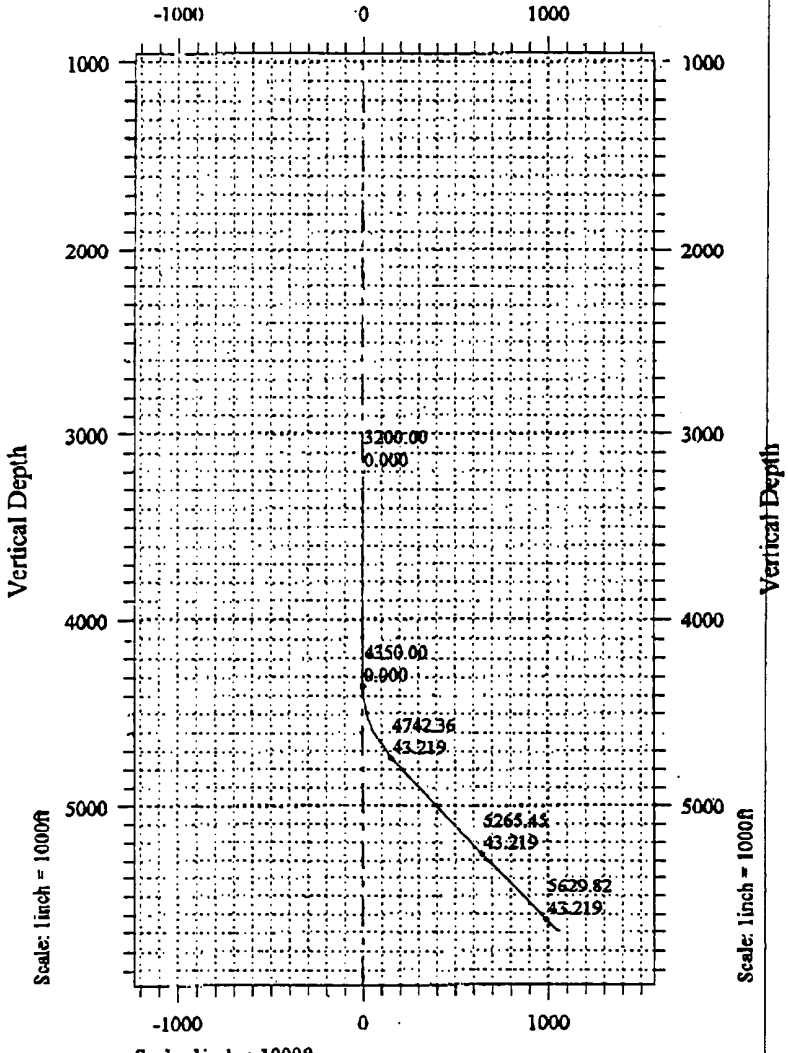
Prepared:	Checked:	Approved:

Customer: Amoco Production Co.
Folder: Amoco Production Co.
Field: New Mexico
Project: Re-Entry Wells
Structure: Sec 31-T31N-R8W
Well: Dawson LS1B

Vertical Section

Scale: 1inch = 1000ft

Section Azimuth: 135.000 (True North)



Scale: 1inch = 1000ft

Section Azimuth: 135.000 (True North)

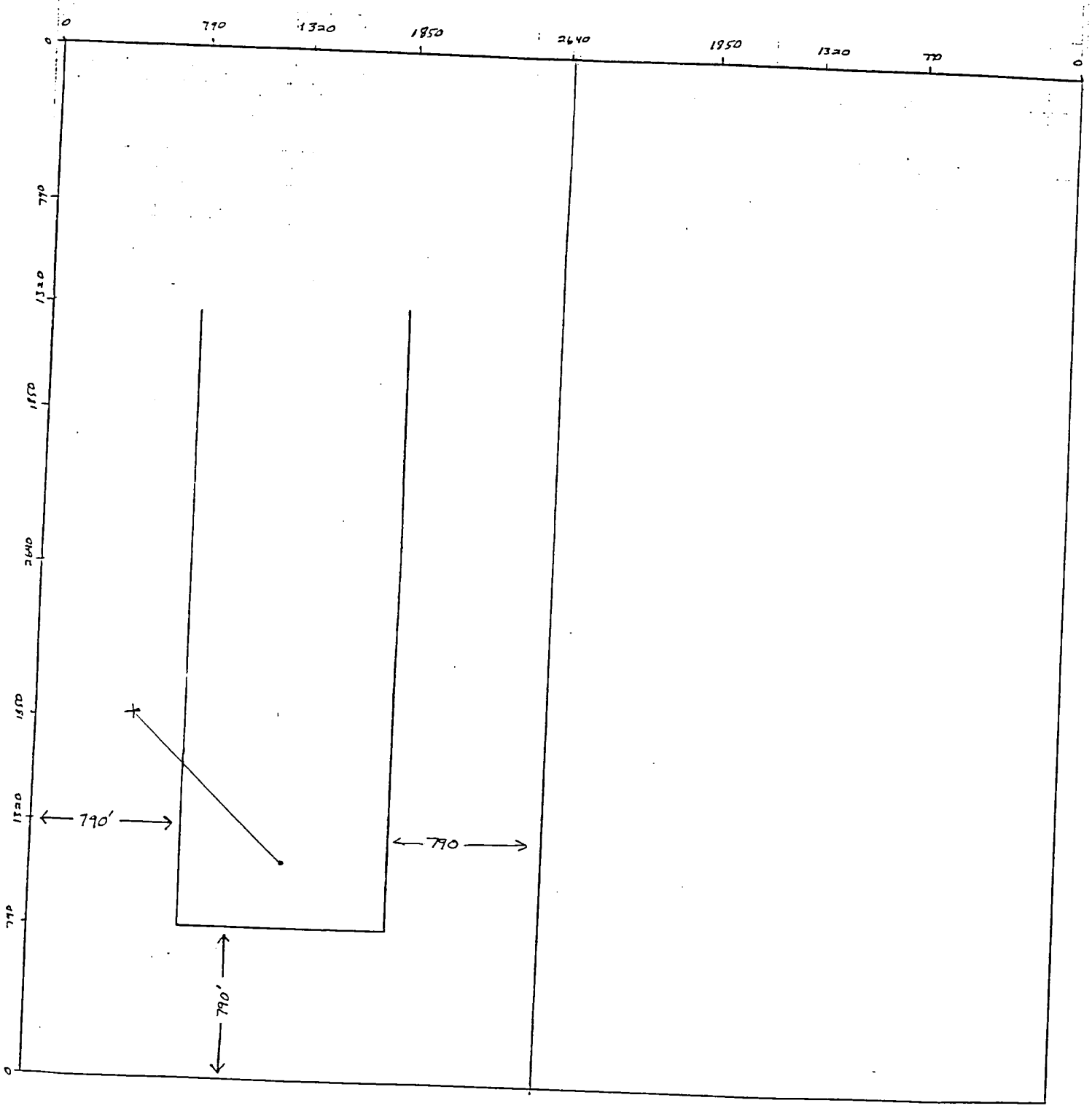
Vertical Section

Prepared:	Checked:	Approved:

SUBJECT Dawson 520' FNL x 1890' FSL

Date

By



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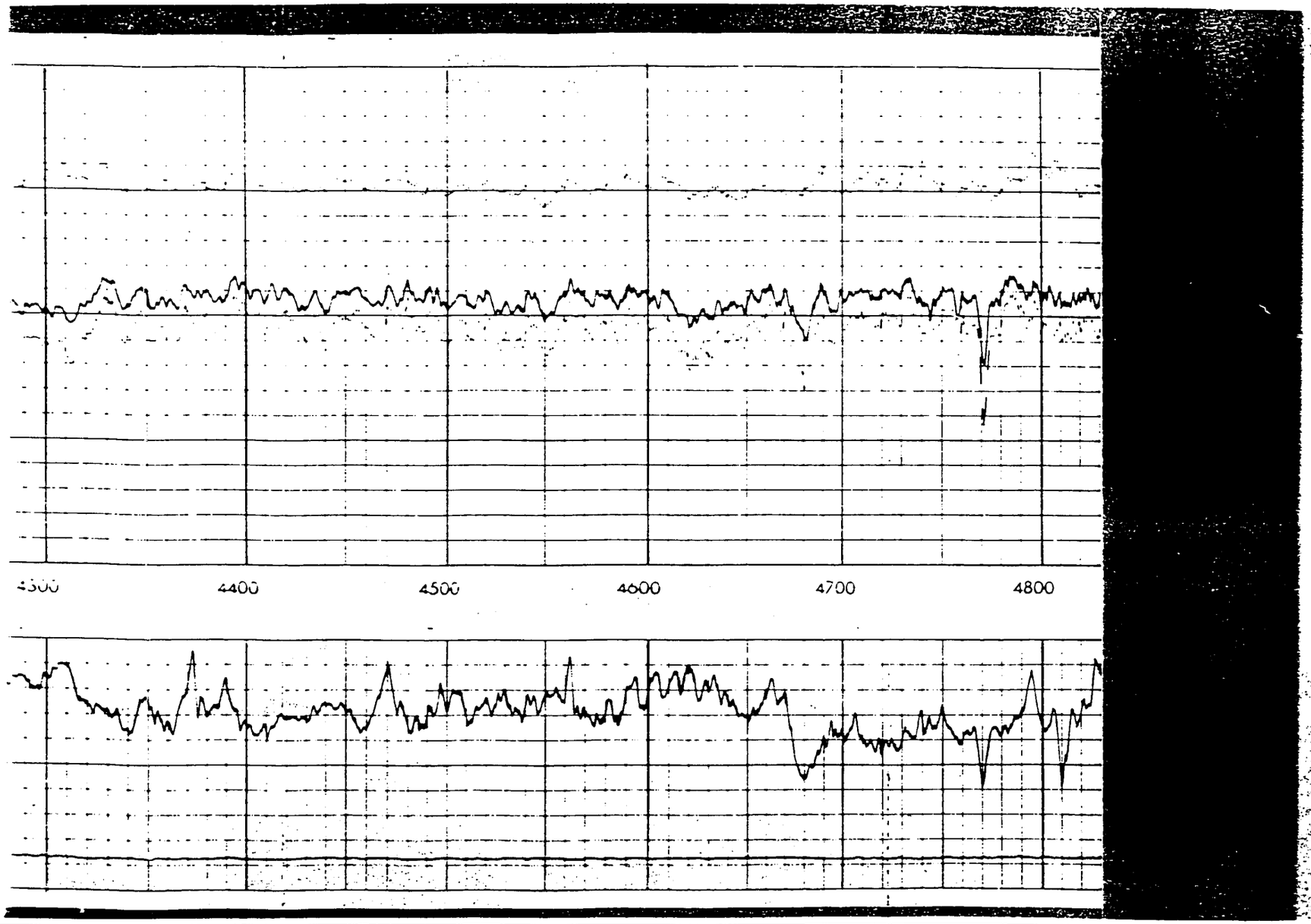
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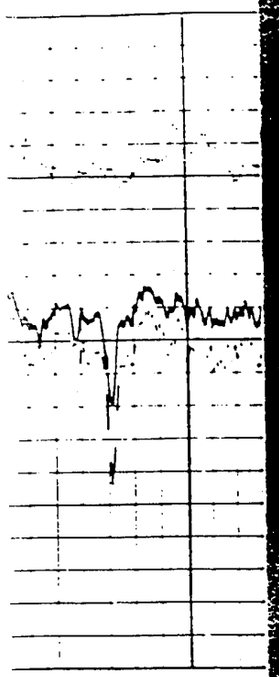
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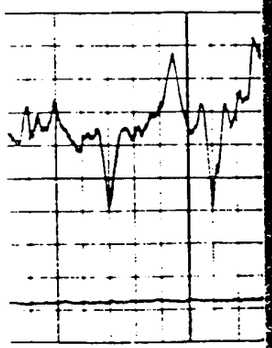

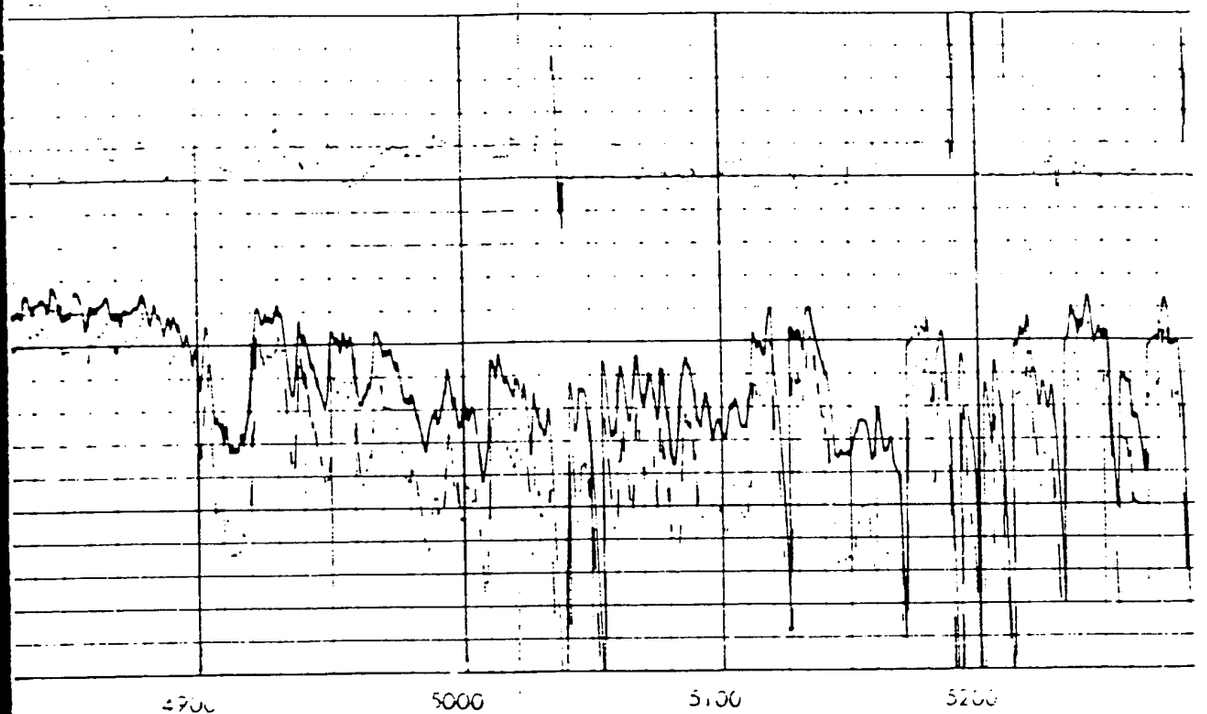
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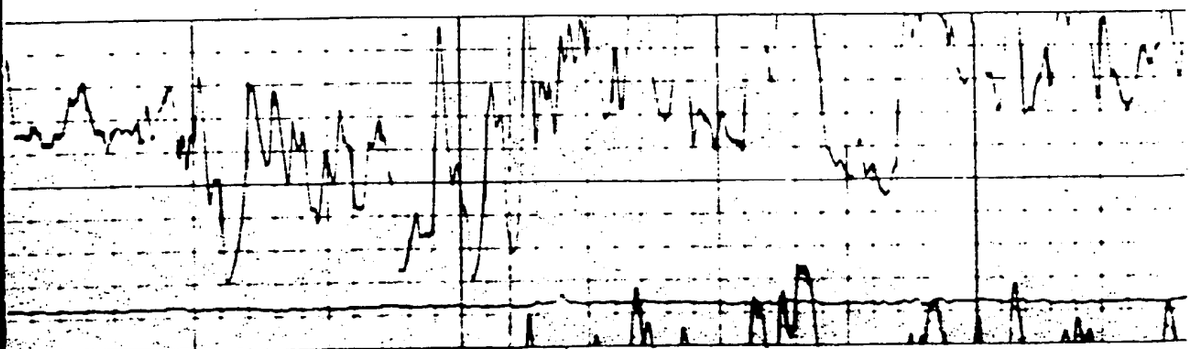

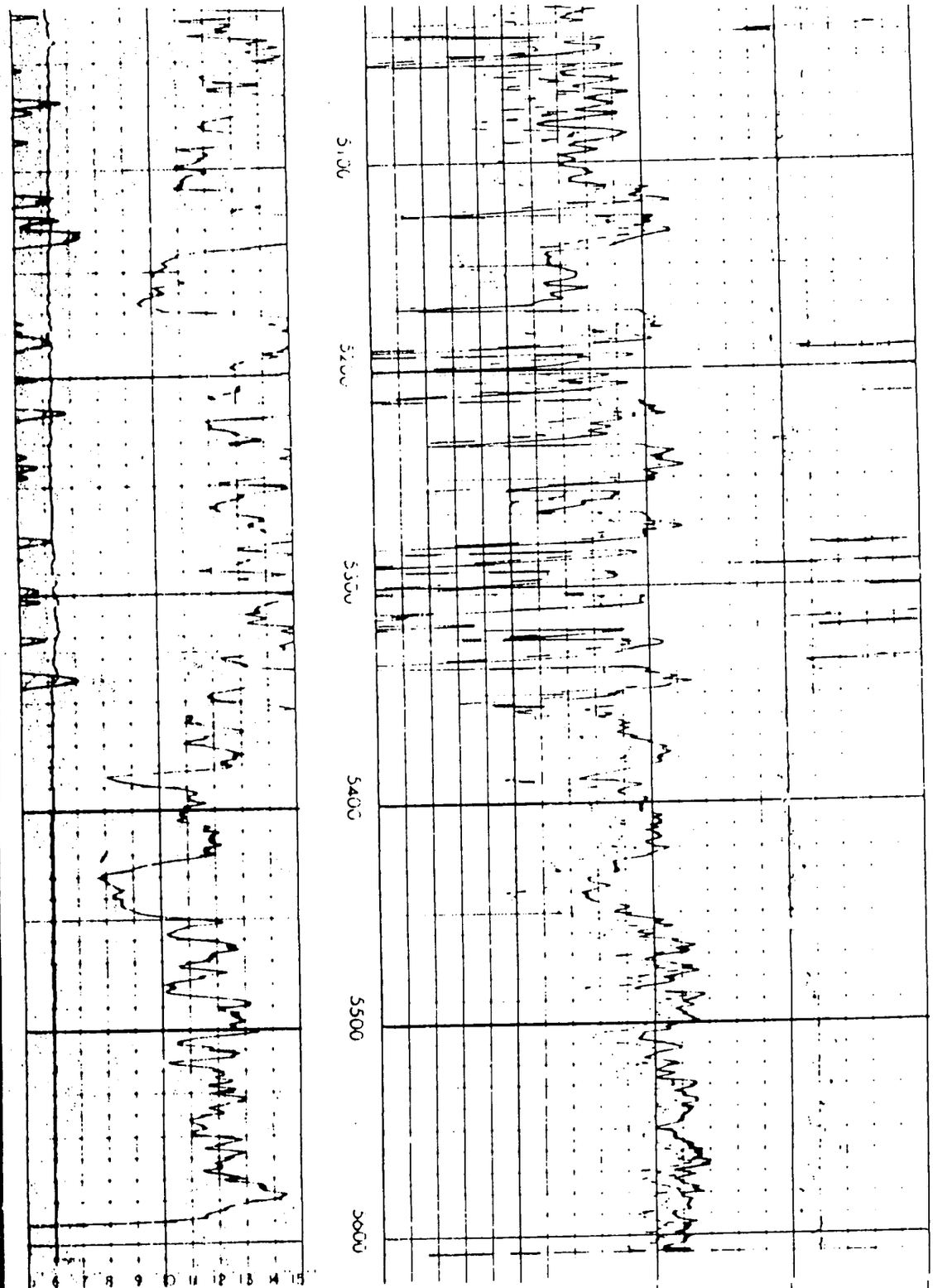
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5500
6000
6 7 8 9 10 11 12 13 14 15
25 0 25
CORRECTION
POROSITY (%) Pg
20 25 30
15 20
BULK DENSITY
Grams/cc (when Z/A 0.5)
CALIPER
Average Diameter In
GAMMA
API Gamma Ray Units
T D LOGGED
T D DRILLER