Form 3160-3
(August 1999)

FORM APPROVED
OMB No. 1004-0136
Expires November 30, 2000

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: ☒ DRILL ☐ REENTER	5. Lease Serial No. NMSF - 078387-A
	6. If Indian, Allottee or Tribe Name
	7. If Unit or CA Agreement, Name and No.
1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☐ Single Zone ☒ Multiple Zone	8. Lease Name and Well No. FLETCHER 1M
2. Name of Operator AMOCO PRODUCTION COMPANY Contact: MARY CORLEY E-Mail: corleyml@bp.com	9. API Well No. 30-045-30767
3a. Address P.O. BOX 3092 HOUSTON, TX 77253	3b. Phone No. (include area code) Ph: 281.366.4491 Fx: 281.366.0700
	10. Field and Pool, or Exploratory BASIN DAKOTA/BLANCO MESAVERDE
4. Location of Well (Report location clearly and in accordance with any State requirements.*) At surface SENW Lot F 2310FNL 1540FWL 36.51300 N Lat, 107.41000 W Lon At proposed prod. zone	11. Sec., T., R., M., or Blk. and Survey or Area F Sec 33 T31N R8W Mer NMP
14. Distance in miles and direction from nearest town or post office* 22 MILES FROM AZTEC, NM	12. County or Parish SAN JUAN 13. State NM
15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1540	16. No. of Acres in Lease 17. Spacing Unit dedicated to this well 320 W/2
18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth 8060 MD 20. BLM/BIA Bond No. on file
21. Elevations (Show whether DF, KB, RT, GL, etc. 6447 GL	22. Approximate date work will start 09/01/2001 23. Estimated duration

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature	Name (Printed/Typed) MARY CORLEY	Date 07/27/2001
Title AUTHORIZED REPRESENTATIVE		
Approved by (Signature)	Name (Printed/Typed)	Date 11/26/01
Title AFM	Office FFO	

Application approval does not warrant or certify 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, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make 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.

Additional Operator Remarks (see next page)

Electronic Submission #6015 verified by the BLM Well Information System
For AMOCO PRODUCTION COMPANY, sent to the Farmington
Committed to AFMSS for processing by Maurice Johnson on 08/02/2001 ()

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

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

**** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ** ORIGINAL ****

HOLD C104 FOR NSL - Basin Dakota

NMOCD

District I
PO Box 1980, Hobbs NM 88241-1980
District II
PO Drawer KK, Artesia, NM 87211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

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

Form C-102
Revised February 21, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-045-30767	71599 & 72319	BASIN DAKOTA & BLANCO MESAVERDE

4 Property Code	5 Property Name	6 Well Number
000517	Fletcher	# 1M

7 OGRID No.	8 Operator Name	9 Elevation
000778	AMOCO PRODUCTION COMPANY	6447

10 Surface Location

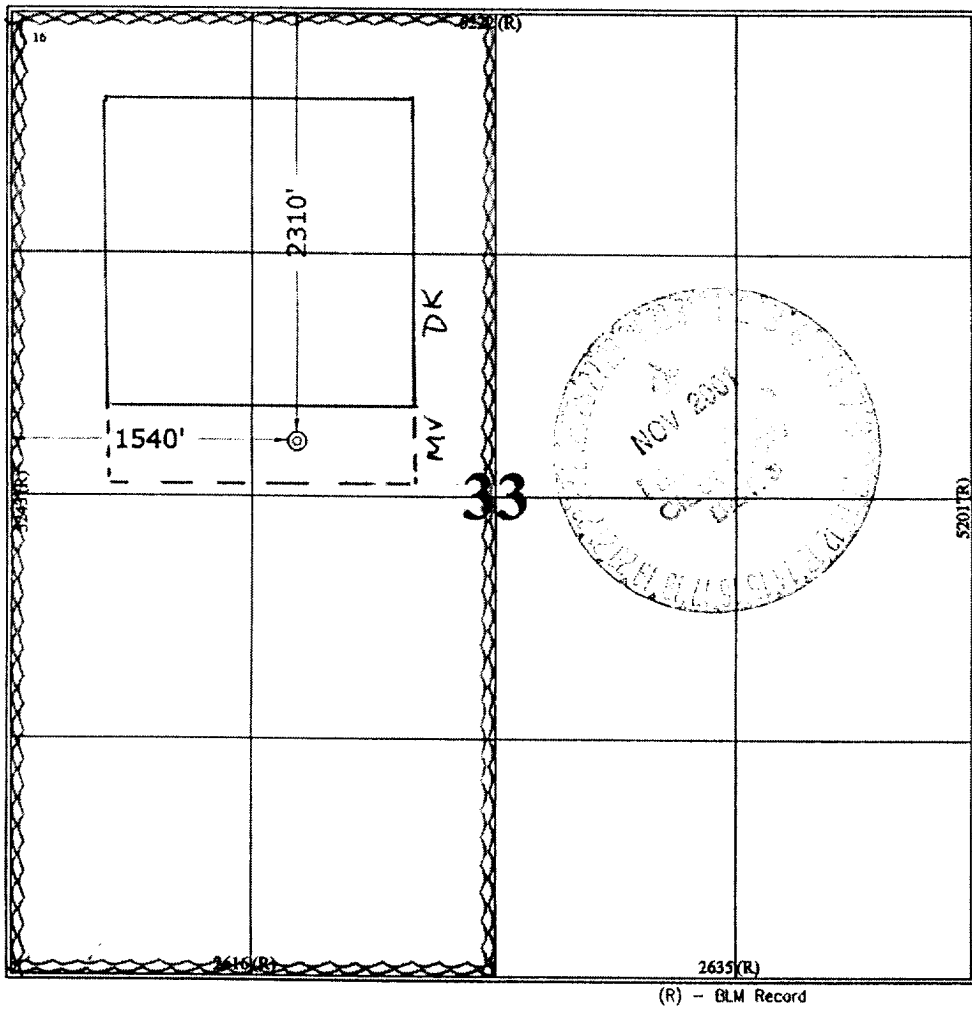
UL or Lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	33	31 N	8 W		2310	NORTH	1540	WEST	SAN JUAN

11 Bottom Hole Location If Different From Surface

7 UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
320			

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



17 OPERATOR CERTIFICATION

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

Signature: Mary Corley

Printed Name: Mary Corley

Title: Sr Regulatory Analyst

Date: 7-27-01

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.

Date of Survey: May 14, 2001

Signature and Seal of Professional Surveyor

GARY D. JONES
NEW MEXICO
7016
REGISTERED PROFESSIONAL LAND SURVEYOR

Certificate Number: 7016

(R) – BLM Record

AMOCO PRODUCTION COMPANY
AMOCO PRODUCTION COMPANY
DRILLING AND COMPLETION PROGRAM

Prospect Name: Fletcher
Lease: FLETCHER
County: San Juan
State: New Mexico
Date: July 27, 2001

Well No: 1M
Surface Location: 33-31N-8W, 2310 FNL,1540 FWL
Field: Blanco Mesaverde/Basin Dakota

OBJECTIVE: Drill 450' below the base of the Greenhorn Limestone, set 41/2" production casing, Stimulate LS, CH, MF, PL and DK intervals

METHOD OF DRILLING

TYPE OF TOOLS	DEPTH OF DRILLING
Rotary	0 - TD

LOG PROGRAM

TYPE	DEPTH INVERAL
OPEN HOLE	
GR-Induction	TD to 7" shoe
Density/Neutron	TD to 7" shoe
CASED HOLE	
GR-CCL-TDT	TDT – TD to 7" shoe
CBL	Identify 4 ½" cement top

REMARKS:
- Please report any flares (magnitude & duration).

APPROXIMATE DEPTHS OF GEOLOGICAL MARKER

Estimated GL: 6447 Estimated KB: 6461

MARKER		SUBSEA	MEAS. DEPTH
Ojo Alamo		4387.1	2074
Fruitland Coal	*	3691.3	2563
Pictured Cliffs	*	3189.1	3272
Lewis Shale	#	2861	3600
Cliff House	#	1440.2	5021
Menefee Shale	#	1239.1	5222
Point Lookout	#	926.6	5534
Mancos		546.4	5915
Greenhorn		-1102.5	7564
Bentonite Marker		-1149.4	7610
Two Wells	#	-1221.3	7682
Dakota MB	#	-1308.8	7770
Burro Canyon	*	-1506.2	7967
Morrison	*	-1556.2	8017
TOTAL DEPTH		-1599	8060

Probable completion interval * Possible Pay

SPECIAL TESTS

TYPE
None

REMARKS:

DRILL CUTTING SAMPLES

FREQUENCY	DEPTH
10 feet	Production hole

DRILLING TIME

FREQUENCY	DEPTH
Geolograph	0-TD

MUD PROGRAM:

Approx. Interval			Type Mud	Weight, #/ga	Vis, sec/qt	W/L cc's/30 min	Other Specification
0	- 200		Spud	8.6-9.2			
200	- 3700	(1)	Water/LSND	8.6-9.2		<6	
3700	- 7967		Gas/Air/N2/Mist	Volume sufficient to maintain a stable and clean wellbore			
7967	8060	(2)	LSND	9.0-9.2		<6	

REMARKS:
(1) The hole will require sweeps to keep unloaded while fresh water drilling. Let hole conditions dictate frequency.
(2) Mud up 50' above Morrison +/-.

CASING PROGRAM: (Normally, tubular goods allocation letter specifies casing sizes to be used. Hole sizes will be governed by Contract)

Casing String	Estimated Depth	Casing Size	Grade	Weight	Hole Size	Landing Pt, Cmt, Etc.
Surface/Conductor	200	9 5/8"	H-40 ST&C	32#	12.25"	1
Intermediate 1	3700	7"	J/K-55 ST&C	20#	8.75"	1,2
Production	8060	4 1/2"	J-55	11.6#	6.25"	3

REMARKS:
(1) Circulate Cement to Surface
(2) Set casing 100' into Lewis Shale
(3) Bring cement 100' above 7" shoe

CORING PROGRAM:
None

COMPLETION PROGRAM:
Rigless, 4-6 Stage Limited Entry Hydraulic Frac

GENERAL REMARKS:
Notify BLM/NMOCD 24 hours prior to Spud, BOP testing, and Casing and Cementing.

Form 46 Reviewed by: Logging program reviewed by: N/A

PREPARED BY:	APPROVED:	DATE: 21 June 2001	

Cementing Program

Well Name:	Fletcher 1M	Field:	Blanco Mesaverde / Basin Dakota
Location:	33-31N-8W, 2310 FSL,1540 FEL	API No.	
County:	San Juan	Well Flac	
State:	New Mexico	Formation:	Dakota MesaVerde
		KB Elev (est)	6461
		GL Elev. (est)	6447

Casing Program:

Casing String	Est. Depth (ft.)	Hole Size (in.)	Casing Size (in.)	Thread	TOC (ft.)	Stage Tool Or TOL (ft.)	Cmt Cir. Out (bbl.)
Surface	200	12.25	9.625	ST&C	Surface	NA	
Intermediate	3700	8.75	7	LT&C	Surface	NA	
Production -	8060	6.25	4.5	?	3600	NA	

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.)
Surface	9.625	32	H-40	3370	1400	254	0.0787	8.845
Intermediate	7	20	K-55	3740	2270	234	0.0405	6.456
Production -	4.5	11.6	J-55	5350	4960	154	0.0155	3.875

Mud Program

Apx. Interval (ft.)	Mud Type	Mud Weight
0 - SCP	Water/Spud	8.6-9.2
SCP - ICP	Water/LSND	8.6-9.2
ICP - ICP2	Gas/Air Mist	NA
ICP2 - TD	LSND	8.6 - 9.2

Recommended Mud Properties Prio Cementing:

PV	<20
YP	<10
Fluid Loss	<15

Cementing Program:

	Surface	Intermediate	Production
Excess %, Bit	100%	80	10
Excess %, Caliper	NA	NA	30
BHST (est deg. F)	60	120	160
Pipe Movement	NA	Rotate/Reciprocate	Rotate/Reciprocate
Rate, Max (bpm)	7	4	2
Rate Recommended (bpm)	6	4	2
Pressure, Max (psi)	200	2000	2000
Shoe Joint	40	80	40
Batch Mix	NA	NA	NA
Circulating prior cmtng (hr)	0.5	1.5	2
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. Reverse out
4. Run Blend Test on Cement
5. Record Rate, Pressure, and Density on 3.5" disk
6. Confirm densitometer with pressurized mud scales
7. 1" cement to surface if cement is not circulated.
8. If cement is not circulated to surface, run temp. survey 10-12 hr. after landing plug.

Notes:

*Do not wash up on top of plug. Wash lines before displacing production cement job to minmize drillout.
*** Run TMD cased hole logs to identify pay; Perforating and CH logs can be run rigless.

Surface:

Preflush	20 bbl.	FreshWater

Cementing Program

Slurry 1	108 sx Class G Cement			125 cuft
TOC@Surface	+ 2% CaCl2 (accelerator)			
	0.25 #/sk Cellophane Flake (lost circulation additive)			0.3132 cuft/ft OH
	0.1% D46 antifoam			100 % excess

Slurry Properties:	Density (lb/gal)	Yield (ft3/sk)	Water (gal/sk)
Slurry 1	15.8	1.16	4.95

Casing Equipment: 9-5/8", 8R, ST&C
1 Guide Shoe
1 Top Wooden Plug
1 Autofill insert float valve
4 Centralizers
1 Stop Ring
1 Thread Lock Compound

Intermediate:

Fresh Water	20 bbl	fresh water	
Lead	292 sx Class "G" Cement		847 cuft
Slurry 1	+ 3% D79 extender		
TOC@Surface	+ 2% S1 Calcium Chloride		
	+1/4 #/sk. Cellophane Flake		
	+ 0.1% D46 antifoam'		
Tail	107 sx 50/50 Class "G"/Poz		135 cuft
Slurry 2	+ 2% gel (extender)		
500 ft fill	0.1% D46 antifoam		0.1503 cuft/ft OH
	+1/4 #/sk. Cellophane Flake		0.1746 cuft/ft csg ann
	+ 2% CaCl2 (accelerator)		80 % excess

Slurry Properties:	Density (lb/gal)	Yield (ft3/sk)	Water (gal/sk)
Slurry 1	11.4	2.9	17.77
Slurry 2	13.5	1.27	5.72

Casing Equipment: 7", 8R, ST&C

1 Float Shoe (autofill with minimal LCM in mud)
1 Float Collar (autofill with minimal LCM in mud)
1 Stop Ring
10 Centralizers (one in middle of first joint, then every third collar)
2 Fluidmaster vane centalizers @ base of Ojo
7 Centalizers one every 4th joint from Ojo to base of surface casing
1 Top Rubber Plug
1 Thread Lock Compound

Production:

Fresh Water	10 bbl	CW100	
Lead	143 LiteCrete D961 / D124 / D154		306 cuft
Slurry 1	+ 0.03 gps D47 antifoam		
TOC@Surface	+ 0.5% D112 fluid loss		

Cementing Program

		+ 0.11% D65 TIC		
Tail Slurry 2	1645 ft fill	129 sx 50/50 Class "G"/Poz + 5% D20 gel (extender) + 0.1% D46 antifoam + 1/4 #/sk. Cellophane Flake + 0.25% D167 Fluid Loss		186 cuft + 5 #/sk D24 gilsonite + 0.15% D65 TIC + 0.1% D800 retarder

Slurry Properties:	Density (lb/gal)	Yield (ft3/sk)	Water (gal/sk)
Slurry 1	9.5	2.14	6.38
Slurry 2	13	1.44	6.5

0.1026 cuft/ft OH
10 % excess
0.1169 cuft/ft csg ann

Top of Mancos
5915

Casing Equipment: 4-1/2", 8R, ST&C

1 Float Shoe (autofill with minimal LCM in mud)
1 Float Collar (autofill with minimal LCM in mud)
1 Stop Ring
39 Centralizers (every third joint

1 Top Rubber Plug
1 Thread Lock Compound

Note:

1. The job should be pumped at 2-3 bpm max rate. Do not exceed 3 bpm on displacement
2. Wash pump and lines before displacement. Slow to 1 bpm for the last 30 bbl of displacement.