ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

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

July 30, 1997

Amoco Production Company
San Juan Business Unit
P. O. Box 800
Denver, Colorado 80201
Attention: Pamela Staley

Administrative Order DD-195

Dear Ms. Staley:

Reference is made to Amoco Production Company's application dated July 8, 1997 for authorization to directional drill a high-angle well to a pre-determined bottomhole location in order to further develop the Blanco-Mesaverde Pool underlying an existing 320-acre standard gas spacing and proration unit ("GPU") comprising the N/2 of Section 27, Township 30 North, Range 9 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 11274 on June 13, 1995;

(2) 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 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;

(3) Initial development of Blanco-Mesaverde gas pool production within the subject 320-acre GPU occurred with the E. E. Elliott "B" Well No. 2 (**API No. 30-045-09225**) being drilled in 1952 at a standard gas well location 990 feet from the North and East lines (Unit A) of said Section 27. The E. E. Elliott "B" Well No. 2-A (**API No. 30-045-22060**) was drilled in 1976 as an "infill well" at a standard gas well location 1160 feet from the North line and 880 feet from the West line (Unit D) of said Section 27;

(4) It is our understanding that the subject well of this application, the existing E.E. Elliott "B" Well No. 7 (**API No. 30-045-09193**), located at a standard gas well location 1800

H-27-30N-09W

feet from the North line and 990 feet from the East line (Unit H) of said Section 27, is currently completed as a producing gas well in the Basin-Dakota Pool and that upon issuance of this order said well is to be recompleted by milling a window in the 4-1/2 inch production casing string, kick-off of the vertical portion of the wellbore at a depth of approximately 4,605 feet in a northwesterly direction, build to an angle of approximately 45 degrees, and continue to drill in such a manner as to bottom into the Blanco-Mesaverde Pool with total horizontal displacement of said well to be approximately 740 feet;

(5) A high angle wellbore 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 GPU.

(6) The applicable drilling window or "producing area" for said wellbore should include that area within the NE/4 of said Section 27 that is no closer than 790 feet to the quarter section lines; and,

(7) 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 E.E. Elliott "B" Well No. 7 (**API No. 30-045-09193**), located at a standard gas well location 1800 feet from the North line and 990 feet from the East line (Unit H) of Section 27, Township 30 North, Range 9 West, NMPM, San Juan County, New Mexico, by milling a window in the 4-1/2 inch production casing string, kick-off from vertical at a depth of approximately 4,605 feet in a northwesterly direction, build to an angle of approximately 45 degrees and continue drilling inch a manner as to bottom into the Blanco-Mesaverde Pool (total horizontal displacement of said well to be approximately 740 feet) within a drilling window or "producing area" comprising the NE/4 of said Section 27 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 E. E. Elliott "B" Well No. 2 (**API No. 30-045-09225**), located at a standard gas well location 990 feet from the North and East lines (Unit A) of said Section 27, the E. E. Elliott "B" Well No. 2-A (**API No. 30-045-22060**), located at a standard infill gas well location 1160 feet from the North line and 880 feet from the West line (Unit D) of said Section 27, and the E. E. Elliott "B" Well No. 7, as described above, shall be attributed to the existing 320-acre standard gas spacing and proration unit ("GPU") comprising the N/2 of Section 27.

(4) Said wells and subject 320-acre GPU will be subject to all existing rules, regulations, policies, and procedures applicable to prorated gas pools in Northwest New Mexico.

(5) 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.

(6) 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.

(7) 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

SEAL

WJL/MES/kv

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

DEPUTY OIL & GAS INSPECTOR

DEC 2 2 1997

Approved

Meter Number:73947
Location Name:E.E. ELLIOTT B#7
Location:TN-30 RG-09
SC-27 UL-H
2 - Federal
NMOCD Zone:OUTSIDE
Hazard Ranking Score:00

RECEIVED
APR 1 4 1997
OIL CON. DIV.
DIST. 3

RATIONALE FOR RISK-BASED CLOSURE OF PRODUCTION PITS LOCATED OUTSIDE OF THE VULNERABLE ZONE IN THE SAN JUAN BASIN

This production pit location was ranked according to the criteria in the New Mexico Oil Conservation Division's Unlined Surface Impoundment Closure Guidelines and received a ranking score of zero. The estimated depth to groundwater is greater than 100-feet beneath ground surface (bgs), the pit is not in a well head protection area, and there are no surface water bodies within 1,000 horizontal feet of the pit location.

The primary source, discharge to the pit has been removed. There has been no discharge to the pits for at least 4 years and the pits have been closed for at least one year.

Each pit was backfilled with clean soil and graded in a manner to divert precipitation away from the excavated area. Minimal infiltration of rainfall is expected. Any rainfall that does infiltrate the ground surface must migrate through clean backfill before reaching the residual hydrocarbons.

There is no source material at the ground surface, so direct contact of hydrocarbons with livestock and the populous is not likely.

In general, outside of the vulnerable area and alluvial valleys, bedrock material is generally encountered within 20 feet of the ground surface. Bedrock material in the San Juan Basin consists of interbedded sandstones, shales and clays. According to Freeze and Cherry, 1979, the hydraulic conductivity of the bedrock material are as follows:

Sandstone	10^{-9} to 10^{-13} cm/sec
Shale	10^{-12} to 10^{-16} cm/sec
Clay	10^{-12} to 10^{-15} cm/sec

Based on this information, the residual hydrocarbons should not migrate to groundwater.

Natural process (bioremediation) are degrading the residual hydrocarbon to carbon dioxide and water and will continue until the source is gone, therefore minimizing any impact to the environment.

Based on the above information, it is highly unlikely that any source material will impact groundwater or ever find an exposure pathway to affect human health and therefore El Paso Field Services Company (EPFS) requests closure of this pit location.

FIELD PIT SITE ASSESSMENT FORM

EPFS EL PASO FIELD SERVICES

GENERAL

Meter: 73947 Location: E.E. ELLIOT B #7
Operator #: 0203 Operator Name: AMOCO P/L District: BLOOMFIELD
Coordinates: Letter: H Section 27 Township: 30 Range: 9
Or Latitude _____ Longitude _____
Pit Type: Dehydrator ___ Location Drip: X Line Drip: ___ Other: _____
Site Assessment Date: 4.25.94 Area: 10 Run: 33

SITE ASSESSMENT

NMOCD Zone: (From NMOCD Maps)
Inside ☐ (1)
Outside ☒ (2)

Land Type:
BLM ☒ (1)
State ☐ (2)
Fee ☐ (3)
Indian _____

Depth to Groundwater
Less Than 50 Feet (20 points) ☐ (1)
50 Ft to 99 Ft (10 points) ☐ (2)
Greater Than 100 Ft (0 points) ☒ (3)

Wellhead Protection Area :
Is it less than 1000 ft from wells, springs, or other sources of fresh water extraction? , or ; Is it less than 200 ft from a private domestic water source? ☐ (1) YES (20 points) ☒ (2) NO (0 points)

Horizontal Distance to Surface Water Body
Less Than 200 Ft (20 points) ☐ (1)
200 Ft to 1000 Ft (10 points) ☐ (2)
Greater Than 1000 Ft (0 points) ☒ (3)
Name of Surface Water Body _____
(Surface Water Body : Perennial Rivers, Major Wash, Streams, Creeks, Irrigation Canals, Ditches, Lakes, Ponds)
Distance to Nearest Ephemeral Stream ☐ (1) < 100' (Navajo Pits Only)
☐ (2) > 100'

TOTAL HAZARD RANKING SCORE: 0 **POINTS**

REMARKS

Remarks : TWO PITS ON LOCATION. WILL CLOSE ONLY ONE. PIT IS REDLINE AND TOPO CONFIRMED LOCATION OUTSIDE U.Z.

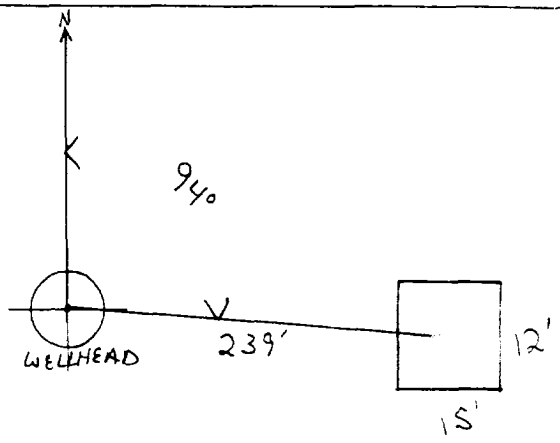
PUSH IN

ORIGINAL PIT LOCATION

ORIGINAL PIT LOCATION

Original Pit : a) Degrees from North 94° Footage from Wellhead 239'

b) Length : 15' Width : 12' Depth : 4'



REMARKS

Remarks :

TOOK PICTURES AT 1:27 P.M.

END DUMP

Completed By:

Robert Thompson
Signature

4.25.94
Date

GENERAL

Meter: 73947 Location: EE Elliot B #7

Coordinates: Letter: H Section 27 Township: 30 Range: 9

Or Latitude _____ Longitude _____

Date Started : 5-18-94 Area: 10 Run: 33

FIELD OBSERVATIONS

Sample Number(s): VW 105 _____ _____ _____

Sample Depth: 9' Feet

Final PID Reading 1 PID Reading Depth 9' Feet

Yes No

Groundwater Encountered ☐ (1) ☒ (2) Approximate Depth _____ Feet

CLOSURE

Remediation Method :

Excavation ☐ (1) Approx. Cubic Yards _____

Onsite Bioremediation ☐ (2)

Backfill Pit Without Excavation ☒ (3)

Soil Disposition:

Envirotech ☐ (1) ☐ (3) Tierra

Other Facility ☐ (2) Name: _____

Pit Closure Date: 5-18-94 Pit Closed By: BEI

REMARKS

Remarks : EPNG line markers 9' h.t rock

Signature of Specialist: Vale Wilson

(SP3191) 04/07/94

El Paso Natural Gas Company

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT - Soil

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	VW 105	945224
MTR CODE | SITE NAME:	73947	N/A
SAMPLE DATE | TIME (Hrs):	5-18-94	1230
SAMPLED BY:	N/A	
DATE OF TPH EXT. | ANAL.:	5-19-94	5/19/94
DATE OF BTEX EXT. | ANAL.:	N/A	N/A
TYPE | DESCRIPTION:	VG	Brown Course Sand

REMARKS: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q	M(g)	V(ml)
BENZENE		MG/KG				
TOLUENE		MG/KG				
ETHYL BENZENE		MG/KG				
TOTAL XYLENES		MG/KG				
TOTAL BTEX		MG/KG				
TPH (418.1)	<10	MG/KG			2.09	28
HEADSPACE PID	1	PPM				
PERCENT SOLIDS	97.3	%				

– TPH is by EPA Method 418.1 and BTEX is by EPA Method 8020 –

The Surrogate Recovery was at N/A % for this sample All QA/QC was acceptable.

Narrative:

DF = Dilution Factor Used

Approved By: John Saddler Date: 6/15/94

****

Test Method for
Oil and Grease and Petroleum Hydrocarbons
in Water and Soil

Perkin-Elmer Model 1600 FT-IR
Analysis Report

****

24/05/19 13:49

Sample identification
245226

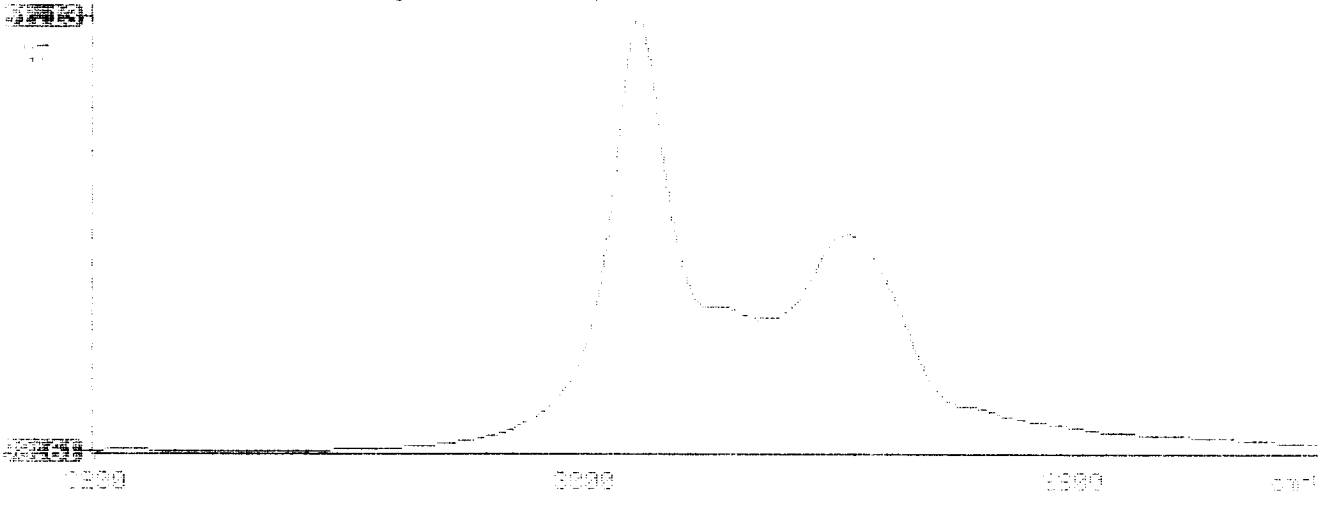
Initial mass of sample, g
1.090

Volume of sample after extraction, ml
[illegible]2.000

Petroleum hydrocarbons, ppm
[illegible]94.367

Net absorbance of hydrocarbons (2930 cm-1)
0.075

Y: Petroleum hydrocarbons spectrum [illegible]13:50



PO Box 1980, Hobbs, NM 88241-1980

District II
811 South First, Artesia, NM 88210

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

District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

DD-199
OK

Form C-102
Revised October 18, 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
3004509193	72319	Blanco Mesaverde

[4] Property Code	[5] Property Name	[6] Well Number
000470	E. E. Elliott B	7

[7] OGRID No.	[8] Operator Name	[9] Elevation
000778	Amoco Production Company	5942 KB

[10] Surface Location

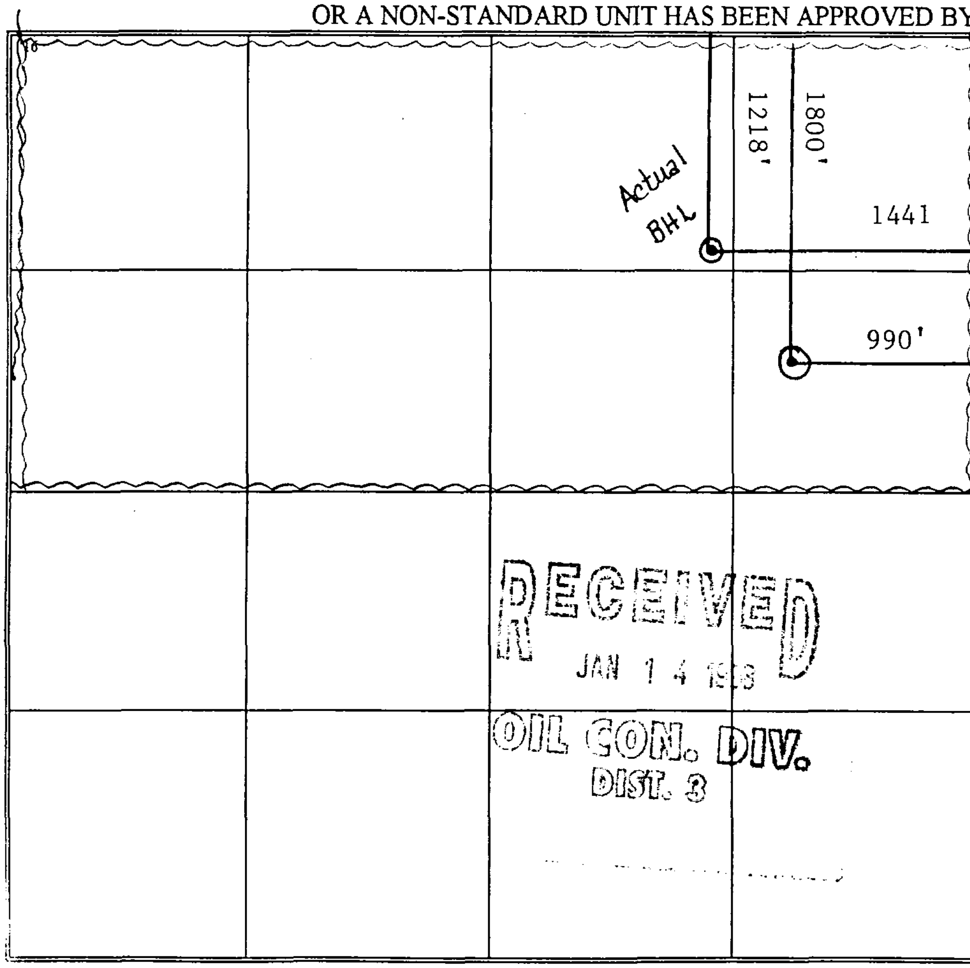
UI or lot no.	Section	Township	Range	Lot.Idn	Feet from the	North/South Line	Feet from the	East/West Line	County
H	27	30N	9W		1800	North	990	East	San Juan

[11] Bottom Hole Location If Different From Surface

UI or lot no.	Section	Township	Range	Lot.Idn	Feet from the	North/South Line	Feet from the	East/West Line	County
B	27	30N	9W		1218	North	1441	East	San Juan

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order Number
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: Gail M. Jefferson

Printed Name: Gail M. Jefferson

Title: Sr. Admin. Staff Asst.

Date: January 12, 1998

[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: June 10, 1964

Signature and Seal of Professional Surveyer:

Certificate Number: 3602

Sperry-Sun Drilling Services

Survey Report for Elliott B 7 - Geoservice Surveys

Amoco Production Co.
New Mexico

Re-Entry Wells
Sec 27-T30N-R9W

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	
3184.00	0.060	208.000	3184.00	1.47 S	0.78 W	-0.68	0.002
3200.00	3.000	219.600	3199.99	1.80 S	1.05 W	-0.78	18.383
3259.00	5.200	220.100	3258.84	5.04 S	3.76 W	-1.68	3.729
3415.00	3.800	223.800	3414.35	14.18 S	11.89 W	-3.93	0.916
3572.00	2.900	219.600	3571.08	20.99 S	18.02 W	-5.56	0.594
3726.00	2.400	220.600	3724.92	26.44 S	22.61 W	-7.07	0.326
3882.00	1.700	209.600	3880.82	30.93 S	25.87 W	-8.62	0.513
3945.00	1.300	209.300	3943.80	32.37 S	26.69 W	-9.26	0.635
3977.00	1.300	211.700	3975.79	32.99 S	27.05 W	-9.53	0.170
4008.00	1.100	317.800	4006.78	33.07 S	27.44 W	-9.35	6.199
4037.00	3.200	309.000	4035.76	32.36 S	28.26 W	-8.29	7.309
4068.00	3.800	309.600	4066.70	31.16 S	29.72 W	-6.44	1.939
4100.00	5.300	315.500	4098.60	29.43 S	31.57 W	-3.94	4.904
4131.00	6.700	323.700	4129.43	26.95 S	33.65 W	-0.71	5.284
4162.00	9.100	330.300	4160.14	23.36 S	35.93 W	3.53	8.264
4192.00	11.600	331.800	4189.65	18.64 S	38.53 W	8.85	8.381
4223.00	12.400	332.100	4219.97	12.95 S	41.56 W	15.20	2.588
4253.00	13.800	332.000	4249.19	6.95 S	44.75 W	21.90	4.667
4284.00	15.500	330.500	4279.18	0.08 S	48.53 W	29.65	5.618
4315.00	17.200	328.000	4308.92	7.42 N	53.00 W	38.31	5.934
4346.00	19.400	328.800	4338.35	15.71 N	58.09 W	47.98	7.143
4377.00	18.800	324.800	4367.65	24.19 N	63.64 W	58.09	4.643
4407.00	19.100	326.800	4396.02	32.25 N	69.11 W	67.81	2.385
4439.00	20.800	326.200	4426.10	41.35 N	75.14 W	78.70	5.351
4500.00	21.500	322.600	4482.99	59.23 N	87.96 W	100.68	2.418
4562.00	24.100	323.600	4540.15	78.45 N	102.37 W	124.70	4.240
4593.00	26.100	322.700	4568.22	88.97 N	110.26 W	137.85	6.568
4655.00	28.600	321.800	4623.28	111.49 N	127.70 W	166.33	4.087
4716.00	27.700	325.300	4677.07	134.62 N	144.81 W	195.09	3.082
4747.00	27.100	327.000	4704.59	146.46 N	152.75 W	209.32	3.180
4778.00	27.100	327.200	4732.19	158.32 N	160.42 W	223.40	0.294
4809.00	28.400	326.700	4759.62	170.42 N	168.30 W	237.78	4.260
4840.00	30.800	326.300	4786.58	183.18 N	176.75 W	253.05	7.768
4872.00	32.100	324.100	4813.88	196.89 N	186.28 W	269.72	5.419
4904.00	34.100	323.200	4840.68	210.96 N	196.64 W	287.19	6.436
4935.00	37.300	324.700	4865.85	225.59 N	207.28 W	305.27	10.701
4966.00	40.800	326.300	4889.92	241.69 N	218.33 W	324.76	11.748
5028.00	43.200	325.100	4936.00	275.95 N	241.71 W	366.17	4.082
5090.00	44.000	325.000	4980.89	310.99 N	266.21 W	408.87	1.295
5151.00	44.400	325.100	5024.63	345.85 N	290.57 W	451.35	0.666
5244.00	43.300	325.700	5091.69	398.88 N	327.15 W	515.68	1.264
5337.00	44.500	327.000	5158.70	452.56 N	362.88 W	580.00	1.614
5368.00	43.900	326.500	5180.93	470.64 N	374.73 W	601.54	2.238
5490.00	43.100	325.500	5269.42	540.26 N	421.68 W	685.34	0.865

Continued...

Sperry-Sun Drilling Services

Survey Report for Elliott B 7 - Geoservice Surveys

Amoco Production Co.
New Mexico

Re-Entry Wells
Sec 27-T30N-R9W

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
5520.00	41.900	325.200	5291.54	556.93 N	433.21 W	705.58	4.057
5566.00	41.900	325.200	5325.78	582.16 N	450.74 W	736.26	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 322.251° (True).

Based upon Minimum Curvature type calculations, at a Measured Depth of 5566.00ft.,
The Bottom Hole Displacement is 736.26ft., in the Direction of 322.251° (True).

2472

3