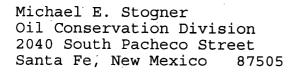
#### JAMES BRUCE ATTORNEY AT LAW

POST OFFICE BOX 1056 SANTA FE, NEW MEXICO 87504

SUITE B 612 OLD SANTA FE TRAIL SANTA FE. NEW MEXICO 87501

(505) 982-2043 (505) 982-2151 (FAX)

April 7, 1997



Application of Santa Fe Energy Resources, Inc. ("Santa TO Fe") to directionally drill the following well: Section for his difficult for the property and it is a section in the contract the contract of the contract of

#### parasa Federala "AE " well No No 1 014 Signa, paparas pu par 184 og Section 20 is farmed out to Santa Fe. Arnta Fe has already

ToppoSurface Location: 1650 UFSL and 1980 UFEL THEORES

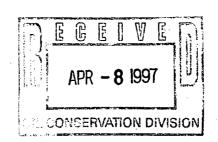
CTINETERMINUS: BOROF PART 1650 CFNE and 12310 CFFEECCION FR ST MOLEY Project Area: SWANEY and NWASEY Of Section 20.

Township 22 South, Range 28 East, NMPM, Eddy County, New Mexico

Dear Mr. Stogner:

You asked about working interest ownership in the above well, and whether a communitization agreement was in place. I conferred with Santa Fe's landman, and he informed me of the following:

- 1. All of Section 20 is federal land, covered by a single federal lease, NM 86542. The APD for the well filed, attached as Exhibit D to the application, contains a land plat marked as Exhibit F of Exhibit D, which shows that the proposed well unit is covered by a single lease. As a result, communitization agreement is necessary.
- Attached as Exhibit C to the application is a plat of Section 20, showing the project area for the well and listing working interest owners. The reason the working interest differs in the north half and south half of the section is as follows: [Scall of Louis Dreyfus 25% working interest in Section 20 is farmed out to Santa Fe. Santa Fe has already earned an assignment of Louis Dreyfus' interest in the N% of Section 20; by drilling the proposed well, Santa Fe will earn an assignment of Louis Dreyfus' interest in the Sk of Section



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wat traky source

s <del>till i sami i dinasi i</del>

20. Thus, although record title in the north half and south half of the section varies, actual title is common.

Should you need any additional information, please call.

Very truly yours,

James Bruce

Attorney for Santa Fe Energy Resources, Inc.

#### STATE OF NEW MEXICO



#### ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

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

April 2, 1997

Santa Fe Energy Resources, Inc. c/o James Bruce
P. O. Box 1056
Santa Fe, New Mexico 87504

Administrative Order DD-166(H)
High Angle/Horizontal

Dear Mr. Bruce:

Reference is made to Santa Fe Energy Resources, Inc.'s ("Santa Fe") application dated February 24, 1997 for authorization to re-enter the plugged and abandoned Dinero Operating Company Amoco Federal "AE" Well No. 1 (API No. 30-015-23027), to be redesignated the Federal "AE" Well No. 1, and recomplete by side tracking off of the vertical wellbore and drilling horizontally in order to test the Cherry Canyon member of the Delaware Mountain Group in either the Undesignated Herradura Bend-Cherry Canyon Pool or Undesignated Indian Draw-Delaware Pool underlying an 80-acre area comprising the SW/4 NE/4 and NW/4 SE/4 of Section 20, Township 22 South, Range 28 East, NMPM, Eddy County, New Mexico.

#### The Division Director Finds That:

- (1) The subject 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 above-described 80-acre tract is within one mile of both the Herradura Bend-Cherry Canyon and Indian Draw-Delaware Pools, both of which are subject to the statewide rules and regulations, as promulgated by Rule 104.C(1)(a), which provides for 40-acre oil spacing and proration units, or drilling units, and requires that wells be located no closer than 330 feet to the outer boundary of a single 40-acre oil spacing and proration unit;
- (3) The "project area" proposed by Santa Fe would consist of an over-sized spacing unit comprising 80 acres (two standard 40-acre tracts) underlying the SW/4 NE/4

#### and NW/4 SE/4 of said Section 20:

- (4) The subject Federal "AE" Well No. 1, located at a standard surface oil well location 1650 feet from the South line and 1980 feet from the East line (Unit J) of said Section 20, was drilled in 1979 to a total depth of 12,730 feet with completions in the Morrow, Wolfcamp, Bone Spring, and Delaware formations and was plugged and abandoned in 1984;
- (5) The applicant/operator proposes to re-enter said well, clean out the existing wellbore in such a manner as to allow them to kick-off from vertical at a depth of approximately 3,515 feet by milling a window in the production casing, drill in a northerly direction with a short radius curve (90 foot radius), and drill horizontally within the Cherry Canyon member a lateral distance of approximately 1,910 feet;
- (6) The applicable drilling window or "producing area" for said wellbore should include that area within the subject 80-acre non-standard oil spacing and proration unit comprising SW/4 NE/4 and NW/4 SE/4 of said Section 20 that is no closer than 330 feet to the outer boundary of said proration unit; and,
- (7) It appears 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, Santa Fe Energy Resources, Inc.'s ("Santa Fe"), is hereby authorized to re-enter and recomplete the Federal "AE" Well No. 1 (API No. 30-015-23027), from a standard surface oil well location 1650 feet from the South line and 1980 feet from the East line (Unit J) of Section 20, Township 22 South, Range 28 East, NMPM, Eddy County, New Mexico, by milling a window in the production casing at a depth of approximately 3,515 feet, kick-off from vertical in a northerly direction with a short radius curve (90 foot radius), and continue drilling horizontally within the Cherry Canyon member of the Delaware Mountain Group in either the Undesignated Herradura Bend-Cherry Canyon Pool or Undesignated Indian Draw-Delaware Pool a lateral distance of approximately 1,910 feet.

<u>PROVIDED HOWEVER THAT</u> 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.

Administrative Order DD-166(H) Santa Fe Energy Resources, Inc. April 2, 1997 Page 3

<u>PROVIDED FURTHER THAT</u> during or upon completion of said 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 Artesia 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 Artesia offices of the Division upon completion.
- (3) The "project area" for said horizontal well shall consist of an oversized 80-acre non-standard oil spacing and proration unit for said pool comprising the SW/4 NE/4 and NW/4 SE/4 of said Section 20.
- (4) The applicable drilling window or "producing area" for said wellbore shall include that area within this 80-acre non-standard oil spacing and proration unit that is no closer than 330 feet to the outer boundary of said unit.
- (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.
- (6) Form C-105 shall be filed in accordance with Division Rule 1105 and the operator shall indicate thereon true vertical depth (TVD) in addition to measured depths (MVD).
- (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

cc: Oil Conservation Division - Artesia
U. S. Bureau of Land Management - Carlsbad

PR-SF. H

Rec: 2-25-97 Susp: 3-17-97 Rubersed: 4-2-97

April 2, 1997

Santa Fe Energy Resources, Inc. c/o James Bruce
P. O. Box 1056
Santa Fe, New Mexico 87504

مامار
Administrative Order DD
\*\*\*\*(H)
High Angle/Horizontal

Dear Mr. Bruce:

Reference is made to Santa Fe Energy Resources, Inc.'s ("Santa Fe") application dated February 24, 1997 for authorization to re-enter the plugged and abandoned Dinero Operating Company Amoco Federal "AE" Well No. 1 (API No. 30-015-23027) to be redesignated the Federal "AE" Well No. 1, and recomplete by side tracking off of the vertical wellbore and drilling horizontally in order to test the Cherry Canyon member of the Delaware Mountain Group in either the Undesignated Herradura Bend-Cherry Canyon Pool or Undesignated Indian Draw-Delaware Pool underlying an 80-acre area comprising the SW/4 NE/4 and NW/4 SE/4 of Section 20, Township 22 South, Range 28 East, NMPM, Eddy County, New Mexico.

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- (3) The "project area" proposed by Santa Fe would consist of an over-sized spacing unit comprising 80 acres (two standard 40-acre tracts) underlying the SW/4 NE/4 and NW/4 SE/4 of said Section 20;
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location 1650 feet from the South line and 1980 feet from the East line (Unit J) of said Section 20, was drilled in 1979 to a total depth of 12,730 feet with completions in the Morrow, Wolfcamp, Bone Spring, and Delaware formations and was plugged and abandoned in 1984;

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- (6) The applicable drilling window or "producing area" for said wellbore should include that area within the subject 80-acre non-standard oil spacing and proration unit comprising SW/4 NE/4 and NW/4 SE/4 of said Section 20 that is no closer than 330 feet to the outer boundary of said proration unit; and,
- (7) It appears 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.

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- (3) The "project area" for said horizontal well shall consist of an oversized 80-acre non-standard oil spacing and proration unit for said pool comprising the SW/4 NE/4 and NW/4 SE/4 of said Section 20.
- (4) The applicable drilling window or "producing area" for said wellbore shall include that area within this 80-acre non-standard oil spacing and proration unit that is no closer than 330 feet to the outer boundary of said unit.
- (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.
- (6) Form C-105 shall be filed in accordance with Division Rule 1105 and the operator shall indicate thereon true vertical depth (TVD) in addition to measured depths (MVD).
- (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

cc: Oil Conservation Division - Artesia

U. S. Bureau of Land Management - Carlsbad

Rui 2-25-97

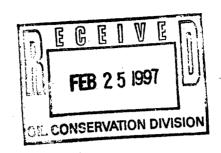
## JAMES BRUCE ATTORNEY AT LAW

POST OFFICE BOX 1056 SANTA FE, NEW MEXICO 87504

SUITE B 612 OLD SANTA FE TRAIL SANTA FE, NEW MEXICO 87501

(505) 982-2043 (505) 982-2151 (FAX)

February 24, 1997



#### HAND DELIVERED

Michael E. Stogner
Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505

Dear Mr. Stogner:

Santa Fe Energy Resources, Inc. ("Santa Fe") hereby applies for administrative approval to re-enter and directionally drill the following well:

#### Federal "AE" Well No. 1

Surface Location:

Terminus:

Project Area:

1650' FSL and 1980' FEL 1650' FNL and 2310' FEL

SW¼NE¼ and NW¼SE¼ of Section 20, Township 22 South, Range 28 East,

NMPM, Eddy County, New Mexico

The well was originally drilled as a Morrow test in 1979, and the original Form C-102 for the well is attached as Exhibit A. The well will be re-entered and directionally drilled to test the Cherry Canyon member of the Delaware Mountain Group (Undesignated Herradura Bend-Cherry Canyon Pool or Undesignated Indian Draw-Delaware Pool). The well is subject to statewide rules. A revised Form C-102 for the well is attached as Exhibit B.

Pursuant to Division Rule 111(D), Santa Fe makes the following statements and submittals:

- 1. Santa Fe is drilling this well as a test horizontal well in the Delaware. Production from the Delaware has been established to the northwest and south of the well.
- 2. Attached as Exhibit C is a land plat of Section 20. The project area for the well is outlined in gray. The producing area is the same as the project area. There are no existing

Delaware wells in the project area, or immediately offsetting the project area.

All of Section 20 is federal land, covered by Lease NM 86542. An APD for the well has been filed with and approved by the Bureau of Land Management (Exhibit D).

Exhibit C lists the names and addresses of offset lessees. Copies of this application were mailed today to the offset lessees, by certified mail, advising them they have twenty days from the date of the notice letter to object to the application. A copy of the notice letter is attached as Exhibit E. **Please note** that all of the offset lessees own interests in the proposed well.

- 3. Attached as Exhibit F is a vertical plan view of the well. (A horizontal plan view of the well is given on Exhibit C.)
- 4. Attached as Exhibit G is a geological write-up on the project, which references a cross-section (Exhibit H) and a isopach/structure map (Exhibit I).

Should you need any additional data, please call. This application is submitted in duplicate.

Very truly yours,

James Bruce

Attorney for Santa Fe Energy Resources, Inc.

cc: Tim Gum (Artesia District Office)

# MEXICO OIL CONSERVATION COP"

Supersedes C-1. - LOCATION AND ACREAGE DEDIC Effective 1-1-65 All distances must be from the outer bounderses of the Section Cperator Well No. Amoco Production Co. Fed. 22 South 28 East Eddy Actual Footage Location of Well: 1650 South 1980 East feet from the line and feet from the Producing Formation Ground Level Elev. POOLDUDIN PANCH Dedicated Acteques Morrow Und. Morrow 320 3077.0 Actes 1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below. 2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty). 3. If more than one lease of different ownership is dedicated to the well, have the intere iloenn<u>o reselven</u> dated by communitization, unitization, force-pooling, etc? **EXHIBIT** If answer is "yes," type of consolidation If answer is "no;" list the owners and tract descriptions which have actually been co side o this form if necessary.). No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commis sion. CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief. Administrative Supervisor Amoco Production Company September 12, 1979 I hereby certify that the well location knowledge and belief. Sept.

2000

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1320

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1650

Certificate No. John W. <u>Ronald J. Eidson</u>

6:

District I
PO Box 1980. Hobbs, NM \$8241-1980
District II
PO Drawer DD, Artesia, NM \$8211-0719
District III
1000 Rio Brazos Rd., Aztec, NM \$7410
District IV
PO Box 2088, Santa Fe, NM \$7504-2088

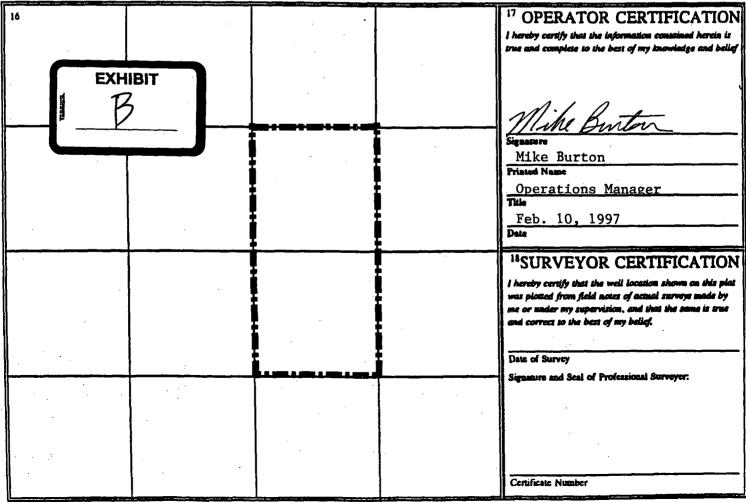
State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION PO Box 2088 Santa Fe, NM 87504-2088 Form C-102 Revised February 10, 1994 Instructions on back Submit to Appropriate District Office

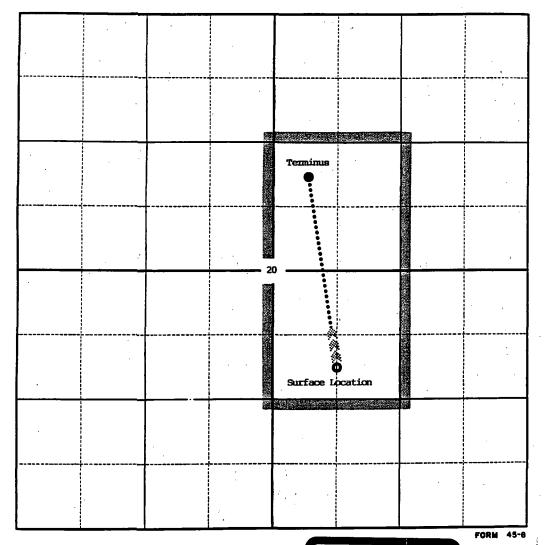
State Lease - 4 Copies
Fee Lease - 3 Copies

MAMENDED REPORT

		WE	LL LO	CATION	I AND ACR	REAGE DEDIC	CATION PI	AT	•		
7	API Numbe	#	T-	<sup>3</sup> Pool Code		<sup>3</sup> Pool Name					
30-025	-23027					. Undesignat	ted (Delawa	ire)			
* Property	Code				* Property	Name			* Well Number		
2010	2	l	Fede	ral "AE				}	1		
'OGRID	No.				<sup>1</sup> Operator	Name			* Devation		
020305			Santa	a Fe Enc	ergy Resour	ces, Inc.			3077' GR		
					10 Surface	Location					
UL or lot no.	Section	Towaship	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line County			
J	20	22S	28E	1	1650	South	1980	1980 East Eddy			
		<del></del>	11 Bot	tom Hol	e Location I'	f Different Fro	om Surface				
UL or lot no.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West lin	ne County		
G	20	22S	28E		1650	North	2310	East	Eddy		
12 Dedicated Act	12 Dedicated Acres 12 Joint or Infill 14 Consolidation Code 14 Order No.										
NO ALLO	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							l hareby cert	tify that the inform	ERTIFICATION matten contained herein is of my knowledge and belief		



ill interest



#### N/2 Section 20

#### Operator:

Santa Fe Energy Resources, Inc. 550 W. Texas, Suite 1330 Midland, TX 79701

#### **Leasehold Owners:**

Nearburg Exploration Company, LL 3300 N. A St., Bldg. 2 Suite 120 Midland, TX 79705

Burlington Resources, Inc. 3300 N. A St., Bldg. 6 Midland, TX 79705

#### S/2 Section 20

#### Operator:

Santa Fe Energy Resources, Inc. 550 W. Texas, Suite 1330 Midland, TX 79701

#### **Leasehold Owners:**

Nearburg Exploration Company, LL 3300 N. A St., Bldg. 2 Suite 120 Midland, TX 79705

Louis Dreyfus Natural Gas 14000 Quail Springs Parkway #600 Oklahoma City, OK 73134

Burlington Resources, Inc. 3300 N. A St., Bldg. 6 Midland, TX 79705

#### FEDERAL "AE" NO. 1 WELL

Section 20-T22S-R28E 1650' FSL & 1980' FEL Surf. Loc. 1650' FNL & 2310' FEL Terminus

Operator: SFER, Inc.



Project Area (NWSE & SWNE) BLM Lease NM 86542





**EXHIBIT** 

Santa Fe Energy Resources, Inc. Central Division Midland, Texas

**EDDY COUNTY, NEW MEXICO** 

#### **LAND PLAT**

DIRECTIONAL DRILLING
OFFSET OPERATOR / LEASEHOLD OWNERS

Date: 2-1-97

Form 3160-3 (July 1992)

OPERATOR'S COPY, SUBMIT IN TR' CATE.

(Other instruc

FORM APPROVED OMB NO. 1004-0136 Expires: February 28, 1995

## U1...ED STATES DEPARTMENT OF THE INTERIOR A

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	LL X Re-Entry	DEEPEN [		NOV 12	3 53 AH	7. GHIT AGREEMENT NAME
b. TIPE OF WELL		_			<u> </u>	 
	S OTHER	<u> </u>		NOLE X MULTIPL	<u> </u>	6: FARM OR LEASE NAME, WELL NO. Federal "AE" #1
2. NAME OF OPERATOR Santa Fe En	ergy Resources, ]	Inc.				D. AR WELL NO.
3. ADDRESS AND TELEPHONE NO.						D. AR WELLING.
550 W. Texa	s, Suite 1330; Mi	idland, Texa	as 797	701 (915)682-	6373	10. FIELD AND POOL, OR WILDCAT
A. LOCATION OF WELL (Re	port location clearly and	in accordance wit	h auy 8	tate requirements.*)		Dublin Ranch
	SL & 1980' FEL					11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
At proposed prod. zone	e					Sec. 20, T-22-S, R-28-F
	and direction from NEAR utheast of Carls			1.0		12. COUNTY OR PARISH 13. STATE Eddy New Mexico
10. DISTANCE FROM PROPU LOCATION TO NEAREST			10. NO	OF AURES IN LEASE	17. NO. (	F ACRES ABBIGNED
PROPERTY OR LEADE L (Also to degrest drig	INE, PT.	1650′		640	70 7	320
18. DISTANCE FROM PROP TO NEAREST WELL, DI	OBED LOCATION*		10. Pi	TOPOSED DEPTH	20. ROTA	RT OR CABLE TOOLS
OR APPLIED FOR, ON THE	IS LEASE, FT.	3250′		12730'		Rotary
21. ELEVATIONS (Show who	ether DF, RT, GR, etc.)			•		22. APPROX. DATE WORK WILL START
3077 GR						December 10, 1996
2 <b>3.</b> 		PROPOSED CAS	ING ANI	CEMENTING PROGRAM	4	1182 mil 1284-148
SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER F	00 <b>T</b>	SETTING DEPTH		QUANTITY OF CEMENT
20"	16"	65.0		390′	57	5 sx csg in place
14 3/4"	10 3/4"	40.5		2705′	244	5 sx csg in place
9 1/2"	7 5/8"	29 & 33.7		10614'	201	0 sx csg in place
6 1/2"	4 1/2"	13.5		10286'-12728'	5 <b>5</b>	0 sx csg in place
6 1/2"	K-80 5 1/2"	17.0		10286'	•	0 sx for TOC @ 5000'
						e Morrow formation for
				run to TD. II non t with Federal Re		ctive, the well will be ons. Specific programs
				outlined in the f		
Drilling Pr						•
Exhibit	A - Operations P B - BOP and Chok	Lan		Language (1996) Exhi		- Topo Map at Location - Plat Showing Existing Wells
Exhibit	C - Drilling Flu	id Program?	FOLKL	Exhi		- Well Site Layout
	D - Auxiliary Eq		TADE			e and Operations Plan
	_	_			_	
						itions, stipulations and portion thereof, as
described a		racions con	ducte	d on the leased l	Land Of	portion thereor, as
Bond Covers	ge: Blanket Bon	d	BLM B	ond File No.: Mi	r 0750	
IN ABOVE SPACE DESCRIE	BE PROPOSED PROGRAM: If tinent data on subsurface location	proposal is to deeper ons and measured and	ı, give dat true verti	in on present productive zone cal depths. Give blowout preve	and propose nier program	d new productive zone. If proposal is to drill or , if any.
24.	2.00					
BIGNED James	utte Lille !	mon a	gen±_	for Santa Fe Ener	rgy	DATE 11-8-96
(This space for Fed	eral or State office une)					EYHIDIT
PERMIT NO.				APPROVAL DATE		EXHIBIT
		pilcant holds legal or	echnimple :	title to those rights in the subject	les j	onduct operations thereon.
For	y L. Fergu	son	. A	SM, Minera	Qu	DATE 12/11/96
ADDDOVED BY V	<i>y</i> - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	111.	c. "/ "			

\*See Instructions On Reverse Side

# MEXICO OIL CONSERVATION COPHICE IN LOCATION AND ACREAGE DEDIC. LAT

Form C-102 Supersedes C-1 Effective 1-1-65

All distances must be from the outer boundaries of the Section Amoco Production Co. Fed. "out Letter Township County 22 South 28 East Eddv Actual Footage Location of Wells 1650 South feet from the line and 1980 East feet from the Ground Level Elev. Producing Formation POOIDEDIN Panch Sedicated Acresqe: Morrow 3077.0 Und. Morrow 320 1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below. 2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to workin interest and royalty). 3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consoli dated by communitization, unitization, force-pooling, etc? The second of th ☐ No If answer is "yes." type of consolidation \_ If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side c this form if necessary.). No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commis sion. CERTIFICATION I hereby certify that the information cor tained herein is true and complete to th best of my knowledge and belief. Administr<u>ative Supervi</u>sor Amoco Production Company September 12, 1979 I hemby certify that the well locatio 1980 Cate Surveyet 1979 Sept.

District I PO Box 1980, Hobbs, NM 88241-1980 District [[ PO Drawer DD, Artenia, NM \$8211-0719 District [II]

# State of New Mexico Energy, Minerals & Natural Resources Department

# OIL CONSERVATION DIVISION PO Box 2088

Form C-102 Revised February 10, 1994 Instructions on back Submit to Appropriate District Office
State Lease - 4 Copies

Certificate Number

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#### DRILLING PROGRAM

#### SANTA FE ENERGY RESOURCES, INC.

#### Federal "AE" NO. 1

In conjunction with Form 3160-3, Application to Drill the subject well, Santa Fe Energy Resources, Inc. submits the following ten items of pertinent information in accordance with Onshore Oil & Gas Order No. 1.

- 1. Geologic Name of Surface Formation: Alluvium
- Estimated Tops of Significant Geologic Markers:

Delaware	2475′
Bone Spring	5950 <i>°</i>
Wolfcamp	9480′
Strawn	11051'
Atoka	11262'
Morrow	11700′
Total Depth	12730′

3. The estimated depths at which water, oil or gas formations are expected:

Water None expected in area Gas Morrow 11720'-12035'

- 4. Proposed Casing Program: See Form 3160-3 and Exhibit A
- 5. Pressure Control Equipment: See Exhibit B
- 6. Drilling Fluid Program: See Exhibit C
- 7. Auxiliary Equipment: None
- 8. Testing, Logging and Coring Program:

Drill Stem Tests: None planned.

Logging: None planned. Coring: None planned.

9. Abnormal Conditions, Pressures, Temperatures & Potential Hazards:

No abnormal pressures are anticipated. The bottom hole pressure of 5740 psi at 12000' and the bottom hole temperature of 164° Fahrenheit is expected. A Blow Out Preventer System as outlined in Exhibit B will be utilized should the need arise to shut the well in prior to running and cementing the production casing. No Hydrogen Sulfide or other hazardous gases or fluids have been encountered, reported or are known to exist at this depth in this area. No major lost circulation zones have been reported in the offsetting wells.

10. Anticipated Starting Date and Duration of Operations:

Road and location work will not begin until approval has been received from the B.L.M. The anticipated spud date is <u>December 10, 1996</u>. Once spudded, the re-entry operation should be completed in approximately 20 days. If the well is productive, an additional 30 days will be required for completion and testing before permanent facilities are installed.

# OPERATIONS PLAN SANTA FE ENERGY RESOURCES, INC. FEDERAL "AE" No. 1

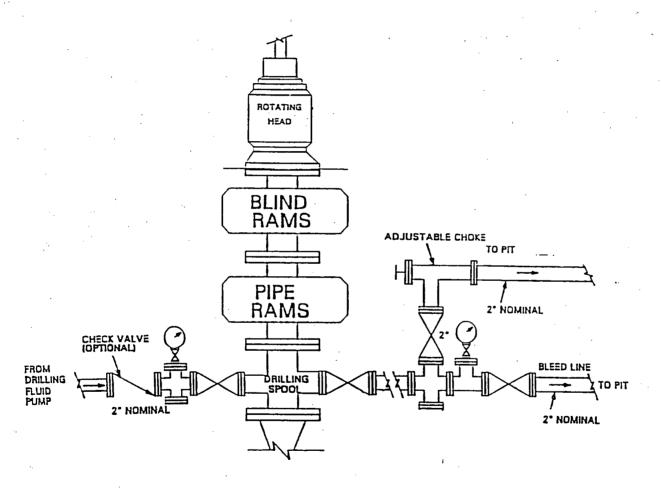
- 1. Remove P&A marker.
- 2. Drill out surface plug with rathole machine.
- 3. Weld on wellhead and nipple up 3M BOP.
- 4. Drill out cement plugs at 340'-440, 1000'-1100', 2650'-2750', 3150'-3250', and CIBP @ 3250'.
- Drill out cement plug 5915'-5950', CIBP @ 5950', cement 9365'-9400', CIBP @ 9400', cement 10115'-10150' and CIBP @ 10150'.
- 6. Condition hole, run and cement 10286' of 5 1/2" 17# N-80 LT&C casing. 5 1/2" casing will be tied into 4 1/2" liner.
- 7. Nipple up wellhead and 5M BGP system.
- 8. Drill out cement 11565'-11600' and CIBP @ 11600'.
- 9. Production test the Morrow formation for gas.

EXHIBIT "A"

SANTA FE ENERGY RESOURCES, INC.
FEDERAL "AE" #1
Section 20, T-22-S, R-28-E
Eddy County, New Mexico

EXHIBIT B

SANTA FE ENERGY RESOURCES, INC.
FEDERAL "AE" NO. 1
1650' FSL & 1980' FEL
SEC 20, T-22-S, R-28-E
EDDY COUNTY, NEW MEXICO



# EXHIBIT C DRILLING FLUID PROGRAM SANTA FE ENERGY RESOURCES, INC. FEDERAL "AE" NO. 1 Section 20, T-22-S, R-28-E Eddy County, New Mexico

#### 0-12730'

Drill out with brine, circulating the steel pit. Add salt gel as necessary to clean hole prior to running casing.

# EXHIBIT D AUXILIARY EQUIPMENT Santa Fe Resources, Inc. FEDERAL "AE" No. 1 Section 20, T-22-S, R-28-E Eddy County, New Mexico

Workover unit with pump and steel pit.

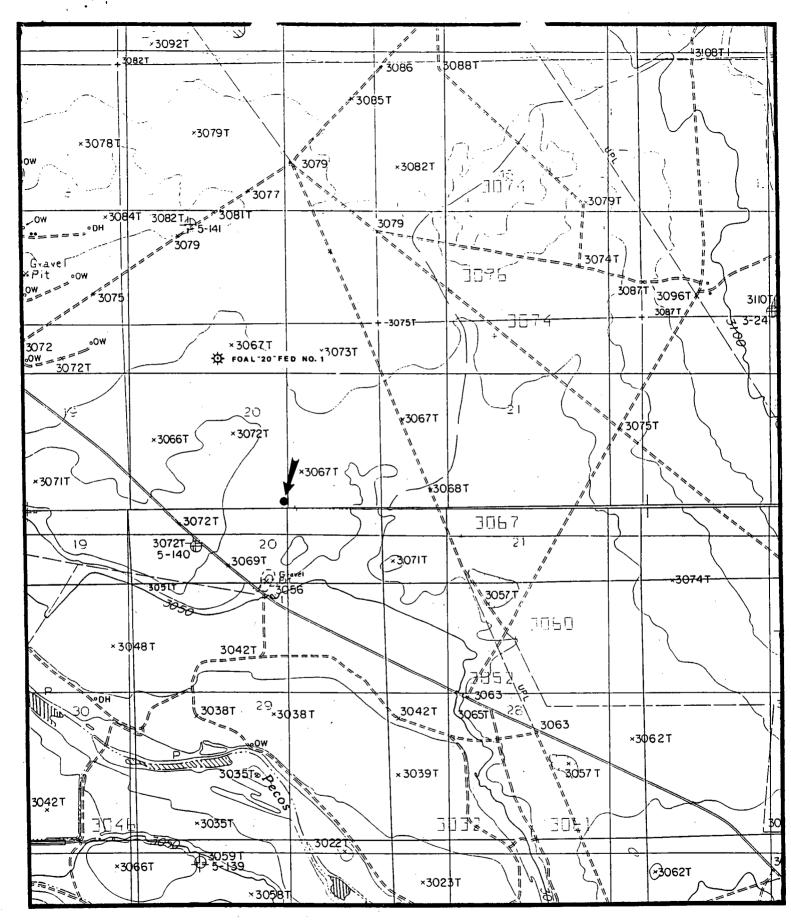


EXHIBIT E
TOPO MAP OF LOCATION AREA
SANTA FE ENERGY RESOURCES, INC.
FEDERAL "AE" No. 1
1650' FSL & 1980' FEL
SEC 20, T-22-S, R-28-E
EDDY COUNTY, NEW MEXICO

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EXHIBIT F
EXISTING WELLS

SANTA FE ENERGY RESOURCES, INC.
FEDERAL "AE" NO. 1
1650' FSL & 1980' FEL
SEC 20, T-22-S, R-28-E
EDDY COUNTY, NEW MEXICO

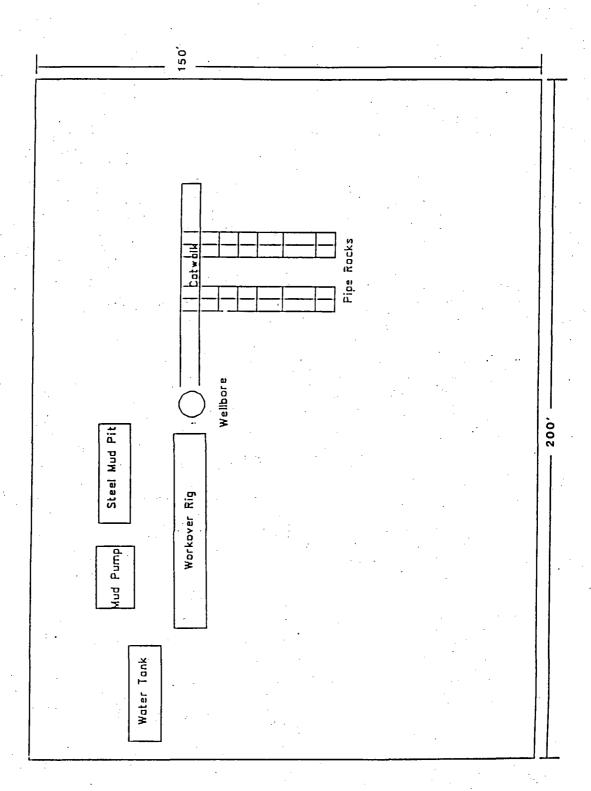


EXHIBIT G
WELL SITE LAYOUT

SANTA FE ENERGY RESOURCES, INC.
FEDERAL "AE" NO. 1
1650' FSL & 1980' FEL
SEC 20, T-22-S, R-28-E
EDDY COUNTY, NEW MEXICO

# SANTA FE ENERGY RESOURCES, INC. <u>MULTI-POINT SURFACE USE AND OPERATIONS PLAN</u> <u>FEDERAL "AE" NO 1</u> <u>Section 20, T-22-S,R-28-E</u>

#### Eddy County, New Mexico

This plan is submitted with Form 3160-3, Application for Permit to Drill, covering the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of necessary surface disturbance involved, and the procedures to be followed by rehabilitating the surface after completion of the operations, so that a complete appraisal can be made of the environmental effects associated with the operation.

#### 1. EXISTING ROADS.

A. Exhibit E is a 15 minute topographic map which shows the location of the proposed wellsite and roads in the vicinity. The proposed location is situated approximately 4 1/2 miles northeast of Otis, New Mexico.

#### DIRECTIONS

1. From the intersection of State Hwy 82 & Hwy 31, go east 5 miles on Hwy 31 and turn left (northwest) on Refinery Road for 7 miles, turn right 0.4 miles to location.

#### 2. PLANNED ACCESS ROAD.

A. The existing lease road will be repaired as necessary.

#### 3. LOCATION OF EXISTING WELLS.

A. The well locations in the vicinity of the proposed well are shown in Exhibits E.

#### 4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES

- A. There is one producing gas well on this lease at this time.
- B. In the event the well is productive, the necessary production equipment will be installed on the drilling pad. If the well is productive of oil, electricity will be run to the location to supply the necessary power to run a pump jack.

#### 5. LOCATION AND TYPE OF WATER SUPPLY.

A. It is planned to re-enter the well with a brine water system. Waters will be hauled to the location by truck over existing roads. Water will be obtained from commercial sources.

#### 6. SOURCES OF CONSTRUCTION MATERIALS.

A. Any caliche required for construction of the drilling pad will be obtained from a pit approved by the BLM.

#### 7. METHODS OF HANDLING WASTE DISPOSAL.

- A. Drill cuttings will be disposed of in the workover pit.
- B. Drilling fluids will be allowed to evaporate in the reserve pits until the pits are dry.
- C. Water produced during operations will be either placed in the reserve pits and allowed to evaporate or collected in tanks until hauled to an approved disposal system or a separate disposal application will be submitted to the BLM for appropriate approval.
- D. Oil produced during operations will be stored in tanks until sold.
- E. Human waste will be disposed of per current standards.
- F. Trash, waste paper, garbage, and junk will be collected in trash trailers and disposed of in an approved waste facility such as a land fill. The trash trailers will contain all of the material to prevent scattering by the wind.
- G. All trash and debris will be removed from the wellsite within 30 days after finishing drilling and/or completion operations.

#### 8. ANCILLARY FACILITIES

None Required at this time.

#### 9. WELLSITE LAYOUT

- A. Exhibit G shows the dimensions of the well pad and reserve pit, and the location of major rig components.
- B. The ground surface of the location is relatively flat. The old Amoco location will be repaired as necessary.

#### 10. PLAN FOR RESTOIRATION OF THE SURFACE

- A. After re-entering and/or completion operations, all equipment and other material not needed for further operations will be removed. The location will be cleared of all trash and junk, to leave the wellsite in as aesthetically pleasing a condition as possible.
- B. Unguarded pits, if any, containing fluid will be fenced until they have been filled.
- C. If the proposed well is non-productive, all rehabilitation and/or vegetation requirements of the Bureau of Land Management and the United States Geological Survey will be complied with and will be accomplished as expeditiously as possible. All pits will be filled and levelled within 300 days after abandonment.

Multi-Point Surface Use and Operations Plan FEDERAL "AE" No. 1 Page 3

#### 11. TOPOGRAPHY

- A. The wellsite and access route are located in a relatively flat area.
- B. The top soil at the wellsite is sandy.
- C. The vegetation cover at the wellsite is moderately sparse, with prairie grasses, some mesquite bushes, and shinnery oak.
- No wildlife was observed but it is likely that deer, rabbits, coyotes, and rodents traverse the area.

#### . 12. OPERATOR'S REPRESENTATIVES

A. The field representatives responsible for assuring compliance with the approved surface use plan are:

Michael R. Burton
Division Operations Manager
Santa Fe Energy Resouces, Inc.
550 W. Texas, Suite 1330
Midland, Texas 79701
915-686-6616 - office
915-559-6842 - cellular

Darrell Roberts
Division Drilling Engineer
Santa Fe Energy Resources, Inc.
550 W. Texas, Suite 1330
Midland, Texas 79701
915-686-6614 - office
915-553-1214 - cellular

#### CERTIFICATION

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route, that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Santa Fe Energy Resources, Inc. and its contractors and subcontractors in conformity with this plan and the terms and conditions under which is approved.

signed this 8th day of November.

James P. (Phil) Stinson

Agent for Santa Fe Energy Resources, Inc.

#### SPECIAL DRILLING STIPULATION

#### THE FOLLOWING DATA IS REQUIRED ON THE WELL SIGN

ALBERTON O MENTS		ERGY RESOURCES	WELL NO. &	NAME #1	FEDERAL "AE"
LOCATION 1650'	PSL&	1980 <b>F</b> E <b>L</b>	SEC. 20 ,	T. 225	R. 28E .
LEASE NO. NM-86	542	COUNTY EDDY	STA	TE NEW N	ÆXICO

The special stipulations check marked below are applicable to the above described well and approval of this application to drill is conditioned upon compliance with such stipulations in addition to the General Requirements. The permittee should be familiar with the General Requirements, a copy of which is available from a Bureau of Land Management office. RACH PERMITTEE HAS THE RIGHT OF ADMINISTRATIVE APPEAL TO THESE STIPULATIONS PURSUANT TO TITLE 43 CFR 3165.3 and 3165.4.

This permit is valid for a period of one year from the date of approval or until lease expiration or termination whichever is shorter.

I.	SPECIAL	EHVIRONMENT	REQUIREMENTS
----	---------	-------------	--------------

(	)	Lesser Prairie Chicken	(Stips attached)	(	) Ploodplain	(Stips	attached)
(	)	San Simon Swale (Stips	attached)		) Other	•	

#### II. ON LEASE - SURFACE REQUIREMENTS PRIOR TO DRILLING

The BLM will monitor construction of this drill site. Notify the (M Carlsbad Resource Area Office at (505) 887-6544 () Hobbs Office at (505) 393-3612, at least 3 working days prior to commencing construction.

( Roads and the drill pad for this well must be surfaced with 6 inches of compacted caliche.

( ) All topsoil and vegetation encountered during the construction of the drill site area will be stockpiled and made available for resurfacing of the disturbed area after completion of the drilling operation. Topsoil on the subject location is approximately inches in depth. Approximately cubic yards of topsoil material will be stockpiled for reclamation.

#### ( ) Other

#### III. WELL COMPLETION REQUIREMENTS

( ) A Communitization Agreement covering the acreage dedicated to the well must be filed for approval with the BLM. The effective date of the agreement must be prior to any sales.

Surface Restoration: If the well is a producer, the reserve pit(s) will be backfilled when dry, and cut-and-fill slopes will be reduced to a slope of 3:1 or less. All areas of the ped not necessary for production must be re-contoured to resemble the original contours of the surrounding terrain, and topsoil must be re-distributed and reseeded with a drill equipped with a depth indicator (set at a depth of 1/2 inch) with the following seed mixture, in pounds of Pure Live Side (PLS), per acre.

- ( ) A. Seed Mixture 1 (Loney Site)
  Lehmanns Lovegrass (Eragrostis lehmannlana) 1.0
  Side Oats Grass (Boutelous curtipendule) 5.0
  Sand Dropseed (Sporobolus cryptandrus) 1.0
- ( ) C. Seed Mixture 3 (Shallow Sites) Sidecats Grama (Bouts:curtipoudule) 1.0 Lehmanns Lovegrass (Bragrostis lensanniane) 1.0 og Boar Lovegrass (B. chlorosslas)
- ( ) B. Seed Mixture 2 (Seedy Sites)
  Bend Dropseed (Sparobolus cryptendrus) 1.0
  Send Lovegrass (Sragrostis trichodes) 1.0
  Plains Bristlegrass (Setaria magrostachya) 2.0
- D. Seed Mixture 4 ("Gyp" Sites)
  Alkali Sacaton (Sporobolus aircides) 1.0
  Four-Wing Saltbush (Atriples camesons) 5.0

seeding should be done either late in the fall (September 15 - November 15, before freeze up) or early as possible the following spring to take advantage of available ground moisture.

#### ( ) Other

#### RESERVE PIT CONSTRUCTION STANDARDS

The reserve pit shall be constructed entirely in cut material and lined with 6 mil plastic.

Mineral material extracted during construction of the reserve pit may be used for development of the pad and access road as needed. Removal of any additional material on location must be purchased from BLM.

Reclamation: Reclamation of this type of deep pit will consist of pushing the pit walls into the pit when sufficiently dry to support track equipment. The pit liner is NOT TO BE RUPTURED to facilitate drying; a ten month period after completion of the well is allowed for drying of the pit contents.

The pit ares must be contoured to the natural terrain with all contaminated drilling mud buried with at least 3 feet of clean soil. The reclaimed area will then be seeded as specified in this permit.

#### OPTIONAL PIT CONSTRUCTION STANDARDS

The reserve pit may be constructed in predominantly fill material if:

- 1) Lined as specified above and,
- 2) A borrow/caliche/gravel pit can be constructed immediately adjacent to the reserve pit and is capable of containing all reserve pit contents. The mineral material removed in the process can be used for pad and access road construction. However, a material sales contract must be purchased from BLM prior to removal of the material.

Reclamation of the reserve pit consists of bulldozing all reserve pit contents and contaminants into the borrow pit and covering with a minimum of 3 feet of clean soil material. The entire area must be recontoured, all trash removed, and reseeded as specified in this permit.

#### CULTURAL

Whether or not an archaeological survey has been completed and notwithstanding that operations are being conducted as approved, the lessee/operator/grantee shall notify the BLM immediately if previously unidentified cultural resources are observed during surface disturbing operations. From the time of the observation, the lessee/operator/grantee shall avoid operations that will result in disturbance to these cultural resources until directed to proceed by BLM.

#### TRASH PIT STIPS

All trash, junk and other waste material shall be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Burial on site is not permitted.

#### CONDITIONS OF APPROVAL - DRILLING

Operator's Name: Santa Fe Energy Resources, Inc.

Well No. 1 - Federal AE
Location: 1650' FSL & 1980' FEL sec. 20 , T. 22 S., R. 28 E.

Lease: NM-86542

[Re-Entry] DRILLING OPERATIONS REQUIREMENTS:

The Bureau of Land Management (BLM) is to be notified at (505) 887-6544 in sufficient time for a representative to witness:

1. Re-Entry

2. Cementing casing: 5-1/2 inch

#### II. CASING:

1. Minimum required fill of cement behind the  $\frac{5-1/2}{}$  inch production casing is sufficient to tie back to 5000 feet below surface.

#### PRESSURE CONTROL:

- 1. Before drilling into the <u>cement plug at 340 feet</u>, the blowout preventer assembly shall consist of a minimum of One Annular Preventer or Two Ram-Type Preventers and a Kelly Cock/Stabbing Valve
- 2. Minimum working pressure of the blowout preventer and related equipment (BOPE) shall be 3000 psi.
- 3. Before drilling into the <u>cement plug at 9365 feet</u>, the BOPE shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.
- 4. The results of the test will be reported to the BLM Carlsbad Resource Area Office at 620 East Greene Street, Carlsbad, New Mexico 88220-6292.

#### EXHIBIT A

BLM Serial Number: NM-86542

Company Reference: #1 FEDERAL "AE"

# STANDARD STIPULATIONS FOR PERMANENT RESOURCE ROADS THE ROSWELL DISTRICT, BLM

The holder/grantee/permittee shall hereafter be identified as the holder in these stipulations. The Authorized Officer is the person who approves the Application for Permit to Drill (APD) and/or Right-of-Way (ROW).

#### GENERAL REQUIREMENTS

The holder shall minimize disturbance to existing fences and other improvements on public domain surface. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will make a documented good-faith effort to contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence.

Holder agrees to comply with the following stipulations:

#### 1. ROAD WIDTH AND GRADE

The road will have a driving surface of 14 feet (all roads shall have a minimum driving surface of 12 feet, unless local conditions dictate a different width). The maximum grade is 10 percent unless the box below is checked. Maximum width of surface disturbance from construction will be 30 feet.

/\_/ Those segments of road where grade is in excess of 10% for more than 300 feet shall be designed by a professional engineer.

#### 2. CROWNING AND DITCHING

Crowning with materials on site and ditching on one side of the road on the uphill side will be required. The road cross-section will conform to the cross section diagrams in Figure 1. If conditions dictate, ditching may be required for both sides of the road; if local conditions permit, a flat-bladed road may be considered (if these conditions exist, check the appropriate box below). The crown shall have a grade of approximately 2% (i.e., 1" crown on a 12' wide road).

Ditching will be required on both sides of the roadway as shown on the attached map or as staked in the field.

/\_/ Flat-blading is authorized on segment(s) delineated on the attached map.

#### DRAINAGE

Drainage control shall be ensured over the entire road through the use of borrow ditches, outsloping, insloping, natural rolling topography, lead-off (turnout) ditches, culverts, and/or drainage dips.

A. All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval for lead-off ditches shall be determined according to the following table, but may be amended depending upon existing soil types and centerline road slope (in %):

SPACING IN	<b>TERVAL</b>	FOR	TURNOUT	DITCHES
Percent	slope		Spacing	interval
- \$0	48		400'	- 150'
4% -	6%		250'	- 125'
6% -	8%		200'	- 100'
8% - 3	10%		150'	- 75'

A typical lead-off ditch has a minimum depth of 1 foot below and a berm 6 inches above natural ground level. The berm will be on the down-slope side of the lead-off ditch. The ditch end will tie into vegetation whenever possible.

For this road the spacing interval for lead-off ditches shall be at

/\_/ 400 foot intervals.

/\_/ foot intervals.

/\_/ locations staked in the field as per spacing intervals above.

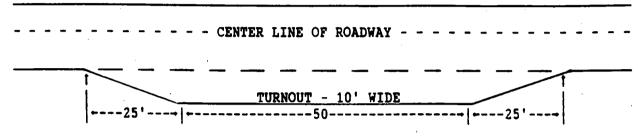
/\_/ locations delineated on the attached map.

- B. Culvert pipes shall be used for cross drains where drainage dips or low water crossings are not feasible. The minimum culvert diameter must be 18 inches. Any culvert pipe installed shall be of sufficient diameter to pass the anticipated flow of water. Culvert location and required diameter are shown on the attached map (Further details can be obtained from the Roswell District Office or the appropriate Resource Area Office).
- C. On road slopes exceeding 2%, drainage dips shall drain water into an adjacent lead-off ditch. Drainage dip location and spacing shall be determined by the formula:

Example: 4% slope: spacing interval =  $\frac{400}{100}$  + 100 = 200 feet

#### 4. TURNOUTS

Unless otherwise approved by the Authorized Officer, vehicle turnouts will be required. Turnouts will be located at 2000-foot intervals, or the turnouts will be intervisible, whichever is less. Turnouts will conform to the following diagram:



STANDARD TURNOUT - PLAN VIEW

#### 5. SURFACING

Surfacing of the road or those portions identified on the attached map may, at the direction of the Authorized Officer, be required, if necessary, to maintain traffic within the right-of-way with caliche, gravel, or other surfacing material which shall be approved by the Authorized Officer. When surfacing is required, surfacing materials will be compacted to a minimum thickness of six inches with caliche material. The width of surfacing shall be no less than the driving surface. Prior to using any mineral materials from an existing or proposed Federal source, authorization must be obtained from the Authorized Officer.

#### 6. CATTLEGUARDS

Where used, all cattleguard grids and foundation designs and construction shall meet the American Association of State Highway and Transportation Officials (AASHTO) Load Rating H-20, although AASHTO U-80 rated grids shall be required where heavy loads (exceeding H-20 loading), are anticipated (See BLM standard drawings for cattleguards). Cattleguard grid length shall not be less than 8 feet and width of not less than 14 feet. A wire gate (16-foot minimum width) will be provided on one side of the cattleguard unless requested otherwise by the surface user.

#### 7. MAINTENANCE

The holder shall maintain the road in a safe, usable condition. A maintenance program shall include, but not be limited to blading, ditching, culvert installation, culvert cleaning, drainage installation, cattleguard maintenance, and surfacing.

#### 8. PUBLIC ACCESS

Public access along this road will not be restricted by the holder without specific written approval being granted by the Authorized Officer. Gates or cattleguards on public lands will not be locked or closed to public use unless closure is specifically determined to be necessary and is authorized in writing by the Authorized Officer.

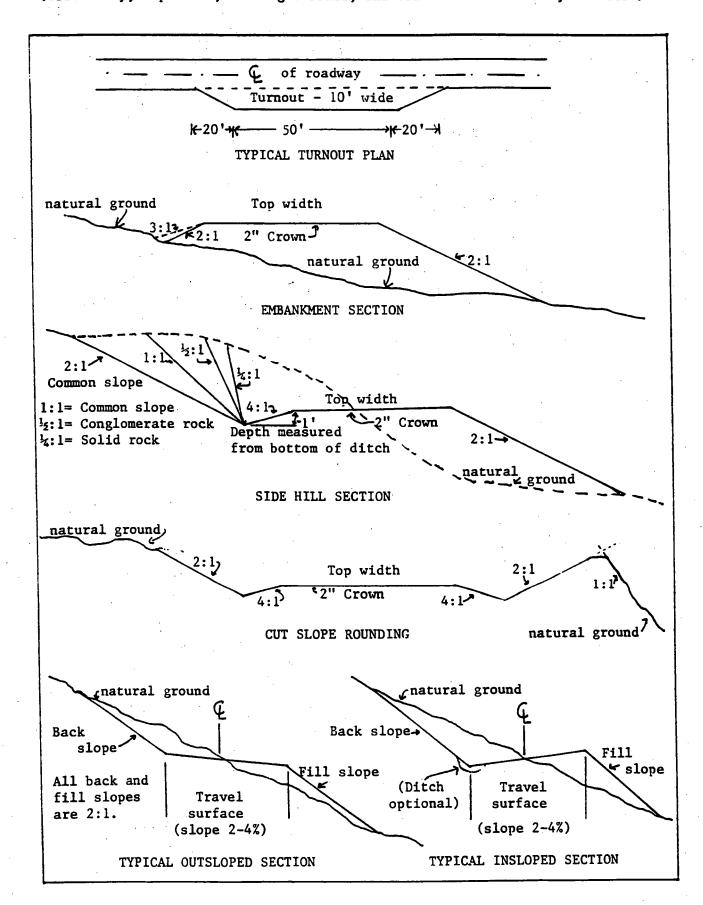
#### 9. CULTURAL RESOURCES

Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the authorized officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the authorized officer after consulting with the holder.

#### 10. SPECIAL STIPULATIONS: Now.

## FIGURE 1: CROS. JECTIONS AND PLANS FOR TYPICAL & J CONSTRUCTION REPRESENTATIVE OF BLM RESOURCE, AND HIGHER CLASS, ROADS.

(Travel way, top width, driving surface, and travel surface are synonomous.)



## JAMES BRUCE ATTORNEY AT LAW

POST OFFICE BOX 1056 SANTA FE, NEW MEXICO 87504

SUITE B 612 OLD SANTA FE TRAIL SANTA FE, NEW MEXICO 87501

(505) 982-2043 (505) 982-2151 (FAX)

February 24, 1997

# CERTIFIED MAIL RETURN RECEIPT REQUESTED

Nearburg Exploration Company, LLC Suite 120 3300 North A Street, Building 2 Midland, Texas 79705

Burlington Resources Oil & Gas Company 3300 North A Street, Building 6 Midland, Texas 79705

Louis Dreyfus Natural Gas Corporation Suite 600 14000 Quail Springs Parkway Oklahoma City, Oklahoma 73134

## Dear Sirs:

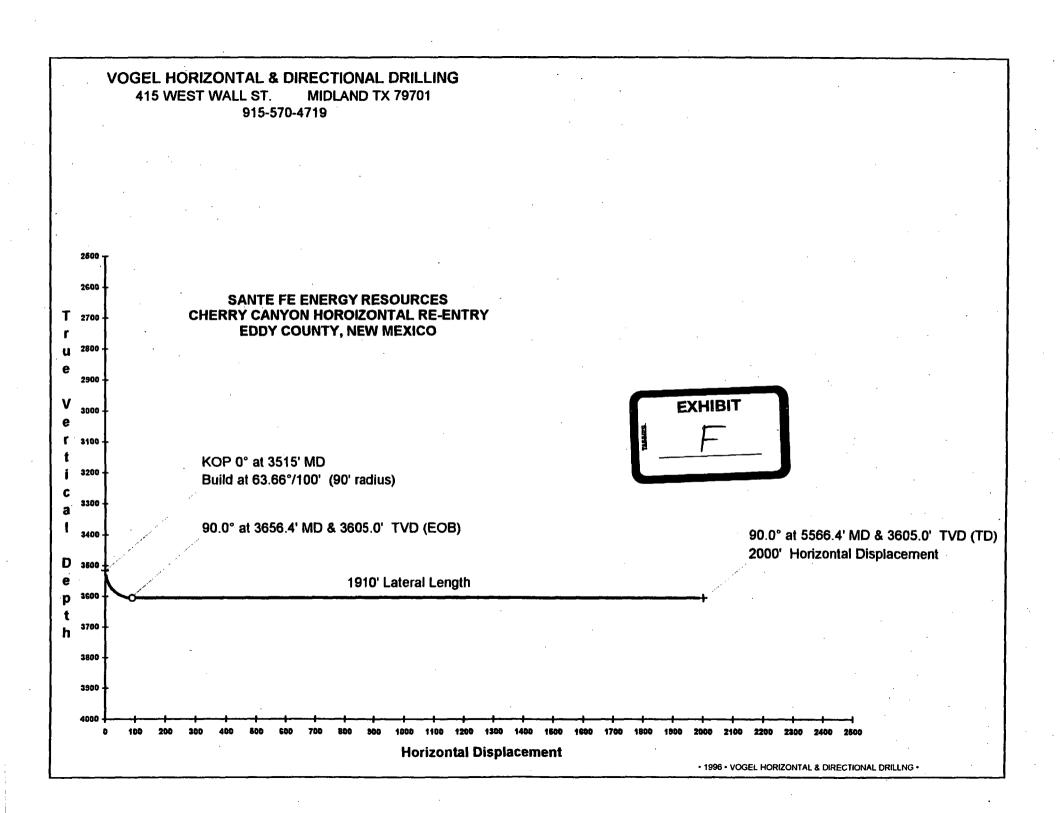
On February 24, 1997, Santa Fe Energy Resources, Inc. filed an application at the New Mexico Oil Conservation Division seeking administrative approval to directionally drill the Federal "AE" Well No. 1, located in the NW\(\frac{N}{2}\) of Section 20, Township 22 South, Range 28 East, NMPM, Eddy County, New Mexico. The well unit will be comprised of the SW\(\frac{N}{2}\) and NW\(\frac{N}{2}\) of Section 20. A copy of the application is enclosed. Santa Fe's records show that you own an interest offsetting the above well unit. If you have any objection to the unorthodox location, you must notify the Division in writing no later than 20 days from the date of this letter, at its Santa Fe office (2040 South Pacheco Street, Santa Fe, New Mexico 87505, Attention: Michael E. Stogner).

Very truly yours,

James Bruce

EXHIBIT

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Geologic Discussion to accompany Administrative Application Proposed Reentry and Directional Drilling of the Amoco Federal "AE" #1 wellbore 1650 FSL and 1980 FEL of Section 20, T22S, R28E, Eddy County, New Mexico

Santa Fe Energy Resources proposes to drill a horizontal well in Section 20, T22S, R28E of Eddy County, New Mexico. This well will test the "Foal Lobe" of the Cherry Canyon "IDE Sandstone" (refer to Cross Section A-A'). Santa Fe drilled the Foal 20 Fed #1 well in the N/2 of Section 20, T22S, R28E and encountered 26 feet of highly porous and permeable sandstone that yielded good shows of oil and gas. Rotary sidewall cores confirmed these shows and the porosity and permeability suggested by the open hole electric logs. This same sandstone was encountered by the Amoco Prod. Co. Federal "AE" #1 well in the S/2 of Section 20. Regional subsurface mapping suggests that this sandstone body is continuous and trends NW to SE across Section 20 in a structurally advantageous position (refer to enclosed combination Structure and Isopach Map). Santa Fe intends to reenter the Amoco Federal "AE" #1 well and drill horizontally to the north-northwest in an attempt to complete this well from this highly prospective Cherry Canyon sandstone.



## **INTENTIONAL OMISSIONS**

The following document(s) have been intent indicated reasons.	ionally omitted from this file due to the
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# JAMES BRUCE ATTORNEY AT LAW

POST OFFICE BOX 1056 SANTA FE, NEW MEXICO 87504

SUITE B 612 OLD SANTA FE TRAIL SANTA FE, NEW MEXICO 87501

(505) 982-2043 (505) 982-2151 (FAX)

February 24, 1997

# Dec 2-25-97

## HAND DELIVERED

Michael E. Stogner
Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505

Dear Mr. Stogner:

Santa Fe Energy Resources, Inc. ("Santa Fe") hereby applies for administrative approval to re-enter and directionally drill the following well:

## Federal "AE" Well No. 1

Surface Location:

Terminus:

1650' FSL and 1980' FEL 1650' FNL and 2310' FEL

Project Area:

SW4NE% and NW%SE% of Section 20, Township 22 South, Range 28 East,

NMPM, Eddy County, New Mexico

The well was originally drilled as a Morrow test in 1979, and the original Form C-102 for the well is attached as Exhibit A. The well will be re-entered and directionally drilled to test the Cherry Canyon member of the Delaware Mountain Group (Undesignated Herradura Bend-Cherry Canyon Pool or Undesignated Indian Draw-Delaware Pool). The well is subject to statewide rules. A revised Form C-102 for the well is attached as Exhibit B.

Pursuant to Division Rule 111(D), Santa Fe makes the following statements and submittals:

- 1. Santa Fe is drilling this well as a test horizontal well in the Delaware. Production from the Delaware has been established to the northwest and south of the well.
- 2. Attached as Exhibit C is a land plat of Section 20. The project area for the well is outlined in gray. The producing area is the same as the project area. There are no existing

Delaware wells in the project area, or immediately offsetting the project area.

All of Section 20 is federal land, covered by Lease NM 86542. An APD for the well has been filed with and approved by the Bureau of Land Management (Exhibit D).

Exhibit C lists the names and addresses of offset lessees. Copies of this application were mailed today to the offset lessees, by certified mail, advising them they have twenty days from the date of the notice letter to object to the application. A copy of the notice letter is attached as Exhibit E. **Please note** that all of the offset lessees own interests in the proposed well.

- 3. Attached as Exhibit F is a vertical plan view of the well. (A horizontal plan view of the well is given on Exhibit C.)
- 4. Attached as Exhibit G is a geological write-up on the project, which references a cross-section (Exhibit H) and a isopach/structure map (Exhibit I).

Should you need any additional data, please call. This application is submitted in duplicate.

Very truly yours,

James Bruce

Attorney for Santa Fe Energy

Resources, Inc.

cc: Tim Gum (Artesia District Office)

# MEXICO OIL CONSERVATION COPPERTY IN LOCATION AND ACREAGE DEDIC APLAT

Operator Amoco Production Co. "AE" Fed. "nit Letter County 22 South Eddv Actual Footage Location of Wells 1650 East feet from the South 1980 line and feet from the Producing Formation Ground Level Elev. Pool Dublin Panch Sedicated Acteque: Morrow Und. Morrow 320 3077.0 1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below. 2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to worki interest and royalty). **EXHIBIT** 3. If more than one lease of different ownership is dedicated to the well, have rs been conso dated by communitization, unitization, force-pooling, etc? ☐ Yes If answer is "yes," type of consolidation If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side this form if necessary.). No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitizatio forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commision. CERTIFICATION I hereby certify that the information co tained herein is true and complete to the Administrative Supervisor Amoco Production Company September 12, 1979 wledge and belief. Cate Surveyer Sept. Registeren Fretenskindt Engine

District I PO Box 1980, Hobbs, NM \$8241-1980 District [] 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

# State of New Mexico Energy, Minerals & Natural Resources Departm

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

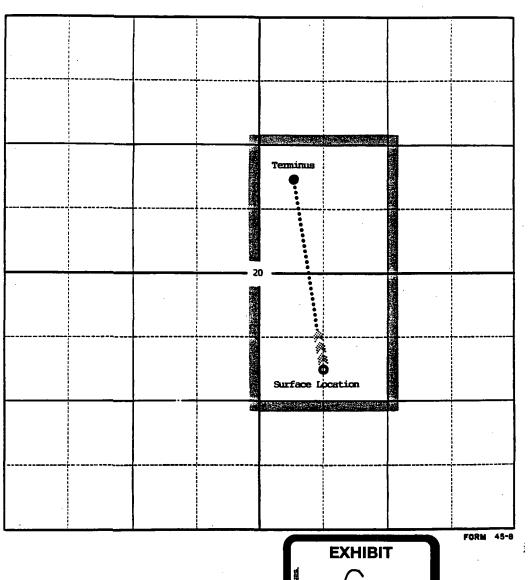
Form C-10 Revised February 10, 199 Instructions on bac

Submit to Appropriate District Offic

State Lease - 4 Copic Fee Lease - 3 Copie

MENDED REPOR

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N/2 Section 20

Operator:

Santa Fe Energy Resources, Inc. 550 W. Texas, Suite 1330 Midland, TX 79701

Leasehold Owners:

Nearburg Exploration Company, LL 3300 N. A St., Bldg. 2 Suite 120 Midland, TX 79705

Burlington Resources, Inc. 3300 N. A St., Bldg. 6 Midland, TX 79705

S/2 Section 20

Operator:

Santa Fe Energy Resources, Inc. 550 W. Texas, Suite 1330 Midland, TX 79701

Leasehold Owners:

Nearburg Exploration Company, LL 3300 N. A St., Bidg. 2 Suite 120 Midland, TX 79705

Louis Dreyfus Natural Gas 14000 Quail Springs Parkway #600 Oklahoma City, OK 73134

Burlington Resources, Inc. 3300 N. A St., Bldg. 6 Midland, TX 79705

FEDERAL "AE" NO. 1 WELL

Section 20-T22S-R28E 1650' FSL & 1980' FEL Surf. Loc. 1650' FNL & 2310' FEL Terminus

Project Area (NWSE & SWNE)

Operator: SFER, Inc.

Santa Fe Energy Resources, Inc. Central Division Midland, Texas

**EDDY COUNTY, NEW MEXICO** 

LAND PLAT

DIRECTIONAL DRILLING OFFSET OPERATOR / LEASEHOLD OWNERS

BLM Lease NM 86542

SFER, Inc. Acreage

Date: 2-1-97

Form 3160-3 (July 1992)

## COPY SUBMIT IN TRY CATE.

(Other instruc

FORM APPROVED OMB NO. 1004-0136 Expires: February 28, 1995

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\*See Instructions On Reverse Side

# MEXICO OIL CONSERVATION COPPERT 'N LOCATION AND ACREAGE DEDIC . PLAT

Form C-102 Supersedes ( Effective 1-)

Checator Amoco Production Co. Fed. 22 South 28 East Eddy Actual Footage Location of Wells feet from the 1980 line and East Ground Level Elev. Producing Formation POOIDUDIIN FANCY Seaschied Acreage: Morrow 3077.0 Und. Morrow 1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below. 2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to work interest and royalty). 3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been cons dated by communitization, unitization, force-pooling, etc? If answer is "yes!' type of consolidation \_ If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse sid this form if necessary.). No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitizat forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Com sion. CERTIFICATION I hereby certify that the information Administrătive Supervisc Amoco Production Company September 12, 1979 Sept. Houlstorm Friensung Engine

District I PO Box 1988, Hobbs, NM 88241-1986 PO Drawer DD, Artesia. NM \$2211-0719 District [[]

State of New Mexico Energy, Minerais & Natural Resources Dep

# OIL CONSERVATION DIVISION

Form C-102 Revised February 10, 1994

Instructions on back

District IV	00 Rio Brazos Rd., Artes, NM 27410					FION DIVISIO 2088 87504-2088	ON Su	Sta Fe	riate District Offic te Lease - 4 Copie ce Lease - 3 Copie
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## DRILLING PROGRAM

## SANTA FE ENERGY RESOURCES, INC.

## Federal "AE" NO. 1

In conjunction with Form 3160-3, Application to Drill the subject well, Santa Fe Energy Resources, Inc. submits the following ten items of pertinent information in accordance with Onshore Oil & Gas Order No. 1.

- 1. Geologic Name of Surface Formation: Alluvium
- 2. Estimated Tops of Significant Geologic Markers:

Delaware	2475′
Bone Spring	59501
Wolfcamp	94801
Strawn	11051
Atoka	11262'
Morrow	11700′
Total Depth	12730

3. The estimated depths at which water, oil or gas formations are expected:

Water None expected in area Gas Morrow 11720'-12035'

- 4. Proposed Casing Program: See Form 3160-3 and Exhibit A
- 5. Pressure Control Equipment: See Exhibit B
- 6. Drilling Fluid Program: See Exhibit C
- 7. Auxiliary Equipment: None
- 8. Testing, Logging and Coring Program:

Drill Stem Tests: None planned.

Logging: None planned.

Coring: None planned.

9. Abnormal Conditions, Pressures, Temperatures & Potential Hazards:

No abnormal pressures are anticipated. The bottom hole pressure of 5740 psi at 12000' and the bottom hole temperature of 164° Fahrenheit is expected. A Blow Out Preventer System as outlined in Exhibit B will be utilized should the need arise to shut the well in prior to running and cementing the production casing. No Hydrogen Sulfide or other hazardous gases or fluids have been encountered, reported or are known to exist at this depth in this area. No major lost circulation zones have been reported in the offsetting wells.

10. Anticipated Starting Date and Duration of Operations:

Road and location work will not begin until approval has been received from the B.L.M. The anticipated spud date is <u>December 10, 1996</u>. Once spudded, the re-entry operation should be completed in approximately 20 days. If the well is productive, an additional 30 days will be required for completion and testing before permanent facilities are installed.

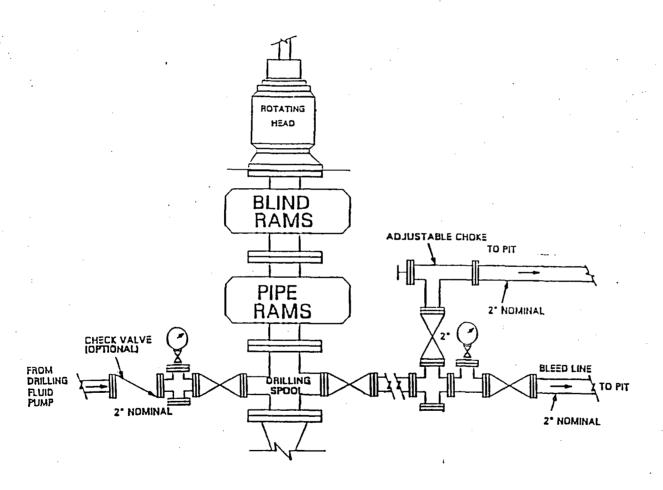
# OPERATIONS PLAN SANTA FE ENERGY RESOURCES, INC. FEDERAL "AE" No. 1

- 1. Remove P&A marker.
- 2. Drill out surface plug with rathole machine.
- 3. Weld on wellhead and nipple up 3M BOP.
- Drill out cement plugs at 340'-440, 1000'-1100', 2650'-2750', 3150'-3250', and CIBP @ 3250'.
- 5. Drill out cement plug 5915'-5950', CIBP @ 5950', cement 9365'-9400', CIBP @ 9400', cement 10115'-10150' and CIBP @ 10150'.
- 6. Condition hole, run and cement 10286' of 5 1/2" 17# N-80 LT&C casing. 5 1/2" casing will be tied into 4 1/2" liner.
- 7. Nipple up wellhead and 5M BCP system.
- 8. Drill out cement 11565'-11600' and CIBP @ 11600'.
- 9. Production test the Morrow formation for gas.

EXHIBIT "A"
SANTA FE ENERGY RESOURCES, INC.
FEDERAL "AE" #1
Section 20, T-22-S, R-28-E
Eddy County, New Mexico

EXHIBIT B

SANTA FE ENERGY RESOURCES, INC.
FEDERAL "AE" No. 1
1650' FSL & 1980' FEL
SEC 20, T-22-S, R-28-E
EDDY COUNTY, NEW MEXICO



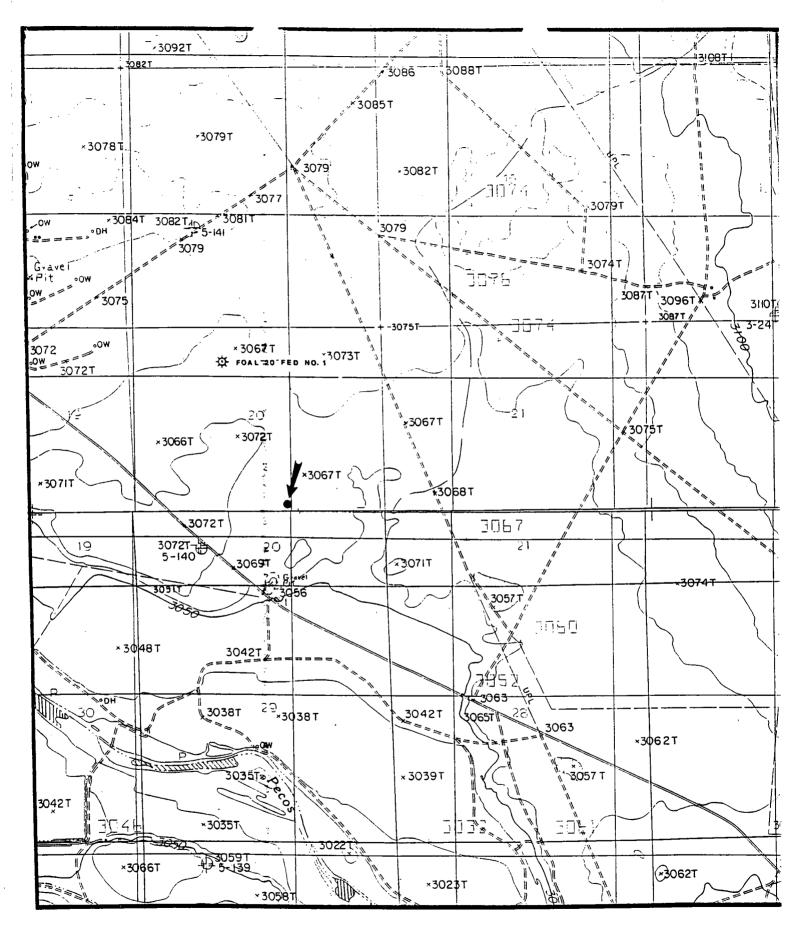
# EXHIBIT C DRILLING FLUID PROGRAM SANTA FE ENERGY RESOURCES, INC. FEDERAL "AE" NO. 1 Section 20, T-22-S, R-28-E Eddy County, New Mexico

## 0-12730'

Drill out with brine, circulating the steel pit. Add salt gel as necessary to clean hole prior to running casing.

EXHIBIT D
AUXILIARY EQUIPMENT
Santa Fe Resources, Inc.
FEDERAL "AE" No. 1
Section 20, T-22-S, R-28-E
Eddy County, New Mexico

Workover unit with pump and steel pit.



TOPO MAP OF LOCATION AREA

SANTA FE ENERGY RESOURCES, INC.

FEDERAL "AE" NO. 1

1650' FSL & 1980' FEL

SEC 20, T-22-S, R-28-E

EDDY COUNTY, NEW MEXICO

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EXHIBIT F
EXISTING WELLS

SANTA FE ENERGY RESOURCES, INC.
FEDERAL "AE" NO. 1
1650' FSL & 1980' FEL
SEC 20, T-22-S, R-28-E
EDDY COUNTY, NEW MEXICO

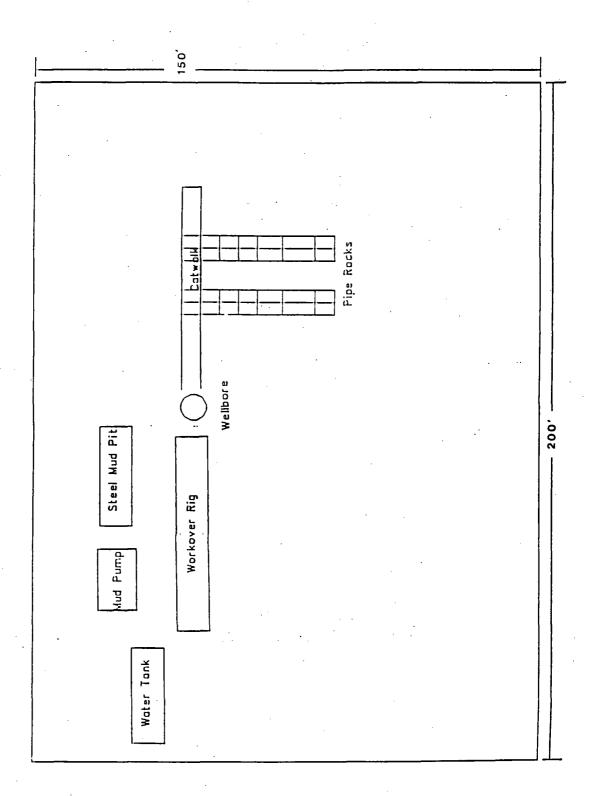


EXHIBIT G
WELL SITE LAYOUT

SANTA FE ENERGY RESOURCES, INC.
FEDERAL "AE" NO. 1
1650' FSL & 1980' FEL
SEC 20, T-22-S, R-28-E
EDDY COUNTY, NEW MEXICO

# SANTA FE ENERGY RESOURCES, INC. MULTI-POINT SURFACE USE AND OPERATIONS PLAN FEDERAL "AE" NO 1 Section 20, T-22-S,R-28-E Eddy County, New Mexico

This plan is submitted with Form 3160-3, Application for Permit to Drill, covering the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of necessary surface disturbance involved, and the procedures to be followed by rehabilitating the surface after completion of the operations, so that a complete appraisal can be made of the environmental effects associated with the operation.

## 1. EXISTING ROADS.

A. Exhibit E is a 15 minute topographic map which shows the location of the proposed wellsite and roads in the vicinity. The proposed location is situated approximately 4 1/2 miles northeast of Otis, New Mexico.

## **DIRECTIONS**

1. From the intersection of State Hwy 82 & Hwy 31, go east 5 miles on Hwy 31 and turn left (northwest) on Refinery Road for 7 miles, turn right 0.4 miles to location.

## 2. PLANNED ACCESS ROAD.

- A. The existing lease road will be repaired as necessary.
- 3. LOCATION OF EXISTING WELLS.
  - A. The well locations in the vicinity of the proposed well are shown in Exhibits E.
- 4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES
  - A. There is one producing gas well on this lease at this time.
  - B. In the event the well is productive, the necessary production equipment will be installed on the drilling pad. If the well is productive of oil, electricity will be run to the location to supply the necessary power to run a pump jack.
- 5. LOCATION AND TYPE OF WATER SUPPLY.
  - A. It is planned to re-enter the well with a brine water system. Waters will be hauled to the location by truck over existing roads. Water will be obtained from commercial sources.
- 6. SOURCES OF CONSTRUCTION MATERIALS.
  - A. Any caliche required for construction of the drilling pad will be obtained from a pit approved by the BLM.

Multi-point Surface Use and Operations Plan FEDERAL "AE" No. 1 Page 2

## 7. METHODS OF HANDLING WASTE DISPOSAL.

- A. Drill cuttings will be disposed of in the workover pit.
- B. Drilling fluids will be allowed to evaporate in the reserve pits until the pits are dry.
- C. Water produced during operations will be either placed in the reserve pits and allowed to evaporate or collected in tanks until hauled to an approved disposal system or a separate disposal application will be submitted to the BLM for appropriate approval.
- D. Oil produced during operations will be stored in tanks until sold.
- E. Human waste will be disposed of per current standards.
- F. Trash, waste paper, garbage, and junk will be collected in trash trailers and disposed of in an approved waste facility such as a land fill. The trash trailers will contain all of the material to prevent scattering by the wind.
- G. All trash and debris will be removed from the wellsite within 30 days after finishing drilling and/or completion operations.

## 8. ANCILLARY FACILITIES

None Required at this time.

## 9. WELLSITE LAYOUT

- A. Exhibit G shows the dimensions of the well pad and reserve pit, and the location of major rig components.
- B. The ground surface of the location is relatively flat. The old Amoco location will be repaired as necessary.

## 10. PLAN FOR RESTOIRATION OF THE SURFACE

- A. After re-entering and/or completion operations, all equipment and other material not needed for further operations will be removed. The location will be cleared of all trash and junk, to leave the wellsite in as aesthetically pleasing a condition as possible.
- B. Unguarded pits, if any, containing fluid will be fenced until they have been filled.
- C. If the proposed well is non-productive, all rehabilitation and/or vegetation requirements of the Bureau of Land Management and the United States Geological Survey will be complied with and will be accomplished as expeditiously as possible. All pits will be filled and levelled within 300 days after abandonment.

Multi-Point Surface Use and Operations Plan FEDERAL "AE" No. 1 Page 3

## 11. TOPOGRAPHY

- A. The wellsite and access route are located in a relatively flat area.
- B. The top soil at the wellsite is sandy.
- C. The vegetation cover at the wellsite is moderately sparse, with prairie grasses, some mesquite bushes, and shinnery oak.
- No wildlife was observed but it is likely that deer, rabbits, coyotes, and rodents traverse the area.

## 12. OPERATOR'S REPRESENTATIVES

A. The field representatives responsible for assuring compliance with the approved surface use plan are:

Michael R. Burton
Division Operations Manager
Santa Fe Energy Resouces, Inc.
550 W. Texas, Suite 1330
Midland, Texas 79701
915-686-6616 - office
915-559-6842 - cellular

Darrell Roberts
Division Drilling Engineer
Santa Fe Energy Resources, Inc.
550 W. Texas, Suite 1330
Midland, Texas 79701
915-686-6614 - office
915-553-1214 - cellular

### CERTIFICATION

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route, that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Santa Fe Energy Resources, Inc. and its contractors and subcontractors in conformity with this plan and the terms and conditions under which is approved.

signed this 8th day of November.

ames P. (Phil) Stinson

Agent for Santa Fe Energy Resources, Inc.

SPECIAL DRILLING STIPULATION

TO

THE POLLOWING DATA IS REQUIRED ON THE WELL SIGN
OPERATOR'S NAME SANTA FE ENERGY RESOURCES  LOCATION 1650' F S L & 1980 F E L SEC. 20 , T. 22S., R. 28E .  LEASE NO. NM-86542 COUNTY EDDY STATS NEW MEXICO
The special stipulations check marked below are applicable to the above described well as approval of this application to drill is conditioned upon compliance with such stipulations in addition to the General Requirements. The permittee should be familiar with the General Requirements, a copy of which is available from a Bureau of Land Management office. RACH PERMITTEE HAS THE RIGHT OF ADMINISTRATIVE APPEAL TO THESE STIPULATIONS PURSUANT TO TITLE 43 CFR 3165.3 and 3165.4.
This permit is valid for a period of one year from the date of approval or until lease expiration or termination whichever is shorter.
I. SPECIAL ENVIRONMENT REQUIREMENTS
( ) Lesser Prairie Chicken (Stips attached) ( ) Floodplain (Stips attached) ( ) Other
II. ON LEASE - SURFACE REQUIREMENTS PRIOR TO DRILLING
The BLM will monitor construction of this drill site. Notify the ( Carlsbad Resource Area Office at (505) 887-6544 ( ) Hobbs Office at (505) 393-3612, at least 3 working days prior to commencing construction.
(Noads and the drill pad for this well must be surfaced with 6 inches of compacted caliche.
( ) All topsoil and vegetation encountered during the construction of the drill site are will be stockpiled and made available for resurfacing of the disturbed area after completion of the drilling operation. Topsoil on the subject location is approximately inches in depth. Approximately oubic yards of topsoil material will be stockpiled for reclamation.
( ) Other
III. WELL COMPLETION REQUIREMENTS
() A Communitization Agreement covering the acreage dedicated to the well must be file for approval with the SLM. The effective data of the agreement must be prior to any sales.
Surface Restoration: If the well is a producer, the reserve pit(s) will be backfilled when dry, and cut-and-fill slopes will be reduced to a slope of 3:1 or less. All areas of the ped not necessary for production must be re-contoured to resemble the original contours of the surrounding terrain, and topsoil must be re-distributed and reseeded with a drill equipped with a depth indicator (set at a depth of 1/2 inch) with the following seed mixture, in pounds of Pure Live Side (PLS), per acre.
( ) A. Soed Mixture 1 (Lossy Site)  Lebesons Lovegrase (Bragmontis lebesonless) 1.0  Side Oats Grass (Boutelous curtipendule) 5.0  Sand Dropseed (Sporobolus cryptandrus) 1.0  Sand Dropseed (Sporobolus cryptandrus) 1.0  Plains Bristlegrass (Setaria magnostachys) 2.0

Seeding should be done either late in the fall (September 15 - November 15, before freeze up) or early as possible the following spring to take advantage of available ground moisture.

U. Seed Mixture 4 ("Gyp" Sites)

Alkali Sacaton (Sporobolus aircides) 1.0 Your-Wing Saltbush (Atriplex camescams) 5.0

( ) Other

( ) C. Seed Mixtors 3 (Shallow Sites)

Sidecats Grama (Bouts:curtipsodula) 1.0

Lohnanns Lovegrass (Bragrostis lemmanniana) 1.0 or Boar Lovegrass (B. obloromelas)

## RESERVE PIT CONSTRUCTION STANDARDS

The reserve pit shall be constructed entirely in cut material and lined with 6 mil plastic.

Mineral material extracted during construction of the reserve pit may be used for development of the pad and access road as needed. Removal of any additional material on location must be purchased from BLM.

Reclamation: Reclamation of this type of deep pit will consist of pushing the pit walls into the pit when sufficiently dry to support track equipment. The pit liner is NOT TO BE RUPTURED to facilitate drying; a ten month period after completion of the well is allowed for drying of the pit contents.

The pit area must be contoured to the natural terrain with all contaminated drilling mud buried with at least 3 feet of clean soil. The reclaimed area will then be seeded as specified in this permit.

## OPTIONAL PIT CONSTRUCTION STANDARDS

The reserve pit may be constructed in predominantly fill material if:

- 1) Lined as specified above and,
- 2) A borrow/caliche/gravel pit can be constructed immediately adjacent to the reserve pit and is capable of containing all reserve pit contents. The mineral material removed in the process can be used for pad and access road construction. However, a material sales contract must be purchased from BLM prior to removal of the material.

Reclamation of the reserve pit consists of buildozing all reserve pit contents and contaminants into the borrow pit and covering with a minimum of 3 feet of clean soil material. The entire area must be recontoured, all trash removed, and reseeded as specified in this permit.

## CULTURAL

Whether or not an archaeological survey has been completed and notwithstanding that operations are being conducted as approved, the lessee/operator/grantee shall notify the BLM immediately if previously unidentified cultural resources are observed during surface disturbing operations. From the time of the observation, the lessee/operator/grantee shall avoid operations that will result in disturbance to these cultural resources until directed to proceed by BLM.

## TRASH PIT STIPS

All trash, junk and other waste material shall be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Burial on site is not permitted.

## CONDITIONS OF APPROVAL - DRILLING

Operator's Name: Santa Fe Energy Resources, Inc.

Well No. 1 - Federal AE Location: 1650' FSL & 1980' FEL sec. 20 , T. 22 S., R. 28 E.

Lease: <u>NM-86542</u>

[Re-Entry] CARLES TO WATER SA

## 1. DRILLING OPERATIONS REQUIREMENTS:

The Bureau of Land Management (BLM) is to be notified at (505) 887-6544 in sufficient time for a representative to witness:

- 1. Re-Entry
- 2. Cementing casing: 5-1/2 inch

## II. CASING:

1. Minimum required fill of cement behind the 5-1/2 inch production casing is sufficient to tie back to 5000 feet below surface.

## III. PRESSURE CONTROL:

- 1. Before drilling into the <u>cement plug at 340 feet</u>, the blowout preventer assembly shall consist of a minimum of One Annular Preventer or Two Ram-Type Preventers and a Kelly Cock/Stabbing Valve
- 2. Minimum working pressure of the blowout preventer and related equipment (BOPE) shall be 3000 psi.
- 3. Before drilling into the <u>cement plug at 9365 feet</u>, the BOPE shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.
- 4. The results of the test will be reported to the BLM Carlsbad Resource Area Office at 620 East Greene Street, Carlsbad, New Mexico 88220-6292.

## EXHIBIT A

BLM Serial Number: NM-86542

Company Reference: #1 FEDERAL "AE"

## STANDARD STIPULATIONS FOR PERMANENT RESOURCE ROADS THE ROSWELL DISTRICT, BLM

The holder/grantee/permittee shall hereafter be identified as the holder in these stipulations. The Authorized Officer is the person who approves the Application for Permit to Drill (APD) and/or Right-of-Way (ROW).

## GENERAL REQUIREMENTS

The holder shall minimize disturbance to existing fences and other improvements on public domain surface. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will make a documented good-faith effort to contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence.

Holder agrees to comply with the following stipulations:

## ROAD WIDTH AND GRADE

The road will have a driving surface of 14 feet (all roads shall have a minimum driving surface of 12 feet, unless local conditions dictate a different width). The maximum grade is 10 percent unless the box below is checked. Maximum width of surface disturbance from construction will be 30 feet.

/\_/ Those segments of road where grade is in excess of 10% for more than 300 feet shall be designed by a professional engineer.

## 2. CROWNING AND DITCHING

Crowning with materials on site and ditching on one side of the road on the uphill side will be required. The road cross-section will conform to the cross section diagrams in Figure 1. If conditions dictate, ditching may be required for both sides of the road; if local conditions permit, a flat-bladed road may be considered (if these conditions exist, check the appropriate box below). The crown shall have a grade of approximately 2% (i.e., 1" crown on a 12' wide road).

Ditching will be required on both sides of the roadway as shown on the attached map or as staked in the field.

/\_/ Flat-blading is authorized on segment(s) delineated on the attached map.

## DRAINAGE

Drainage control shall be ensured over the entire road through the use of borrow ditches, outsloping, insloping, natural rolling topography, lead-off (turnout) ditches, culverts, and/or drainage dips.

A. All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval for lead-off ditches shall be determined according to the following table, but may be amended depending upon existing soil types and centerline road slope (in %):

SPACING INT	ERVAL	FOR	TURNOUT	DITCHES
Percent	slope		Spacing	interval
- \$0	48		400'	- 150'
48 -	68		250'	- 125'
6% -	88		200'	- 100'
8% - 3	10%		150'	- 75'

A typical lead-off ditch has a minimum depth of 1 foot below and a berm 6 inches above natural ground level. The berm will be on the down-slope side of the lead-off ditch. The ditch end will tie into vegetation whenever possible.

For this road the spacing interval for lead-off ditches shall be at

/\_/ 400 foot intervals.

/\_/ foot intervals.

/\_/ locations staked in the field as per spacing intervals above.

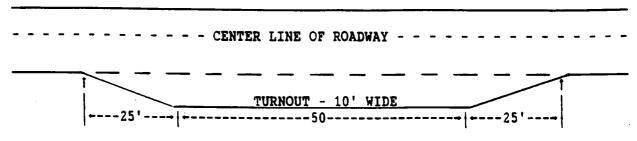
/\_/ locations delineated on the attached map.

- B. Culvert pipes shall be used for cross drains where drainage dips or low water crossings are not feasible. The minimum culvert diameter must be 18 inches. Any culvert pipe installed shall be of sufficient diameter to pass the anticipated flow of water. Culvert location and required diameter are shown on the attached map (Further details can be obtained from the Roswell District Office or the appropriate Resource Area Office).
- C. On road slopes exceeding 2%, drainage dips shall drain water into an adjacent lead-off ditch. Drainage dip location and spacing shall be determined by the formula:

Example: 4% slope: spacing interval = 400 + 100 = 200 feet

## 4. TURNOUTS

Unless otherwise approved by the Authorized Officer, vehicle turnouts will be required. Turnouts will be located at 2000-foot intervals, or the turnouts will be intervisible, whichever is less. Turnouts will conform to the following diagram:



STANDARD TURNOUT - PLAN VIEW

## 5. SURFACING

Surfacing of the road or those portions identified on the attached map may, at the direction of the Authorized Officer, be required, if necessary, to maintain traffic within the right-of-way with caliche, gravel, or other surfacing material which shall be approved by the Authorized Officer. When surfacing is required, surfacing materials will be compacted to a minimum thickness of six inches with caliche material. The width of surfacing shall be no less than the driving surface. Prior to using any mineral materials from an existing or proposed Federal source, authorization must be obtained from the Authorized Officer.

## 6. CATTLEGUARDS

Where used, all cattleguard grids and foundation designs and construction shall meet the American Association of State Highway and Transportation Officials (AASHTO) Load Rating H-20, although AASHTO U-80 rated grids shall be required where heavy loads (exceeding H-20 loading), are anticipated (See BLM standard drawings for cattleguards). Cattleguard grid length shall not be less than 8 feet and width of not less than 14 feet. A wire gate (16-foot minimum width) will be provided on one side of the cattleguard unless requested otherwise by the surface user.

## 7. MAINTENANCE

The holder shall maintain the road in a safe, usable condition. A maintenance program shall include, but not be limited to blading, ditching, culvert installation, culvert cleaning, drainage installation, cattleguard maintenance, and surfacing.

## 8. PUBLIC ACCESS

Public access along this road will not be restricted by the holder without specific written approval being granted by the Authorized Officer. Gates or cattleguards on public lands will not be locked or closed to public use unless closure is specifically determined to be necessary and is authorized in writing by the Authorized Officer.

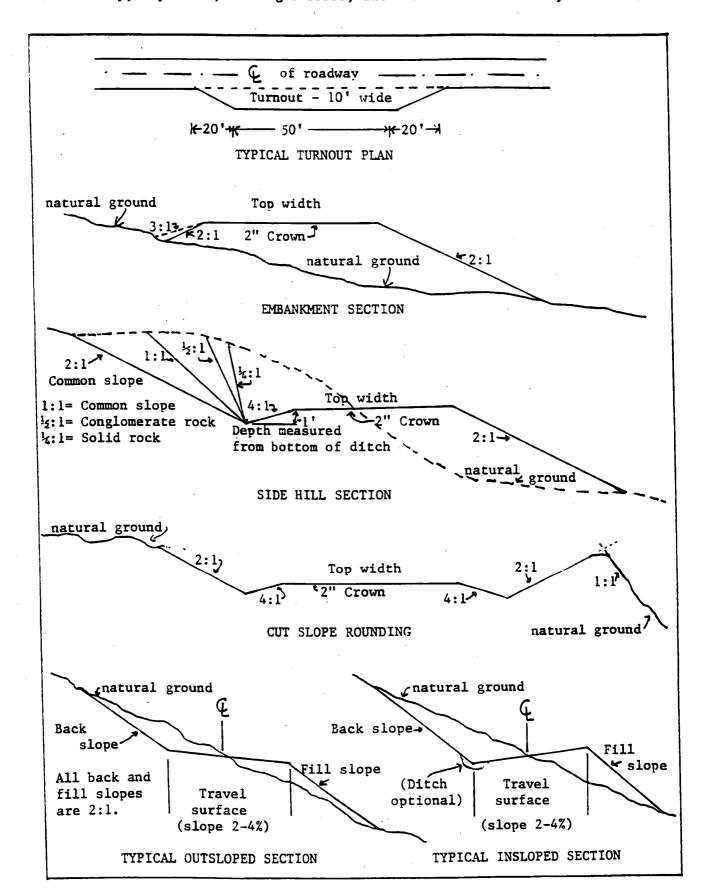
## 9. CULTURAL RESOURCES

Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the authorized officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the authorized officer after consulting with the holder.

## 10. SPECIAL STIPULATIONS: Now.

# FIGURE 1: CROS. JECTIONS AND PLANS FOR TYPICAL & J CONSTRUCTION REPRESENTATIVE OF BLM RESOURCE, AND HIGHER CLASS, ROADS.

(Travel way, top width, driving surface, and travel surface are synonomous.)



## JAMES BRUCE ATTORNEY AT LAW

POST OFFICE BOX 1056 SANTA FE, NEW MEXICO 87504

SUITE B 612 OLD SANTA FE TRAIL SANTA FE, NEW MEXICO 87501

(505) 982-2043 (505) 982-2151 (FAX)

February 24, 1997

# CERTIFIED MAIL RETURN RECEIPT REQUESTED

Nearburg Exploration Company, LLC Suite 120 3300 North A Street, Building 2 Midland, Texas 79705

Burlington Resources Oil & Gas Company 3300 North A Street, Building 6 Midland, Texas 79705

Louis Dreyfus Natural Gas Corporation Suite 600 14000 Quail Springs Parkway Oklahoma City, Oklahoma 73134

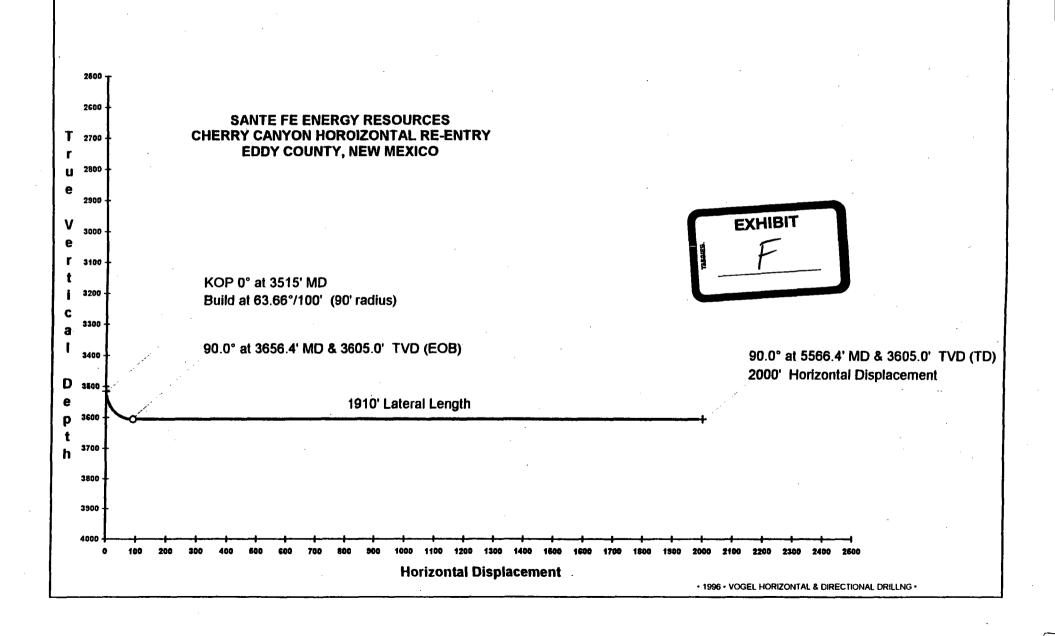
## Dear Sirs:

On February 24, 1997, Santa Fe Energy Resources, Inc. filed an application at the New Mexico Oil Conservation Division seeking administrative approval to directionally drill the Federal "AE" Well No. 1, located in the NW%SE% of Section 20, Township 22 South, Range 28 East, NMPM, Eddy County, New Mexico. The well unit will be comprised of the SWMNE% and NW%SE% of Section 20. A copy of the application is enclosed. Santa Fe's records show that you own an interest offsetting the above well unit. If you have any objection to the unorthodox location, you must notify the Division in writing no later than 20 days from the date of this letter, at its Santa Fe office (2040 South Pacheco Street, Santa Fe, New Mexico 87505, Attention: Michael E. Stogner).

Very truly yours,

James Bruce





Geologic Discussion to accompany Administrative Application Proposed Reentry and Directional Drilling of the Amoco Federal "AE" #1 wellbore 1650 FSL and 1980 FEL of Section 20, T22S, R28E, Eddy County, New Mexico

Santa Fe Energy Resources proposes to drill a horizontal well in Section 20, T22S, R28E of Eddy County, New Mexico. This well will test the "Foal Lobe" of the Cherry Canyon "IDE Sandstone" (refer to Cross Section A-A'). Santa Fe drilled the Foal 20 Fed #1 well in the N/2 of Section 20, T22S, R28E and encountered 26 feet of highly porous and permeable sandstone that yielded good shows of oil and gas. Rotary sidewall cores confirmed these shows and the porosity and permeability suggested by the open hole electric logs. This same sandstone was encountered by the Amoco Prod. Co. Federal "AE" #1 well in the S/2 of Section 20. Regional subsurface mapping suggests that this sandstone body is continuous and trends NW to SE across Section 20 in a structurally advantageous position (refer to enclosed combination Structure and Isopach Map). Santa Fe intends to reenter the Amoco Federal "AE" #1 well and drill horizontally to the north-northwest in an attempt to complete this well from this highly prospective Cherry Canyon sandstone.

