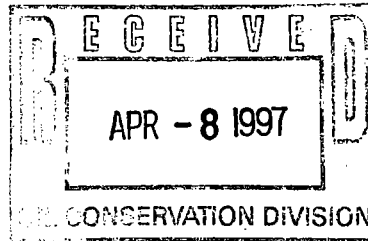


**JAMES BRUCE**  
ATTORNEY AT LAW

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

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

Re: Application of Santa Fe Energy Resources, Inc. ("Santa Fe") to directionally drill the following well: Federal "AE" Well No. 1. Surface Location: 1650' FSL and 1980' FEL. Terminus: 1650' FNL and 2310' FEL. Project Area: SW¼NE¼ and NW¼SE¼ 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, no communitization agreement is necessary.

2. 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: All 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 N½ of Section 20; by drilling the proposed well, Santa Fe will earn an assignment of Louis Dreyfus' interest in the S½ of Section

Clinton State Hotel, New York City, N.Y. 10017  
Attention: Mr. J. Edgar Hoover, Director, Federal Bureau of Investigation

Dear Sir: I am writing to you regarding the matter of the

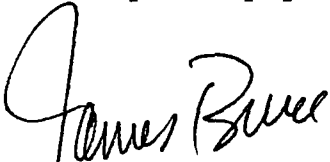
subject of the above captioned letter.

Sincerely,  
J. Edgar Hoover

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,

A handwritten signature in cursive script that reads "James Bruce". The signature is written in dark ink and is positioned to the left of the typed name.

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 recompleat 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.

**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 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.

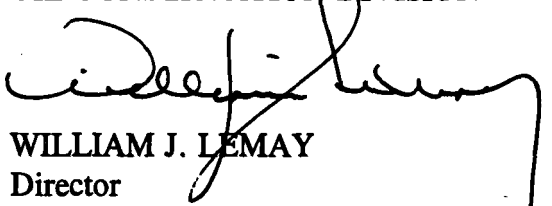
(5) The operator shall comply with all requirements and conditions set forth in Division General Rule 111.E(2) and any applicable requirements in 111.D and F.

(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

S E A L

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

PP-SF. H

Rec: 2-25-97

Susp: 3-17-97

Released: 4-2-97

April 2, 1997

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

Administrative Order DD-<sup>166</sup>\*\*\*<sup>(H)</sup>  
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.

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**PROVIDED FURTHER THAT** 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

S E A L

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

DD

3/17/97

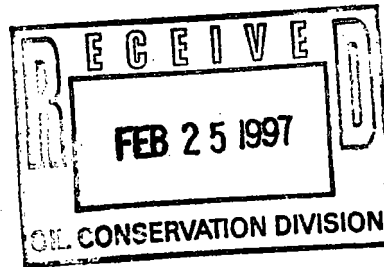
Rec: 2-25-97

**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: 1650' FSL and 1980' FEL  
Terminus: 1650' FNL and 2310' FEL  
Project Area: SW $\frac{1}{4}$ NE $\frac{1}{4}$  and NW $\frac{1}{4}$ SE $\frac{1}{4}$  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).

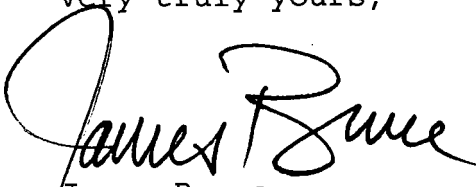
Exhibit C lists the names and addresses of offset lessees. Copies of this application were mailed today to the offset lessees, by certified mail, advising them they have twenty days from the date of the notice letter to object to the application. A copy of the notice letter is attached as Exhibit E. **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 COMMISSION  
LOCATION AND ACREAGE DEDICATION PLAT

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

All distances must be from the outer boundaries of the Section

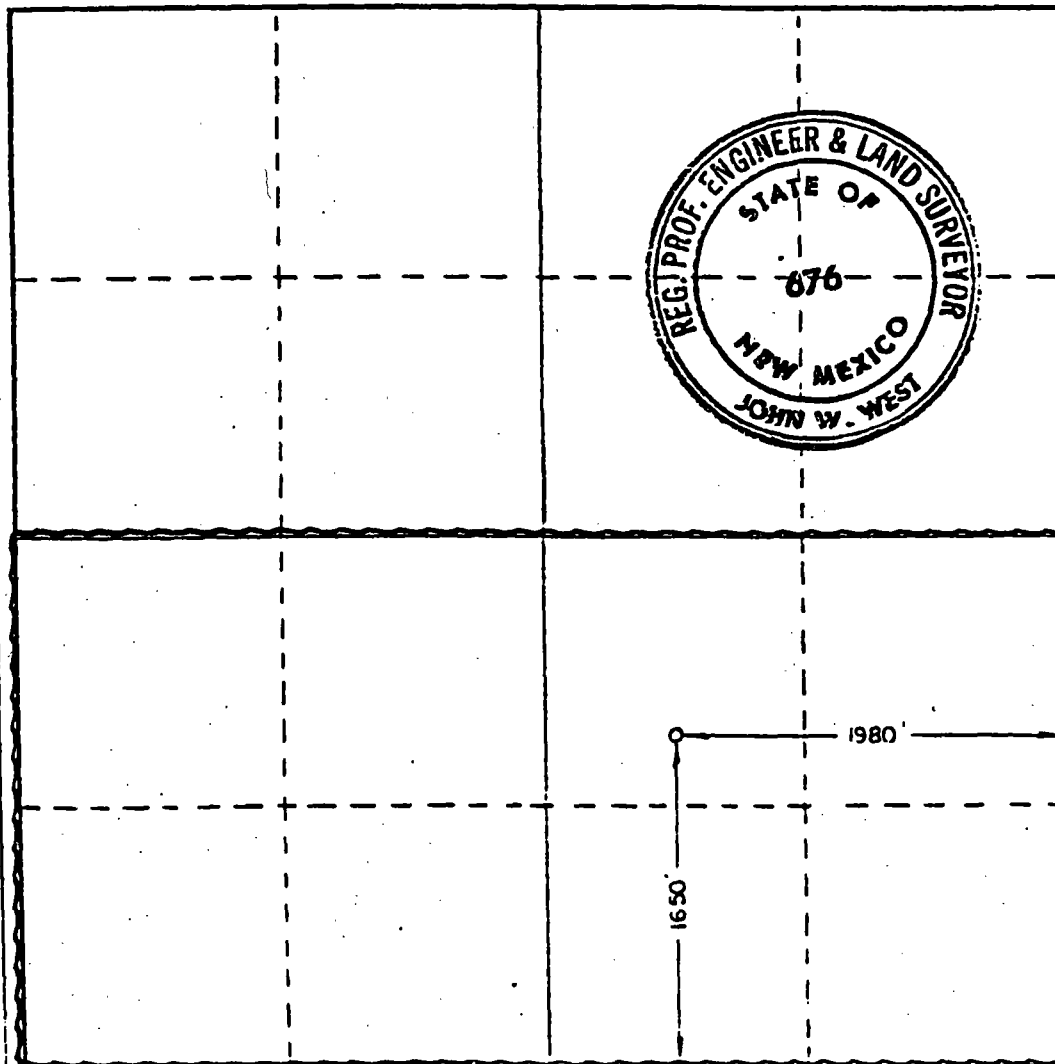
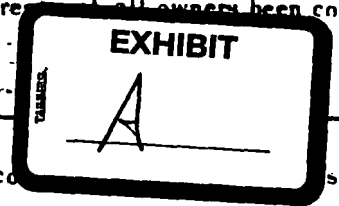
Operator <b>Amoco Production Co.</b>			Lease <b>Fed. "AE"</b>			Well No. <b>1</b>
Unit Letter <b>J</b>	Section <b>20</b>	Township <b>22 South</b>	Range <b>28 East</b>	County <b>Eddy</b>		
Actual Footage Location of Well: <b>1650</b> feet from the <b>South</b> line and <b>1980</b> feet from the <b>East</b> line						
Ground Level Elev. <b>3077.0</b>	Producing Formation <b>Morrow</b>		Pool <b>Dublin Ranch</b> Und. <b>Morrow</b>		Dedicated Acreage: <b>320</b> Acres	

- Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
- If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
- If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation \_\_\_\_\_

If answer is "no," list the owners and tract descriptions which have actually been consolidated on the reverse side of 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 Commission.



CERTIFICATION

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

Name Ray Cox  
Position Administrative Supervisor  
Company Amoco Production Company  
Date September 12, 1979

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 knowledge and belief.

Date Surveyed Sept. 7, 1979  
Registered Professional Engineer and Land Surveyor

John W. West  
Certificate No. John W. West 6  
Ronald J. Eidson 32

District I  
PO Box 1980, Hobbs, NM 88241-1980  
District II  
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 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

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-025-23027		Pool Code	Pool Name Undesignated (Delaware)
Property Code 20102	Property Name Federal "AE"		Well Number 1
OGRID No. 020305	Operator Name Santa Fe Energy Resources, Inc.		Elevation 3077' GR

<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	20	22S	28E		1650	South	1980	East	Eddy

<sup>11</sup> Bottom Hole Location If Different From Surface

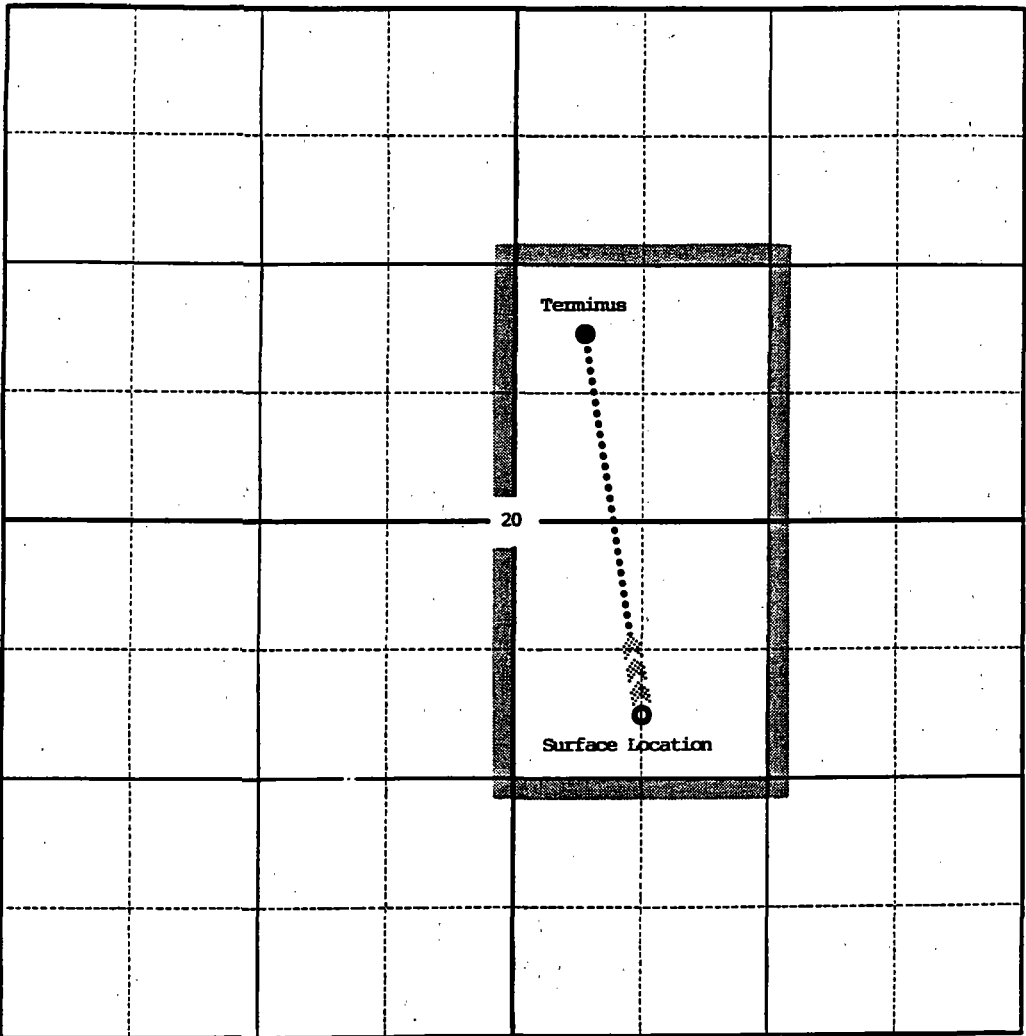
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	20	22S	28E		1650	North	2310	East	Eddy

<sup>12</sup> Dedicated Acres 80	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
-------------------------------------	-------------------------------	----------------------------------	-------------------------

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

<div>16</div> <div>EXHIBIT B</div>					<div><sup>17</sup> OPERATOR CERTIFICATION</div> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</p> <div>Mike Burton</div> <div>Signature</div> <div>Mike Burton</div> <div>Printed Name</div> <div>Operations Manager</div> <div>Title</div> <div>Feb. 10, 1997</div> <div>Date</div>
					<div><sup>18</sup> SURVEYOR CERTIFICATION</div> <p>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.</p> <div></div> <div>Date of Survey</div> <div>Signature and Seal of Professional Surveyor:</div>
					Certificate Number

*all 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

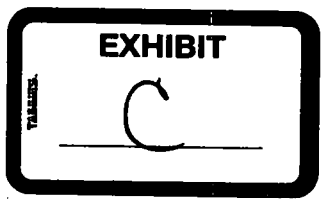
**Leasehold Owners:**

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


FORM 45-8





**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

 SFER, Inc. Acreage

 <p>Santa Fe Energy Resources, Inc. Central Division Midland, Texas</p>
<p>EDDY COUNTY, NEW MEXICO</p>
<p><b>LAND PLAT</b> <b>DIRECTIONAL DRILLING</b> <b>OFFSET OPERATOR / LEASEHOLD OWNERS</b></p>
<p>Date: 2-1-97</p>

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

# APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. TYPE OF WORK DRILL <input checked="" type="checkbox"/> Re-Entry      DEEPEN <input type="checkbox"/>		Nov 12 9 53 AM '96		UNIT AGREEMENT NAME	
b. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER <input type="checkbox"/>		SINGLE ZONE <input checked="" type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>		6. FARM OR LEASE NAME, WELL NO. Federal "AE" #1	
2. NAME OF OPERATOR Santa Fe Energy Resources, Inc.				9. API WELL NO.	
3. ADDRESS AND TELEPHONE NO. 550 W. Texas, Suite 1330; Midland, Texas 79701      (915) 682-6373				10. FIELD AND POOL, OR WILDCAT Dublin Ranch	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.) At surface (J) 1650' FSL & 1980' FEL At proposed prod. zone				11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec. 20, T-22-S, R-28-E	
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE* 7 miles southeast of Carlsbad, New Mexico				12. COUNTY OR PARISH      13. STATE Eddy      New Mexico	
10. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)		1650'		17. NO. OF ACRES ASSIGNED TO THIS WELL 320	
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.		3250'		20. ROTARY OR CABLE TOOLS Rotary	
21. ELEVATIONS (Show whether DF, RT, GR, etc.) 3077 GR				22. APPROX. DATE WORK WILL START* December 10, 1996	

## PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE, SIZE OF CASINO	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
20"	16"	65.0	390'	575 sx csg in place
14 3/4"	10 3/4"	40.5	2705'	2445 sx csg in place
9 1/2"	7 5/8"	29 & 33.7	10614'	2010 sx csg in place
6 1/2"	4 1/2"	13.5	10286'-12728'	550 sx csg in place
6 1/2"	K-80 5 1/2"	17.0	10286'	400 sx for TOC @ 5000' - 5000'

We propose to re-enter the former Amoco Federal "AE" #1 to test the Morrow formation for gas. If productive, 5 1/2" casing will be run to TD. If non-productive, the well will be plugged and abandoned in a manner consistent with Federal Regulations. Specific programs as per Onshore Oil and Gas Order No. 1 are outlined in the following attachments:

## Drilling Program

### Exhibit A - Operations Plan

**Exhibit B - BOP and Choke Schematic**

**Exhibit C - Drilling Fluid Program**

**Exhibit D - Auxiliary Equipment**

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

2000-2001

SECRET

100-35921-100-35923

1527

**Exhibit E - Topo Map at Location**

Exhibit F - Plat Showing Existing Wells

Exhibit G - Well Site Layout

## Surface Use and Operations Plan

Santa Fe Energy Resources, Inc. accepts all applicable terms, conditions, stipulations and restrictions concerning operations conducted on the leased land or portion thereof, as described above.

**Bond Coverage: Blanket Bond**

BLM Bond File No.: MT 0750

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

**SIGNEE**

Agent for Santa Fe Energy

DATE 11-8-76

(This space for Federal or State office use)

**PERMIT NO.****APPROVAL DATE:**

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject land.

**CONDITIONS OF APPROVAL, IF ANY:**

conduct operations thereon.

**APPROVED BY**

**TITLE**

DATE \_\_\_\_\_

**\*See Instructions On Reverse Side**

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

MEXICO OIL CONSERVATION COMMISSION  
LOCATION AND ACREAGE DEDICATION PLAT

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

All distances must be from the outer boundaries of the Section

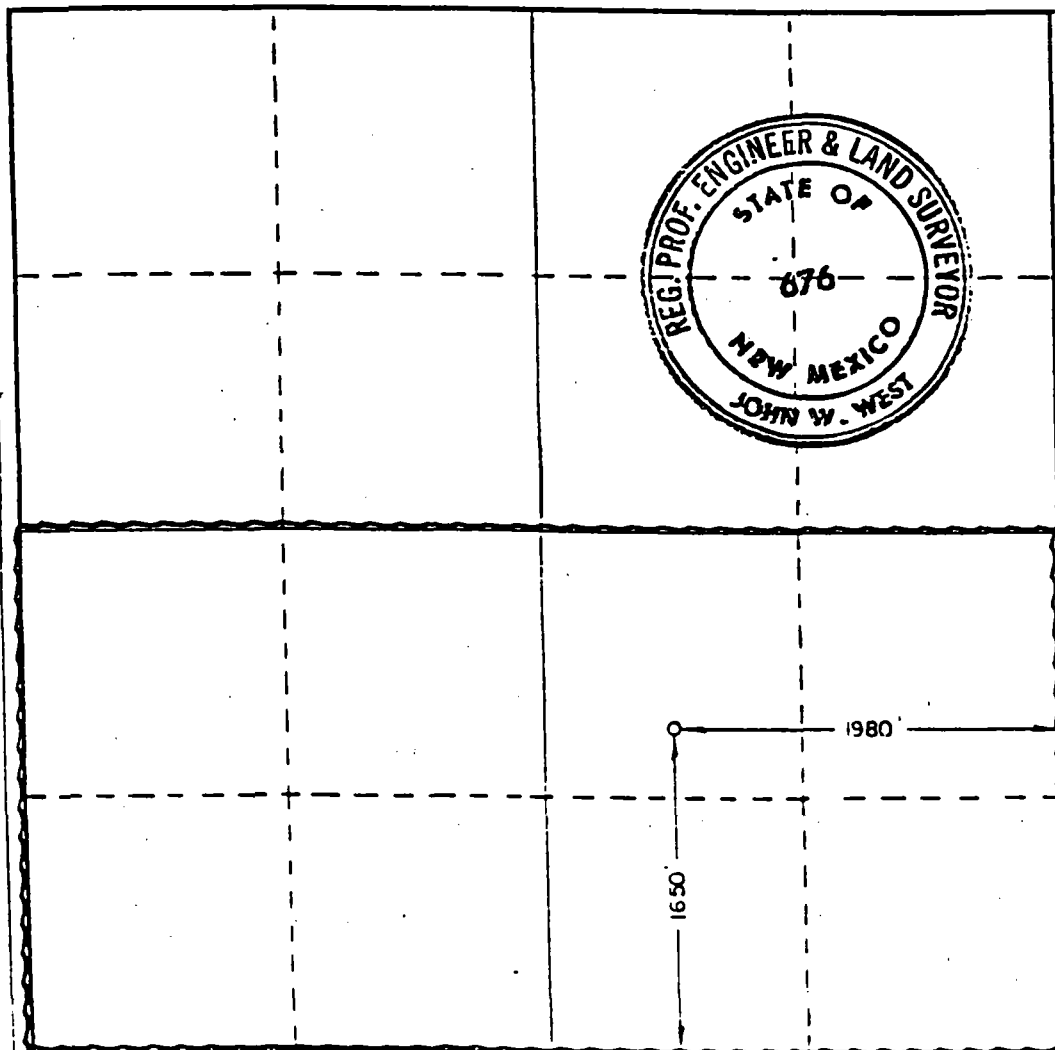
Operator <b>Amoco Production Co.</b>			Lease <b>Fed. "AE"</b>		Well No. <b>1</b>
Unit Letter <b>J</b>	Section <b>20</b>	Township <b>22 South</b>	Range <b>28 East</b>	County <b>Eddy</b>	
Actual Footage Location of Well: <b>1650</b> feet from the <b>South</b> line and <b>1980</b> feet from the <b>East</b> line					
Ground Level Elev. <b>3077.0</b>	Producing Formation <b>Morrow</b>		Pool <b>Dublin Ranch</b> Und. <b>Morrow</b>		Dedicated Acreage: <b>320</b> Acres

- Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
- If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
- If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ 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 of 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 Commission.



CERTIFICATION

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

Name Ray Cox  
Position Administrative Supervisor  
Company Amoco Production Company  
Date September 12, 1979

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 knowledge and belief.

Date Surveyed Sept. 7, 1979  
Registered Professional Engineer and/or Land Surveyor

John W. West  
Certificate No. John W. West  
Reinald J. Eide



District I  
PO Box 1980, Hobbs, NM 88241-1980  
District II  
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 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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

* API Number		* Pool Code		* Pool Name Dublin Ranch	
* Property Code		* Property Name Federal "AE"			* Well Number 1
* OGRID No.		* Operator Name Santa Fe Energy Resources, Inc.			* Elevation 3077


<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Ids	Feet from the	North/South line	Feet from the	East/West line	County
J	20	22-S	28-E		1650	South	1980	East	Eddy

<sup>11</sup> Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Ids	Feet from the	North/South line	Feet from the	East/West line	County
<sup>12</sup> Dedicated Acres 320		<sup>13</sup> Joint or Infill		<sup>14</sup> Consolidation Code		<sup>15</sup> Order No.			

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					17 OPERATOR CERTIFICATION <i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</i>   Signature James P. "Phil" Stinson Printed Name Agent for Santa Fe Energy Title 11-8-96 Date
18 SURVEYOR CERTIFICATION <i>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.</i>  Date of Survey Signature and Seal of Professional Surveyor:  Certificate Number					

**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	5950'
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:**

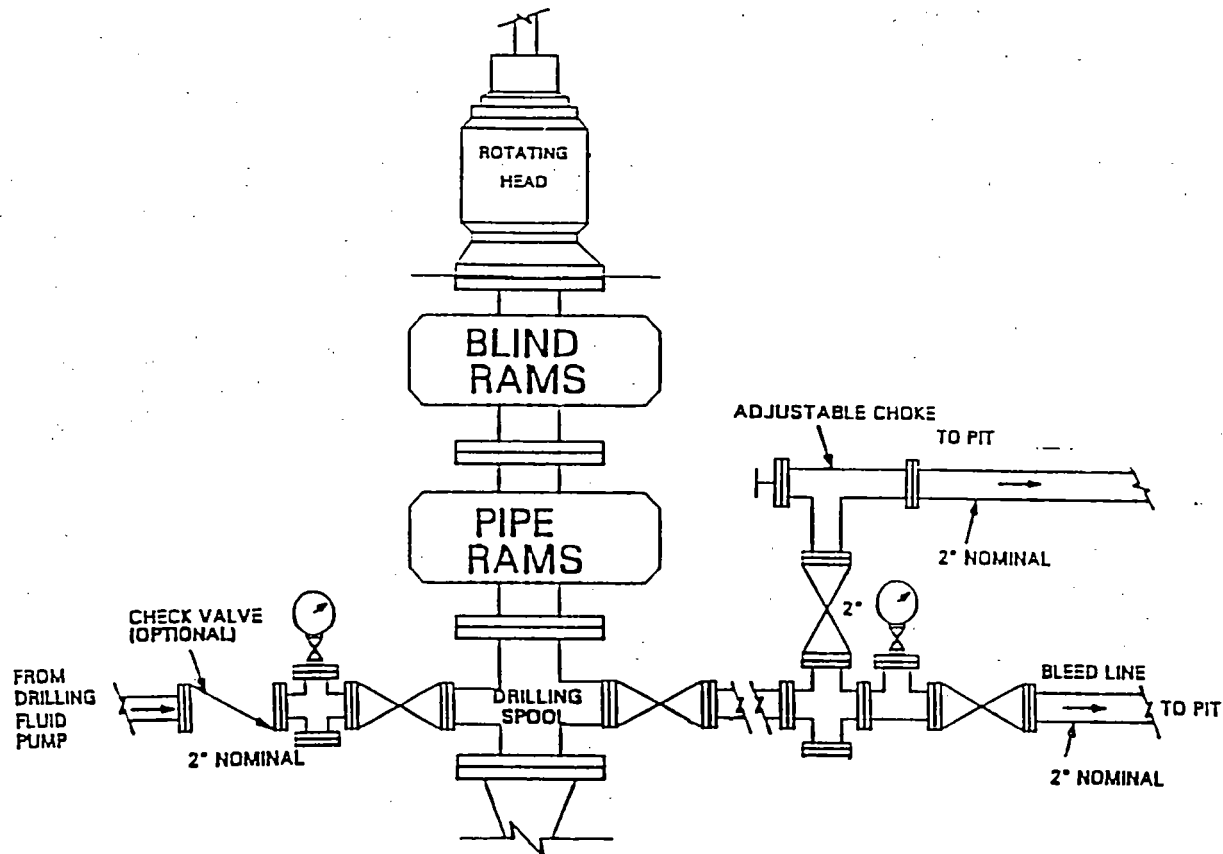
Road and location work will not begin until approval has been received from the B.L.M. The anticipated spud date is December 10, 1996. Once spudded, the re-entry operation should be completed in approximately 20 days. If the well is productive, an additional 30 days will be required for completion and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



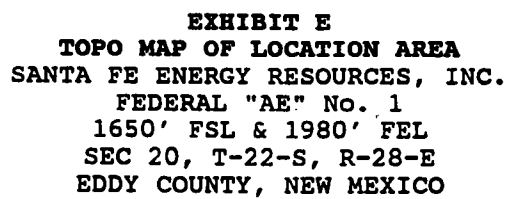
**EXHIBIT C  
DRILLING FLUID PROGRAM  
SANTA FE ENERGY RESOURCES, INC.  
FEDERAL "AE" NO. 1  
Section 20, T-22-S, R-28-E  
Eddy County, New Mexico**

**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**

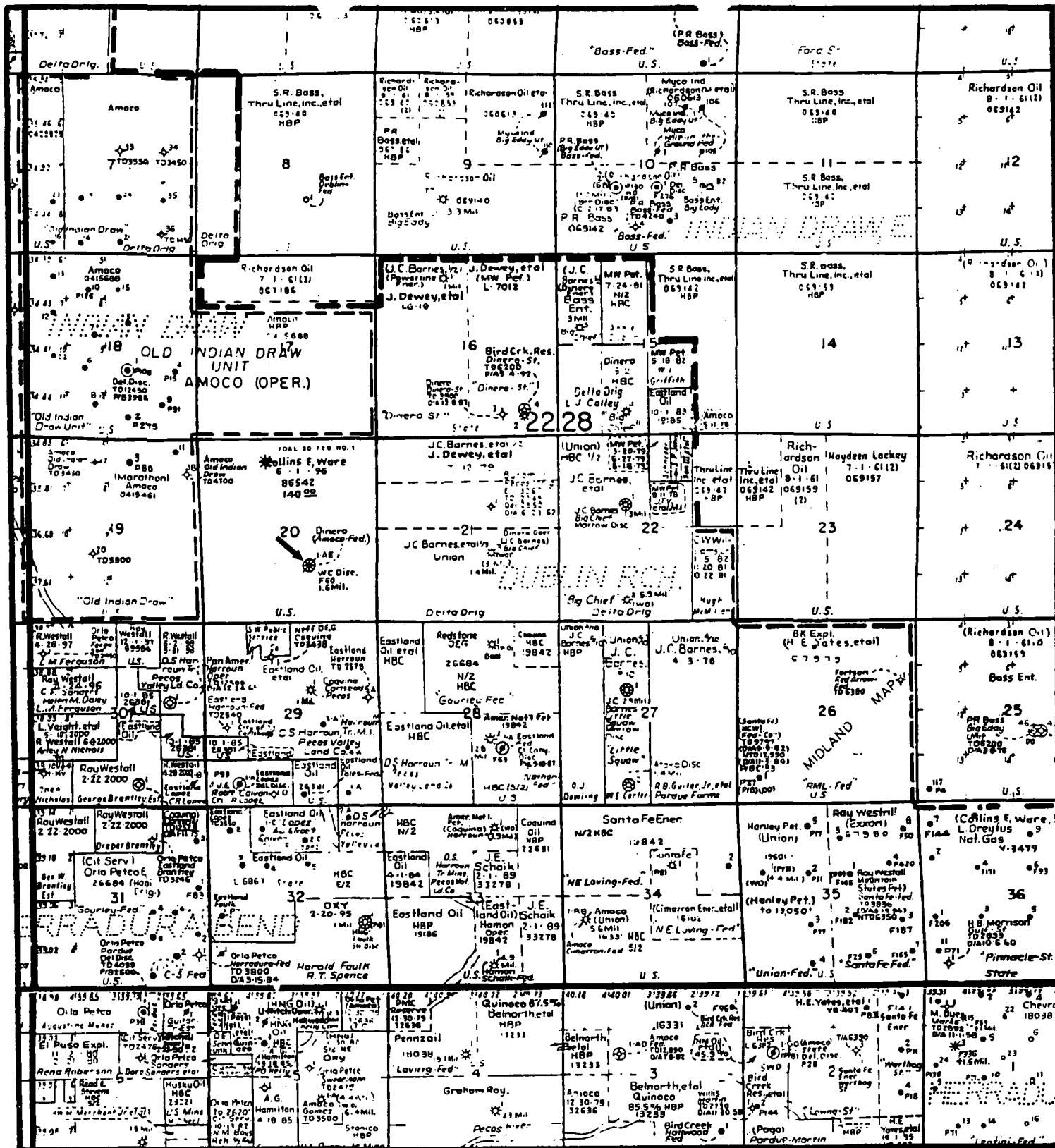
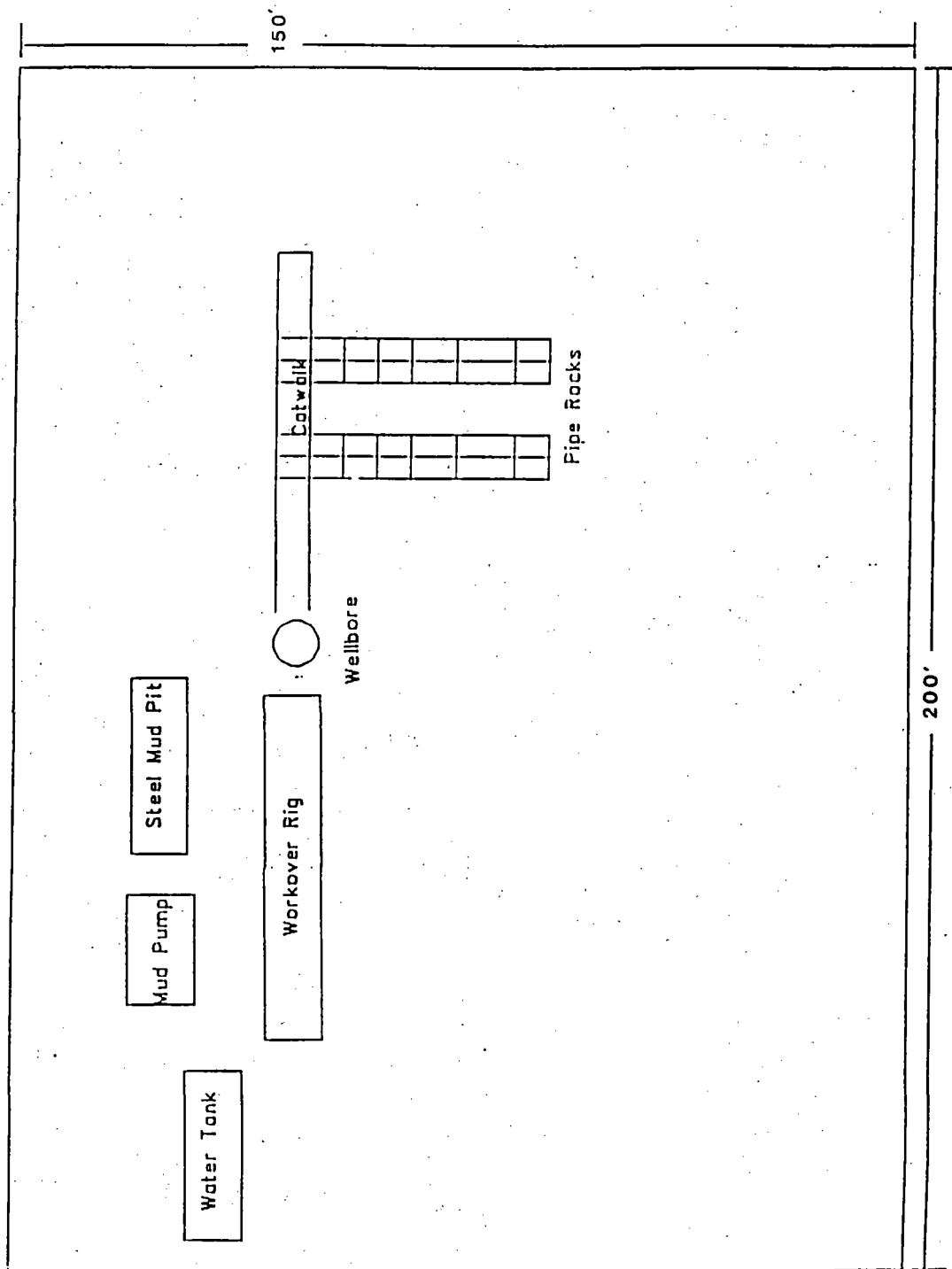


EXHIBIT F  
EXISTING WELLS  
SANTA FE ENERGY RESOURCES, INC.  
FEDERAL "AE" No. 1  
1650' FSL & 1980' FEL  
SEC 20, T-22-S, R-28-E  
EDDY COUNTY, NEW MEXICO





**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.

**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 RESTORATION 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.

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.
- D. 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:

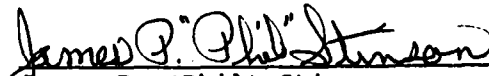
Michael R. Burton  
Division Operations Manager  
Santa Fe Energy Resources, Inc.  
550 W. Texas, Suite 1330  
Midland, Texas 79701  
915-686-6616 - office  
915-559-6842 - cellular

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 8<sup>th</sup> 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**

OPERATOR'S NAME SANTA FE ENERGY RESOURCES WELL NO. & NAME #1 FEDERAL "AE"  
 LOCATION 1650' F S L & 1980' E L SEC. 20, T. 22S., R. 28E.  
 LEASE NO. NM-86542 COUNTY EDDY STATE NEW MEXICO

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. EACH 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)  
☐ 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 ☒ 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 pad not necessary for production must be re-contoured to resemble the original contours of the surrounding terrain, and topsoil must be re-distributed and re-seeded 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 Seed (PLS), per acre.

- |   |  |
|---|--|
| <input type="checkbox"/> A. Seed Mixture 1 (Loamy Site)<br>Lehmanns Lovegrass ( <i>Eragrostis lehmanniana</i> ) 1.0<br>Side Oats Grass ( <i>Bouteloua curtipendula</i> ) 5.0<br>Sand Dropseed ( <i>Sporobolus cryptandrus</i> ) 1.0 | <input type="checkbox"/> B. Seed Mixture 2 (Sandy Sites)<br>Sand Dropseed ( <i>Sporobolus cryptandrus</i> ) 1.0<br>Sand Lovegrass ( <i>Eragrostis trichodes</i> ) 1.0<br>Plains Bristlegrass ( <i>Setaria macrostachya</i> ) 2.0 |
| <input type="checkbox"/> C. Seed Mixture 3 (Shallow Sites)<br>Sideoats Grass ( <i>Bouteloua curtipendula</i> ) 1.0<br>Lehmanns Lovegrass ( <i>Eragrostis lehmanniana</i> ) 1.0<br>or Bear Lovegrass ( <i>E. oblicornis</i> )        | <input checked="" type="checkbox"/> D. Seed Mixture 4 ("Gyp" Sites)<br>Alkali Sacaton ( <i>Sporobolus airoides</i> ) 1.0<br>Four-Wing Saltbush ( <i>Atriplex canescens</i> ) 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 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 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

I. DRILLING OPERATIONS REQUIREMENTS: [Re-Entry]

CARLSBAD CONTROLLED WATER BASIN

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 cement plug at 340 feet, 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 cement plug at 9365 feet, 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.



## 3. 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 INTERVAL FOR TURNOUT DITCHES	
Percent slope	Spacing interval
0% - 4%	400' - 150'
4% - 6%	250' - 125'
6% - 8%	200' - 100'
8% - 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).

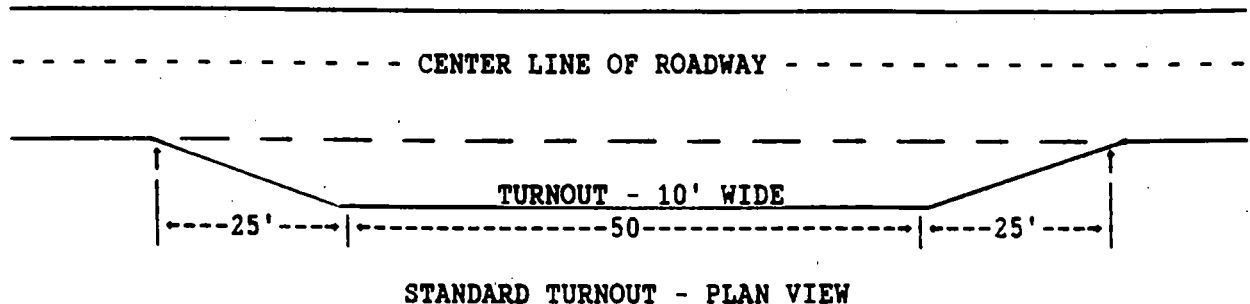
C. On road slopes exceeding 2%, drainage dips shall drain water into an adjacent lead-off ditch. Drainage dip location and spacing shall be determined by the formula:

$$\text{spacing interval} = \frac{400'}{\text{road slope in \%}} + 100'$$

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



#### 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.

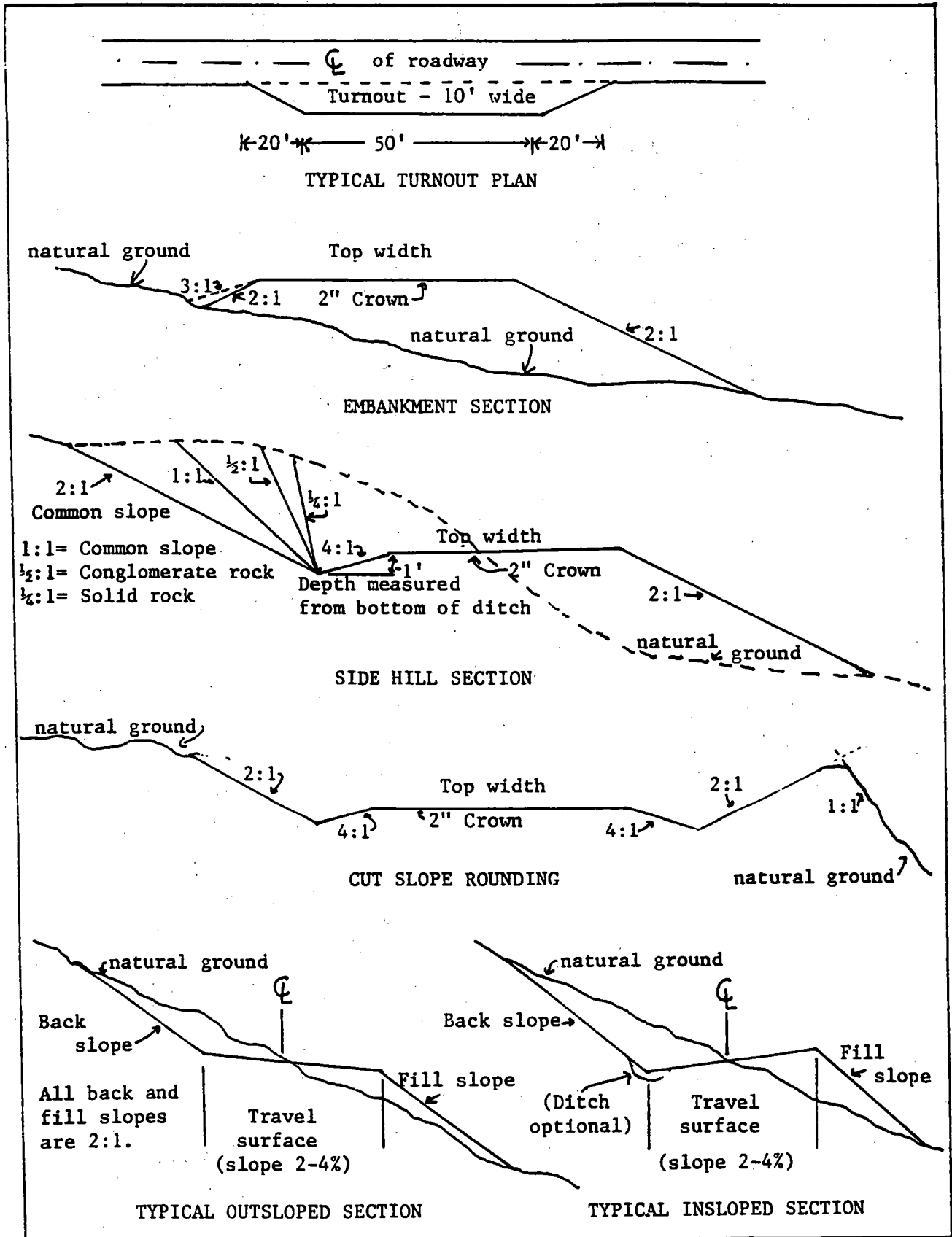
9. CULTURAL RESOURCES

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: None.

FIGURE 1: CROSS SECTIONS AND PLANS FOR TYPICAL AND CONSTRUCTION REPRESENTATIVE OF BLM RESOURCE, AND HIGHER CLASS, ROADS.

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



**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

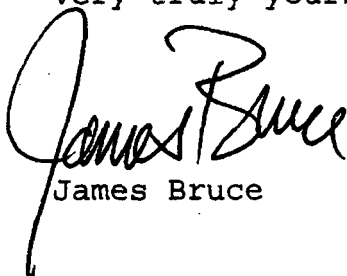
Burlington Resources Oil & Gas Company  
3300 North A Street, Building 6  
Midland, Texas 79705

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 $\frac{1}{4}$ SE $\frac{1}{4}$  of Section 20, Township 22 South, Range 28 East, NMPM, Eddy County, New Mexico. The well unit will be comprised of the SW $\frac{1}{4}$ NE $\frac{1}{4}$  and NW $\frac{1}{4}$ SE $\frac{1}{4}$  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).

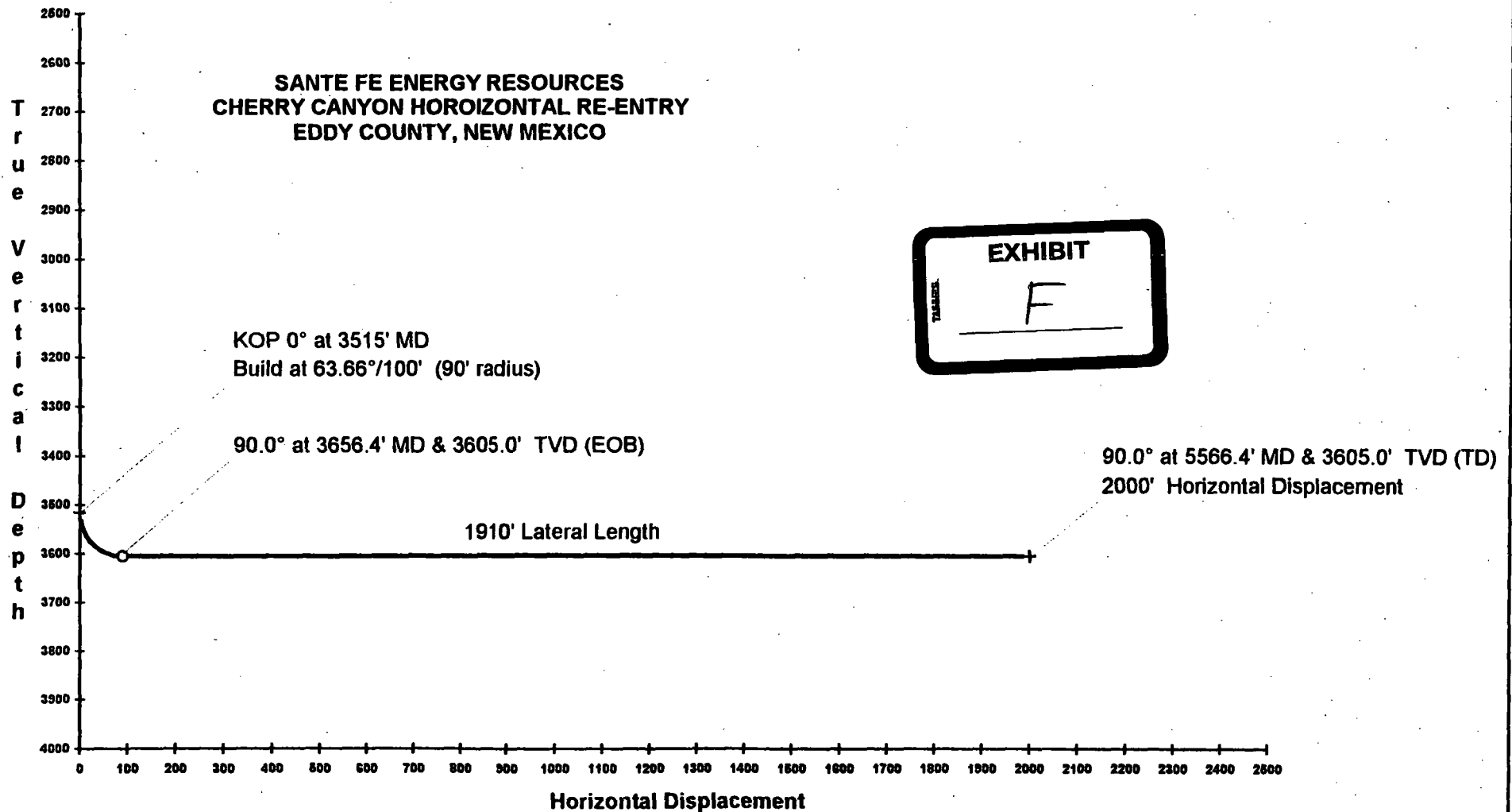
Very truly yours,

  
James Bruce



VOGEL HORIZONTAL & DIRECTIONAL DRILLING  
415 WEST WALL ST. MIDLAND TX 79701  
915-570-4719

SANTE FE ENERGY RESOURCES  
CHERRY CANYON HORIZONTAL RE-ENTRY  
EDDY COUNTY, NEW MEXICO



**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 intentionally omitted from this file due to the indicated reasons.**

FILE # DD 166

### DESCRIPTION OF OMITTED DOCUMENTS

**OMITTED DOCUMENT**

**REASON OMITTED**

EXHIBIT "H" Proposed FED. AE #1 Reentry  
TOO LARGE



County Eddy

Pool Herradura Bend-Cherry Canyon

TOWNSHIP 22 South

Range 28 East

NMPM

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Description:  $\frac{5}{4}$  Sec 29 (R-5911, 2-1-79)

COUNTY *Eddy*POOL *Indian Draw - Delaware*TOWNSHIP *22 South*RANGE *28 East*

NMPM

	6	5	4	3	2	1
	7	8	9	10	11	12
18	17	16	15	14	13	
19	20	21	22	23	24	
30	29	28	27	26	25	
31	32	33	34	35	36	

Description:  $\frac{SE}{4}$  Sec. 18 (R-4734, 3-1-74)Ext:  $\frac{N}{2} \frac{NE}{4}$  Sec 19 (R-5056, 8-1-75)Ext:  $\frac{3}{4} \frac{NE}{4} \& \frac{1}{2} \frac{SW}{4}$  Sec 18 (R-5124, 12-1-75)Ext:  $\frac{NW}{4}$  Sec 18 (R-5252, 9-1-76) Ext:  $\frac{3}{4} \frac{SW}{4}$  Sec 7, --  $\frac{N}{2} \frac{NE}{4}$  Sec 18 (R-5417, 4-1-77) Ext:  $\frac{SE}{4} \& \frac{N}{2} \frac{SW}{4}$  Sec 7 - $\frac{W}{2} \frac{SW}{4}$  Sec 18 (R-5534, 10-1-77)

**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)

*Rec 2-25-97*

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:	1650' FSL and 1980' FEL
Terminus:	1650' FNL and 2310' FEL
Project Area:	SW $\frac{1}{4}$ NE $\frac{1}{4}$ and NW $\frac{1}{4}$ SE $\frac{1}{4}$ 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,

A handwritten signature in black ink, appearing to read "James Bruce". The signature is fluid and cursive, with the first name "James" being more prominent than the last name "Bruce".

James Bruce

Attorney for Santa Fe Energy  
Resources, Inc.

cc: Tim Gum (Artesia District Office)

**MEXICO OIL CONSERVATION COMMISSION  
LOCATION AND ACREAGE DEDICATION PLAT**

Form C-102  
Supersedes C-101  
Effective 1-1-79

All distances must be from the outer boundaries of the Section

Operator <b>Amoco Production Co.</b>			Lessee <b>Fed. "AE"</b>		Well No. <b>1</b>
Unit Letter <b>J</b>	Section <b>20</b>	Township <b>22 South</b>	Range <b>28 East</b>	County <b>Eddy</b>	
Actual Footage Location of Well:					
<b>1650</b> feet from the <b>South</b> line and		<b>1980</b> feet from the <b>East</b> line			
Ground Level Elev. <b>3077.0</b>	Producing Formation <b>Morrow</b>	Pool/Dublin Ranch <b>Und. Morrow</b>		Dedicated Acreage: <b>320</b> Ac.	

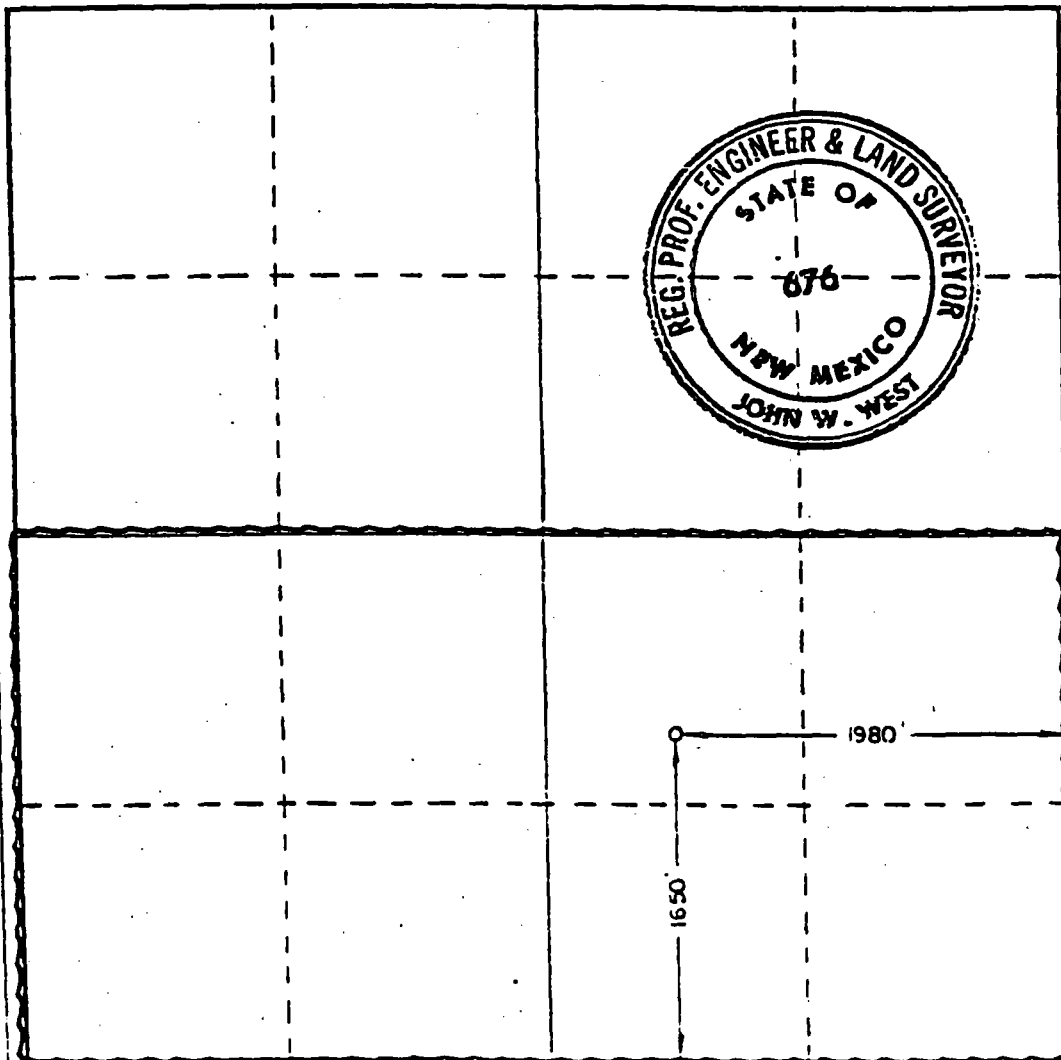
1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have dated by communitization, unitization, force-pooling, etc?

☐ Yes    ☐ 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 of 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 Commission.



**CERTIFICATION**

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

Name Ray Cox  
 Position Administrative Supervisor  
 Company Amoco Production Company  
 Date September 12, 1979

I hereby certify that the well location shown on this plat was plotted from the notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed Sept. 7, 1979  
 Registered Professional Engineer and/or Land Surveyor

John W. West  
 Certificate No. John W. West

District I  
PO Box 1986, Hobbs, NM 88241-1986  
District II  
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 Department

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

Form C-1C  
Revised February 10, 1997  
Instructions on back  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-025-23027		Pool Code	Pool Name Undesignated (Delaware)
Property Code 20102	Property Name Federal "AE"		Well Number 1
OGRID No. 020305	Operator Name Santa Fe Energy Resources, Inc.		Elevation 3077' GR

10 Surface Location

UL or lot no.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
J	20	22S	28E		1650	South	1980	East	Eddy

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
G	20	22S	28E		1650	North	2310	East	Eddy

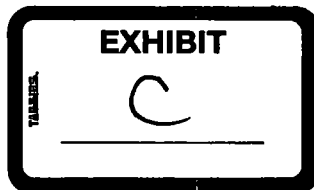
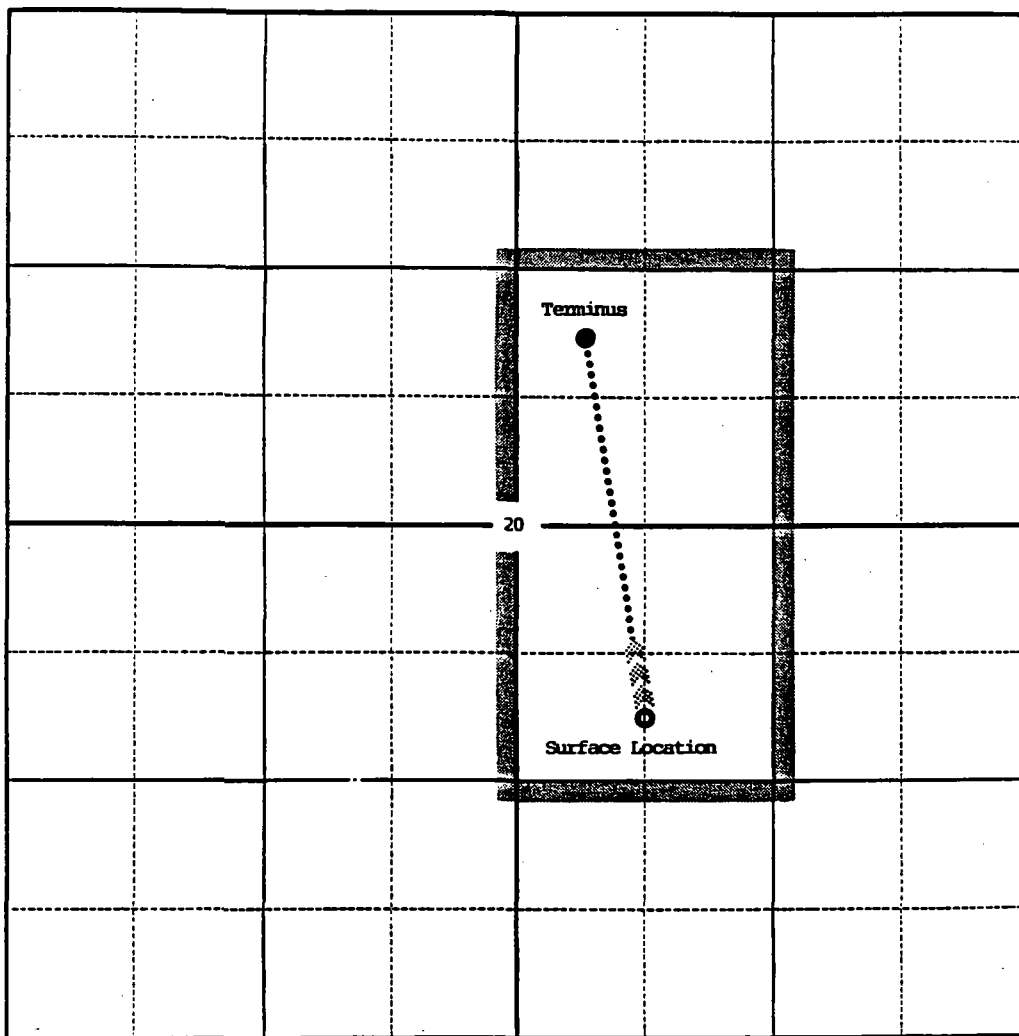
Dedicated Acres 80	Joint or Infill	Consolidation Code	Order No.
-----------------------	-----------------	--------------------	-----------

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				17 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.  <i>Mike Burton</i> Signature Mike Burton Printed Name Operations Manager Title Feb. 10, 1997 Date
				18 SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.  Date of Survey Signature and Seal of Professional Surveyor:  Certificate Number

EXHIBIT

B



FORM 45-8

# 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



SFER, Inc. Acreage



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

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

Bring To: T/M

## APPLICATION FOR PERMIT TO DRILL OR DEEPEN

## 1a. TYPE OF WORK

DRILL ☒ Re-EntryDEEPEN ☐

NOV 12 9 53 AM '96

## b. TYPE OF WELL

OIL WELL ☐GAS WELL ☒

OTHER

SINGLE ZONE ☒MULTIPLE ZONE ☐

## 2. NAME OF OPERATOR

Santa Fe Energy Resources, Inc.

## 3. ADDRESS AND TELEPHONE NO.

550 W. Texas, Suite 1330; Midland, Texas 79701 (915) 682-6373

## 4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)

At surface

(J) 1650' FSL &amp; 1980' FEL

At proposed prod. zone

## 14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE\*

7 miles southeast of Carlsbad, New Mexico

16. DISTANCE FROM PROPOSED\* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT.  
(Also to nearest drilg. unit line, if any)

1650'

## 18. NO. OF ACRES IN LEASE

640

## 17. NO. OF ACRES ASSIGNED TO THIS WELL

320

## 19. DISTANCE FROM PROPOSED\* LOCATION TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.

3250'

## 20. PROPOSED DEPTH

12730'

## 21. ROTARY OR CABLE TOOLS

Rotary

## 22. ELEVATIONS (Show whether DF, RT, GR, etc.)

3077 GR

## 23. APPROX. DATE WORK WILL START\*

December 10, 1996

## 24.

## PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
20"	16"	65.0	390'	575 sx csg in place
14 3/4"	10 3/4"	40.5	2705'	2445 sx csg in place
9 1/2"	7 5/8"	29 & 33.7	10614'	2010 sx csg in place
6 1/2"	4 1/2"	13.5	10286'-12728'	550 sx csg in place
6 1/2"	K-80 5 1/2"	17.0	10286'	400 sx for TOC @ 5000'

We propose to re-enter the former Amoco Federal "AE" #1 to test the Morrow formation for gas. If productive, 5 1/2" casing will be run to TD. If non-productive, the well will be plugged and abandoned in a manner consistent with Federal Regulations. Specific programs as per Onshore Oil and Gas Order No. 1 are outlined in the following attachments:

## Drilling Program

Exhibit A - Operations Plan

Exhibit B - BOP and Choke Schematic

Exhibit C - Drilling Fluid Program

Exhibit D - Auxiliary Equipment

Exhibit E - Topo Map at Location

Exhibit F - Plat Showing Existing Wells

Exhibit G - Well Site Layout

Surface Use and Operations Plan

Santa Fe Energy Resources, Inc. accepts all applicable terms, conditions, stipulations and restrictions concerning operations conducted on the leased land or portion thereof, as described above.

Bond Coverage: Blanket Bond

BLM Bond File No.: MT 0750

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED

James J. "Bill" Stinson

Agent for Santa Fe Energy

DATE 11-8-96

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject land.

CONDITIONS OF APPROVAL, IF ANY:

EXHIBIT

D

APPROVED BY

Tony L. Ferguson

TITLE

ADM, Minerals

DATE

12/11/96

\*See Instructions On Reverse Side



MEXICO OIL CONSERVATION COMMISSION  
LOCATION AND ACREAGE DEDICATION PLAT

Form C-102  
Supersedes C-101  
Effective 1-1-79

All distances must be from the outer boundaries of the Section

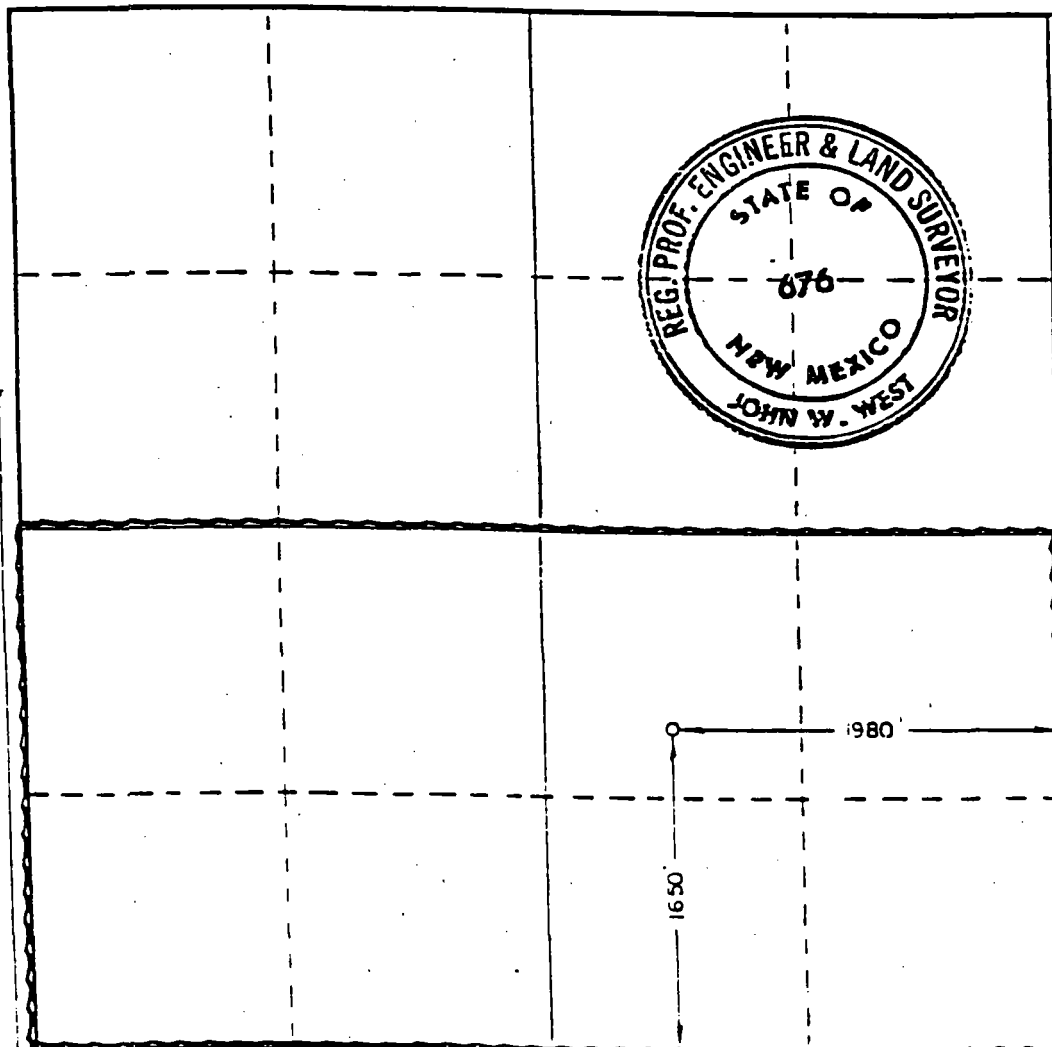
Operator <b>Amoco Production Co.</b>			Lease <b>Fed. "AE"</b>		Well No. <b>1</b>
Unit Letter <b>J</b>	Section <b>20</b>	Township <b>22 South</b>	Range <b>28 East</b>	County <b>Eddy</b>	
Actual Footage Location of Well: <b>1650</b> feet from the <b>South</b> line and <b>1980</b> feet from the <b>East</b> line					
Ground Level Elev. <b>3077.0</b>	Producing Formation <b>Morrow</b>		Pool/Dublin Ranch <b>Und. Morrow</b>		Dedicated Acreage: <b>320</b>

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure 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 consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ 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 of 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 Commission.



CERTIFICATION

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

Name Ray Cox

Position Administrative Supervisor

Company Amoco Production Company

Date September 12, 1979

I hereby certify that the well location shown on this plat was plotted from notes of actual surveys made by me under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed Sept. 7, 1979

Registered Professional Engineer and/or Land Surveyor

John W. West  
Certificate No. John W. West

District I  
PO Box 1980, Hobbs, NM 88241-1980  
District II  
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 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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number		Pool Code		Pool Name	
				Dublin Ranch	
Property Code		Property Name			Well Number
		Federal "AE"			1
OGRID No.		Operator Name			Elevation
		Santa Fe Energy Resources, Inc.			3077

<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	Comany
J	20	22-S	28-E		1650	South	1980	East	Eddy

<sup>11</sup> Bottom Hole Location If Different From Surface

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

<sup>12</sup> Dedicated Acres	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
320			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

16					<p><sup>17</sup> OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</p> <p><u>James P. "Phil" Stinson</u></p> <p>Signature</p> <p>James P. "Phil" Stinson</p> <p>Printed Name</p> <p>Agent for Santa Fe Energy</p> <p>Title</p> <p>11-8-96</p> <p>Date</p> <p><sup>18</sup> SURVEYOR CERTIFICATION</p> <p>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.</p> <p>Date of Survey</p> <p>Signature and Seal of Professional Surveyor:</p> <p>Certificate Number</p>

**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	5950'
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 December 10, 1996. 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'.
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 BOP 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**

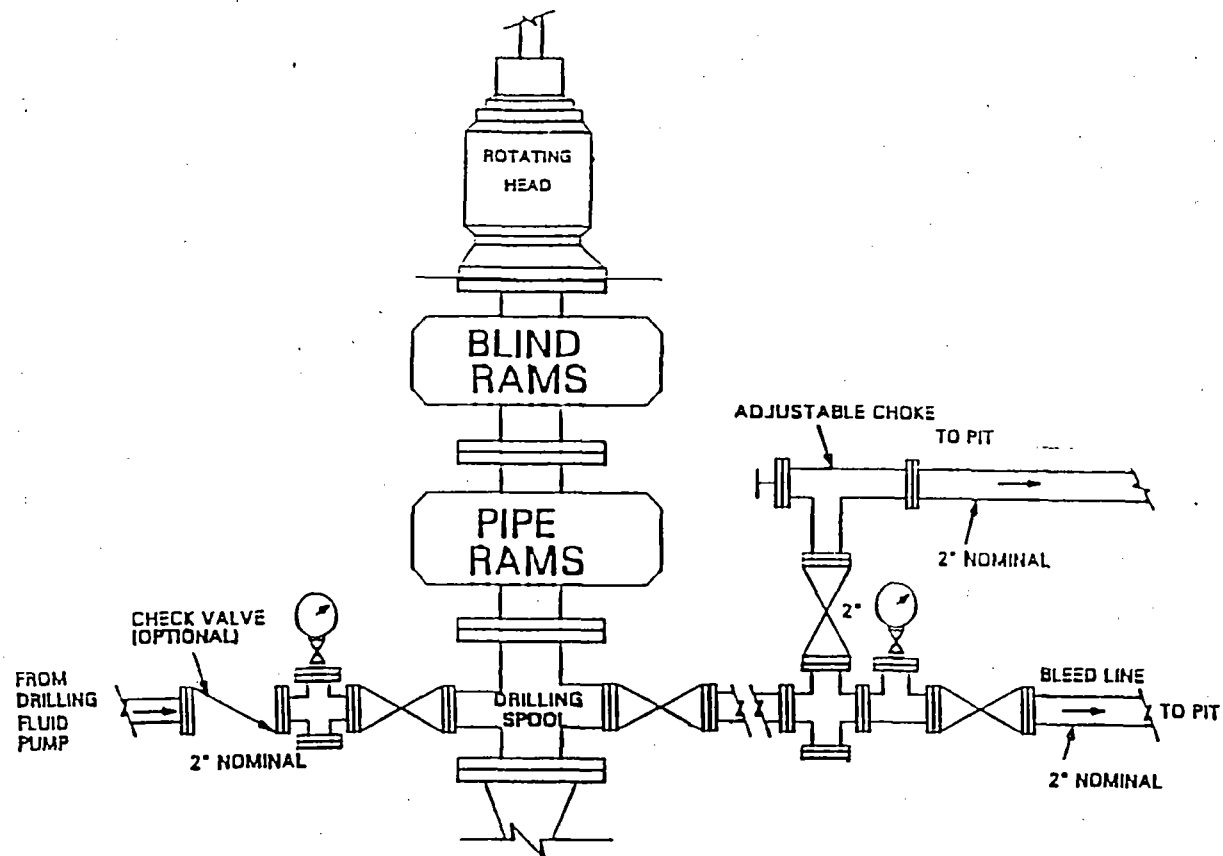


EXHIBIT C  
DRILLING FLUID PROGRAM  
SANTA FE ENERGY RESOURCES, INC.  
FEDERAL "AE" NO. 1  
Section 20, T-22-S, R-28-E  
Eddy County, New Mexico

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.





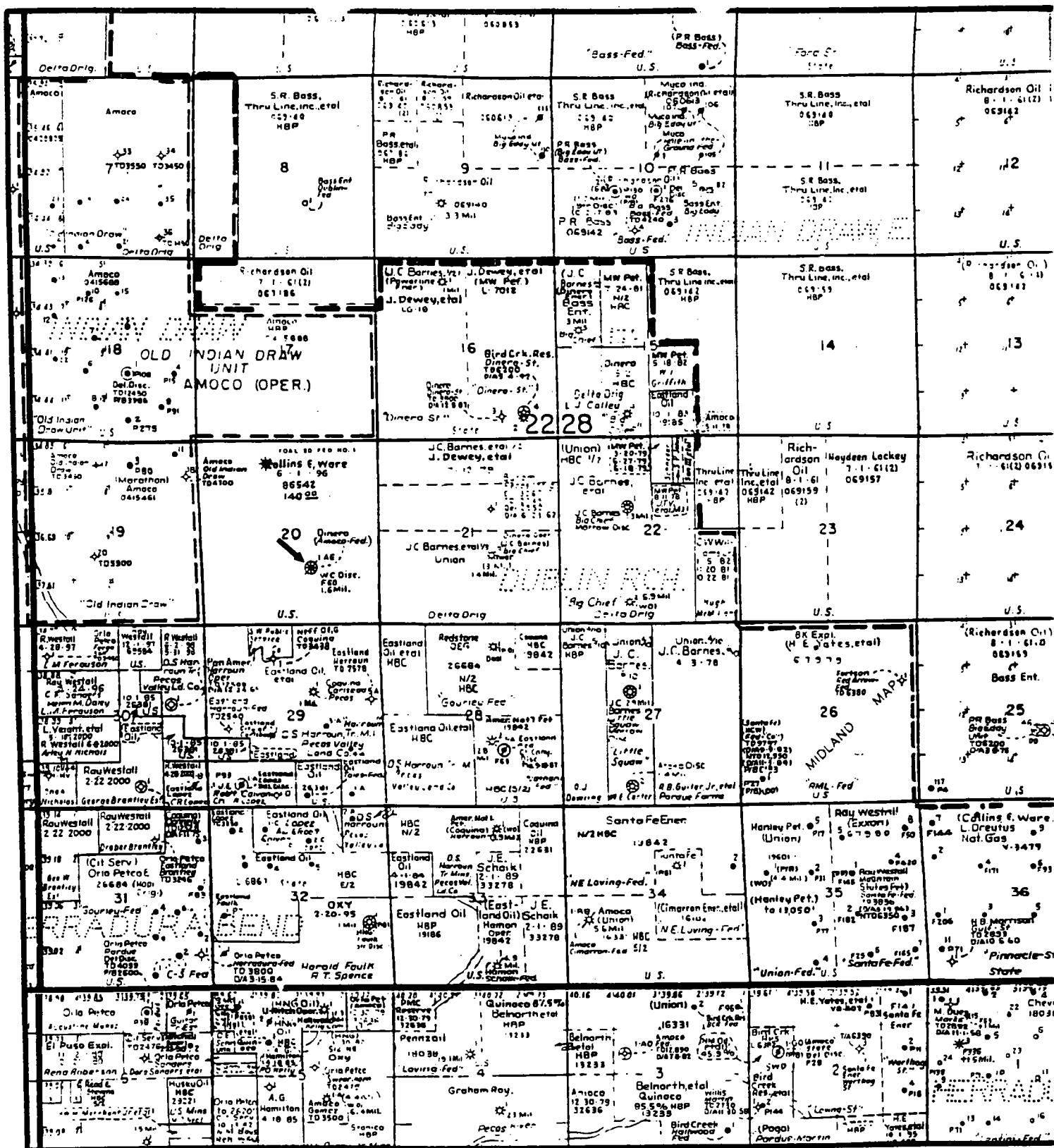
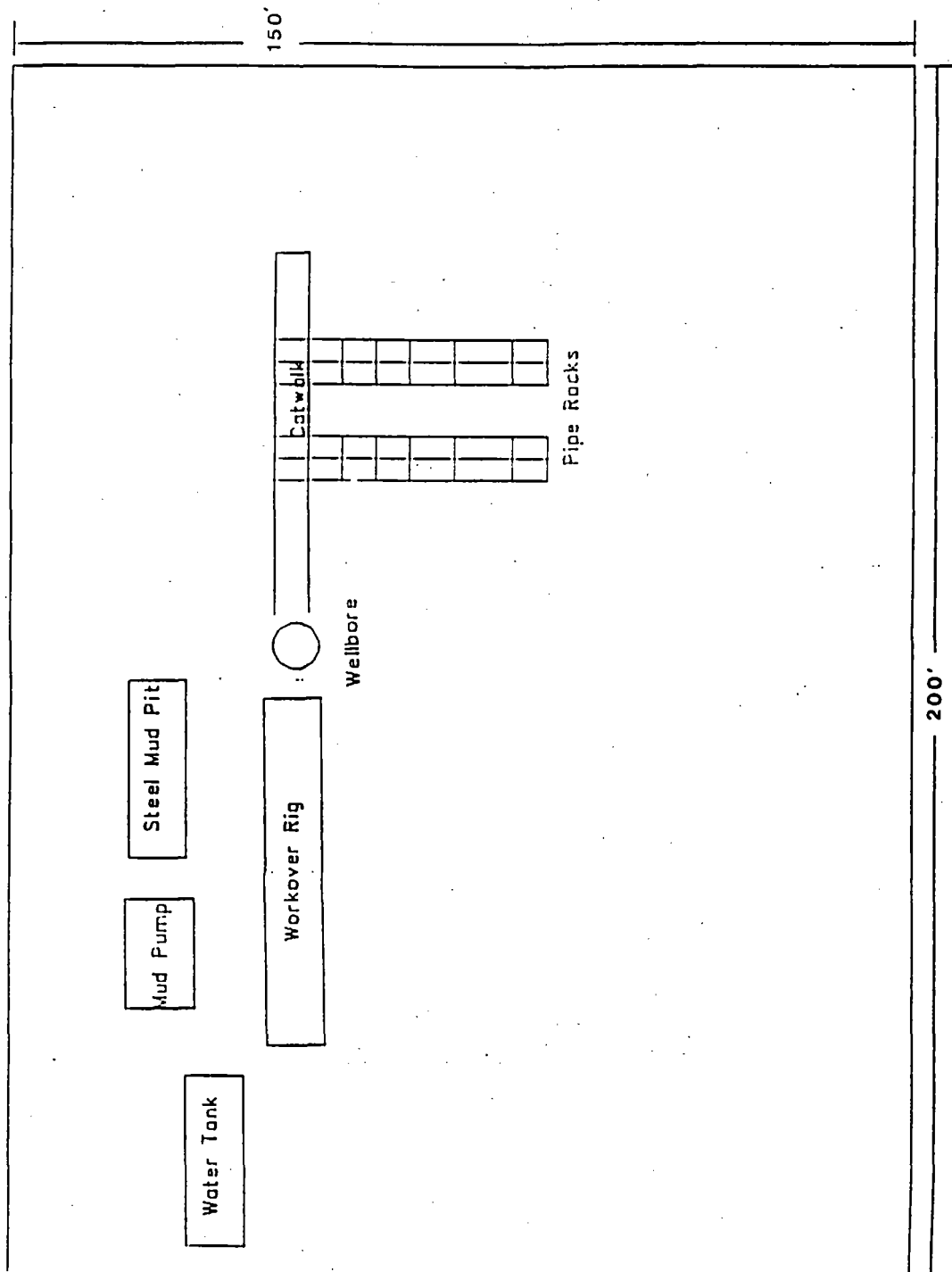


EXHIBIT F  
EXISTING WELLS  
SANTA FE ENERGY RESOURCES, INC.  
FEDERAL "AE" No. 1  
1650' FSL & 1980' FEL  
SEC 20, T-22-S, R-28-E  
EDDY COUNTY, NEW MEXICO



**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.

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 RESTORATION 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.

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.
- D. 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 Resources, 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 8<sup>th</sup> 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**

OPERATOR'S NAME SANTA FE ENERGY RESOURCES WELL NO. & NAME #1 FEDERAL "AE"  
 LOCATION 1650' F S L & 1980' E L SEC. 20, T. 22S., R. 28E.  
 LEASE NO. NM-86542 COUNTY EDDY STATE NEW MEXICO

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. EACH 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)  
☐ 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 ☒ 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 pad not necessary for production must be re-contoured to resemble the original contours of the surrounding terrain, and topsoil must be re-distributed and re-seeded 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 Seed (PLS), per acre.

- ☐ A. Seed Mixture 1 (Loamy Site)  
 Lehmanns Lovegrass (*Eragrostis lehmanniana*) 1.0  
 Side Oats Grass (*Bouteloua curtipendula*) 3.0  
 Sand Dropseed (*Sporobolus cryptandrus*) 1.0

- ☐ B. Seed Mixture 2 (Sandy Sites)  
 Sand Dropseed (*Sporobolus cryptandrus*) 1.0  
 Sand Lovegrass (*Eragrostis trichodes*) 1.0  
 Plains Bristlegrass (*Setaria macrostachya*) 2.0

- ☐ C. Seed Mixture 3 (Shallow Sites)  
 Sideoats Grass (*Bouteloua curtipendula*) 1.0  
 Lehmanns Lovegrass (*Eragrostis lehmanniana*) 1.0  
 or Bear Lovegrass (*E. chloromelas*)

- ☒ D. Seed Mixture 4 ("Gyp" Sites)  
 Alkali Sacaton (*Sporobolus airoides*) 1.0  
 Four-Wing Saltbush (*Atriplex canescens*) 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 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 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

..... CARLSBAD CONTROLLED WATER BA

I. DRILLING OPERATIONS REQUIREMENTS: [Re-Entry]

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 cement plug at 340 feet, 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 cement plug at 9365 feet, 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.

## 3. 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 INTERVAL FOR TURNOUT DITCHES	
Percent slope	Spacing interval
0% - 4%	400' - 150'
4% - 6%	250' - 125'
6% - 8%	200' - 100'
8% - 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).

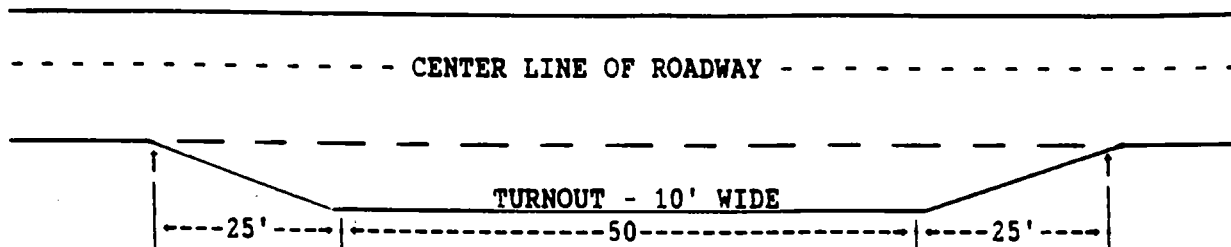
C. On road slopes exceeding 2%, drainage dips shall drain water into an adjacent lead-off ditch. Drainage dip location and spacing shall be determined by the formula:

$$\text{spacing interval} = \frac{400'}{\text{road slope in \%}} + 100'$$

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

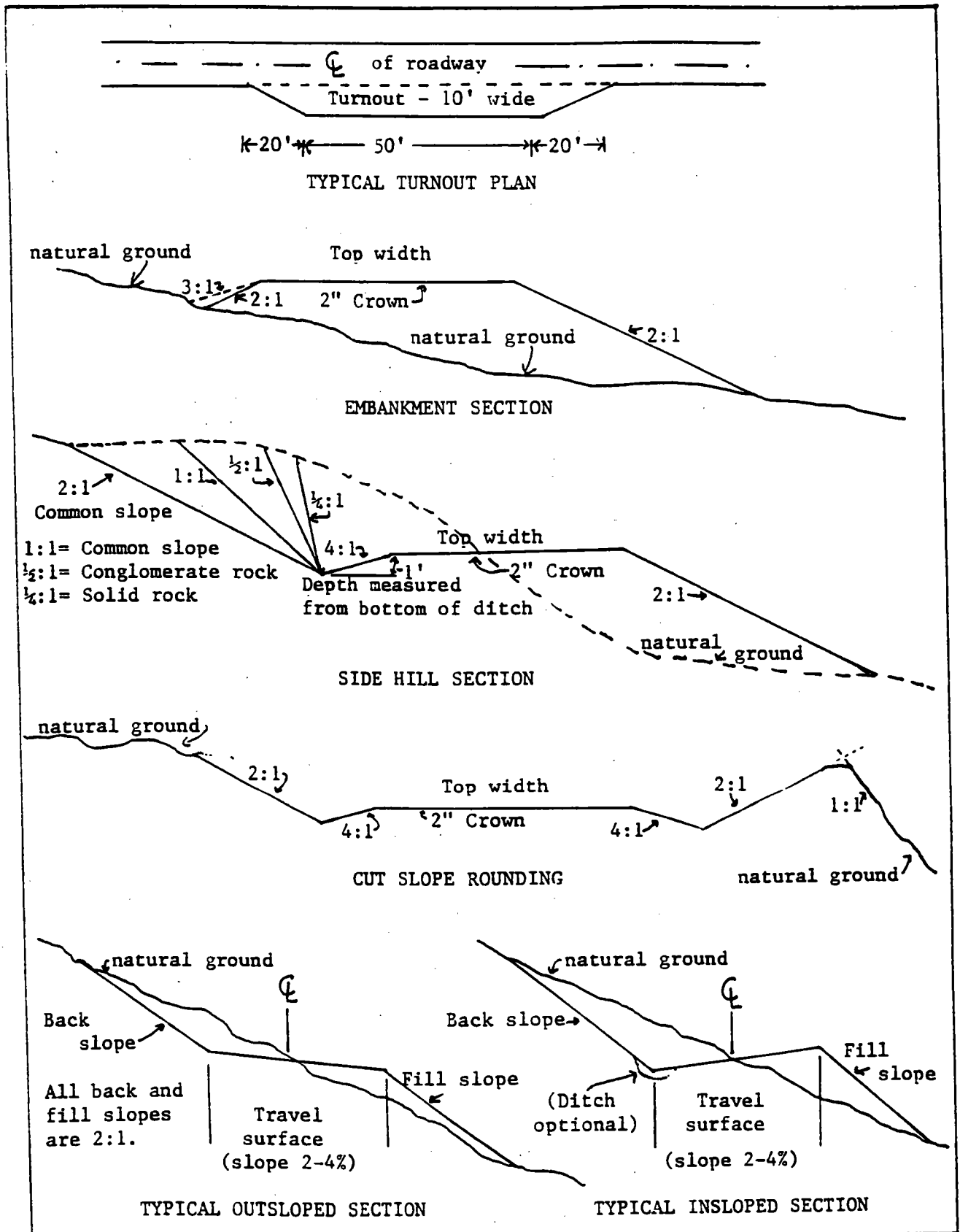
9. CULTURAL RESOURCES

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: None.

FIGURE 1: CROSS SECTIONS AND PLANS FOR TYPICAL ROAD CONSTRUCTION  
REPRESENTATIVE OF BLM RESOURCE, AND HIGHER CLASS, ROADS.

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



**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

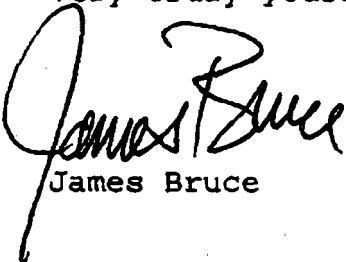
Burlington Resources Oil & Gas Company  
3300 North A Street, Building 6  
Midland, Texas 79705

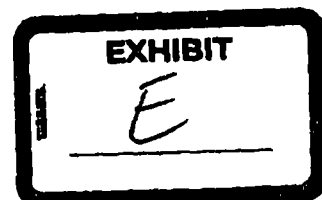
Louis Dreyfus Natural Gas Corporation  
Suite 600  
14000 Quail Springs Parkway  
Oklahoma City, Oklahoma 73134

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~~1~~SE~~4~~ of Section 20, Township 22 South, Range 28 East, NMPM, Eddy County, New Mexico. The well unit will be comprised of the SW~~1~~NE~~4~~ and NW~~1~~SE~~4~~ 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).

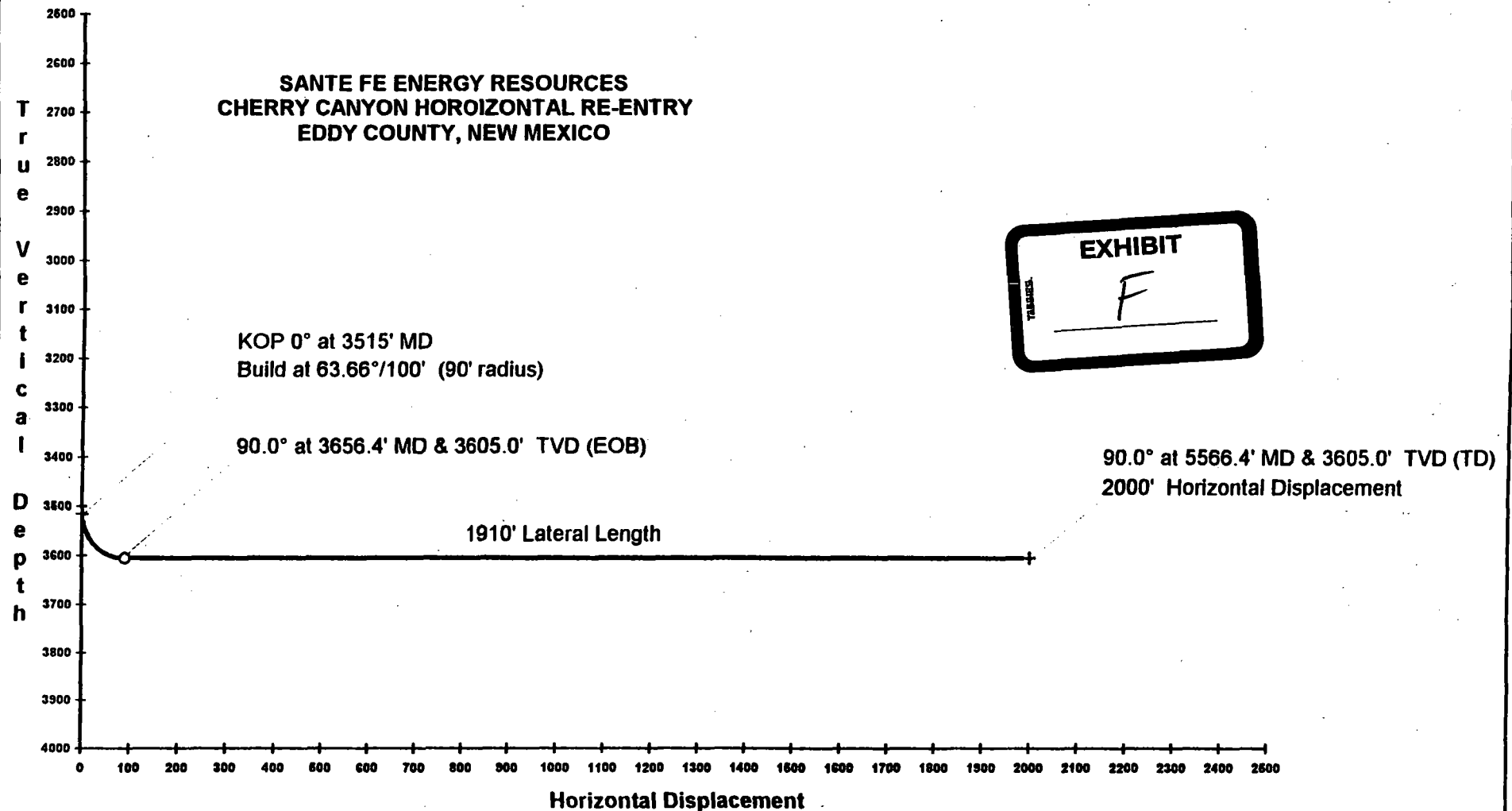
Very truly yours,

  
James Bruce



**VOGEL HORIZONTAL & DIRECTIONAL DRILLING**  
415 WEST WALL ST. MIDLAND TX 79701  
915-570-4719

**SANTE FE ENERGY RESOURCES  
CHERRY CANYON HORIZONTAL RE-ENTRY  
EDDY COUNTY, NEW MEXICO**



**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**

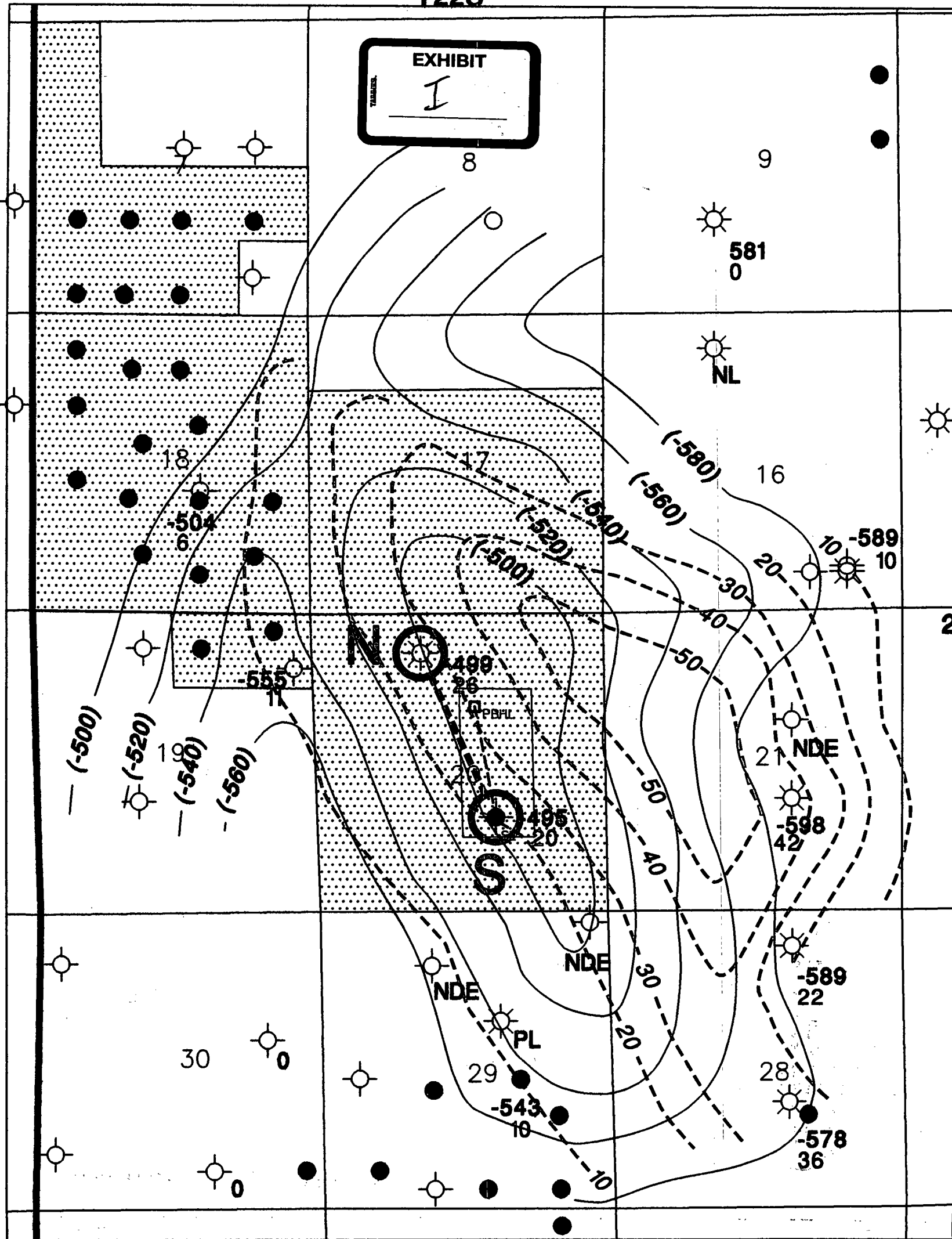
Santa Fe Energy Resources proposes to drill a horizontal well in Section 20, T22S, R28E of Eddy County, New Mexico. This well will test the "Foal Lobe" of the Cherry Canyon "IDE Sandstone" (refer to Cross Section A-A'). Santa Fe drilled the Foal 20 Fed #1 well in the N/2 of Section 20, T22S, R28E and 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.





T22S

EXHIBIT  
I



STRUCTURE CI = 20'  
ISOPACH CI = 10'



DIRECTIONAL DRILLING PROJECT AREA



SFER LEASEHOLD



Santa Fe Energy Resources, Inc.  
CENTRAL DIVISION  
MIDLAND, TEXAS

T22S, R28E  
**APPALOOSA PROSPECT**  
Eddy County, New Mexico

**IDE SAND, "FOAL LOBE"**  
STRUCTURE / ISOPACH  
(Density 8.2-10%)

Geol: G. Davis  
Scale: 1"=2000'  
APLOSAGO.DWG

C. L.  
Date: 2-17-97

T22S

EXHIBIT

I

9

581  
0

NL

16

589  
10

T  
28  
S

499  
26

PBHL

495  
20

NDE

598  
42

589  
22

NDE

PL

29

543  
10

28

578  
36

STRUCTURE


CI = 20'

ISOPACH

CI = 10'

DIRECTIONAL DRILLING PROJECT AREA

SFER LEASEHOLD

 **Santa Fe Energy Resources, Inc.**  
CENTRAL DIVISION  
MIDLAND, TEXAS

T22S, R28E  
**APPALOOSA PROSPECT**  
Eddy County, New Mexico

**IDE SAND, "FOAL LOBE"**  
STRUCTURE / ISOPACH  
(Density  $\geq 18\%$ )

Geol: G. Davis  
Scale: 1"=2000'  
APLOSAGD.DWG

C. I.  
Date: 2-17-97

