OPERATOR'S COPY

Form 3160-3
(August 1999)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NM-06784

6. If Indian, Allottee or Tribe Name

1a. Type of Work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.

1b. Type of Well: ☐ Oil Well ☑ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
Hale Federal Com., Well No. 3

2. Name of Operator
V-F Petroleum, Inc.

9. API Well No.

3a. Address
P.O. Box 1889 Midland, TX 79702

3b. Phone No. *(include area code)*
915-687-0008

10. Field and Pool, or Exploratory
Dos Hermanos Morrow

4. Location of Well *(Report location clearly and in accordance with any State requirements. *)*
At surface 1450' FSL & 660' FWL
At proposed prod. zone 950' FNL & 760' FWL R-111-P Potash

11. Sec., T., R., M., or Blk. and Survey or Area
Sec. 22-T20S-R30E

14. Distance in miles and direction from nearest town or post office*
20 miles east of Carlsbad, NM

12. County or Parish
Eddy

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 660' (760")

16. No. of Acres in lease
280

17. Spacing Unit dedicated to this well
640

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
100'

19. Proposed Depth
12,300'

20. BLM/BIA Bond No. on file
NM-2246

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3268' GL

22. Approximate date work will start*
September 1, 2001

23. Estimated duration
6 weeks

24. Attachments

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

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

25. Signature George R. Smith — Name *(Printed/Typed)* George R. Smith — Date 6/27/01

Title
Agent for: V-F Petroleum, Inc.

Approved by *(Signature)* — Name *(Printed/Typed)* MJ CHAVEZ — Date 9/14/01

Title STATE DIRECTOR — Office

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on reverse)

APPROVAL FOR 1 YEAR

Lease Responsibility Statement: V-F Petroleum, Inc. accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted on the leased land or portion thereof.

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS
ATTACHED

George R. Smith, agent

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-102
Revised March 17, 1999

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
		Dos Hermanos Morrow

4 Property Code	5 Property Name	6 Well Number
	HALE FEDERAL COM	3

7 OGRID No.	8 Operator Name	9 Elevation
	V-F PETROLEUM INC.	3268.

10 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	22	20-S	30-E		1450	SOUTH	660	WEST	EDDY

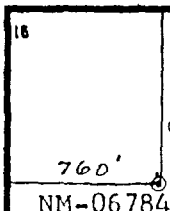
11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	22	20-S	30-E		950	NORTH	760	West	Eddy

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

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

George R. Smith

Signature George R. Smith, agent for:

Printed Name V-F Petroleum, Inc.

Title June 27, 2001

Date

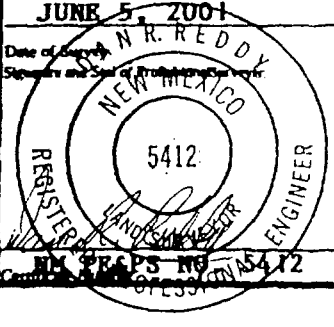
18 SURVEYOR CERTIFICATION

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

JUNE 5, 2001

Date of Survey

Signature and Seal of Professional Surveyor:



NM PRCPS NO. 5412

Certificate Number

APPLICATION FOR DRILLING

V-F PETROLEUM, INC.
Hale Federal Com., Well No. 3
Surface: 1450' FSL & 660' FWL, Sec. 22-T20S-R30E
Production: 950' FNL & 760' FWL, Sec. 22-T20S-R30E
Eddy County, New Mexico
Lease No.: NM-06784
(Development Well)

In conjunction with Form 3160-3, Application for Permit to Drill subject well, V-F Petroleum, Inc. submits the following items of pertinent information in accordance with BLM requirements:

1. The geologic surface formation is recent Permian with quaternary alluvium and other surficial deposits.

2. The estimated tops of geologic markers are as follows:

Rustler	425'	Wolfcamp Limestone	10,293'
Yates	1,778'	Middle Strawn Limestone	10,953'
Capitan Reef	2,319'	Atoka	11,243'
Delaware	3,653'	Morrow	11,688'
Bone Spring	6,450'	Lower Morrow	12,168'
Wolfcamp	10,124'	T.D	12,300'

3. The estimated depths at which water, oil or gas formations are anticipated to be encountered:

Water: Surface water between 100' - 300'.
Oil: None expected.
Gas: Possible in the Strawn below 10,953', Atoka below 11,243' and the Morrow below 11,688'.

4. Proposed Casing Program: Capitan Controlled Water Basin

HOLE SIZE	CASING SIZE	WEIGHT	GRADE	JOINT	SETTING DEPTH	QUANTITY OF CEMENT
20"	16"	65.0#	H-40	ST&C	400'	Circ. 450 sx HL & 150 "C" to surface.
15"	11 3/4"	42.0#	H-40	ST&C	750'	
15"	11 3/4"	47.0#	K-55	ST&C	1,500' 1745'	Circ. 1000 sx HL & 150 "C" to surface.
10 5/8"	8 5/8 "	24.0#	K-55	ST&C	1,950'	
10 5/8"	8 5/8"	32.0#	K-55	ST&C	3,900'	Circ. 900 sx HL & 300 "C" to surface.
7 7/8"	5 1/2"	17.0#	N-80	LT&C	6,150'	
7 7/8"	5 1/2"	20.0#	N-80	LT&C	12,300'	750 sx "H" returned to 8,000'.

NOTE: Deviation Requirements: Commencing at 4,500',. Kick off and build angle at 3 degrees per 100 feet. Drill and build curve section at 19 degrees to 9,500'. Natural drop section to near vertical at TD. See Exhibit "F".

5. Proposed Control Equipment: A 12" 5000 psi wp Shaffer Type LWS Double Gate BOP will be installed on the 11 3/4" casing. Casing and BOP will be tested according to Onshore Oil & Gas Order #2, not to exceed maximum surface estimated pressures of 2700 psi wp, before drilling out with 10 5/8" and will be tested weekly. See Exhibit "E".

6. MUD PROGRAM:		MUD WEIGHT	VIS.	W/L CONTROL
0' - 400':	Fresh water mud:	8.6 - 9.2 ppg	32 - 40	No W/L control
400' - 1500':	Brine water mud	10.0 - 10.1 ppg	28 - 29	No W/L control
1500' - 3900':	Brine water mud:	10.0 - 10.1 ppg	28 - 29	No W/L control
3900' - 10,600':	Fresh water mud:	8.3 - 8.4 ppg	28 - 29	No W/L control
10,600' - 12,300':	Cut Brine mud:	9.8 - 10.0 ppg	36 - 40	W/L cont. 12 – to 6 cc in Morrow

7. Auxiliary Equipment: Blowout Preventer, gas detector, Kelly cock, and stabbing valve.

8. Testing, Logging, and Coring Program:
   Drill Stem Tests: None.
   Logging: T.D. to 3900': GR-DNL-DLL
   3900' to Surface: GR-
   Coring: None planned

9. No abnormal pressures or temperatures are anticipated. In the event abnormal pressures are encountered the proposed mud program will be modified to increase the mud weight. Estimated maximum BHP = 5412 and Surface Pressure = 2706 with a temperature of 183°.

10. H_2S: None expected.

11. Anticipated starting date: September 25, 2001
    Anticipated completion of drilling operations: Approximately 30 - 40 days.

MULTI POINT SURFACE USE AND OPERATIONS PLAN

V-F PETROLEUM INC.
Hale Federal Com., Well No. 3
Surface: 1450' FSL & 660' FWL, Sec. 22-T20S-R30E
Production: 950' FNL & 760' FWL, Sec. 22-T20S-R30E
Eddy County, New Mexico
Lease No.: NM-06784
(Development Well)

This plan is submitted with the Application for Permit to Drill the above described well. The purpose of the plan is to describe the location of the proposed well, the proposed construction activities and operations plan, to be followed in rehabilitating the surface environmental effects associated with the operations.

1. EXISTING ROADS:

A. Exhibit "A" is a portion of a USGS/BLM Topo map showing the location of the proposed well as staked. The well site location is approximately 17 road miles northeast of Carlsbad, New Mexico. Traveling east from Carlsbad there will be approximately 17 miles of paved highway and 2.8 miles of gravel ranch/oilfield roads.

B. Directions: Travel east from Carlsbad, NM on U.S. Highway 62/180 for approximately 17 miles between MM# 54 & 55, .27 mile east of the NM Highway 31 turnoff. Turn north at a V-F Petroleum sign onto a good gravel road paralleling a power line. Continue north for 1.6 miles; then NE for .5 mile; then north for .4 mile to a bend in the road 500 feet south of the Hale Fed. Com., Well No. 2 well pad. The start of the proposed access road is staked at this bend on the west side and will run north for 600 feet parallel to a two track beside a PNM gas pipeline. The proposed access road will then turn west for approximately 380 feet to the southeast corner of the proposed well site.

2. PLANNED ACCESS ROAD:

A. Length and Width: The access road will be constructed to a width of 12 feet and will be approximately 1000 feet in length. The proposed access road is color coded red on Exhibits "A ".

B. Construction: The proposed access road will be constructed by grading and topping with compacted caliche and will be properly drained.

C. Turnouts: One turnout may be required at the midpoint, increasing the road width to 20 feet for passing.

D. Culverts: None required.

E. Cuts and Fills: None required except the leveling of small dunes.

F. Gates, Cattle guards: None required.

G. Off Lease R/W: None required.

3. LOCATION OF EXISTING WELLS:

A. Existing wells within a two-mile radius are shown on Exhibit "C".

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES;

A. There are gas production facilities on the lease at this time. The Hale Fed. Com., #2 is located 1650' FSL & 1800' FWL, Sec. 22-T20S-R30E is a producing gas well

B. If the well proves to be commercial, the necessary production facilities, gas production-process equipment and tank battery, if required, will be installed on the drilling pad. A 4" O.D. grade J55 steel line with a test to 250#, to carry a maximum pressure of 125 psi, will be run on the surface approximately 800 feet east, parallel to the proposed access road, to the PNM pipeline, if PNM can handle the gas. A Sundry Report will be submitted for a line if the above is not feasible.

5. LOCATION AND TYPE OF WATER SUPPLY:

A. It is planned to drill the proposed well with fresh water that will be obtained from private or commercial sources and will be transported over the existing and proposed access roads.

6. SOURCE OF CONSTRUCTION MATERIALS:

A. Caliche for surfacing the proposed access road and well site pad will be obtained on location, if available, or from a Federal pit to be cleared in the NE¼NW¼ of Section 27-T20S-R30E. No surface materials will be disturbed except those necessary for actual grading and leveling of the drill site and access road.

7. METHODS OF HANDLING WASTE DISPOSAL:

A. Drill cuttings will be disposed of in the reserve pits.

B. Drilling fluids will be allowed to evaporate in the reserve pits until the pits are dry.

C. All pits will be fenced with normal fencing materials to prevent livestock and wildlife from entering the area.

D. Water produced during operations will be collected in tanks until hauled to an approved disposal system, or a separate disposal application will be submitted to the BLM for approval.

E. Oil produced during operations will be stored in tanks until sold.

F. Current laws and regulations pertaining to the disposal of human waste will be complied with.

G. Trash, waste paper, garbage and junk will be contained in trash bins to prevent scattering and will be removed for deposit in an approved sanitary landfill within 30 days after finishing drilling and/or completion operations.

8. ANCILLARY FACILITIES:

A. None required.

9. WELL SITE LAYOUT:

A. Exhibit "D" shows the relative location and dimensions of the well pad, reserve pits, and major rig components.

B. Mat Size: 175' X 290', plus 110' X 120' reserve pits. The pits will be on the northeast.

C. Cut & Fill: A 3 - 4 foot cut on the northwest with fill to the south and east.

D. The surface will be topped with compacted caliche and the reserve pits will be plastic lined.

10. PLANS FOR RESTORATION OF THE SURFACE:

A. After completion of drilling and/or completion operations, all equipment and other material not required for operations will be removed. Pits will be filled and the location cleaned of all trash and junk to leave the well site in an aesthetically pleasing a condition as possible

B. Any unguarded pits containing fluids will be fenced until they are filled.

C. If the proposed well is non-productive, all rehabilitation and/or vegetation requirements of the Bureau of Land Management will be complied with and will be accomplished as expeditiously as possible. All pits will be filled and leveled as soon as they are dry enough to work after abandonment.

11. OTHER INFORMATION:

A. Topography: The proposed well site and access road is located on the south side of an east/west running hill. The location has a southeasterly slope of 3 - 4% from an elevation of 3268'.

B. Soil: The topsoil at the well site is a moderately dark brown colored, weakly calcareous soil with caliche possible below four feet. The soil is of the Pajarito–Dune land complex Soils Series.

C. Flora and Fauna: The vegetation cover is a sparse to fair grass cover of three-awn and other miscellaneous native grasses along with plants of mesquite, yucca, creosote bush, sage, shinnery oak brush, broomweed, cacti and miscellaneous weeds and wildflowers. The wildlife consists of rabbits, coyotes, rattlesnakes, lizards, dove, quail and other wildlife typical of the semi-arid desert land.

D. Ponds and Streams: None except potash disposal ponds 1 – 1.5 miles to the south.

E. Residences and Other Structures: None, but existing oil field facilities.

F. Land Use: Cattle grazing and potash mines.

G. Surface Ownership: The proposed well site and access road are on Federal surface.

H. There is no evidence of archaeological, historical or cultural sites on the proposed 400' X 400'site and proposed access road right of way. Archaeological Survey Consultants, P. O. Box D, Roswell, NM 88202, are conducting an archaeological survey and their report will be submitted to the appropriate government agencies.

12. OPERATOR'S REPRESENTATIVE:

A. The field representative responsible for assuring compliance with the approved surface use and operations plan is as follows:

Tom Bell
V-F Petroleum Inc.
P.O. Box 1210
Midland, TX 79702
Office Phone: (915) 687-0008

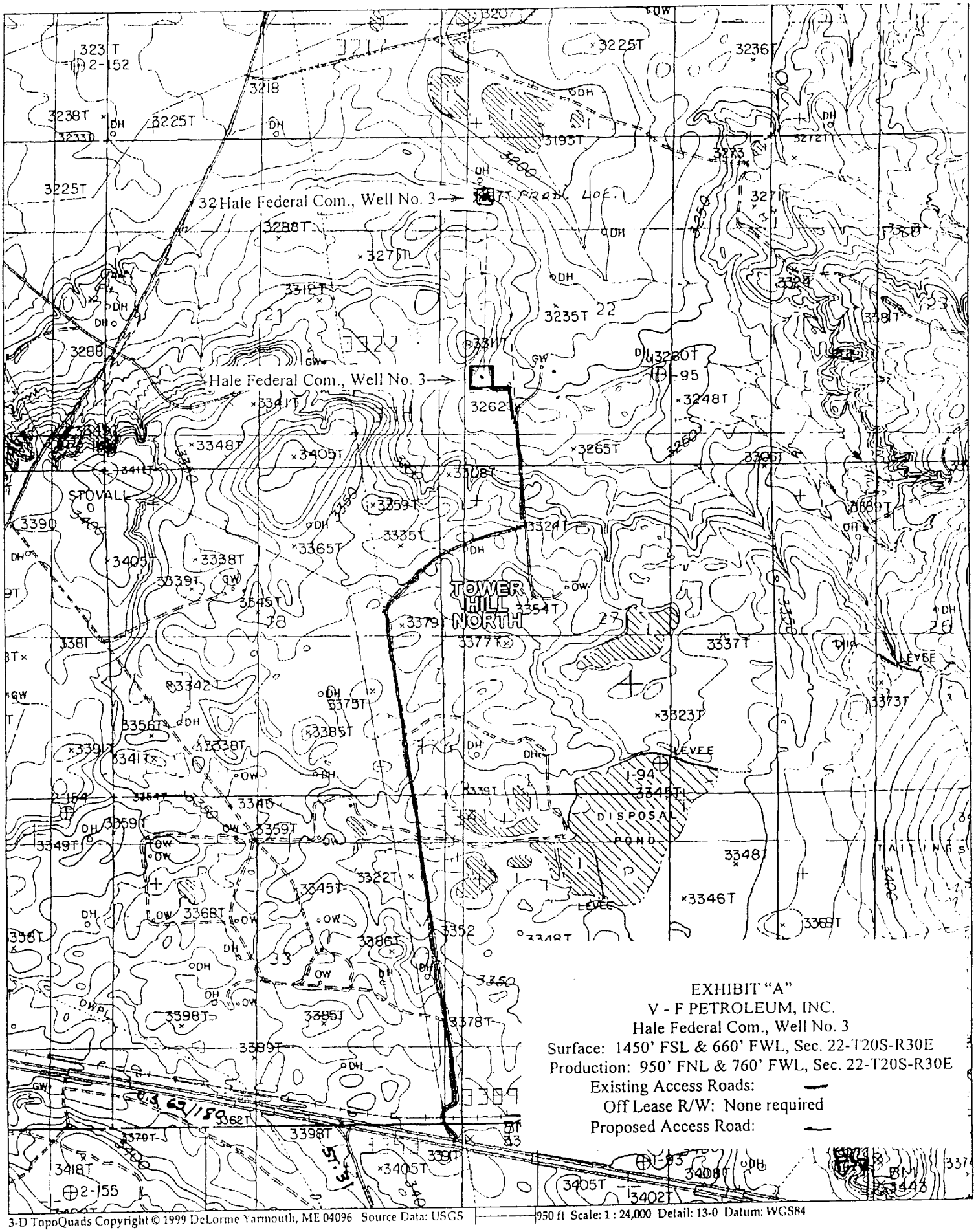
Larry Brazile
V-F Petroleum, Inc.
P.O. Box 1210
Midland, TX 79702
Office Phone: (915) 687-0008

13. CERTIFICATION:

I hereby certify that I have inspected the proposed drill site and access route; that I am familiar with the conditions which presently exist; that the statements made in the 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 V-F Petroleum Inc. and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

June 27, 2001

George R. Smith
Agent for: V-F Petroleum Inc.



950 ft Scale: 1 : 24,000 Detail: 13-0 Datum: WGS84

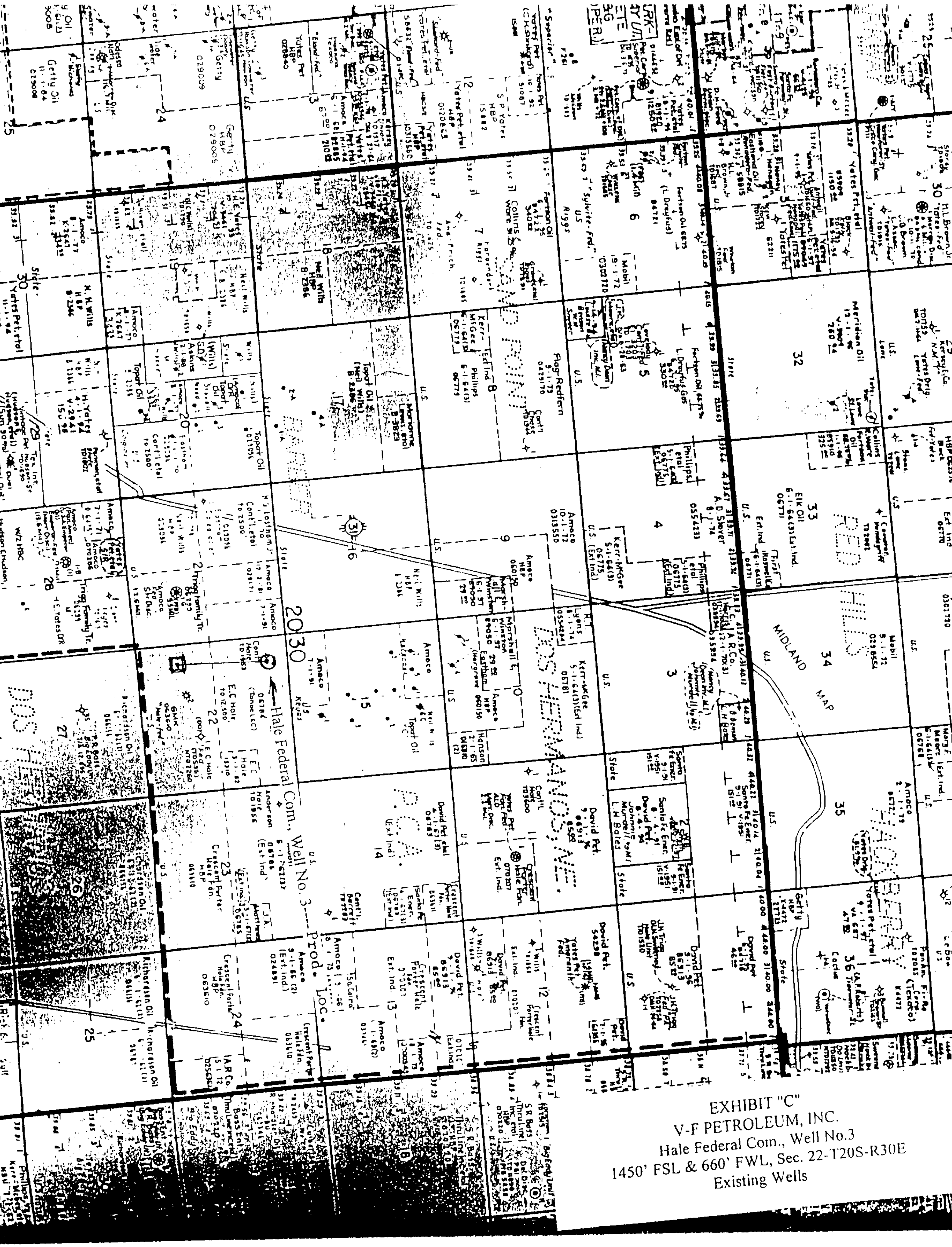


EXHIBIT "C"
V-F PETROLEUM, INC.
Hale Federal Com., Well No.3
1450' FSL & 660' FWL, Sec. 22-T20S-R30E
Existing Wells

TMBR/Sharp Rig #22

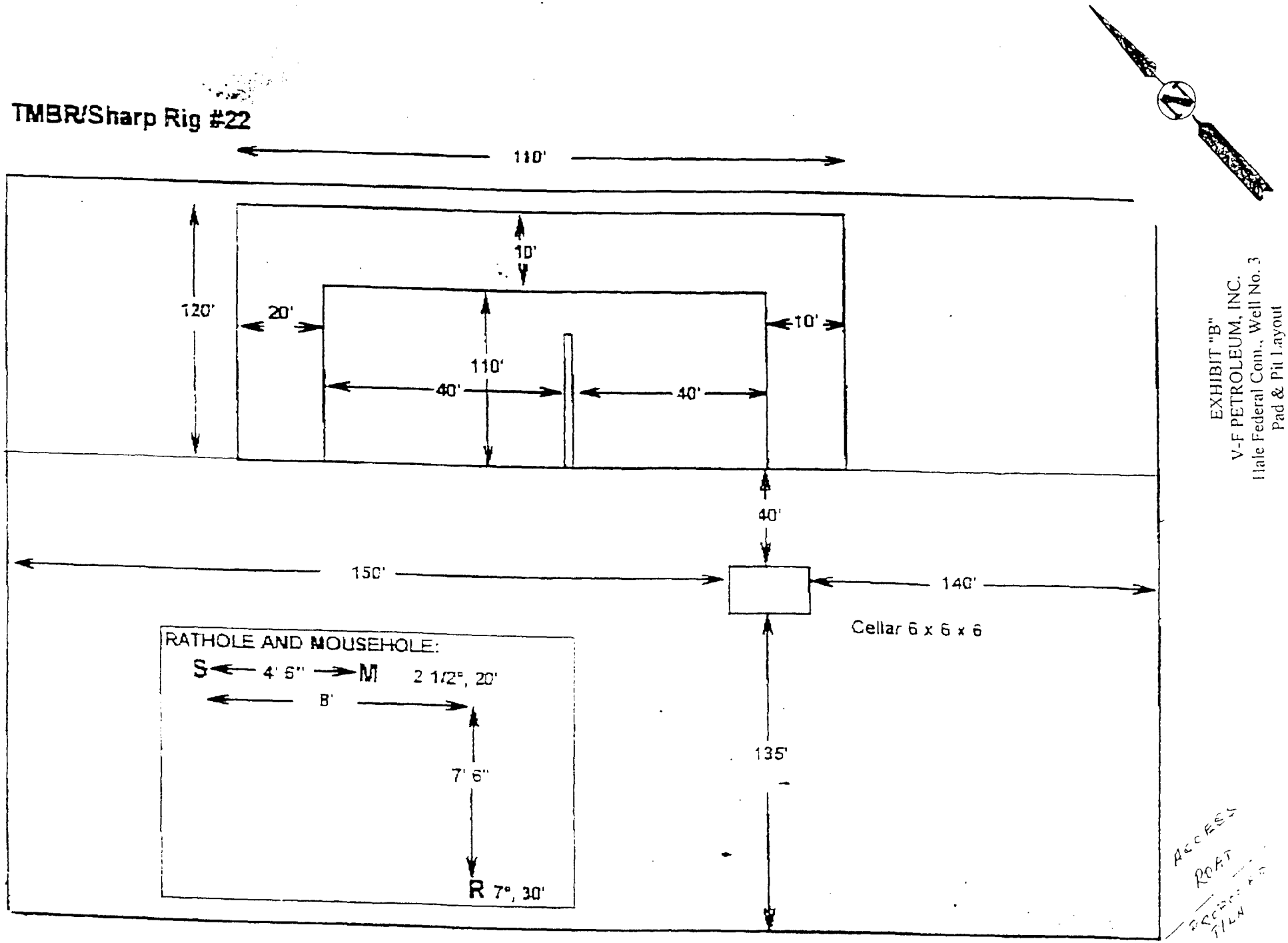


EXHIBIT "B"
V-F PETROLEUM, INC.
Hale Federal Com., Well No. 3
Pad & Pit Layout

REV 2/7/96

TIMBER/SHARP DRILLING

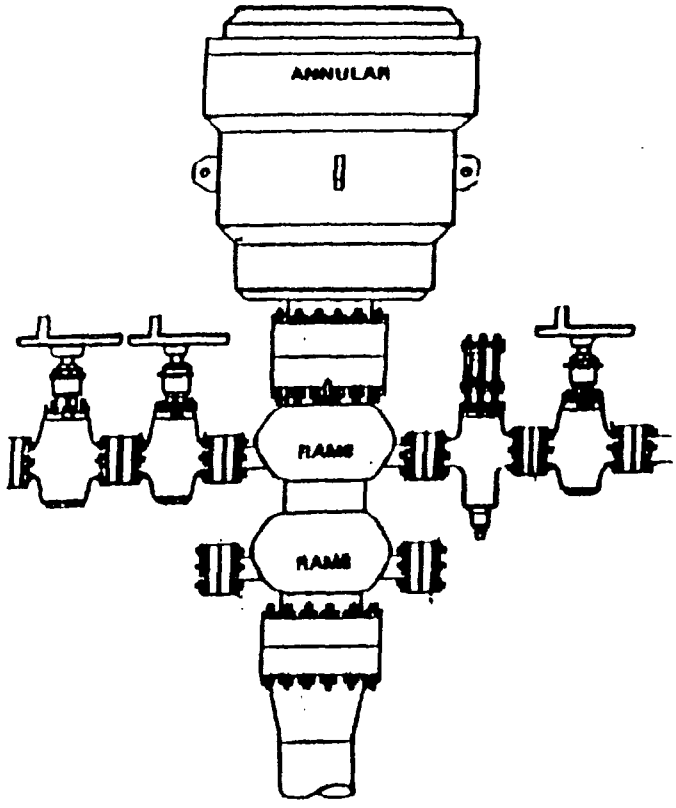
B.O.P. Equipment Intended for use on Rig # 24
Well To Be drilled for Timber/Sharp

' All B.O.P equipment is H2S Trim '
' All Accumulators are Koomey Type-80 : Dual Power Electric/Air '
' Choke Manifold: ' See sheet 2
4' Valves : Cameron F/FC, Shaffer DB Hydraulic
2" Check Valve: Cameron Type R
2' Valves : Cameron or Shaffer

Annular Shaffer Type: Spherical
Annular PSI: 3000
(If Shaffer: Spherical , If Hydril: Type GK)
BOP Type Shaffer LWS
(If Shaffer: LWS or SL, If Cameron: Type U)
BOP Size: 13 5/8 " - 5000 PSI
Rotating Head Type Smith
Rot-Head Furnished By Timber
Rams in top gate: 4 1/2 Pipe
Rams in bottom: Blinds

Side Outlets used:
Bottom X Top ___

4" Valves on Tee



B.O.P. Equipment Intended for use on Rig # 24
Well To Be drilled for Timber/Sharp

' All Valves (H2S) '

Choke Manifold:
Pressure Rating 3,000 or 5,000 (as Req.)
1 - 4" Valves
2 - 2" Valves
2 - 2" Adjustable Chokes

Valve Types Used:
Cameron - F or FC
Shaffer - B Floseal
WKM - type 2
Chokes - Cameron H2 or TC unibolt

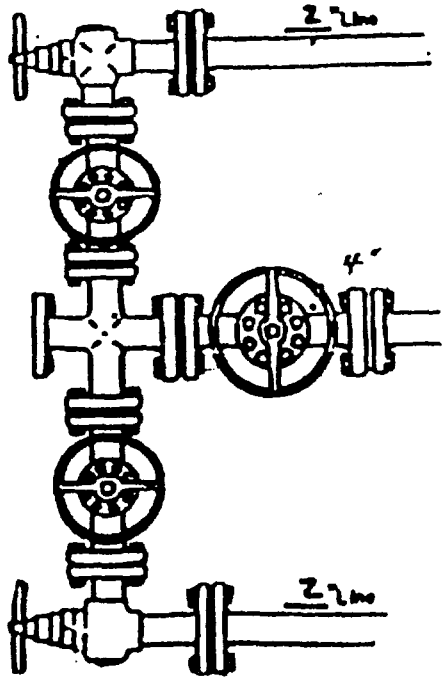


EXHIBIT "E"
V-F PETROLEUM, INC.
Hale Federal Com., Well No. 3
BOP Specifications

ILLEGIBLE

V-F Petroleum Inc.
Elwyn C. Hale #3

slot #1

Eddy County New Mexico

P R O P O S A L L I S T I N G

by
Baker Hughes INTEQ

Your ref : Rev 2
Our ref : prop2655
License :

Date printed : 22-Jun-2001
Date created : 28-Dec-2000
Last revised : 22-Jun-2001

Field is centred on 0.000,0.000,0.000 00000,N
Structure is centred on n32 30 0.000,w104 15 0.000,0

Slot location is n32 30 0.000,w104 15 0.000
Slot Grid coordinates are N 545622.802, E 525691.731
Slot local coordinates are 0.00 N 0.00 E

Projection type: Mercator - New Mexico East (3001), Spheroid: Clarke - 1866

Reference North is True North

EXHIBIT "F"
V-F PETROLEUM, INC.
Hale Federal Com., Well No. 3
Directional Drilling Program
Surface: 1450' FSL & 660' FWL, Sec. 22-T20S-R30E
Production: 950 FNL & 760' FWL, Sec. 22-T20S-R30E

V-F Petroleum Inc.
Elwyn C Hale #3,slot #1
,Eddy County New Mexico

PROPOSAL LISTING Page 1
Your ref : Rev 2
Last revised : 22-Jun 2001

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert Depth	RECTANGULAR COORDINATES		Dogleg Deg/100ft	Vert Sect	
3900.00	0.00	1.99	3900.00	0.00 N	0.00 E	0.00	0.00	
4000.00	0.00	1.99	4000.00	0.00 N	0.00 E	0.00	0.00	KOP/Build 2.5 deg/100
4100.00	2.50	1.99	4099.97	2.18 N	0.08 E	2.50	2.18	
4200.00	5.00	1.99	4199.74	8.72 N	0.30 E	2.50	8.72	
4300.00	7.50	1.99	4299.14	19.60 N	0.68 E	2.50	19.61	
4400.00	10.00	1.99	4397.97	34.80 N	1.21 E	2.50	34.82	
4500.00	12.50	1.99	4496.04	54.29 N	1.89 E	2.50	54.33	
4600.00	15.00	1.99	4593.17	78.05 N	2.71 E	2.50	78.09	
4700.00	17.50	1.99	4689.16	106.01 N	3.68 E	2.50	106.07	
4800.00	20.00	1.99	4783.85	138.13 N	4.80 E	2.50	138.21	
4900.00	22.50	1.99	4877.04	174.35 N	6.05 E	2.50	174.46	
5000.00	25.00	1.99	4968.57	214.60 N	7.45 E	2.50	214.73	
5100.00	27.50	1.99	5058.25	258.80 N	8.99 E	2.50	258.95	
5200.00	30.00	1.99	5145.91	306.86 N	10.66 E	2.50	307.05	
5284.28	32.11	1.99	5218.11	350.31 N	12.17 E	2.50	350.52	EOC/Hold 32.11 deg Inc.
5500.00	32.11	1.99	5400.84	464.90 N	16.15 E	0.00	465.18	
6000.00	32.11	1.99	5824.37	730.49 N	25.37 E	0.00	730.94	
6500.00	32.11	1.99	6247.90	996.08 N	34.59 E	0.00	996.69	
7000.00	32.11	1.99	6671.43	1261.67 N	43.82 E	0.00	1262.43	
7298.82	32.11	1.99	6924.54	1420.40 N	49.33 E	0.00	1421.25	KOP #2/Drop .60 deg/100
7349.99	31.80	1.99	6967.96	1447.46 N	50.27 E	0.60	1448.33	
7449.99	31.20	1.99	7053.22	1499.68 N	52.08 E	0.60	1500.58	
7549.99	30.60	1.99	7139.03	1551.00 N	53.86 E	0.60	1551.94	
7649.99	30.00	1.99	7225.37	1601.42 N	55.62 E	0.60	1602.39	
7749.99	29.40	1.99	7312.23	1650.94 N	57.33 E	0.60	1651.93	
7849.99	28.80	1.99	7399.61	1699.54 N	59.02 E	0.60	1700.57	
7949.99	28.20	1.99	7487.49	1747.23 N	60.68 E	0.60	1748.28	
8049.99	27.60	1.99	7575.86	1793.99 N	62.30 E	0.60	1795.08	
8149.99	27.00	1.99	7664.72	1839.83 N	63.89 E	0.60	1840.94	
8249.99	26.40	1.99	7754.06	1884.74 N	65.45 E	0.60	1885.87	
8349.99	25.80	1.99	7843.86	1928.70 N	66.98 E	0.60	1929.87	
8449.99	25.20	1.99	7934.12	1971.73 N	68.48 E	0.60	1972.92	
8549.99	24.60	1.99	8024.83	2013.81 N	69.94 E	0.60	2015.02	
8649.99	24.00	1.99	8115.96	2054.93 N	71.36 E	0.60	2056.17	
8749.99	23.40	1.99	8207.53	2095.10 N	72.76 E	0.60	2096.37	
8849.99	22.80	1.99	8299.51	2134.31 N	74.12 E	0.60	2135.60	
8949.99	22.20	1.99	8391.90	2172.56 N	75.45 E	0.60	2173.87	
9049.99	21.60	1.99	8484.68	2209.83 N	76.74 E	0.60	2211.17	
9149.99	21.00	1.99	8577.85	2246.14 N	78.01 E	0.60	2247.49	
9249.99	20.40	1.99	8671.40	2281.46 N	79.23 E	0.60	2282.84	
9349.99	19.80	1.99	8765.30	2315.81 N	80.42 E	0.60	2317.20	
9449.99	19.20	1.99	8859.57	2349.17 N	81.58 E	0.60	2350.58	
9549.99	18.60	1.99	8954.18	2381.54 N	82.71 E	0.60	2382.98	
9649.99	18.00	1.99	9049.12	2412.92 N	83.80 E	0.60	2414.38	
9749.99	17.40	1.99	9144.38	2443.31 N	84.85 E	0.60	2444.79	
9849.99	16.80	1.99	9239.96	2472.69 N	85.87 E	0.60	2474.18	
9949.99	16.20	1.99	9335.84	2501.08 N	86.86 E	0.60	2502.58	
10049.99	15.60	1.99	9432.02	2528.46 N	87.81 E	0.60	2529.98	
10149.99	15.00	1.99	9528.47	2554.83 N	88.73 E	0.60	2556.37	
10249.99	14.40	1.99	9625.20	2580.19 N	89.61 E	0.60	2581.74	

All data is in feet unless otherwise stated.
Coordinates from slot #1 and TVD from rotary table.
Bottom hole distance is 2881.75 on azimuth 1.99 degrees from wellhead.
Vertical section is from wellhead on azimuth 1.99 degrees.
Calculation uses the minimum curvature method.
Presented by Baker Hughes INTEQ

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert Depth	RECTANGULAR COORDINATES		Dogleg Deg/100ft	Vert Sect	
10349.99	13.80	1.99	9722.19	2604.53 N	90.45 E	0.60	2606.10	
10449.99	13.20	1.99	9819.42	2627.86 N	91.26 E	0.60	2629.45	
10549.99	12.60	1.99	9916.90	2650.18 N	92.04 E	0.60	2651.77	
10635.05	12.09	1.99	10000.00	2668.35 N	92.67 E	0.60	2669.96	Penetrate Strawn
10649.99	12.00	1.99	10014.60	2671.47 N	92.78 E	0.60	2673.08	
10749.99	11.40	1.99	10112.53	2691.73 N	93.48 E	0.60	2693.39	
10849.99	10.80	1.99	10210.65	2710.97 N	94.15 E	0.60	2712.61	
10949.99	10.20	1.99	10308.98	2729.19 N	94.78 E	0.60	2730.83	
11049.99	9.60	1.99	10407.49	2746.37 N	95.38 E	0.60	2748.02	
11149.99	9.00	1.99	10506.17	2762.52 N	95.94 E	0.60	2764.18	
11249.99	8.40	1.99	10605.02	2777.64 N	96.46 E	0.60	2779.31	
11349.99	7.80	1.99	10704.03	2791.72 N	96.95 E	0.60	2793.40	
11449.99	7.20	1.99	10803.17	2804.76 N	97.41 E	0.60	2806.45	
11549.99	6.60	1.99	10902.44	2816.77 N	97.82 E	0.60	2818.47	
11649.99	6.00	1.99	11001.84	2827.73 N	98.20 E	0.60	2829.44	
11749.99	5.40	1.99	11101.35	2837.66 N	98.55 E	0.60	2839.37	
11838.80	5.40	1.99	11189.55	2845.54 N	98.82 E	0.00	2847.26	
11849.99	4.80	1.99	11200.95	2846.54 N	98.86 E	0.60	2848.26	
11949.99	4.20	1.99	11300.64	2854.39 N	99.13 E	0.60	2856.11	
12049.99	3.60	1.99	11400.41	2861.18 N	99.36 E	0.60	2862.91	
12149.99	3.00	1.99	11500.24	2866.94 N	99.56 E	0.60	2868.66	
12249.99	2.40	1.99	11600.13	2871.64 N	99.73 E	0.60	2873.37	
12349.99	1.80	1.99	11700.06	2875.31 N	99.86 E	0.60	2877.04	
12449.99	1.20	1.99	11800.03	2877.92 N	99.95 E	0.60	2879.66	
12549.99	0.60	1.99	11900.02	2879.49 N	100.00 E	0.60	2881.23	
12649.97	0.00	1.99	12000.00	2880.01 N	100.02 E	0.60	2881.75	PBHL/TD

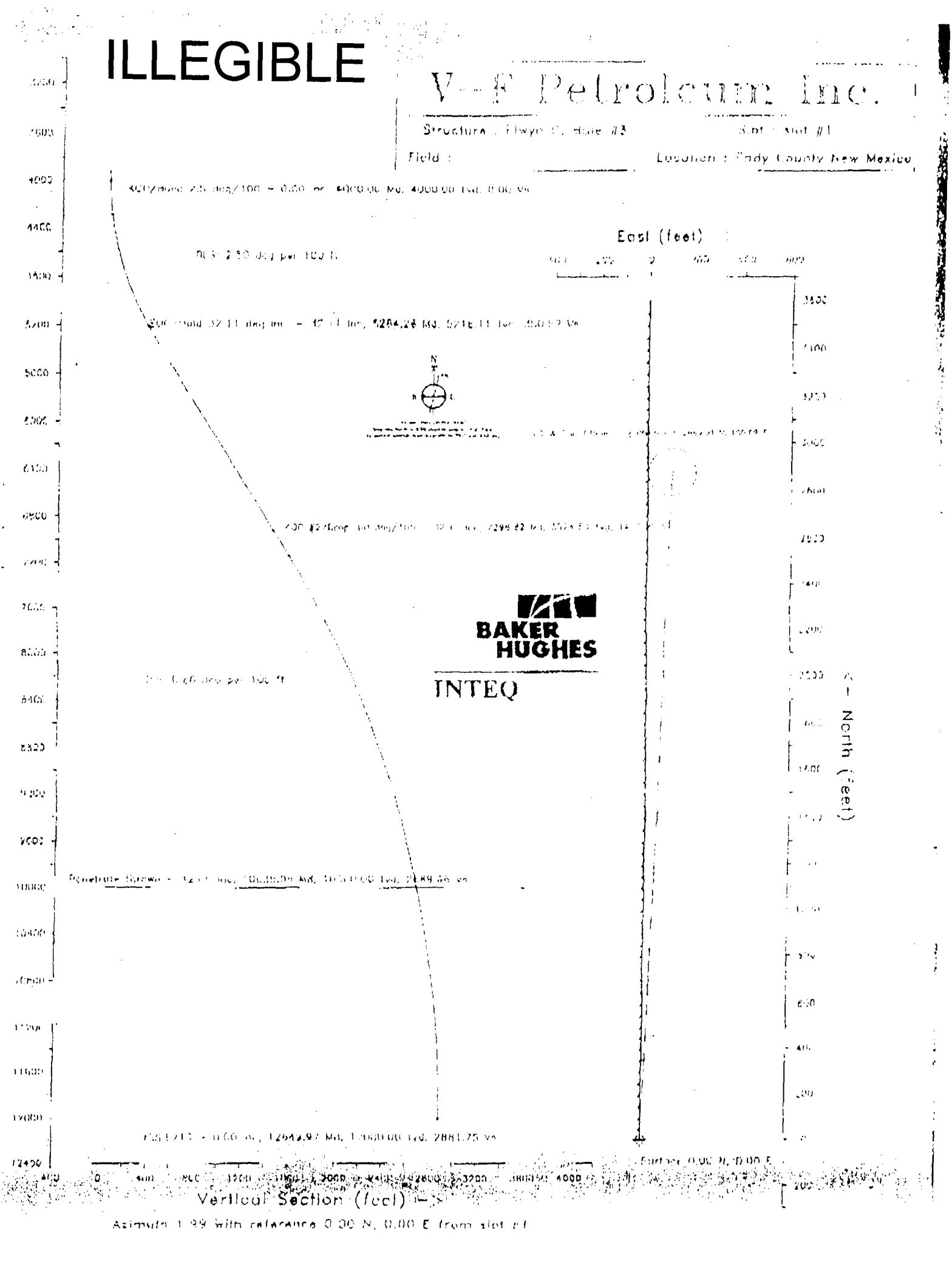
All data is in feet unless otherwise stated.
Coordinates from slot #1 and TVD from rotary table.
Bottom hole distance is 2881.75 on azimuth 1.99 degrees from wellhead.
Vertical section is from wellhead on azimuth 1.99 degrees.
Calculation uses the minimum curvature method.
Presented by Baker Hughes INTEQ

ILLEGIBLE

V-F Petroleum Inc.

Structure : Hwy 82 C, Hole #3 Slot : Slot #1

Field : Location : Eddy County New Mexico



Yates Petroleum Inc.
Elwyn C. Hale #3, Slot #1
,Eddy County New Mexico

PROPOSAL LISTING Page 1
Your ref : Rev 2
Last revised : 22-Jun-2001

Comments in wellpath

MD	TVD	Rectangular Coords.	Comment
4000.00	4000.00	0.00 N 0.00 E	KOP/Build 2.5 deg/100
5284.28	5218.11	350.31 N 12.17 E	EOC/Hold 32.11 deg Inc.
7298.92	6924.54	1420.40 N 49.33 E	KOP #2/Drop .60 deg/100
10635.05	10000.00	2668.35 N 92.67 E	Penetrate Strawn
12649.97	12000.00	2880.01 N 100.02 E	PBHL/TD

Targets associated with this wellpath

Target name	Geographic Location	T.V.D.	Rectangular Coordinates	Revised
Strawn		10000.00	1070.58N 85.42E	28-Dec-2000
Morrow		12000.00	2880.00N 100.00E	28-Dec-2000

BAKER HUGHES

INTEQ

V-F Petroleum Inc.

Structure : Elwyn C. Hale #3 Slot : slot #1

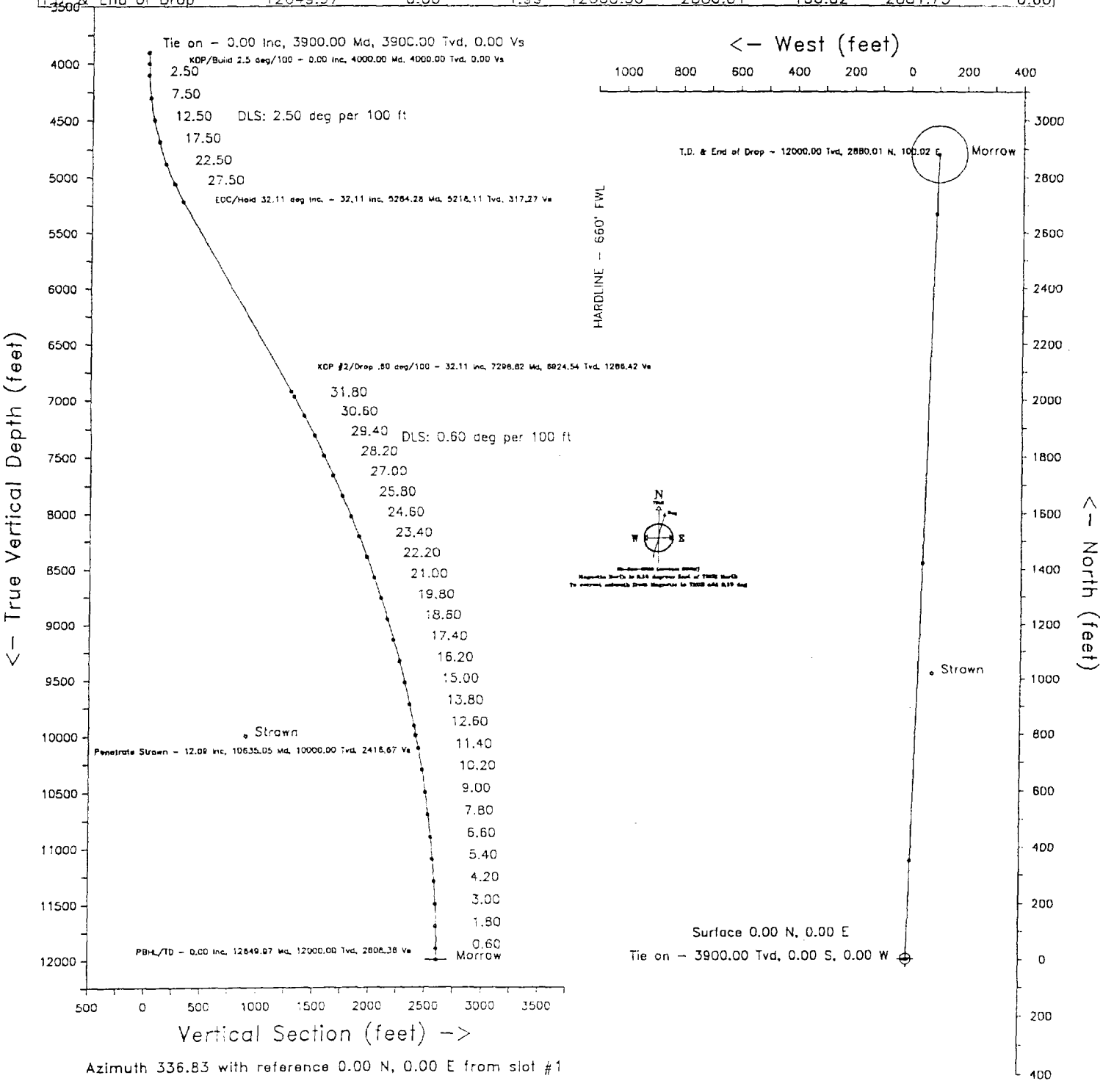
Field : West Shugart 31 Federal Location : Eddy County New Mexico

Created by land
Date plotted : 4-Oct-2001
Plot Reference is Rev 2 .
Coordinates are in feet reference slot #1.
True Vertical Depths are reference rotary table.

--- Baker Hughes INTEQ ---

WELL PROFILE DATA

Point	MD	Inc	Dir	TVD	North	East	V. Sect	Deg/100
Tie on	3900.00	0.00	1.99	3900.00	0.00	0.00	0.00	0.00
End of Hold	4000.00	0.00	1.99	4000.00	0.00	0.00	0.00	0.00
End of Build	5284.28	32.11	1.99	5218.11	350.31	12.17	350.52	2.50
End of Hold	7298.82	32.11	1.99	6924.54	1420.40	49.33	1421.25	0.00
T.D. & End of Drop	12649.97	0.00	1.99	12000.00	2880.01	100.02	2881.75	0.60



CONDITIONS OF APPROVAL - DRILLING

Operator's Name:	V-F PETROLEUM, INC.
Well Name & No.	3 - HALE FEDERAL COM
Location:	1450' FSL & 660' FWL - SEC 22 - T20S - R30E (SHL) 950' FNL & 760' FWL - SEC 22 - T20S - R30E (BHL)
Lease:	NMNM - 06784

I. DRILLING OPERATIONS REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at the Roswell Field Office, 2909 West Second St., Roswell NM 88201, (505) 627-0272 for wells in Chaves and Roosevelt Counties; the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 234-5972 for wells in Eddy County; and the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (505) 393-3612 for wells in Lea County, in sufficient time for a representative to witness:

A. Spudding

B. Cementing casing: 16 inch 11¾ inch 8⅝ inch 5½ inch

C. BOP tests

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

4. Submit a Sundry Notice (Form 3160-5, one original and five copies) for each casing string, describing the casing and cementing operations. Include pertinent information such as; spud date, hole size, casing (size, weight, grade and thread type), cement (type, quantity and top), water zones and problems or hazards encountered. The Sundry shall be submitted within 15 days of completion of each casing string. The reports may be combined into the same Sundry if they fall within the same 15 day time frame.

5. The API No. assigned to the well by NMOCD shall be included on the subsequent report of setting the first casing string.

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

7. Gamma-Ray/Neutron logs shall be run from the base of the Salado formation to the surface; cable speed not to exceed 30 feet per minute.

II. CASING:

1. The 16 inch surface casing shall be set at **475 feet or 25 feet into the top of the Rustler Anhydrite**, below usable water and cement circulated to the surface. If cement does not circulate to the surface the appropriate BLM office shall be notified and a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing shall be completed prior to drilling out that string.

2. The minimum required fill of cement behind the 11¾ inch salt protection casing is **circulate cement to the surface (Note: NMOCD Order R-111-P requires the salt protection string to be set no less than 100 feet or more than 600 feet below the base of the salt (B/Salt=1645 feet). Minimum setting depth of the salt protection string is therefore 1745 feet.)**

3. The minimum required fill of cement behind the 8⅝ inch intermediate casing is **circulate cement to the surface**.

4. The minimum required fill of cement behind the 5-1/2 inch production casing is **cement shall extend upward a minimum of 500 feet above the uppermost perforation.**

5. Whenever a casing string is cemented in the R-111-P Potash Area, cement shall be allowed to stand a minimum of twelve (12) hours under pressure and a total of twenty-four (24) hours before drilling the plug or initiating tests.

(ORIG. SGD.) LES BABYAK

III. PRESSURE CONTROL:

1. All BOP systems and related equipment shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2. The BOP and related equipment shall be installed and operational before drilling below the **11¾** inch casing shoe and shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.

2. Minimum working pressure of the blowout preventer and related equipment (BOPE) shall be **5000** psi.

3. The appropriate BLM office shall be notified in sufficient time for a representative to witness the tests.

- The tests shall be done by an independent service company.
- The results of the test shall be reported to the appropriate BLM office.
- Testing fluid must be water or an appropriate clear liquid suitable for sub-freezing temperatures. Use of drilling mud for testing is not permitted since it can mask small leaks.
- Testing must be done in a safe workman-like manner. Hard line connections shall be required.

SPECIAL DRILLING STIPULATIONS

THE FOLLOWING DATA IS REQUIRED ON THE WELL SIGN

Operator's Name V-F PETROLEUM INC Well Name & No. 3-HALE FEDERAL COM
Location 1450 F S L & 660 F W L Sec 22, T. 20S., R. 30E.
Lease No. NM-06784 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 (slips attached) ( ) Floodplain (slips attached)
( ) San Simon Swale (slips attached) ( ) Other

II. ON LEASE - SURFACE REQUIREMENTS PRIOR TO DRILLING

(✓) The BLM will monitor construction of this drill site. Notify the (✓) Carlsbad Field Office at (505) 234-5972 ( ) Hobbs Office (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 ½ inch) with the following seed mixture, in pounds of Pure Live Seed (PLS), per acre.

( ) A. Seed Mixture 1 (Loamy Sites)
Side Oats Grama (*Bouteloua curtipendula*) 5.0
Sand Dropseed (*Sporobolus cryptandrus*) 1.0

(✓) B. Seed Mixture 2 (Sandy Sites)
Sand Dropseed (*Sporobolus cryptandrus*) 1.0
Sand Lovegrass (*Eragostis trichodes*) 1.0
Plains Bristlegrass (*Setaria magrostachya*) 2.0

( ) C. Seed Mixture 3 (Shallow Sites)
Sideoats Grama (*Boute curtipendula*) 1.0

( ) D. Seed Mixture 4 (Gypsum Sites)
Alkali Sacaton (*Sporobollud 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 possilbe 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 it 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 the 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.

PRAIRIE CHICKENS

No surface use is allowed during the following time periods; unless otherwise specified, this stipulation does not apply to operation and maintenance of production facilities.

On the lands described below:

T. 20 S., R. 30 E.
Sec. 22 - S 1/2

For the purpose of: Protecting Prairie Chickens:

Drilling for oil and gas, and 3-D geophysical exploration operations will not be allowed in Lesser Prairie Chicken Habitat during the period of March 15 through June 15, each year. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 a.m. and 9:00 a.m. The 3:00a.m. and 9:00a.m. restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during the period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on exixting roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not toexceed 75 db measured at 30 feet from the source of the noise.

BLM Serial Number NM-06784
Company Reference V-V PETROLEUM INC
3-HALE FEDERAL COM

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

   a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.

(over)

b. Activities of other parties including, but not limited to:

(1) Land clearing.
(2) Earth-disturbing and earth-moving work.
(3) Blasting.
(4) Vandalism and sabotage.

c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars ($1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any responsibility as provided herein.

6. All construction and maintenance activity will be confined to the authorized right-of-way width of _____ feet. → to follow road ROW area

7. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.

8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky or duney areas, the pipeline will be "snaked" around hummocks and dunes rather then suspended across these features.

9. The pipeline shall be buried with a minimum of 24 inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. 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 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. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. Excluding the pipe, all above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" - Carlsbad Canyon, Munsell Soil Color No. 2.5Y 6/2 (formerly Sandstone Brown); designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route in not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. 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 cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

16. Special Stipulations: NONE.

EXHIBIT A

BLM Serial Number: NM-06784

Company Reference: V-F PETROLEUM INC
3-HALE FEDERAL COM

STANDARD STIPULATIONS FOR PERMANENT RESOURCE ROADS

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.

/✓/ 200 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).

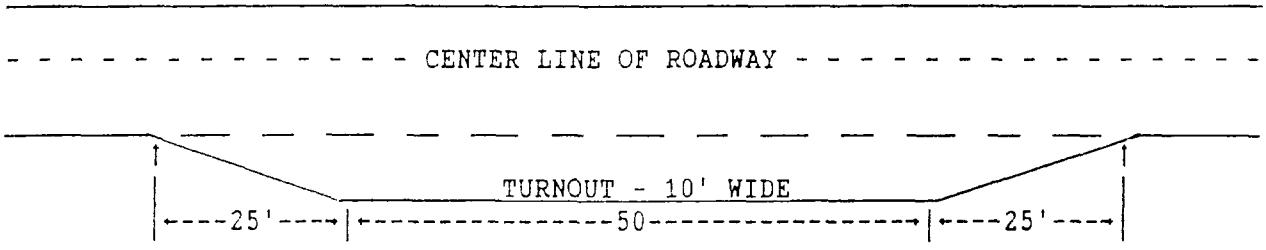
C. On road slopes exceeding 2%, drainage dips shall drain water into an adjacent lead-off ditch. Drainage dip location and spacing shall be determined by the formula:

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

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 synonomous.)