

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

(Other instructions on  
reverse side)

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. TYPE OF WORK

DRILL ☒

DEEPEN ☐

1b. TYPE OF WELL

OIL ☐ GAS ☒

SINGLE ☐

MULTIPLE ☐

WELL WELL

OTHER ZONE

2. NAME OF OPERATOR

Gruy Petroleum Management Co.

3. ADDRESS AND TELEPHONE NO.

P.O. Box 140907 Irving TX 75014 972-401-3111

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

SUBJECT TO LIKE  
APPROVAL BY STATE  
SHL 950' FNL & 1000' FWL BHL 1096' FNL & 1438' FWL Sec 31 24S-26E

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

17 miles South of Carlsbad

15. DISTANCE FROM PROPOSED\*  
LOCATION TO NEAREST  
PROPERTY OR LEASE LINE, T.O

(Also to nearest drlg. unit line, if any) 950'

16. NO. OF ACRES IN LEASE

920

17. NO. OF ACRES ASSIGNED  
TO THIS WELL

640

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

2182'

19. PROPOSED DEPTH

13000'

20. ROTARY OR CABLE TOOLS

Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)  
3524' GR

CARLSBAD CONTROLLED WATER BASIN

22. APPROX. DATE WORK WILL START\*  
06-01-04

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17-1/2"	J-55 13 3/8"	54.5 #	200'	225 sx circulate
12 1/4"	NS-110 9 5/8"	40 #	1900'	600 sx circulate
7 7/8"	N-80/P-110 5 1/2"	17 #	13000'	1920 sx TOC 2700'

From the base of the surface pipe through the running of production casing, the well will be equipped with a 5000 - psi BOP system. We are requesting a variance for the 13 3/8" surface casing and BOP testing from Onshore Order No. 2, which states all casing strings below the conductor, shall be pressure tested to .22 psi per foot or 1500 # whichever is greater, but not to exceed 70% of the manufactures stated maximum internal yield. During the running of the surface pipe and the drilling of the intermediate hole we do not anticipate any pressures greater than 1000 # and are requesting a variance to test the 13 3/8" casing and BOP system to 1000 # psi, and use rig pumps instead of an independent service company.

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.

SIGNED Zeno Farris TITLE Mgr. Ops. Admin DATE 06-09-05

(This space for Federal or State office use)

PERMIT No.

APPROVAL DATE

Approval 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:

APPROVED BY /S/ James Stovall TITLE ACTING FIELD MANAGER DATE AUG 26 2005

\*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.

APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS  
AND SPECIAL STIPULATIONS  
ATTACHED

APPROVAL FOR 1 YEAR

1625 N. FRENCH DR., HOBBS, NM 88240

State of New Mexico

**Energy, Minerals and Natural Resources Department**

Form C-102

Revised JUNE 10, 2003

**Submit to Appropriate District Office**

**State Lease - 4 Copies**

**Fee Lease - 3 Copies**

## DISTRICT II

1301 W. GRAND AVENUE, ARTESIA, NM 88210

## OIL CONSERVATION DIVISION

1220 SOUTH ST. FRANCIS DR.

**Santa Fe, New Mexico 87505**

### DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

### DISTRICT IV

1220 S. ST. FRANCIS DR., SANTA FE, NM 87505

## WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number		Pool Code 87280	Pool Name White City; Penn (Gas)
Property Code	Property Name WHITE CITY 31 FEDERAL		Well Number 3
OGRID No. 162683	Operator Name GRUY PETROLEUM MANAGEMENT COMPANY		Elevation 3524'

### Surface Location

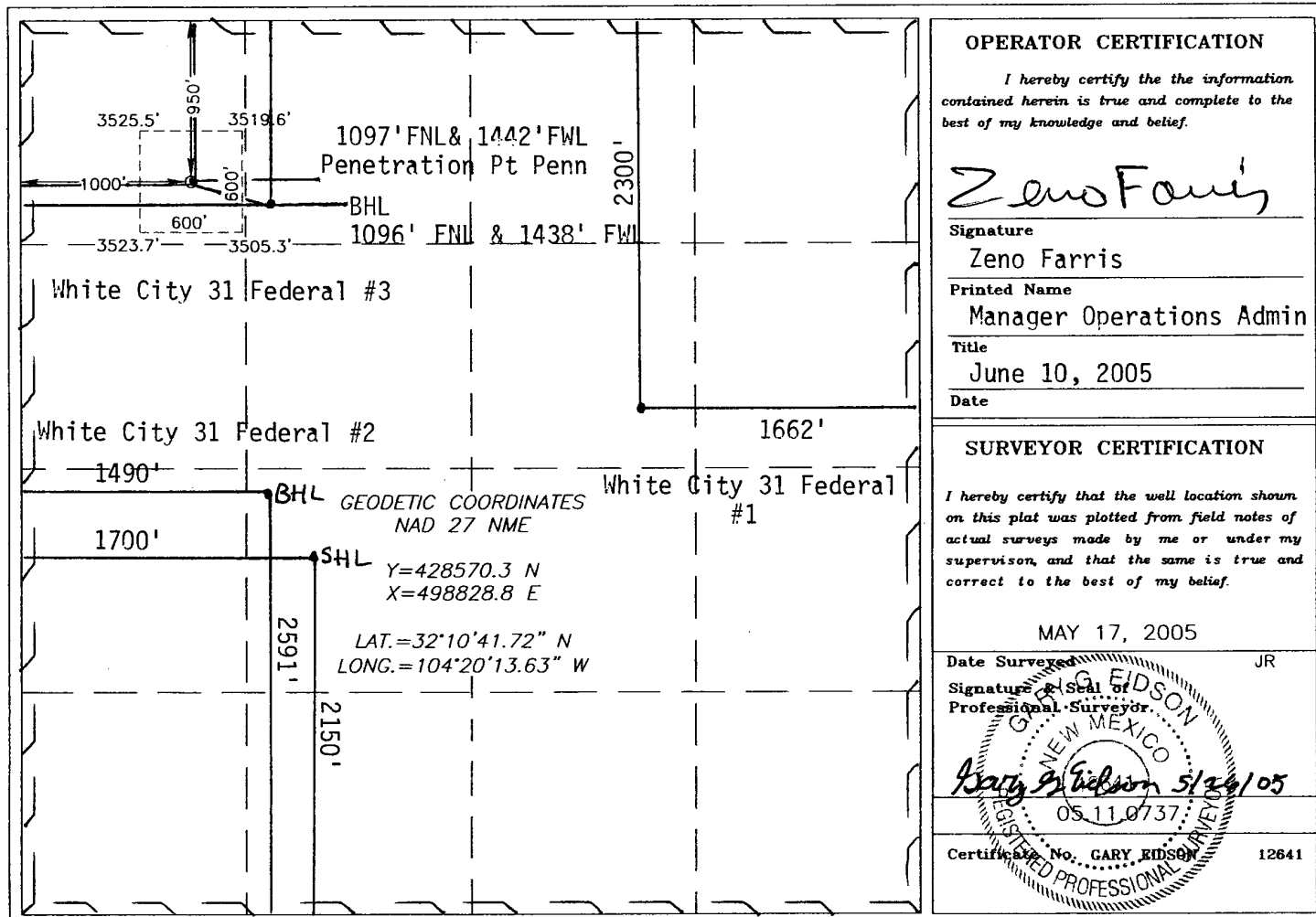
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	31	24-S	26-E		950	NORTH	1000	WEST	EDDY

## 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
C	31	24-S	26-E		1096	NORTH	1438	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
640	Y		

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



## Application to Drill

Gruy Petroleum Management Co.  
White City 31 Federal No. 3  
Unit Letter C Section 31  
T24S - R26E Eddy County, NM

In response to questions asked under Section II B of Bulletin NTL-6 the following information is provided for your consideration:

- 1 Location: SHL 950' FNL & 1000' FWL Sec. 31 24S 26E  
BHL 1096' FNL & 1438' FWL Sec. 31 24S 26E
- 2 Elevation above sea level: GR 3524'
- 3 Geologic name of surface formation: Quaternary Alluvium Deposits
- 4 Drilling tools and associated equipment: Conventional rotary drilling rig using fluid as a circulating medium for solids removal.
- 5 Proposed drilling depth: 13000'

6 Estimated tops of geological markers:

T/Salt	200'	Cisco Canyon	9928
B/Salt	800'	Strawn	10078
Delaware	1500	Atoka	10388
Bone Spring	6168	Morrow	11,158
Wolfcamp	8098	Barnett	11,768

7 Possible mineral bearing formation:

Strawn	Gas
Atoka	Gas
Morrow	Gas

8 Casing program:

Hole Size	Interval	Casing OD	Weight	Thread	Collar	Grade
17 1/2"	0-200'	13 3/8"	54.5	8-R	ST&C	J-55
12 1/4"	0-1900'	9 5/8"	40	8-R	ST&C	NS-110
7 7/8"	0-13000'	5 1/2"	17	8-R	ST&C	N-80 / S-95

## Application to Drill

Gruy Petroleum Management Co.  
White City 31 Federal No. 3  
Unit Letter C Section 31  
T24S - R26E Eddy County, NM

### 9 Cementing & Setting Depth:

13 3/8"	Surface	Set 200' of 13 3/8" J-55 54.5 ST&C casing. Cement with 225 Sx. Of Class "C" cement + additives, circulate cement to surface.
9 5/8"	Intermediate	Set 1900' of 9 5/8" NS-110 40# ST&C casing or casing sufficient to reach the base of the reef complex. Cement in two stages, first stage cement with 400 Sx. Of Class POZ/C Cement + additives, second stage cement with 200 Sx. Of Class "C" + additives, circulate cement to surface.
5 1/2"	Production	Set 13000' of 5 1/2" NP-80 / S-95 17# ST&C casing. Cement in two stages, first stage cement with 870 Sx. of Class POZ/C Cement + additives. Second stage cement with 1050 Sx of Class "C" Estimated top of cement 2700'.

### 10 Pressure control Equipment:

Exhibit "E". A 13 3/8" 5000 PSI working pressure B.O.P. consisting of one set of blind rams and one set of pipe rams and a 5000 # annular type preventer. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. Rotating head below 6000'. A kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor. BOP unit will be hydraulically operated. BOP will be nipped up on the 9 5/8" casing and will be operated at least once a day while drilling and the blind rams will be operated when out of hole during trips. No abnormal pressure or temperature is expected while drilling.

### 11 Proposed Mud Circulating System:

Depth	Mud Wt	Viscosity	Fluid Loss	Type Mud
0 - 200'	8.4 - 8.6	30 - 32	May lose circ.	Fresh water spud mud add paper to control seepage and high viscosity sweeps to clean hole.
200' - 1900'	9.7 - 10.0	28 - 29	May lose circ	Brine water. Add paper as needed to control seepage and add lime to control pH (9-10). Use high viscosity sweeps to clean hole.
1900' - 8300'	8.4 - 9.9	28 - 29	NC	Fresh water. Paper for seepage. Lime for pH (9 - 9.5)
8300' - 10000'	8.45 - 8.9	28 - 29	NC	Cut brine. Caustic for pH control.
10000' - 13000'	8.9 - 9.7	29 - 45	NC	XCD Polymer mud system.

Sufficient mud materials will be kept on location at all times in order to combat lost circulation, or unexpected kicks. In order to run DST's, open hole logs, and casing, the viscosity and water loss may have to be adjusted in order to meet these needs. Mud system monitoring equipment with derrick floor indicators and visual/audio alarms shall be installed and operative prior to drilling into the Wolfcamp formation. This equipment will remain in use until production casing is run and cemented.

## **Application to Drill**

Gruy Petroleum Management Co.  
White City 31 Federal No. 3  
Unit Letter C Section 31  
T24S - R26E Eddy County, NM

### 12 Testing, Logging and Coring Program:

- A. Mud logging program: One-man unit from 8000' to TD
- B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR
- C. No DST's, or cores are planned at this time.

### 13 Potential Hazards:

No abnormal pressures or temperatures or H<sub>2</sub>S gas are expected. Adequate flare lines will be installed off the mud / gas separator where gas may be flared safely. All personnel will be familiar with all aspects of safe operation of equipment being used. Estimated BHP 4000 PSI, estimated BHT 190.

### 14 Anticipated Starting Date and Duration of Operations:

Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved. Drilling expected to take 35 - 45 days. If production casing is run an additional 30 days will be required to complete and construct surface facilities.

### 15 Other Facets of Operations:

After running casing, cased hole gamma ray neutron collar logs will be run from total depth over possible pay intervals. The Strawn / Morrow / Atoka pay will be perforated and stimulated. The well will be tested and potentialized as a gas well.

## **Hydrogen Sulfide Drilling Operations Plan**

- 1 All Company and Contract personnel admitted on location must be trained by a qualified H2S safety instructor to the following:
  - A. Characteristics of H2S
  - B. Physical effects and hazards
  - C. Proper use of safety equipment and life support systems.
  - D. Principle and operation of H2S detectors, warning system and briefing
  - E. Evacuation procedure, routes and first aid.
  - F. Proper use of 30 minute pressure demand air pack.
- 2 H2S Detection and Alarm Systems
  - A. H2S detectors and audio alarm system to be located at bell nipple, end of blooie line (mud pit) and on derrick floor or doghouse.
- 3 Windsock and/or wind streamers
  - A. Windsock at mudpit area should be high enough to be visible.
  - B. Windsock at briefing area should be high enough to be visible.
- 4 Condition Flags and Signs
  - A. Warning sign on access road to location.
  - B. Flags to be displayed on sign at entrance to location. Green flag, normal safe condition. Yellow flag indicates potential pressure and danger. Red flag, danger, H2S present in dangerous concentration. Only emergency personnel admitted to location
- 5 Well control equipment
  - A. See exhibit "E"
- 6 Communication
  - A. While working under masks chalkboards will be used for communication.
  - B. Hand signals will be used where chalk board is inappropriate.
  - C. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.
- 7 Drillstem Testing Not Anticipated

## **Hydrogen Sulfide Drilling Operations Plan**

- 8 Drilling contractor supervisor will be required to be familiar with the effects H<sub>2</sub>S has on tubular goods and other mechanical equipment.
- 9 If H<sub>2</sub>S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H<sub>2</sub>S scavengers if

## Surface Use Plan

Gruy Petroleum Management Co.  
White City 31 Federal No. 3  
Unit Letter C Section 31  
T24S - R26E Eddy County, NM

- 1 Existing Roads: Area maps, Exhibit "B" is a reproduction of Lea Co. General Highway Map. Exhibit "C" is a reproduction of a USGS Topographic Map, showing existing roads and proposed roads. All existing roads will be maintained in a condition equal to or better than current conditions. Any new roads will be constructed to BLM specifications.
  - A. Exhibit "A" shows the proposed well site as staked.
  - B. From the intersection of Hwy 62-180 and Eddy County road # 426 (Cresote Rd.) Go east on Co. Rd. 426 for 1.5 miles. The location is 200' south.
- 2 PLANNED ACCESS ROADS: No new access road will be constructed.
- 3 LOCATION OF EXISTING WELLS IN A ONE-MILE RADIUS EXHIBIT "A"
  - A. Water wells - None Know
  - B. Disposal wells - None known
  - C. Drilling wells - None known
  - D. Producing wells - As shown on Exhibit "A"
  - E. Abandoned wells - As shown on Exhibit "A"





**Gruy Petroleum Management Co.  
New Mexico  
Eddy County  
Sec. 31-T24S-R26E  
White City 31 Fed 3 - Plan 060905**

**Revised: 9 June, 2005**

## **Halliburton Sperry-Drilling Proposal Report**

**9 June, 2005**

Data Source: Mr. Tom Strother

Surface Coordinates: 428570.30 N, 498828.80 E (32° 10' 41.7241" N, 104° 20' 13.6277" W)

Grid Coordinate System: NAD27 New Mexico State Planes, Eastern Zone

Surface Coordinates relative to Center of County: 117042.46 S, 1171.20 W (Grid)

Surface Coordinates relative to SW Corner of Sec. 31: 4351.60 N, 992.80 E (Grid)

Kelly Bushing Elevation: 3544.00ft above Mean Sea Level

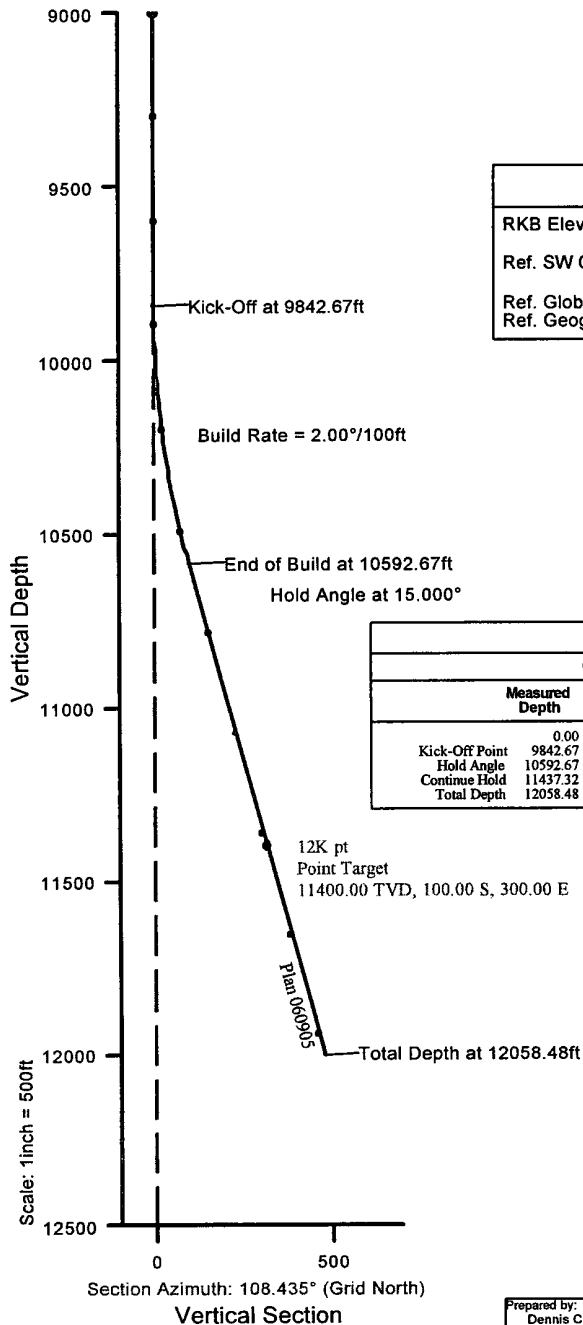
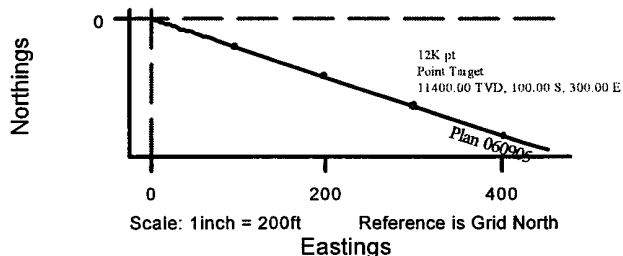
Kelly Bushing Elevation: 51.00ft above Ground Level

Proposal Ref: pro8565

**HALLIBURTON**

**Sperry Drilling Services**

New Mexico  
Eddy County  
Sec. 31-T24S-R26E  
White City 31 Fed 3  
Plan 060905



### White City 31 Fed 3 Surface Location

RKB Elevation: 3544.00ft above Mean Sea Level  
Ref. SW Corner of Sec. 31: 4351.60 N, 992.80 E  
Ref. Global Coordinates: 428570.30 N, 498828.80 E  
Ref. Geographical Coordinates: 32° 10' 41.7241" N, 104° 20' 13.6277" W

### Plan 060905 Proposal Data

Coordinate System: NAD27 New Mexico State Planes, Eastern Zone							
	Measured Depth	Incl.	Azm.	Vertical Depth	Northings	Eastings	Dogleg Rate
Kick-Off Point	0.00	0.000	0.000	0.00	0.00 N	0.00 E	0.00
	9842.67	0.000	0.000	9842.67	0.00 N	0.00 E	0.00
Hold Angle	10592.67	15.000	108.435	10584.13	30.87 S	92.61 E	2.00
Continue Hold	11437.32	15.000	108.435	11400.00	100.00 S	300.00 E	316.23
Total Depth	12058.48	15.000	108.435	12000.00	150.84 S	452.52 E	477.00

### Plan 060905 Bottom Hole Location

Ref. RKB(3524'+20' KB): 12000.00ft  
Ref. Ground Level: 11949.00ft  
Ref. Mean Sea Level: 8456.00ft  
Ref. Wellhead: 150.84 S, 452.52 E  
Ref. SW Corner of Sec. 31: 4200.76 N, 1445.32 E  
Ref. Global Coordinates: 428419.46 N, 499281.32 E  
Ref. Geographical Coordinates: 32° 10' 40.2315" N, 104° 20' 08.3623" W

Prepared by:  
Dennis Cook

Date/Time:  
9 June, 2005 - 14:56

Checked:

Approved:

**Proposal Report for Sec. 31-T24S-R26E - White City 31 Fed 3 - Plan 060905**  
**Data Source: Mr. Tom Strother**  
**Revised: 9 June, 2005**

Measure Depth (ft)	Incl. Angle (Deg)	Drift Direction (Deg)	True Vertical Depth	Vertical Section (ft)	Local Coordinates		Dogleg Severit (°/100ft)	Lease Calls		Global Coordinates	
					N-S (ft)	E-W (ft)		FNL-FSL (ft)	FEL-FWL (ft)	Grid Y (ft)	Grid X (ft)
0.00	0.000	0.000	0.00	0.00	0.00 N	0.00 E		4351.60 FSL	992.80 FWL	428570.30 N	498828.80 E
<b>Kick-Off at 9842.67ft</b>											
9842.67	0.000	0.000	9842.67	0.00	0.00 N	0.00 E	0.00	4351.60 FSL	992.80 FWL	428570.30 N	498828.80 E
9900.00	1.147	108.435	9900.00	0.57	0.18 S	0.54 E	2.00	4351.42 FSL	993.34 FWL	428570.12 N	498829.34 E
10000.00	3.147	108.435	9999.92	4.32	1.37 S	4.10 E	2.00	4350.23 FSL	996.90 FWL	428568.93 N	498832.90 E
10100.00	5.147	108.435	10099.65	11.55	3.65 S	10.96 E	2.00	4347.95 FSL	1003.76 FWL	428566.65 N	498839.76 E
10200.00	7.147	108.435	10199.07	22.26	7.04 S	21.11 E	2.00	4344.56 FSL	1013.91 FWL	428563.26 N	498849.91 E
10300.00	9.147	108.435	10298.06	36.43	11.52 S	34.56 E	2.00	4340.08 FSL	1027.36 FWL	428558.78 N	498863.36 E
10400.00	11.147	108.435	10396.49	54.04	17.09 S	51.27 E	2.00	4334.51 FSL	1044.07 FWL	428553.21 N	498880.07 E
10500.00	13.147	108.435	10494.25	75.08	23.74 S	71.23 E	2.00	4327.86 FSL	1064.03 FWL	428546.56 N	498900.03 E
<b>End of Build at 10592.67ft</b>											
10592.67	15.000	108.435	10584.13	97.62	30.87 S	92.61 E	2.00	4320.73 FSL	1085.41 FWL	428539.43 N	498921.41 E
10600.00	15.000	108.435	10591.21	99.51	31.47 S	94.41 E	0.00	4320.13 FSL	1087.21 FWL	428538.83 N	498923.21 E
10700.00	15.000	108.435	10687.80	125.40	39.65 S	118.96 E	0.00	4311.95 FSL	1111.76 FWL	428530.65 N	498947.76 E
10800.00	15.000	108.435	10784.40	151.28	47.84 S	143.51 E	0.00	4303.76 FSL	1136.31 FWL	428522.46 N	498972.31 E
10900.00	15.000	108.435	10880.99	177.16	56.02 S	168.07 E	0.00	4295.58 FSL	1160.87 FWL	428514.28 N	498996.87 E
11000.00	15.000	108.435	10977.58	203.04	64.21 S	192.62 E	0.00	4287.39 FSL	1185.42 FWL	428506.09 N	499021.42 E
11100.00	15.000	108.435	11074.17	228.92	72.39 S	217.18 E	0.00	4279.21 FSL	1209.98 FWL	428497.91 N	499045.98 E
11200.00	15.000	108.435	11170.77	254.81	80.58 S	241.73 E	0.00	4271.02 FSL	1234.53 FWL	428489.72 N	499070.53 E
11300.00	15.000	108.435	11267.36	280.69	88.76 S	266.28 E	0.00	4262.84 FSL	1259.08 FWL	428481.54 N	499095.08 E
11400.00	15.000	108.435	11363.95	306.57	96.95 S	290.84 E	0.00	4254.65 FSL	1283.64 FWL	428473.35 N	499119.64 E

Measure Depth (ft)	Incl. Angle (Deg)	Drift Direction (Deg)	True Vertical Depth	Vertical Section (ft)	Local Coordinates		Dogleg Severit (°/100ft)	Lease Calls		Global Coordinates	
					N-S (ft)	E-W (ft)		FNL-FSL (ft)	FEL-FWL (ft)	Grid Y (ft)	Grid X (ft)

**Target - 12K pt, Current Target**

11437.32	15.000	108.435	11400.00	316.23	100.00 S	300.00 E	0.00	4251.60 FSL	1292.80 FWL	428470.30 N	499128.80 E
11500.00	15.000	108.435	11460.55	332.45	105.13 S	315.39 E	0.00	4246.47 FSL	1308.19 FWL	428465.17 N	499144.19 E
11600.00	15.000	108.435	11557.14	358.33	113.31 S	339.94 E	0.00	4238.29 FSL	1332.74 FWL	428456.99 N	499168.74 E
11700.00	15.000	108.435	11653.73	384.21	121.50 S	364.50 E	0.00	4230.10 FSL	1357.30 FWL	428448.80 N	499193.30 E
11800.00	15.000	108.435	11750.32	410.10	129.68 S	389.05 E	0.00	4221.92 FSL	1381.85 FWL	428440.62 N	499217.85 E
11900.00	15.000	108.435	11846.92	435.98	137.87 S	413.61 E	0.00	4213.73 FSL	1406.41 FWL	428432.43 N	499242.41 E
12000.00	15.000	108.435	11943.51	461.86	146.05 S	438.16 E	0.00	4205.55 FSL	1430.96 FWL	428424.25 N	499266.96 E

**Total Depth at 12058.48ft**

12058.48	15.000	108.435	12000.00	477.00	150.84 S	452.52 E	0.00	4200.76 FSL	1445.32 FWL	428419.46 N	499281.32 E
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All data is in Feet (US) unless otherwise stated. Directions and coordinates are relative to Grid North.  
Vertical depths are relative to RKB(3524' +20' KB). Northings and Eastings are relative to Wellhead.

Based upon Minimum Curvature type calculations, at a Measured Depth of 12058.48ft.,  
The Bottom Hole Displacement is 477.00ft., in the Direction of 108.435° (Grid).

**Proposal Report for Sec. 31-T24S-R26E - White City 31 Fed 3 - Plan 060905**

**Data Source: Mr. Tom Strother**

**Revised: 9 June, 2005**

**Comments**

Measured Depth (ft)	Station Coordinates			Comment
	TVD (ft)	Northings (ft)	Eastings (ft)	
9842.67	9842.67	0.00 N	0.00 E	Kick-Off at 9842.67ft
10592.67	10584.13	30.87 S	92.61 E	End of Build at 10592.67ft
12058.48	12000.00	150.84 S	452.52 E	Total Depth at 12058.48ft

**Targets associated with this wellpath**

Target Name	Target Entry Coordinates			Target Shape	Target Type
	TVD (ft)	Northings (ft)	Eastings (ft)		
12K pt	11400.00	100.00 S	300.00 E	Point	Current Target
	Mean Sea Level/Global Coordinates:	7856.00	428470.30 N		
	Geographical Coordinates:		32° 10' 40.7345" N 104° 20' 10.1370" W		

## North Reference Sheet for Sec. 31-T24S-R26E - White City 31 Fed 3

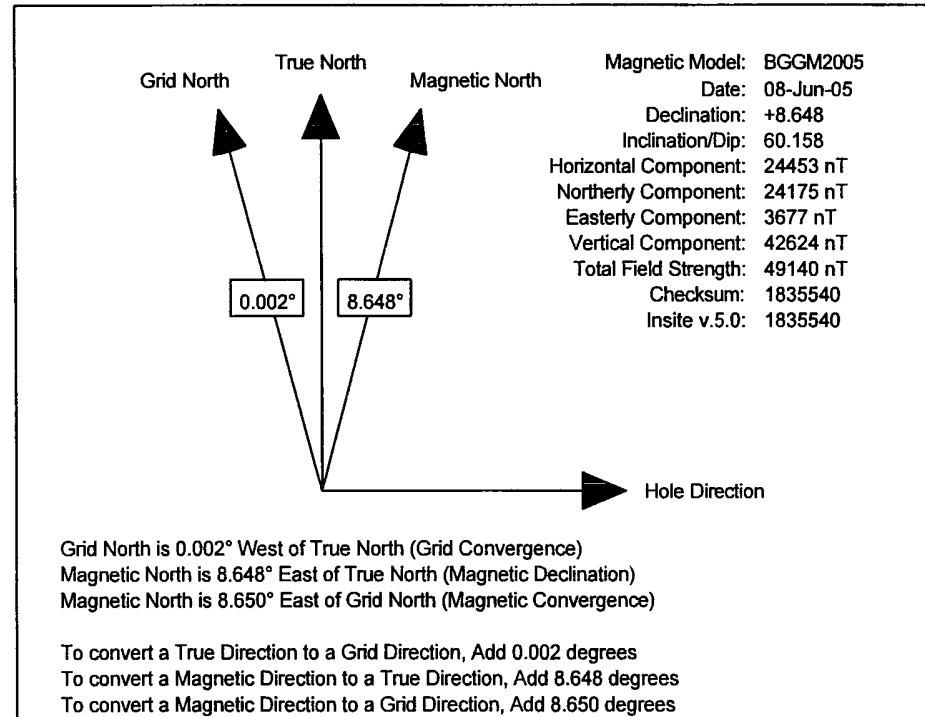
Coordinate System is NAD27 New Mexico State Planes, Eastern Zone, US Foot  
Source: Snyder, J.P., 1987, Map Projections - A Working Manual

Datum is North American Datum of 1927 (US48, AK, HI, and Canada)

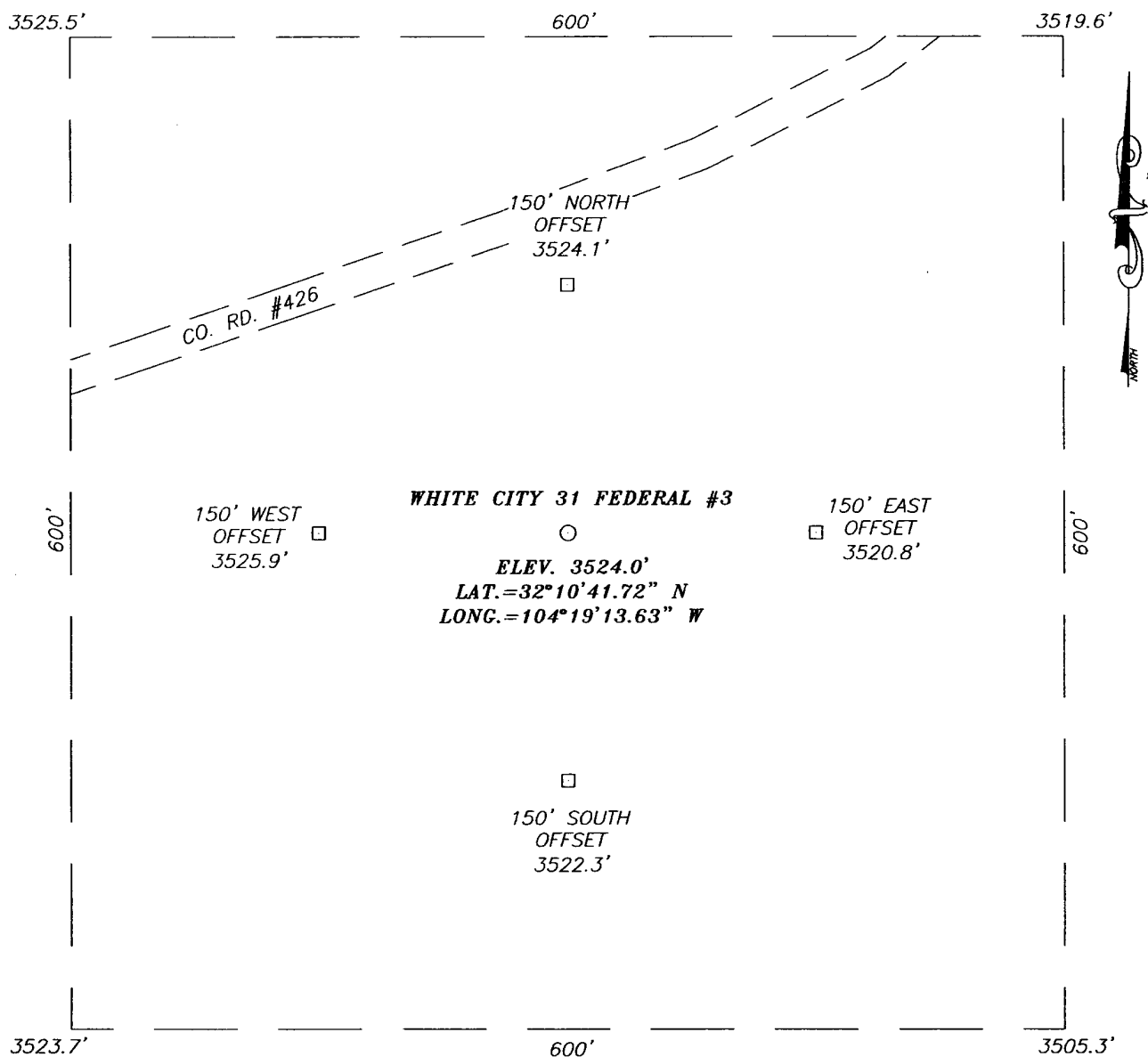
Spheroid is Clarke - 1866  
Equatorial Radius: 6378206.400m.  
Polar Radius: 6356583.800m.  
Inverse Flattening: 294.978698213901

Projection method is Transverse Mercator or Gauss Kruger Projection  
Central Meridian is -104.333°  
Longitude Origin: 0.000°  
Latitude Origin: 31.000°  
False Easting: 152400.00m  
False Northing: 0.00m  
Scale Reduction: 0.99990909

Grid Coordinates of Well: 428570.30 N, 498828.80 E  
Geographical Coordinates of Well: 32° 10' 41.7241" N, 104° 20' 13.6277" W  
Surface Elevation of Well: 3544.00ft  
Grid Convergence at Surface is -0.002°  
Magnetic Convergence at Surface is -8.650° (8 June, 2005)

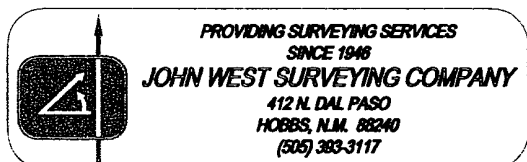
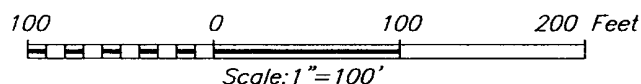


**SECTION 31, TOWNSHIP 24 SOUTH, RANGE 26 EAST, N.M.P.M.,**  
 EDDY COUNTY, NEW MEXICO



**DIRECTIONS TO LOCATION**

FROM THE INTERSECTION OF U.S. HWY.  
 #62-180 AND CO. RD. #426, GO EAST ON  
 CO. RD. #426 FOR APPROX. 1.5 MILES. THIS  
 LOCATION IS APPROX. 200' SOUTH.

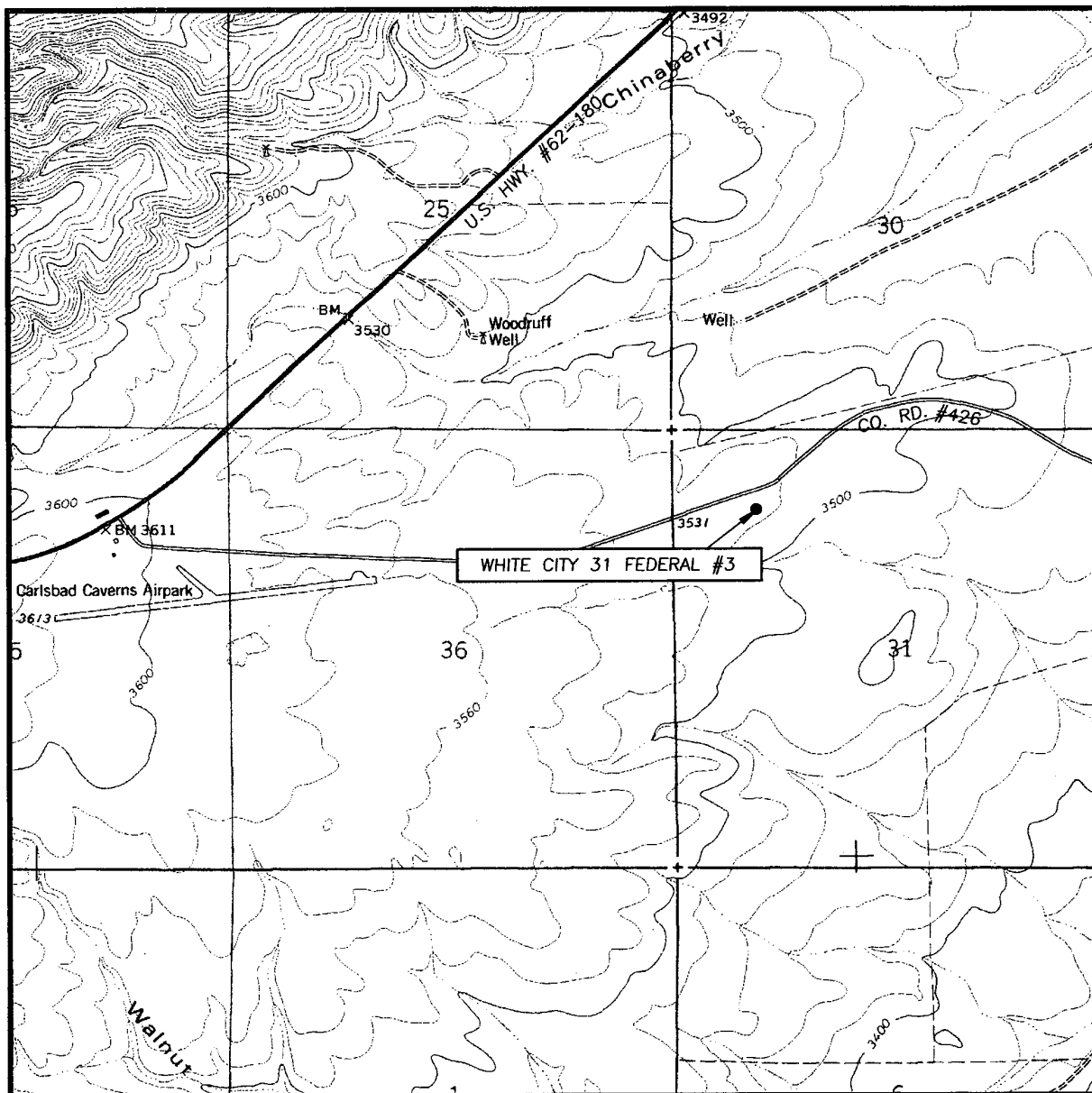


**GRUY PETROLEUM MANAGEMENT COMPANY**

WHITE CITY 31 FEDERAL #3 WELL  
 LOCATED 950 FEET FROM THE NORTH LINE  
 AND 1000 FEET FROM THE WEST LINE OF SECTION 31,  
 TOWNSHIP 24 SOUTH, RANGE 26 EAST, N.M.P.M.,  
 EDDY COUNTY, NEW MEXICO.

Survey Date: 05/17/05	Sheet 1 of 1 Sheets
W.O. Number: 05.11.0737	Dr By: J.R.
Date: 05/23/05	Disk: CD#5
05110737	Scale: 1"=100'

# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:  
BLACK RIVER VILLAGE, N.M. - 20'

SEC. 32 TWP. 24-S RGE. 26-E

SURVEY N.M.P.M.

COUNTY EDDY

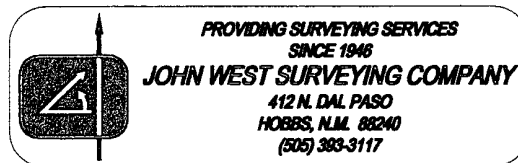
DESCRIPTION 950' FNL & 1000' FWL

ELEVATION 3524'

OPERATOR GRUY PETROLEUM  
MANAGEMENT COMPANY

LEASE WHITE CITY 31 FEDERAL

U.S.G.S. TOPOGRAPHIC MAP  
BLACK RIVER VILLAGE, N.M.



PROVIDING SURVEYING SERVICES  
SINCE 1946

**JOHN WEST SURVEYING COMPANY**

412 N. DAL PASO  
HOBBS, N.M. 88240  
(505) 383-3117

Exhibit C



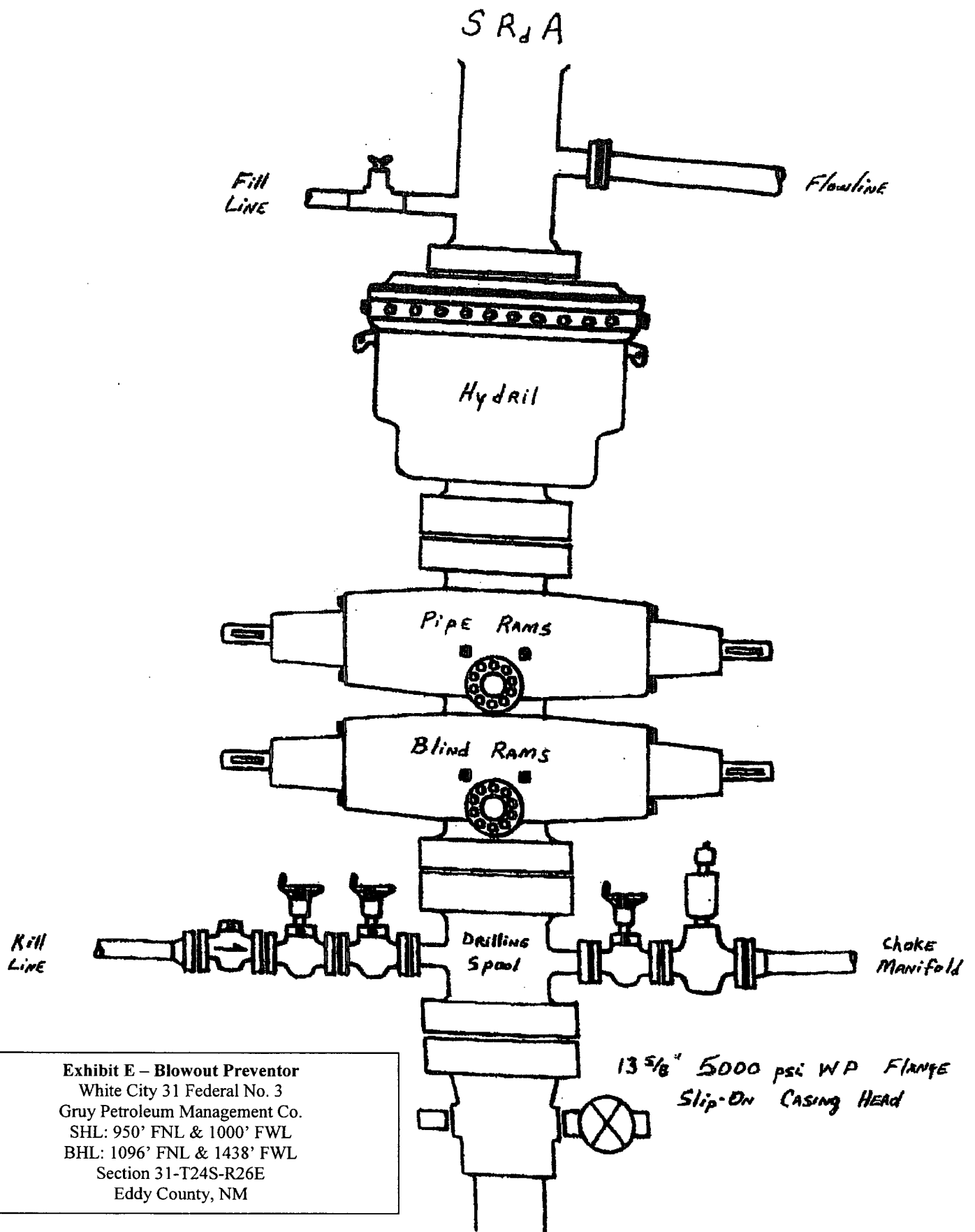
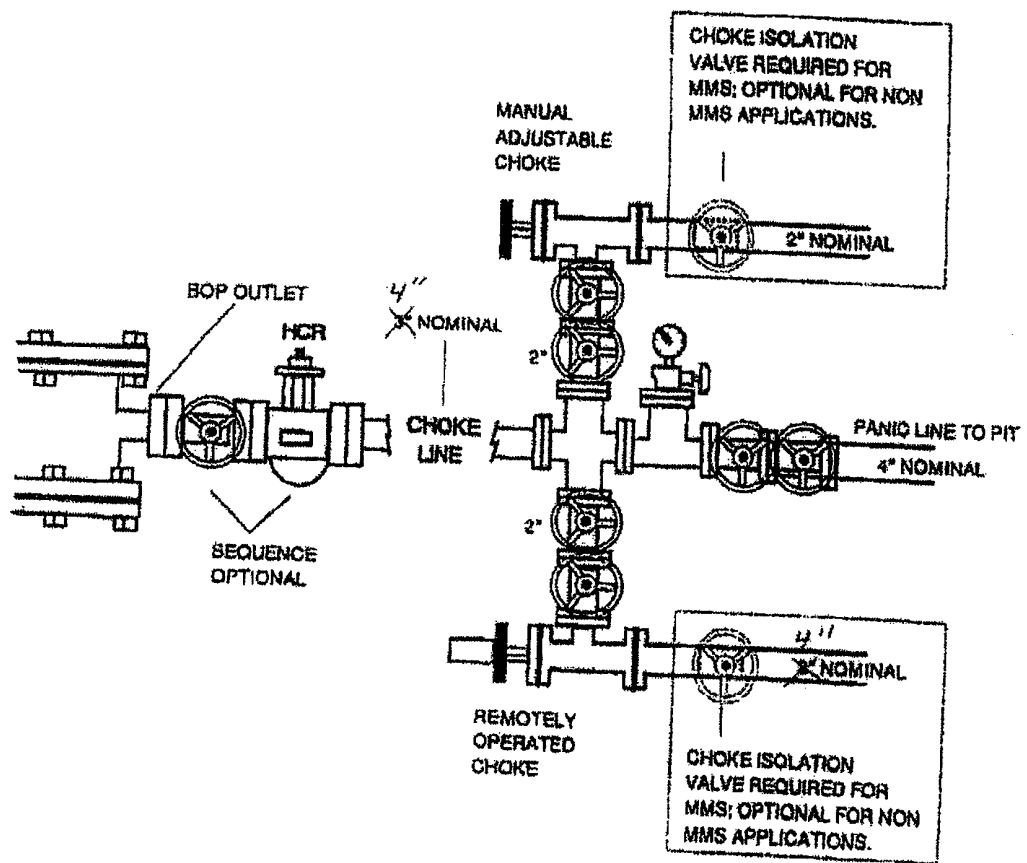


Exhibit E – Blowout Preventor  
 White City 31 Federal No. 3  
 Gruy Petroleum Management Co.  
 SHL: 950' FNL & 1000' FWL  
 BHL: 1096' FNL & 1438' FWL  
 Section 31-T24S-R26E  
 Eddy County, NM

DRILLING OPERATIONS  
CHOKE MANIFOLD  
5M SERVICE



**Exhibit E1 – Choke Manifold Diagram**

White City 31 Federal No. 3  
Gruy Petroleum Management Co.  
SHL: 950' FNL & 1000' FWL  
BHL: 1096' FNL & 1438' FWL  
Section 31-T24S-R26E  
Eddy County, NM

Conditions of Approval  
Cave and Karst  
For  
Gruy Petroleum  
White City 31Fed #3  
Surface Hole: 950 FNL & 1000 FWL – Bottom Hole: 1096 FNL & 1438 FWL  
Section 31, T. 24 S., R. 26 E.  
Lease#: ~~LC~~ -0441951  
Nm  
al

**Cave / Karst Surface Mitigation**

The following stipulations will be applied to minimize impacts during construction, drilling and production.

1. Any tank batteries will be bermed large enough to contain any spills that may occur and lined with a permanent 6 mil plastic liner.
2. A 70X100 foot cuttings pit will be utilized for this location. The cuttings pit will be lined with 4 oz. felt and two layers of 12 mil. plastic. Upon completion of the well all excess fluids will be vacuumed off the cuttings pit and hauled off for proper disposal. The pit will be allowed to dry for 10 months and then reclaimed in accordance with the attached requirements.
3. A closed mud system or steel tanks will be utilized to drill the well. All fluids will be hauled off site to be disposed off.

4. All surface structures will be less than 8 feet high & Painted Flat Juniper Green

**Cave and Karst Resources: Subsurface Mitigation**

The following stipulations will be applied to protect cave/karst and ground water concerns:

1. Rotary drilling techniques in cave or karst areas will include the use of fresh water as a circulating medium in zones where caves or karst features are expected. Sixteen (16) ounces of Florescene dye will be added to the drilling fluid during the drilling of the first 1,550 feet of the well. Below those zones, the operator may use whatever drilling fluid is approved in the drilling plan.
2. **Kick off for directional drilling will occur below 1,650 feet.**
3. All casing will meet or exceed National Association of Corrosion Engineers specifications pertaining to the geology of the location and be run to American Petroleum Institute and BLM standards.
4. A cave protection casing will be required. The cave-protection casing string would be set at the base of the reef and where present at set it in the Lamar Limestone. (See Attached Diagram as an example of the Cave Protection String)
5. **All casing strings will be cemented to the surface.**
6. **Regardless of the type of drilling machinery used, if a bit drops of four feet or more and circulation losses greater than 75 percent occur simultaneously while drilling in any cave-bearing zone, drilling operations will immediately stop and the BLM will**

be notified by the Operator. In the event that such an incident occurs contact Jim Goodbar at 505 234-5929 or 505 236-1016 after hours and Jim Amos at (505) 234-5909 or 706-2775. The BLM will assess the consequences of the situation and work with Operator on corrective actions to resolve the problem. If corrective actions fail, the well will be plugged.

Any corrective actions proposed to resolve problems related to bit drops or lost circulation will require BLM concurrence prior to implementation. A decision on how to proceed will be reached within 24 hours of notification.

7. Any blasting will be a phased and time delayed.
8. Upon well abandonment the well bore will be cemented completely from 100 feet below the bottom of the cave bearing zone to the surface.

#### **Monitoring Production Operations**

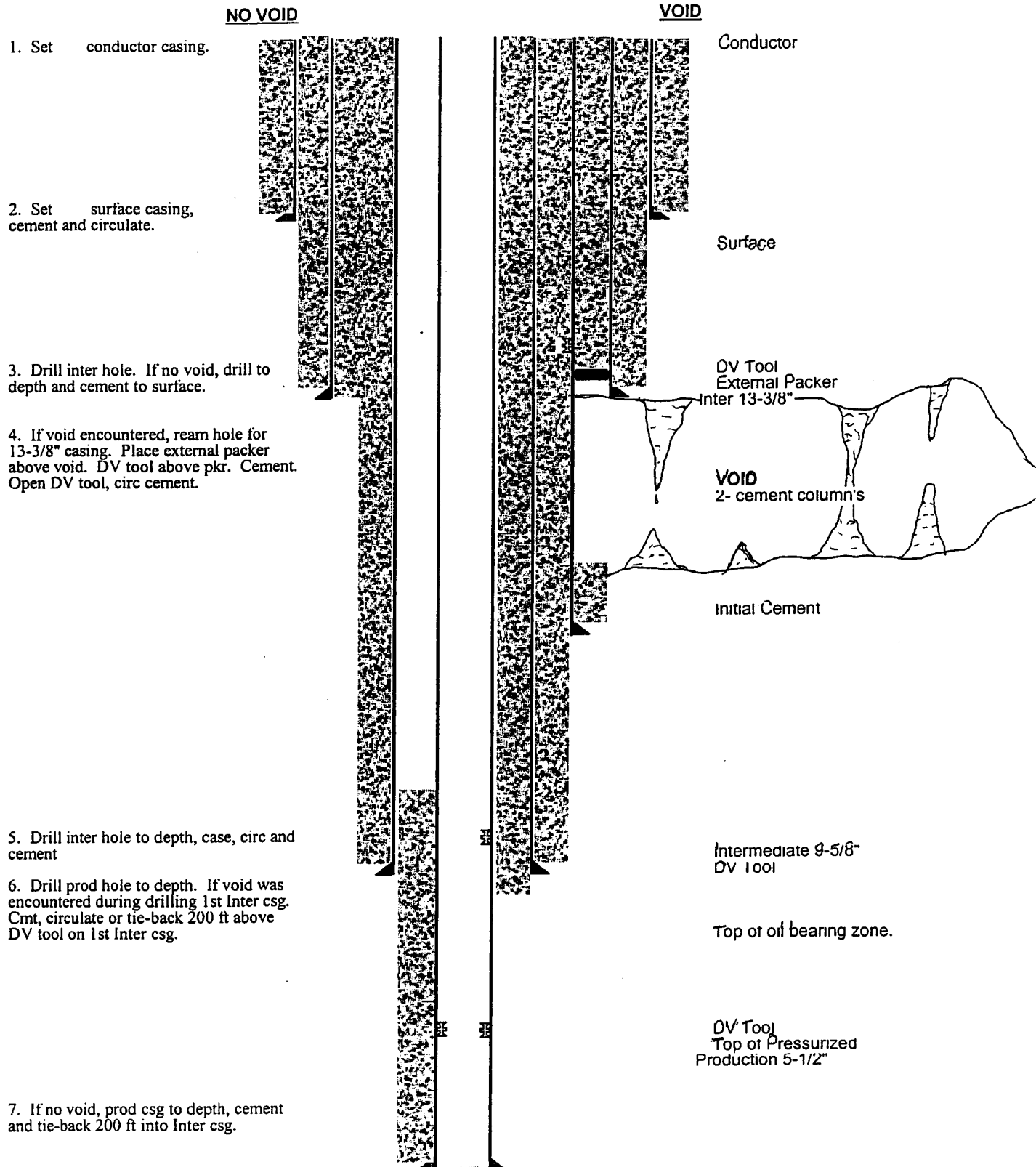
1. Annual pressure tests will be performed by the Operator on all casing annuli. If the test results indicated a casing failure, remedial actions approved by the BLM will be undertaken to correct the problem.

#### **Record Keeping**

1. The Operator will track customary drilling activities, including the rate of penetration, pump pressure, weight on bit, bit drops, percent of mud returns, and presence of absence of cuttings returning to the surface. As part of customary record keeping, each detectable void or sudden increase in the rate of penetration not attributable to a change in the formation type should be documented and evaluated as it is encountered.
2. The BLM may review data held by companies on wells drilled in cave or karst areas, to gain information about impacts to caves and karst. This information will be used to categorize lost-circulation zones on the basis of depth, relative volume, and severity, and to evaluate and compare the relative success or failure of different remedies attempted to combat lost-circulation problems while drilling and cementing casing in these zones. This information also will be used to update information about the occurrence of cave and karst features. Information concerning cave resources gathered during drilling will be submitted and be retained by the BLM.

# WELLBORE SCHEMATIC

## "CAVE PROTECTION"



## CONDITIONS OF APPROVAL - DRILLING

Operator's Name: GRUY PETROLEUM MANAGEMENT CO.  
Well Name & No. 3 - WHITE CITY 31 FEDERAL  
Location: 950' FNL & 1000' FWL - SEC 31 - T24S - R26E - EDDY COUNTY (SHL)  
1096' FNL & 1438' FWL - SEC 31 - T24S - R26E - EDDY COUNTY (BHL)  
Lease: NM LC-0441951

### 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) 234-5909 or (505) 361-2822 (After hours) - 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: 13-3/8 inch 9-5/8 inch 5-1/2 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.

3. 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.

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

### II. CASING:

1. The 13-3/8 inch surface casing shall be set at 200 feet 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 9-5/8 inch salt protection casing is circulate cement to the surface.

3. 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 hydrocarbon bearing interval.

### **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 9-5/8 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) required for drilling the surface and intermediate casing shall be 2000 psi. Minimum working pressure of the blowout preventer and related equipment (BOPE) required for drilling below 9-5/8 inch casing shall be 5000 psi.
3. The appropriate BLM office shall be notified in sufficient time for a representative to witness the tests.
  - A variance to test the 13-3/8 inch casing and BOP system to the reduced pressure of 1000 psi with the rig pumps is approved.
  - 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.
  - BOPE must be tested prior to drilling into the Wolfcamp Formation by an independent service company.

### **IV. DRILLING MUD:**

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp Formation, and shall be used until production casing is run and cemented. Monitoring equipment shall consist of the following:

1. Recording pit level indicator to indicate volume gains and losses.
2. Mud measuring device for accurately determining the mud volumes necessary to fill the hole during trips.
3. Flow-sensor on the flow line to warn of abnormal mud returns from the well.