ATS-08-419

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Form 3160-3
(April 2004)

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

Split Estate

1a. Type of work: [X] DRILL [ ] REENTER	5. Lease Serial No. NM-~~000587~~ 01244A
	6. If Indian, Allotee or Tribe Name ----------
	7. If Unit or CA Agreement, Name and No. ----------
1b. Type of Well: [ ] Oil Well [XX] Gas Well [ ] Other [X] Single Zone [ ] Multiple Zone	8. Lease Name and Well No. 37292 BELL LAKE UNIT # 31
2. Name of Operator 873 APACHE CORPORATION (LANA WILLIAMS 918-491-4980)	9. API Well No. 30-025-39075
3a. Address TWO WARREN PLACE SUITE 1500 6120 SOUTH YALE, TULSA, OKLAHOMA 74136-4224	3b. Phone No. (include area code) (PH-918-491-4980)
	10. Field and Pool, or Exploratory BELL LAKE MORROW-NORTH
4. Location of Well (Report location clearly and in accordance with any State requirements.*) Unit C At surface 330' FNL & 1980' FWL SECTION 6 T23S-R34E LEA CO. NM. At proposed prod. zone 690' FNL & 1850' FWL SECTION 6 T23S-R34E LEA CO.	11. Sec., T. R. M. or Blk. and Survey or Area SECTION 6 T23S-R34E
14. Distance in miles and direction from nearest town or post office* Approximately 60 miles Southwest of Hobbs, New Mexico	12. County or Parish LEA CO. / 13. State NEW MEXICO
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 660'	16. No. of acres in lease 480 / 17. Spacing Unit dedicated to this well 160
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 2850'±	19. Proposed Depth 7017 13,900' 13919 MD / 20. BLM/BIA Bond No. on file BLM-CO-1463 NATION WIDE
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3458' GL	22. Approximate date work will start* WHEN APPROVED / 23. Estimated duration 48 Days

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 Joe T Janica	Name (Printed Typed) Joe T. Janica	Date 06/04/08
Title Agent		
Approved by (Signature) /s/ James Stovall	Name (Printed Typed) /s/ James Stovall	Date JUL 22 2008
Title FIELD MANAGER	Office CARLSBAD FIELD 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.

APPROVAL FOR TWO YEARS

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 page 2)

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

CARLSBAD CONTROLLED WATER BASIN

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised October 12, 2005

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
	71920	BELL LAKE MORROW NORTH

Property Code	Property Name	Well Number
37292	BELL LAKE UNIT	31

OGRID No.	Operator Name	Elevation
873	APACHE CORPORATION	3458'

Surface Location

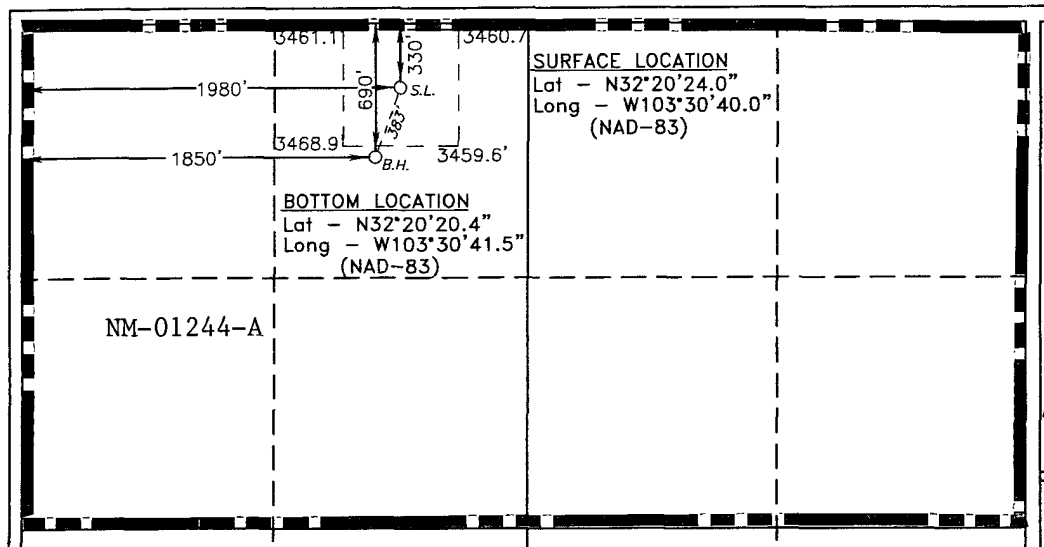
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	6	23 S	34 E		330	NORTH	1980	WEST	LEA

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	6	23 S	34 E		690	NORTH	1850	WEST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	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



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Joe T. Janica
Signature Date

Joe T. Janica 08/06/08
Printed Name

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 supervison, and that the same is true and correct to the best of my belief

FEBRUARY 11, 2008
Date Surveyed

Signature & Seal of Professional Surveyor

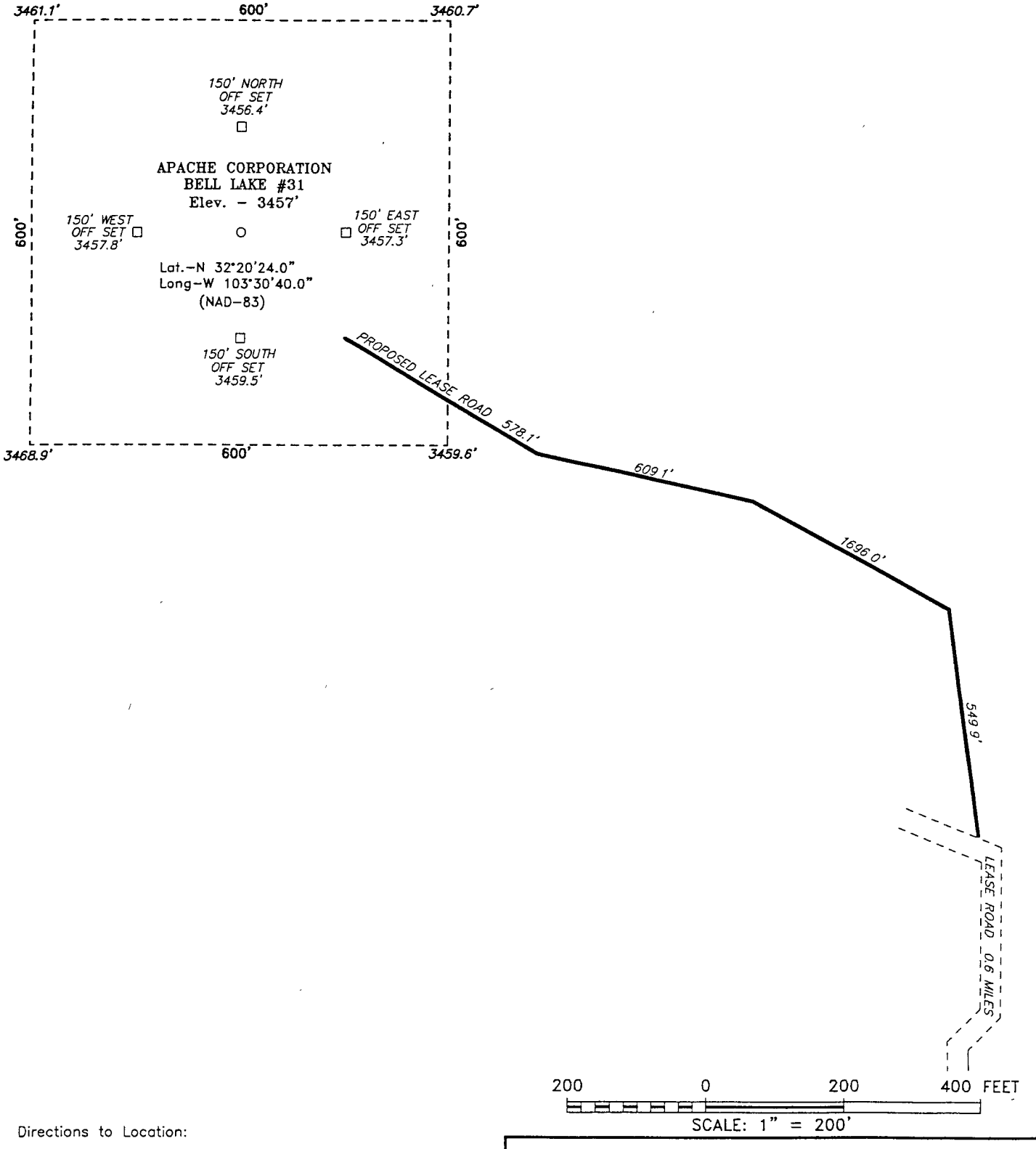
GARY L. JONES
NEW MEXICO
7977
REGISTERED PROFESSIONAL LAND SURVEYOR

W.O. No. 19115

Certificate No. Gary L. Jones 7977

BASIN SURVEYS

SECTION 6, TOWNSHIP 23 SOUTH, RANGE 34 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.



Directions to Location:

FROM THE JUNCTION OF STATE HWY 128 AND CO. RD. E-21 (DELEWARE BASIN), PROCEED NORTH ON CO. RD. E-21 FOR 8.0 MILES TURNING EAST FOR 0.1 MILES TO LEASE ROAD, ON LEASE ROAD GO NORTH 0.6 MILES TO PROPOSED LEASE ROAD.

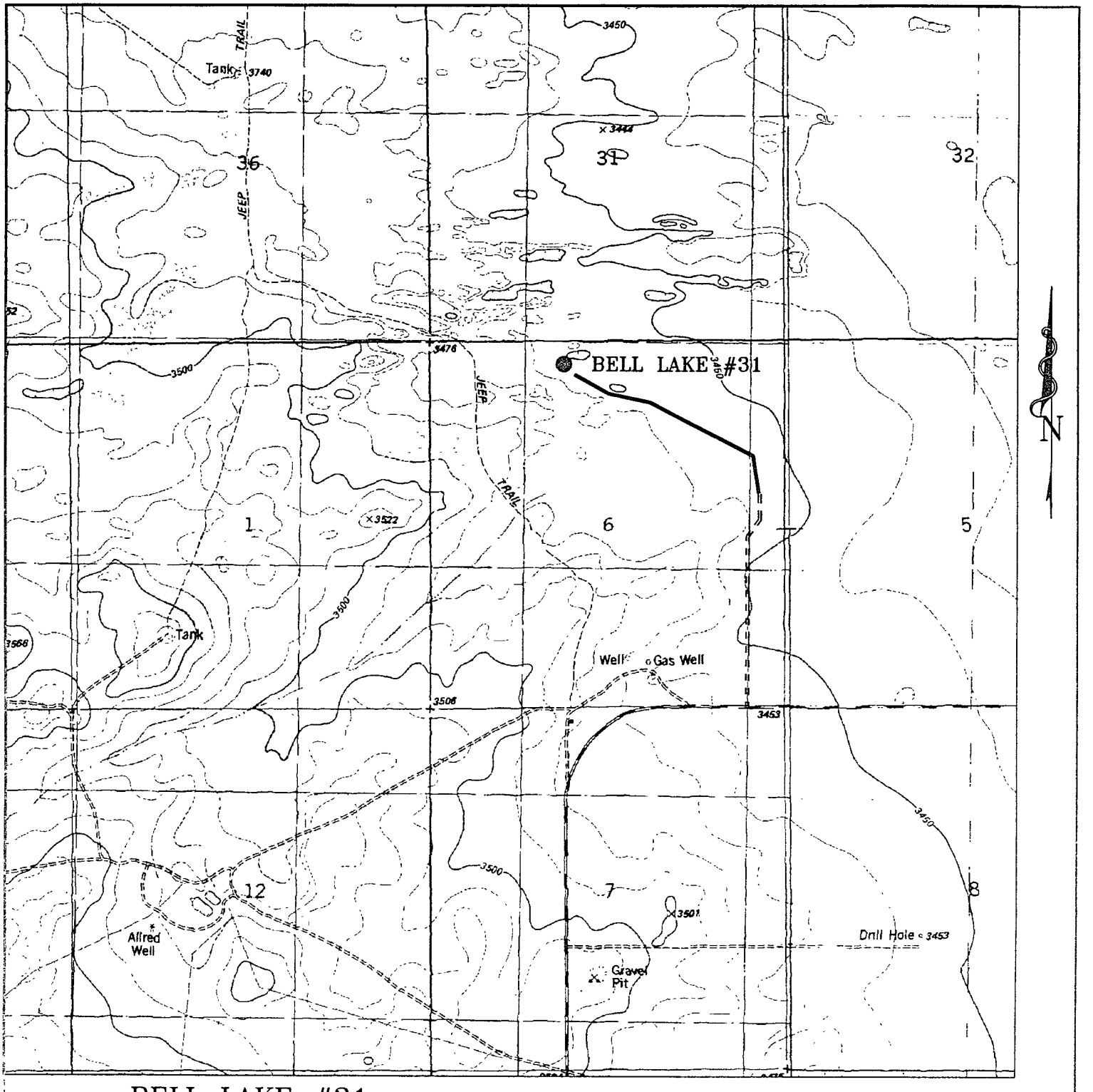
APACHE CORPORATION

REF: BELL LAKE #31 / WELL PAD TOPO

THE BELL LAKE No. 31 LOCATED 330' FROM THE NORTH LINE AND 1980' FROM THE WEST LINE OF SECTION 6, TOWNSHIP 23 SOUTH, RANGE 34 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO.

BASIN SURVEYS P.O. BOX 1786 - HOBBS, NEW MEXICO

W.O. Number: 19115	Drawn By: K. GOAD		
Date: 02-14-2008	Disk: KJG - 19115W.DWG	Survey Date: 02-11-2008	Sheet 1 of 1 Sheets



BELL LAKE #31

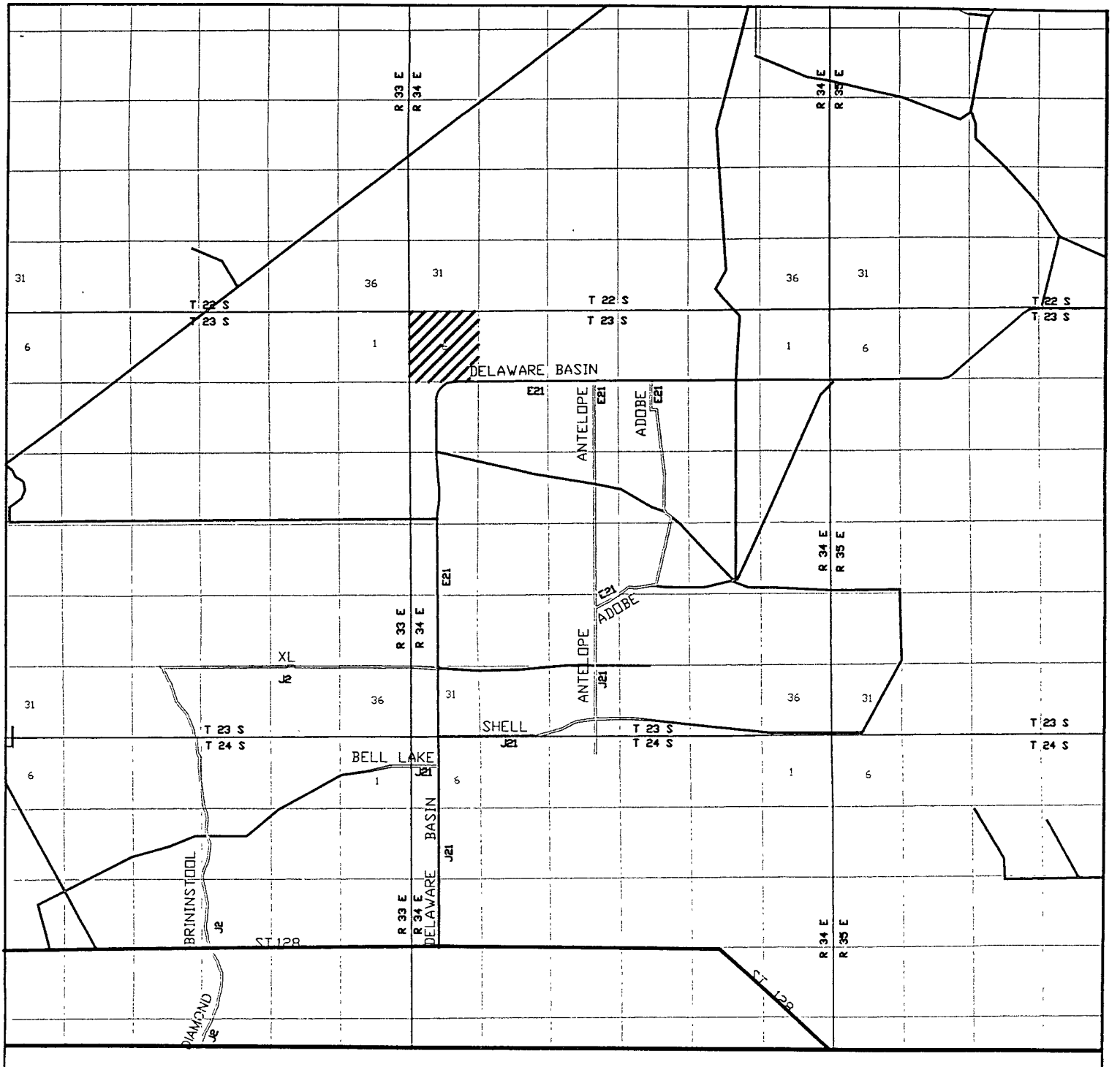
Located at 330' FNL AND 1980' FWL
Section 6, Township 23 South, Range 34 East,
N.M.P.M., Lea County, New Mexico.

Basin Surveys
focused on excellence in the oilfield

P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(505) 393-7316 - Office
(505) 392-3074 - Fax
basinsurveys.com

W O Number:	19115
Survey Date:	02-11-2008
Scale:	1" = 2000'
Date:	02-14-2008

APACHE CORPORATION



BELL LAKE #31
Located at 330' FNL AND 1980' FWL
Section 6, Township 23 South, Range 34 East,
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basin surveys
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1120 N. West County Rd.
Hobbs, New Mexico 88241
(505) 393-7316 - Office
(505) 392-3074 - Fax
basinsurveys.com

W.O. Number:	KJG - 19115TR.DWG
Survey Date:	02-11-2008
Scale:	1" = 2 MILES
Date:	02-14-2008

APACHE CORPORATION

APPLICATION TO DRILL

APACHE CORPORATION
BELL LAKE UNIT #31
UNIT "C" SECTION 6
T23S-R34E LEA CO. NM

In response to questions asked under Section II of Bulliten NTL-6, the following information on the above will be provided.

1. LOCATION: 330' FNL & 1980' FWL SECTION 6 T23S-R34E LEA CO. NM

2. ELEVATION ABOVE SEA LEVEL: 3458' GL

3. GEOLOGICAL NAME OF SURFACE FORMATION: Quaternery Aeolian Deposits.

4. DRILLING TOOLS AND ASSOCIATED EQUIPMENT: Conventional rotary drilling rig using drilling mud as a circulating medium for solids removal from hole.

5. PROPOSED DRILLING DEPTH: 13,900'

6. ESTIMATED TOPS OF GEOLOGICAL FORMATIONS:

Rustler Anhydrite	1370'	Strawn	11,765'
Delaware Mtn. group	5270'	Atoka Clastics	12,065'
Bone Spring	8485'	Morrow Clastics	12,815'
Wolfcamp	11,295'	TD	13,900'

7. POSSIBLE MINERAL BEARING FORMATIONS:

Bone Spring	oil
Morrow	gas

8. CASING PROGRAM:

HOLE SIZE	INTERVAL	OD OF CASING	WEIGHT	THREAD	COLLAR	GRADE	CONDITION
26"	0-40'	20"	NA	NA	NA	Conductor	New
17½"	0-~~1000'~~ 1200'	13 3/8"	48#	8-R	ST&C	H-40	New
12¼"	0-5000'	9 5/8"	40#	8-R	LT&C	HCK-55	New
8 3/4"	0-12,000'	7"	29#	8-R	LT&C	P-110	New
6"	0-13,900'	4½"	15.1# 13.5#	8-R	LT&C	P-110	New

See COA

Casing Design Factors:

Collapse 1.125 Burst 1.0 Body Yield 1.5 Joint Strength 8-R 1.8
Buttress 1.6

APPLICATION TO DRILL

APACHE CORPORATION
BELL LAKE UNIT #31
UNIT "C" SECTION 6
T23S-R34E LEA CO. NM

9. CASING CEMENTING & SETTING DEPTHS:

20"	Conductor	Set 40' of 20" conductor pipe and cement to surface with Redi-mix.
13 3/8"	Surface	Run and set 1000' of 13 3/8" 48# H-40 ST&C casing. Cement with 520 Sx. of Class "C" Lite Premium Plus + 3% Salt Yield 1.88, tail in with 340 Sx. of Premium Plus cement + 1.5 lbm/Sx bwoc CaCl Yield 1.3 circulate cement to surface.
9 5/8"	1st Intermediate	Run and set 5000' of 9 5/8" 40# HCK-55 LT&C casing. Cement with 930 Sx. of Class "C" Interfill cement + 3#/Sx Pheno Seal, Yield 2.81, tail in with 250 Sx. of Premium Pluc cement + .4% Halad 9, (fluid loss additive) Yield 1.33 circulate cement to surface.
7"	2nd Intermediate	Run and set 12,000' of 7" 29# P-110 LT&C casing. Cement with 500 Sx. of Interfill Class "H" cement + 1 lbs/sack Pheno Seal, Yield 2.8, tail in with 250 Sx. of Premium Plus Class "H" cement + .6% Halad 9 + 3# Salt/Sx. Yield 1.16 Top of cement estimate 4500. FS.
4½"	Production See COA	Run and set 13,900' of 4½" Casing as Follows: 4892' of 4½" 15.1# P-110 LT&C, 9008' of 4½" 13.5# P-110 LT&C. Cement with 185 Sx. of Super Class "H" Cement + .5% Halad 344, + .4% CFR3, + 5# Gilsonite/Sx, + 1# Salt/Sx., + .2% HR-5 Retarder, Yield 1.69. Estimated top of cement 11,500'.

MD 13919
Pipe length 13900'

10. PRESSURE CONTROL EQUIPMENT:

Exhibit "H" shows a 10,000 PSI working pressure B. O. P. consisting of annular bag type preventor blind rams and pipe rams with drilling spool with kill line and line to choke manifold. The B. O. P. will be nippled up on the 13 3/8" casing and tested by a third party tester to API specifications. The B. O. P. will be worked at least once in each 24 hour period and the blind rams will be worked when the drill pipe is out of the hole when on trips. Full opening stabbing valve and upper kelly cock will be available on the rig floor at all times. Exhibit "E" shows a 10M PSI choke manifold with remotely controled chokes and manually operated chokes, with a 3" blowdown line. No abnormal pressures or abnormal temperatures are expected while drilling this well.

APPLICATION TO DRILL

APACHE CORPORATION
BELL LAKE UNIT #31
UNIT "C" SECTION 6
T23S-R34E LEA CO. NM

11. PROPOSED MUD CURCULATING SYSTEM:

DEPTH	MUD WT.	VISC.	FLUID LOSS	TYPE MUD SYSTEM
40-1000'	8.6-9.0	38-45	NC	Fresh water Spud mud use paper to control seepage and high viscosity sweeps to clean hole. pH 9.0-9.5
1000-5000'	9.8-10.2	30-36	NC	Brine water use paper to control seepage, and high viscosity sweeps to clean hole. Use Lime to control pH at 9-10.
5000-12,000'	8.6-9.0	28-32	NC	Use cut brine to drill this part of the hole, using paper as required to control seepage. Use high viscosity sweeps to clean hole & Lime for pH 9-10.
12,000-TD	10.5-13.5	38-44	8-10 cc or less	Drill out from under 7" casing with fresh brine water maintain pH at 9.5-10 with caustic soda. Add starch to control water loss 8-10 or less. If necessary to raise mud weight barite will be used.

Sufficient mud materials will be kept on the location at all times in order to combat lost circulation or unexpected kicks. In order to run open hole logs, DST's, Cores, and casing the water loss and viscosity may have to be altered to meet these needs.

APPLICATION TO DRILL

APACHE CORPORATION
BELL LAKE UNIT #31
UNIT "C" SECTION 6
T23S-R34E LEA CO. NM

12. LOGGING, CORING, AND TESTING PROGRAM:

A. Open hole logs will be run according to Geologist: Dual Laterolog, LDT, MSFL, CNL, Gamma Ray & Caliper. Gamma Ray run from TD back to surface.

B. Mud logger rigged up on hole at 5200' and remain on hole to TD.

C. No DST's or cores are planned at this time.

13. POTENTIAL HAZARDS:

No abnormal pressures or temperatures are expected. There is no known presence of H^2S in this area. If H^2S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 5500 PSI, and Estimated BHT 190°.

14. ANTICIPATED STARTING DATE AND DURATION OF OPERATION:

Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available. Move in operation and drilling is expected to take 48 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flowlines in order to place well on production.

15. OTHER FACETS OF OPERATIONS:

After running casing, cased hole Gamma Ray, Neutron Collar logs will be run from TD back to all possible productive zones. The Morrow formation will be perforated and stimulated in order to establish production. The well will be swab tested and potentialed as a gas well.

Apache Corp

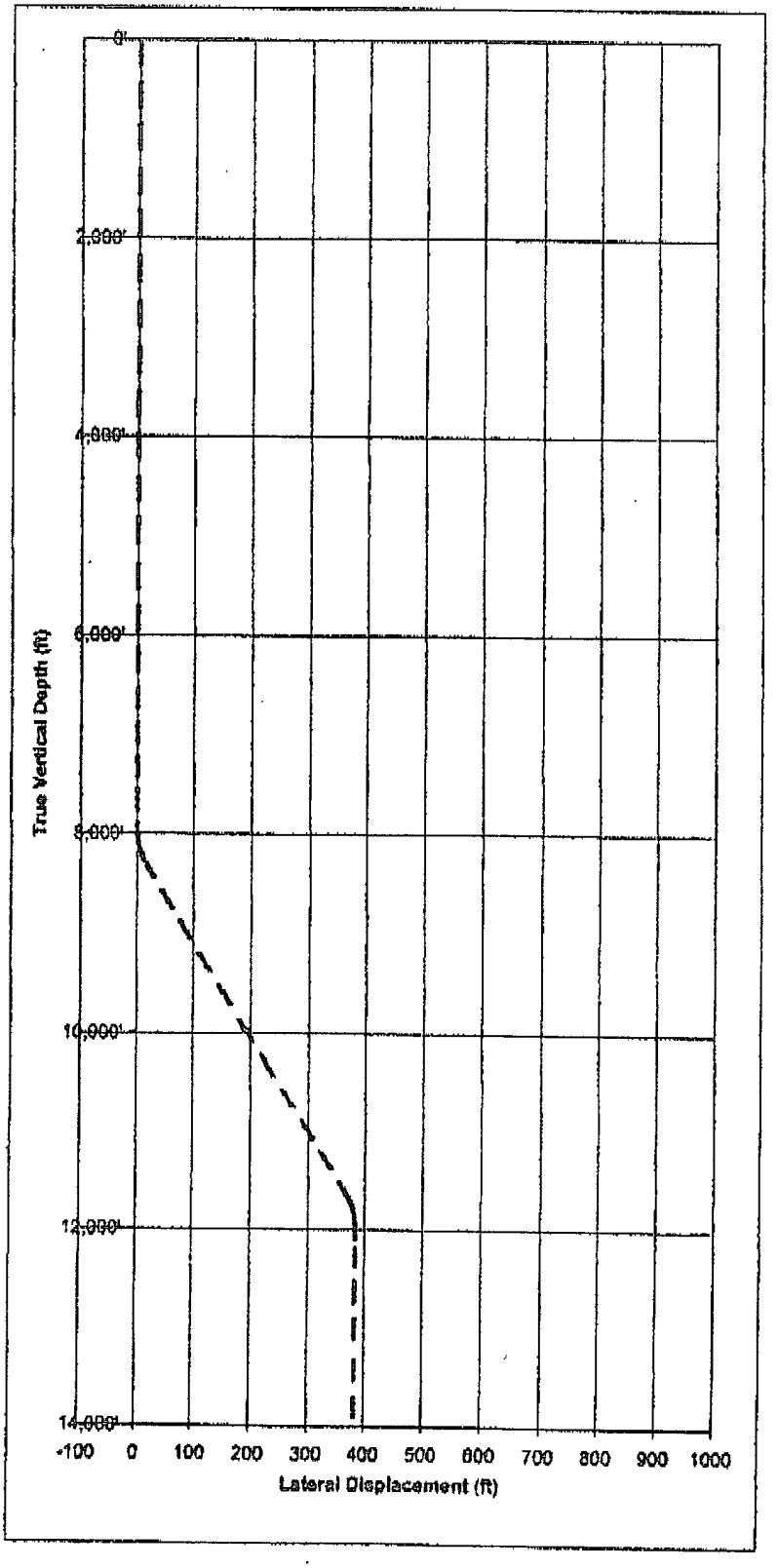
Directional Well Planner **BELL LAKE #31**

	Sec	FNL	FWL
Surface Location	6	330'	1,980'
Stm Hole Location	6	660'	1,650'
Displacement (N/S & E/W)		330'	330'
Direction (Surf -> St-H)		S	W
Direction (deg.)			180.86 °
Total Displacement			383'

Kick Off Depth	8,000'
Max. Build / Drop (deg./100')	2.0

Build & Hold

	TMD	Inclination	Lat. displacement	TVD
	0'	0	0	0'
Kick Off	8,000'	0.0	0.0	8,000.0'
	8,100'	2.0	1.7	8,100.0'
	8,200'	4.0	7.0	8,199.8'
	8,300'	6.0	15.7	8,299.5'
	11,664'	6.0	367.3	11,644.6'
	11,764'	4.0	376.0	11,744.4'
	11,864'	2.0	381.3	11,844.3'
	11,964'	0.0	383.0	11,944.3'
	13,919'	0.0	383.0	13,900.0'



SURFACE USE PLAN

APACHE CORPORATION
BELL LAKE UNIT #32
UNIT "C" SECTION 6
T23S-R34E LEA CO. NM

1. EXISTING AND PROPOSED ROADS:

A. Exhibit "B" is a reporduction of a County General Hi-way map showing existing roads. Exhibit "C" is a reproduction of a USGS topographic map showing existing roads and and proposed roads. All existing roads will be maintained in a condition equal to or better than current conditions. All new roads will be constructed to BLM specifications.

B. Exhibit "A" shows the proposed well site as staked.

C. Directions to location: From Eunice New Mexico take State Road 207 South 2.5 miles to Delaware Basin Road, turn Right (West) follow Delaware Basin Road 24.2 miles, turn Right (North) go .6 miles to well # 3, then follow new road .65 miles North and West to location.

D. Exhibit "C" shows a topographic map with roads to location and proposed flow lines back to well # 3 to connect to gas sales line.

2. PLANNED ACCESS ROADS: Approximately .65 miles of new road will be constructed.

A. The access roads will be crowned and sitched to a 14' wide travel surface, within a 30' R-O-W.

B. Gradient of all roads will be less than 5%.

C. Turn-outs will be constructed where necessary.

D. If require new access roads will be surface with a minimum of 4-6" of caliche. this material will be obtained from a local source.

E. Center line for new roads will be flagged, road construction will be done as field conditions require.

F. Culverts will be placed in the access road as drainage conditions require. Roads will be constructed to use low water crossings for drainage as required by the topographic conditions.

3. LOCATION OF EXISTING WELLS WITHIN A ONE MILE RADIUS: EXHIBIT "A-1"

A. Water wells - None known

B. Disposal wells - None known

C. Drilling wells - none known

D. Producing wells - As shown on Exhibit "F"

E. Abandoned wells - As shown on Exhibit "F"

4. If on completion this well is a producer the operator will lay pipelines and construct powerlines along existing road R-O-W's or other existing R-O-W's. Exhibit "C" shows proposed roads , flowlines and powerlines.

5. LOCATION & TYPE OF WATER SUPPLY:

Water will be purchased locally from a commercial source and trucked over the location access roads or piped to location in flexible lines laid on top of the ground.

6. SOURCE OF CONSTRUCTION MATERIAL:

If possible construction material will be obtained from the excavation of the drill site, if additional material is required it will be obtained from a local source and transported over the location access roads as shown on Exhibit "C".

7. METHODS OF HANDLING WASTE:

A. All trash, junk and other waste material will be contained in trash cages or trash bins in order to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary land fill.

B. Sewage from living quatersw will be drained into holding tanks and will be cleaned out periodically. A Porta-John will be provided for the rig crews. This equipment will be properly maintained during the drilling operations and removed upon completion of well.

C. Where a closed loop mud system is used to drill a well the drilling fluid that remains after the drilling and casing is run or the well is Plugged and abandoned will be removed from the location and in some cases may be used on another well or transported to a State approve disposal site. The drilling cuttings that result from drilling the well will likewise be transported to a State approved disposal site.

D. All water produced while completing this well and completion fluids will be treated in the same procedure as the drilling fluids.

E. Any remaining salts or mud additive that was not used will be removed by the supplier, this includes all broken sacks and containers.

8. ANCILLARY FACILITIES:

A. No camps or air strips will be constructed on this location.

CERTIFICATION

I HEREBY CERTIFY THAT I OR PERSONS UNDER MY SUPERVISION HAVE INSPECTED THE PROPOSED DRILL SITE AND THE ACCESS ROAD ROUTES, THAT I AM FAMILIAR WITH THE CONDITIONS THAT CURRENTLY EXIST, AND THAT THE STATEMENTS MADE IN THIS PLAN ARE TO THE BEST OF MY KNOWLEDGE ARE TRUE AND CORRECT, AND THAT THE WORK ASSOCIATED WITH THE OPERATIONS PROPOSED HEREIN WILL BE PERFORMED BY APACHE CORPORATION ITS CONTRACTORS OR ITS SUB-CONTRACTORS IS IN CONFORMANCE WITH THIS PLAN AND THE TERMS AND THE CONDITIONS UNDER WHICH IT IS APPROVED. THIS STATEMENT IS SUBJECT TO THE PROVISIONS OF U.S.C. 1001 FOR THE FILING OF A FALSE STATEMENT.

OPERATORS REPRESENTATIVES

BEFORE CONSTRUCTION

JOE T. JANICA

TIERRA EXPLORATION, INC.
P. O. BOX 2188
HOBBS, NEW MEXICO 88241
PHONE 505-391-8503
CELL 505-390-1598

DURING AND AFTER CONSTRUCTION

HAROLD SWAIN

APACHE CORPORATION
6120 SOUTH YALE
SUITE 1500
TULAS, OKLAHOMA 74136-4224
PHONE 432-527-3311
CELL PH. 505-390-4368

NAME; JOE JANICA Joe T. Janica

TITLE; PERMIT ENGINEER

DATE; 06/04/08

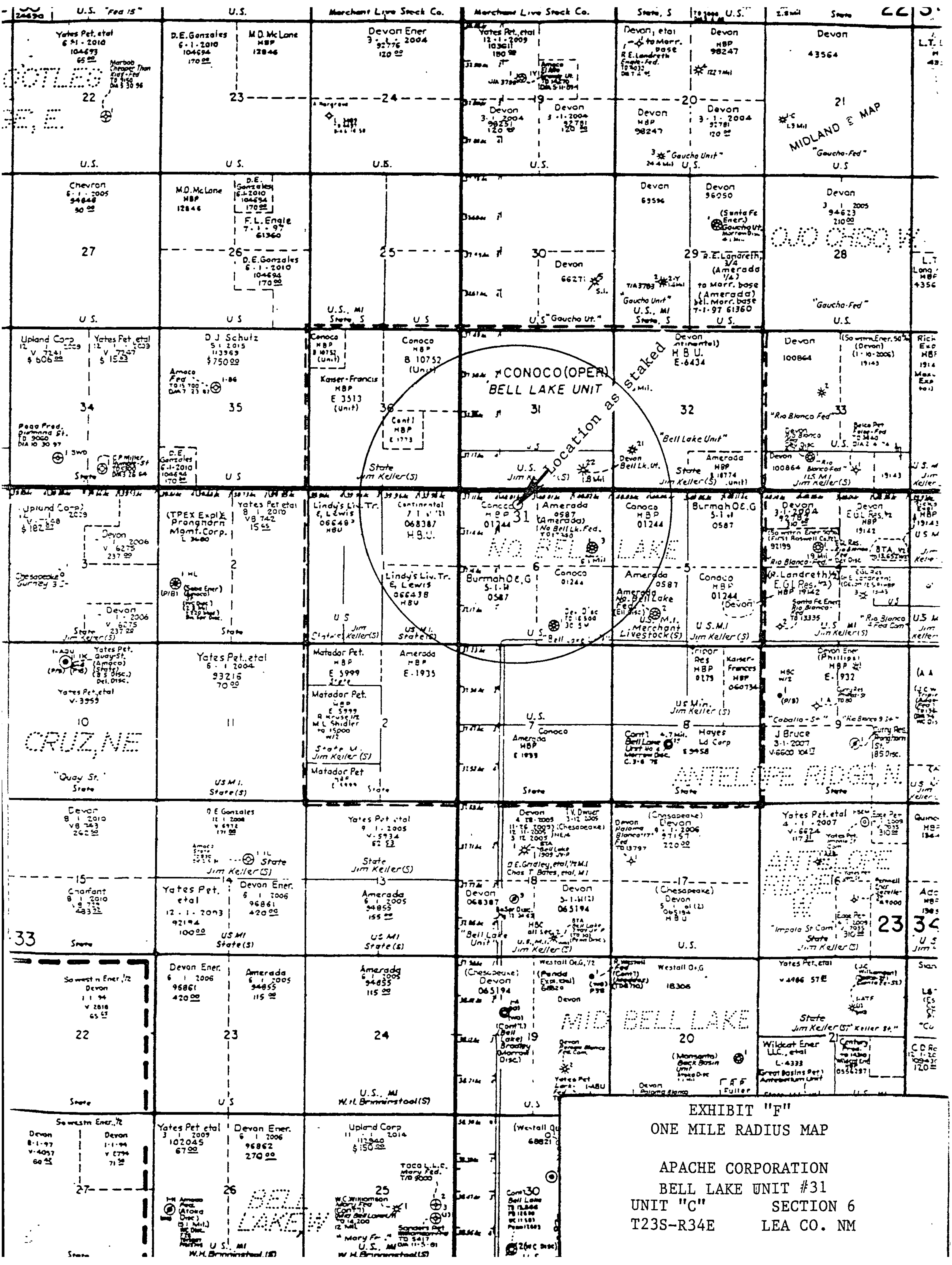


EXHIBIT "F"

ONE MILE RADIUS MAP

APACHE CORPORATION

BELL LAKE UNIT #31

UNIT "C" SECTION 6

T23S-R34E LEA CO. NM

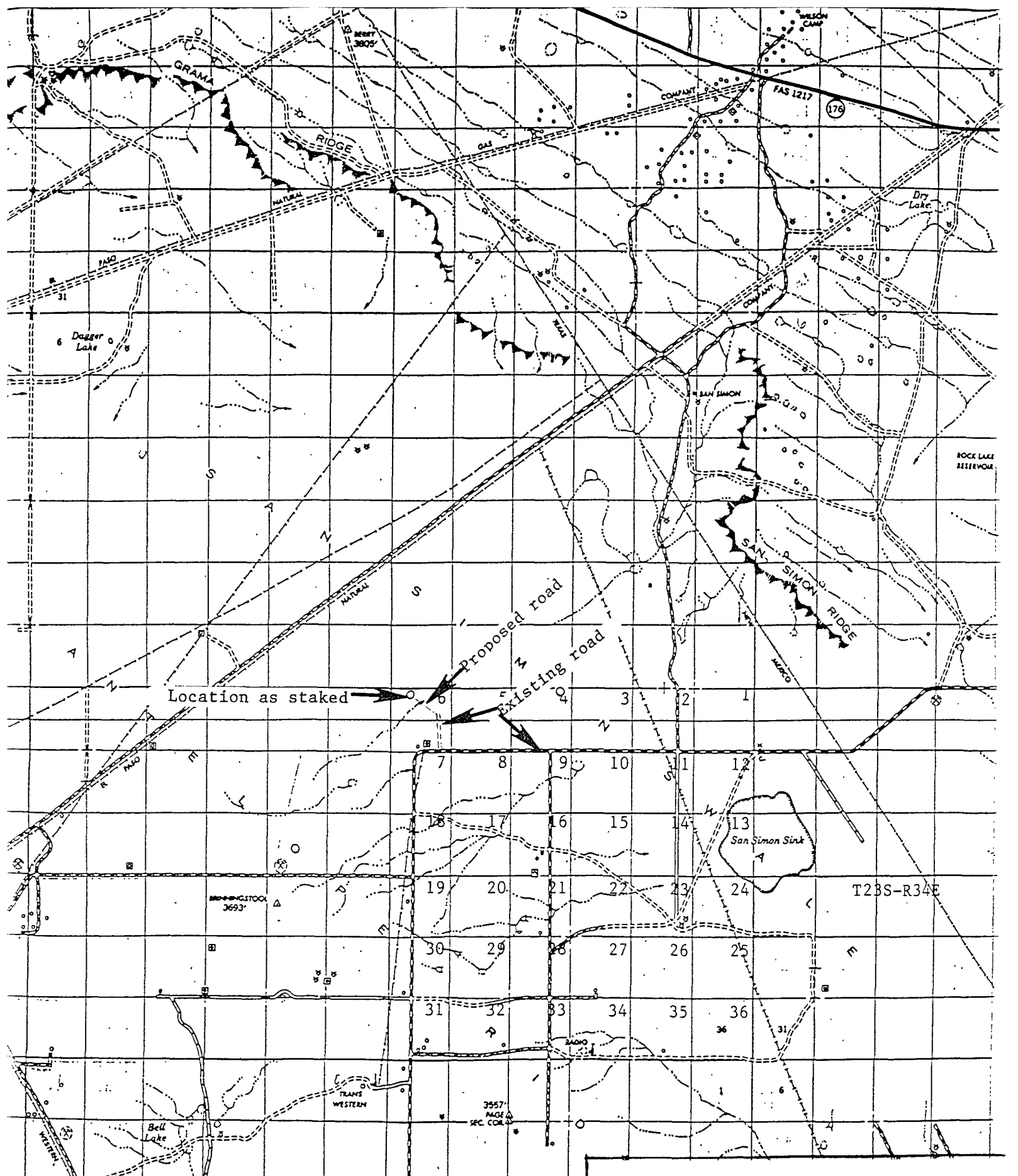


EXHIBIT "B"
LOCATION & ACCESS ROAD MAP

APACHE CORPORATION
BELL LAKE UNIT #31
UNIT "C" SECTION 6
T23S-R34E LEA CO. NM

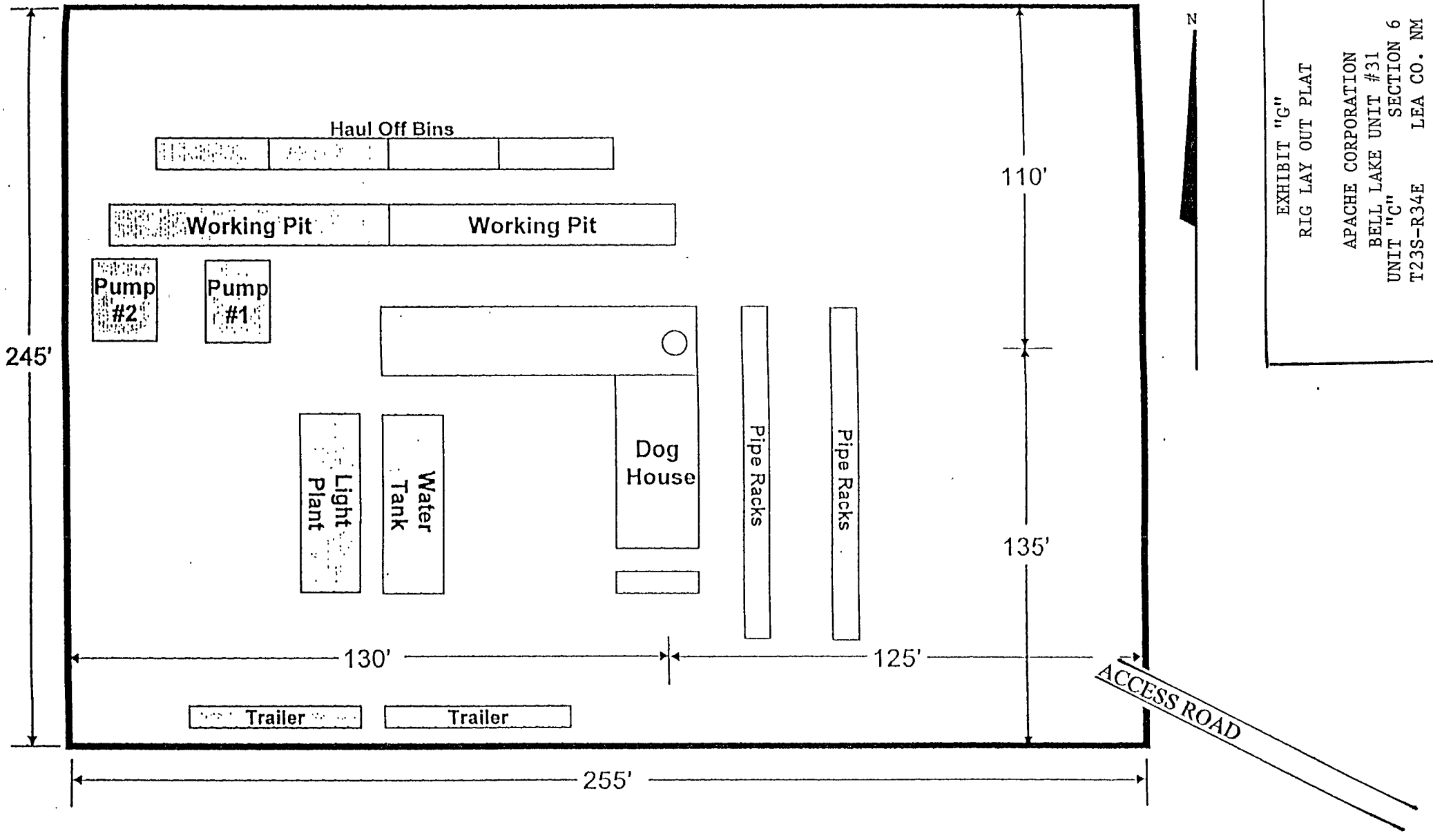


EXHIBIT "G"
RIG LAY OUT PLAT

APACHE CORPORATION
BELL LAKE UNIT #31
UNIT "C" SECTION 6
T23S-R34E LEA CO. NM

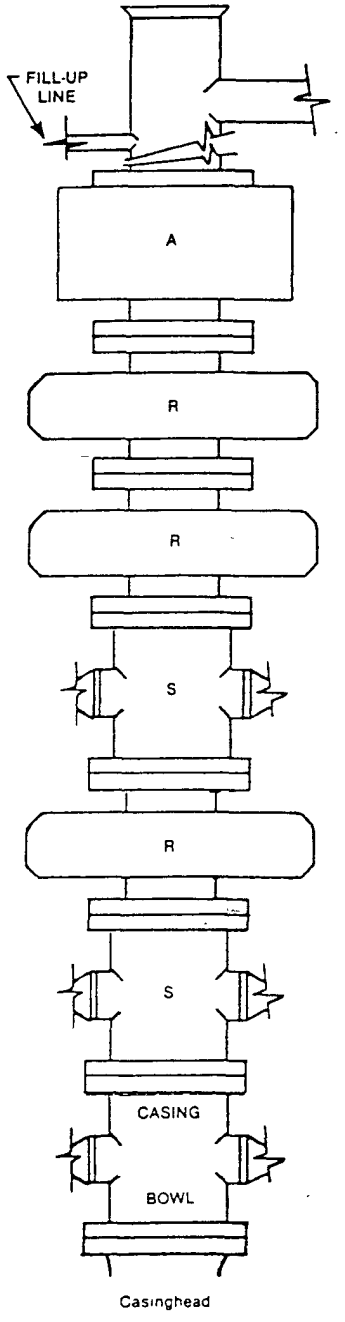
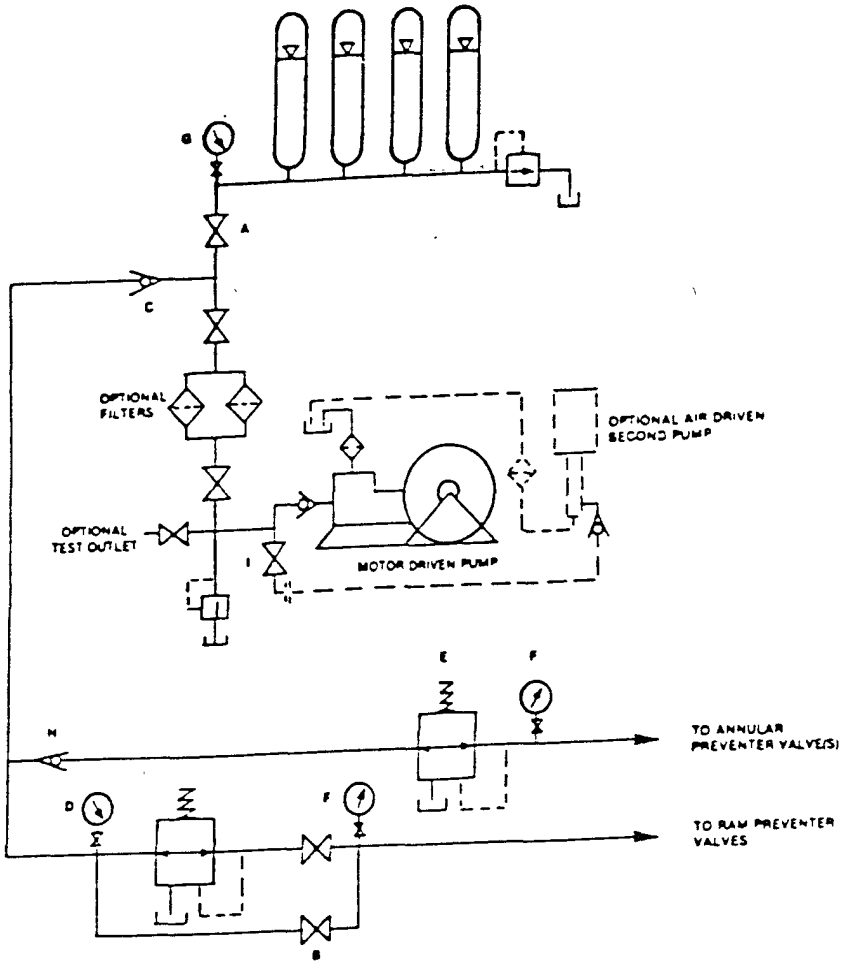


FIGURE K1-3. Recommended IADC Class 10 BOP stack arrangement SRSRRA, 10,000 psi WP. Lower drilling spool is optional with outlets on lower ram. Annular preventers may be 5000 or

EXHIBIT "H"
SKETCH OF B.O.P. TO BE USED ON

APACHE CORPORATION
BELL LAKE UNIT #31
UNIT "C" SECTION 6
T23S-R34E LEA CO. NM



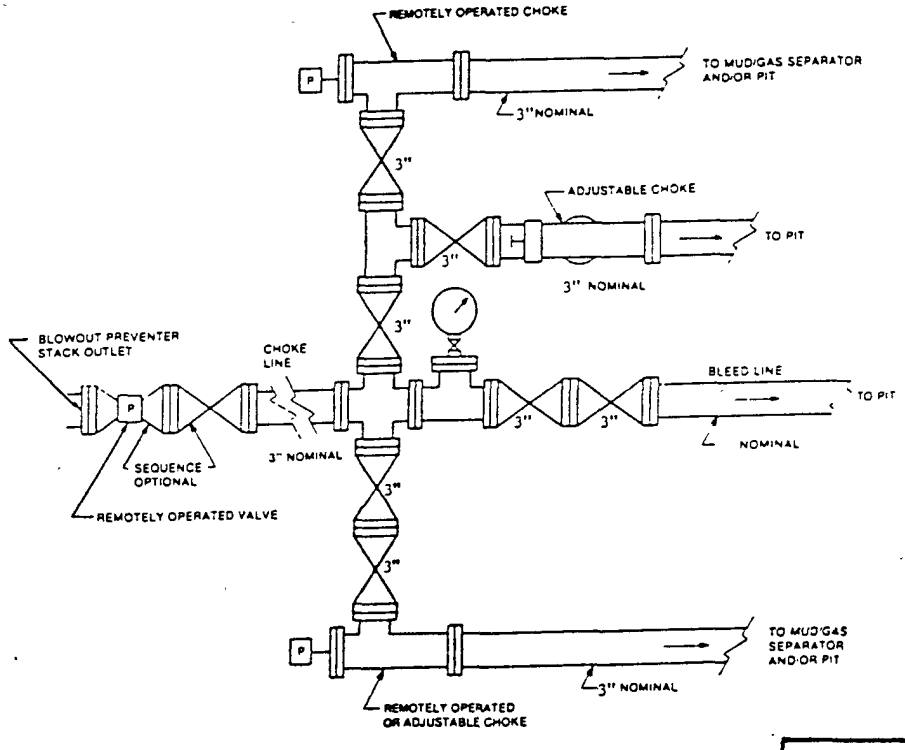


FIGURE K4-3. Typical choke manifold assembly for 10M and 15M rated

EXHIBIT "E"
CHOKE MANIFOLD & CLOSING UNIT

APACHE CORPORATION
BELL LAKE UNIT #31
UNIT "C" SECTION 6
T23S-R34E LEA CO. NM

Apache Corp

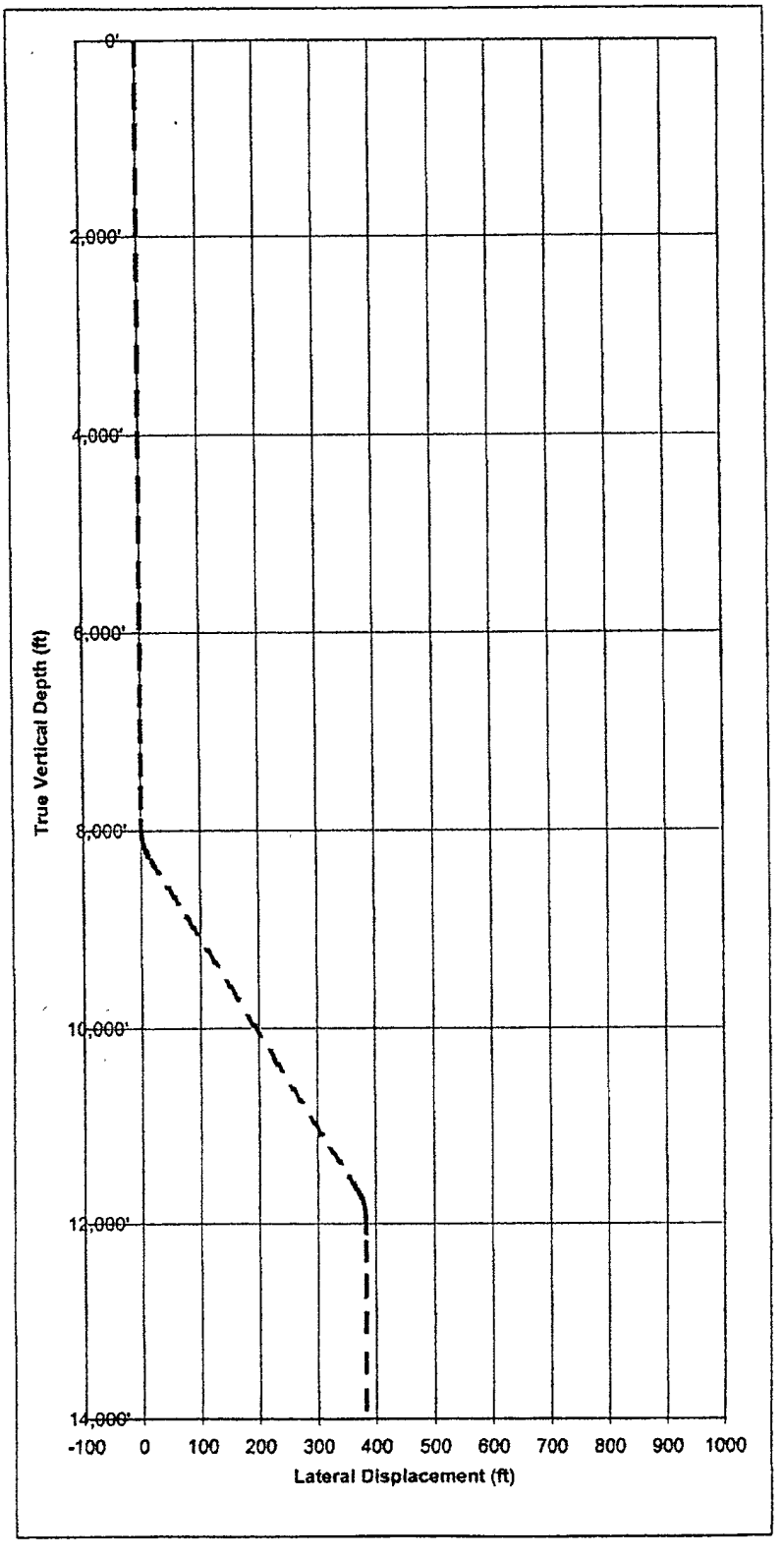
Directional Well Planner **BELL LAKE #31**

	Sec	FNL	FWL
Surface Location	6	330'	1,980'
Btm Hole Location	6	690'	1,850'
Displacement (N/S & E/W)		360'	130'
Direction (Surf -> BHL)		S	W
Direction (deg.)			199.86 °
Total Displacement			383'

Kick Off Depth	8,000'
Max. Build / Drop (deg./100')	2.0

Built & Hold

	TMD	Inclination	Lat. displacement	TVD
	0'	0	0	0'
Kick Off	8,000'	0.0	0.0	8,000.0'
	8,100'	2.0	1.7	8,100.0'
	8,200'	4.0	7.0	8,199.8'
	8,300'	6.0	15.7	8,299.5'
	11,664'	6.0	367.3	11,644.8'
	11,764'	4.0	376.0	11,744.4'
	11,864'	2.0	381.3	11,844.3'
	11,964'	0.0	383.0	11,944.3'
	13,919'	0.0	383.0	13,900.0'



BELL LAKE # 31 – DIRECTIONAL WELL

DRILLING PROGRAM

The geological surface formation is recent Permian with quaternary alluvium and other surficial-deposits.

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Estimated Tops of Geological Markers:

FORMATION	DEPTH
Quaternary alluvials	Surface
Rustler	1370'
Delaware Mtn Group	5270'
Bone Spring	8485'
Wolfcamp	11295'
Strawn	11765'
Atoka Clastics	12065'
Morrow Clastics	12815'
TD	13900'

Estimated depths at which water, oil, gas, or other mineral-bearing formations are expected to be encountered:

SUBSTANCE	DEPTH
Oil	Small amount anticipated
Gas	Morrow @ 12815'
Fresh Water	None anticipated

All fresh water and prospectively valuable minerals (as described by BLM) encountered during drilling will be recorded by depth and adequately protected. All oil and gas shows within zones of correlative rights will be tested to determine commercial potential.

Proposed Casing Program:

HOLE SIZE	CASING SIZE OD / ID	GRADE	WEIGHT PER FOOT	DEPTH	SACKS CEMENT	ESTIMATED TOC - REMARKS
17 2"	13 3/8" 12.715"	H-40 STC	48#	1,000'	860	TOC - Surface 8.9 ppg Water-based Mud; 89 ° F Est. Static Temp; 83 ° F Est. Circ. Temp.
12 ¼"	9 5/8" 8.835"	HCK-55 LTC	40#	5,000'	1,200	TOC - Surface 10.2 ppg Brine-based Mud; 106 ° F Est. Static Temp; 90 ° F Est. Circ. Temp.
8 ¾"	7" 6.184"	P-110 LTC	29#	12,000'	750	TOC – 4,500' 9.0 ppg Water Based Mud; 150 ° F Est. Static Temp; 119 ° F Est. Circ. Temp.
6"	4 ½" 4.892"	P-110 LTC	13.5# & 15.1#	13,900'	185	TOC – ~~Surface~~ 11,500' 13.5 ppg Fresh Water Mud; 160 ° F Est. Static Temp; 129 ° F Est. Circ. Temp.

Proposed Cement Program:

CASING	LEAD SLURRY	TAIL SLURRY	DISPLACEMENT
13 3/8"	520 sacks "Lite" Premium Plus Cement + 3% bwoc Salt 978 Vol. Cu Ft 1.8 Vol. Factor Slurry Weight (ppg) 12.8 Slurry Yield (cf/sack) 1.88 Amount of Mix Water (gps) 10.23; Estimated Pumping Time – 70 BC (HH:MM)-5:00;	340 sacks Premium Plus Cement + 1.5 lbm/sk bwoc Calcium Chloride 455 Vol. Cu Ft 1.3 Vol. Factor Slurry Weight (ppg) 14.8 Slurry Yield (cf/sack) 1.34 Amount of Mix Water (gps)6.38 Estimated Pumping Time – 70 BC (HH:MM)-3:15;	150.5 bbls Fresh Water @ 8.33 ppg

13 3/8" Casing: Volume Calculations:

1,000 ft	x	0.6946 cf/ft	with	100% excess	=	1389.2 cf
42 ft	x	0.881 cf/ft	with	0% excess	=	37.0 cf (inside pipe)
		TOTAL SLURRY VOLUME			=	1,426.2 cf
					=	254.0 bbls

CASING	LEAD SLURRY	TAIL SLURRY	DISPLACEMENT
9 5/8"	930 sacks Interfill C Cement + 3 lbs/sack Pheno Seal. 2,613 Vol. Cu Ft 2.8 Vol. Factor Slurry Weight (ppg) 11.5 Slurry Yield (cf/sack) 2.81 Amount of Mix Water (gps) 16.64; Estimated Pumping Time – 70 BC (HH:MM)-5:00;	250 sacks Premium Plus Cement + 0.4% Halad ®-9 (Fluid Loss additive) 333 Vol. Cu Ft 1.3 Vol. Factor Slurry Weight (ppg) 14.8 Slurry Yield (cf/sack) 1.33 Amount of Mix Water (gps)6.31 Estimated Pumping Time – 70 BC (HH:MM)-3:15;	376.0 bbls Fresh Water @ 8.33 ppg

9 5/8" Casing: Volume Calculations:

4,000 ft	x	0.313 cf/ft	with	75% excess	=	2,191.2 cf
44 ft	x	0.426 cf/ft	with	0% excess	=	18.7 cf (inside pipe)
		TOTAL SLURRY VOLUME			=	2,209.9 cf
					=	393.6 bbls

Spacer 20.0 bbls Water @ 8.33 ppg

CASING	LEAD SLURRY	TAIL SLURRY	DISPLACEMENT
7"	500 sacks Interfill H Cement + 1 lbs/sack Pheno Seal. 1,400 Vol. Cu Ft 2.8 Vol. Factor Slurry Weight (ppg) 11.5 Slurry Yield (cf/sack) 2.80 Amount of Mix Water (gps) 16.75; Estimated Pumping Time – 70 BC (HH:MM)-5:00;	250 sacks Premium Plus Cement + 0.6% Halad ®-9 (Fluid Loss additive) + 3 lb/sk Salt 290 Vol. Cu Ft 1.1 Vol. Factor Slurry Weight (ppg) 16.0 Slurry Yield (cf/sack) 1.16 Amount of Mix Water (gps) 4.89 Estimated Pumping Time – 70 BC (HH:MM)-3:15;	442.9 bbls Fresh Water @ 8.33 ppg

7" Casing: Volume Calculations:

7,000 ft	x	0.150 cf/ft	with	50% excess	=	1,577.7 cf
500 ft	x	0.158 cf/ft	with	10% excess	=	87.1 cf
44 ft	x	0.208 cf/ft	with	0% excess	=	9.2 cf (inside pipe)
		TOTAL SLURRY VOLUME			=	1,674.0 cf
					=	298.1 bbls

Spacer 20.0 bbls Water @ 8.33 ppg

CASING	LEAD SLURRY	TAIL SLURRY	DISPLACEMENT
4 ½"	N/A	185 sacks Super H Cement + 0.5% Halad®-344 (fluid loss) + 0.4% CFR-3(dispersant) + 5 lb/sk Gilsonite (lost circ material) + 1 lb/sk Salt + 0.2% HR-5 (retarder) 313Vol. Cu Ft 1.6 Vol. Factor Slurry Weight (ppg) 13.0 Slurry Yield (cf/sack) 1.69 Amount of Mix Water (gps) 8.4; Estimated Pumping Time – 70 BC (HH:MM)-4:00;	194.1 bbls 2% Kcl Water @ 8.43 ppg

4 ½" Casing: Volume Calculations:

500 ft	x	0.208 cf/ft	with	10% excess	=	53.9 cf
1,900 ft	x	0.086 cf/ft	with	50% excess	=	244.7 cf
44 ft	x	0..0798 cf/ft	with	0% excess	=	3.5 cf(inside pipe)
		TOTAL SLURRY VOLUME			=	302.1 cf
					=	53.8 bbls

All slurries will be tested prior to loading to confirm thickening times and a lab report furnished to Apache. Fluid loss will be tested and reported on slurries with fluid loss additives. Lab test report will be furnished prior to pumping cement.

Proposed Mud Program

DEPTH	MUD PROPERTIES	REMARKS
0 – 1,000'	Weight: 8.6 – 9.0 ppg Viscosity: 38 – 45 sec/qt pH: 9.0 – 9.5 Filtrate: NC	Spud with a Conventional Gel/Lime "Spud mud". Use gel and native solids to maintain a sufficient viscosity to keep the hole clean. Mix Paper one-two sacks every 100 feet drilled to minimize wall cake build up on water sands and to control seepage loss. Every 500' sweep the hole with 50 bbls of pre-mixed freshwater, gel and lime having a viscosity of 45-50 sec/qt.
1,000 – 5,000'	Weight: 9.8 – 10.2 ppg Viscosity: 30 – 36 sec/qt pH: 9.0 – 9.5 Filtrate: NC	Drill out from under the surface casing with Brine Water. Paper should be added at 2 bags after every 100' drilled to control seepage losses. Use Lime to maintain pH at 9-10. Mix one gallon of Anco Drill N at flowline every 250 feet drilled to promote solids settling
5,000' – 12,000'	Weight: 8.6 – 9.0 ppg Viscosity: 28 – 32 sec/qt pH: 9.5 -10 Filtrate: NC	Drill out from under the 1st intermediate casing with Cut Brine Water. Paper should be added at 2 bags after every 100' drilled to control seepage losses. Use Lime to maintain pH at 9-10. Mix one gallon of Anco Drill N at flowline every 250 feet drilled to promote solids settling
12,000' – TD	Weight: 10.5 – 13.5 ppg Viscosity: 38 – 44 sec/qt pH: 9.5 -10 Filtrate: 10-12 cm/30 min	Drill out from under 2nd intermediate casing with fresh Brine Water. Adjust and maintain pH with Caustic Soda. Increase fluid density as necessary with additions of barite. Treat system with WT-22 @ 0.1 ppb. Mix Starch (yellow) to control API filtrate at 8-10 cc. Sweep hole with Anco Drill N every 100'.

Proposed Control Equipment:

Will install on the 13 3/8" surface casing a 13" x 10,000 psi WP Double Ram BOP and 13" 5,000 psi WP Annular. BOPE will be tested using a 3rd party tester before drilling out of surface casing.

Auxiliary Equipment:

10,000 psi Kelly valve
13" x 10,000 psi mud cross – H_2S detector on production hole
Gate-type safety valve 3" 10,000 psi choke line from BOP to manifold
2" 10,000 psi adjustable chokes – 3" blowdown line

Logging Program:

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The following logs may be run:
LDT, GR, CAL, DLL, MSFL, Sonic
CNL, GR from TD-Surface

Mudlogging Program: From 5,200' to TD

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No abnormal pressures or temperatures are anticipated. In the event abnormal pressures are encountered, however, the proposed mud program will be modified to increase the mud-weight. The estimated maximum bottom hole pressure is 5,500 psi.

Bottom Hole Pressure Calculations

Apache estimated bottom hole pressure by multiplying the median depth of perforations by a normal gradient of 0.42, then subtracting a few hundred pounds based upon number of and cumulative production from nearby offsets.

For example:

Expected median depth of perforations:	13570*0.42=5,699
Reduction due to offset production:	200
Expected bottom hole pressure:	5,500

Hydrogen Sulfide Drilling Operations Plan

No H_2S is anticipated.

Surface Location

NW ¼ of Section 6, Township 23 South, Range 34 East, N.M.P.M.
Lea County, New Mexico
330' FNL, 1980' FWL, Unit C

Bottom Hole Location

NW ¼ of Section 6, Township 23 South, Range 34 East, N.M.P.M.
Lea County, New Mexico
690' FNL, 1850' FWL, Unit C

Directional Drilling Plan

This well will be drilled directionally to a bottom hole location approximately 396 feet to the South, South East (199°) of the surface location. The plan is to drill vertically to a measured depth of 8,000' then build angle in the direction of the desired bottom hole location (199°) at a rate of 2°/100' up to 5°. This inclination and direction will be held to a TVD of approximately 11,600' at which point the angle will be dropped to vertical before reaching the 2nd intermediate casing depth of 12,000' TMD. The well will be drilled vertically from there to a TVD or 13,900'.

Leases Issued: NMNM-00124A

Operating Rights:

Apache Corporation	57.074890%
Kaiser-Francis Oil Co.	26.346200%
Hayes Land and Production, LP	2.793500%
Hayes Land Corporation	2.793500%
Robert Kruse	2.793500%
Moore & Shelton Co., Ltd.	1.256680%
Delmar Hudson Lewis Living Trust	1.201700%
Lindy's Living Trust	1.201700%
Edward R. Hudson Trust # 2	1.186870%
Edward R. Hudson Trust # 3	0.890150%
Edward R. Hudson Trust # 4	1.186870%
Mark Shidler	0.977730%
Zorro Partners, Ltd.	0.296710%
	100%

Acres in Lease:

Township 23 South, Range 34 East, NMPM

SEC	5	S2NW, SE;
SEC	5	LOTS 3, 4;
SEC	6	SENW, SE;
SEC	6	LOTS 3,4,5;

Total Acres 634.35

Acres Dedicated to Well:

There are 40.00 acres dedicated to this well, which takes in the UL C of Section 6, Township 23 South, Range 34 East, N.M.P.M., Lea County, New Mexico.

Driving Directions

From the junction of State Highway 128 and County Road E-21 (Deleware Basin), proceed north on County Road E-21 for 8.0 miles turning east for 0.1 miles to lease road, on lease road go north 0.6 miles to proposed lease road.

Location and Type of Water Supply

Apache Corporation plans to drill the proposed well with fresh and brine water which will be transported by truck over proposed and existing access roads.

Method of Handling Waste Material

We will be utilizing a closed-loop mud system, all drill cuttings and fluids will be hauled off to a licensed disposal location.
Water produced during operations will be collected in tanks until hauled to an approved disposal system.
Oil produced during operation will be stored in tanks until sold.
Apache Corporation will comply with current laws and regulations pertaining to the disposal of human waste.
All waste materials will be contained to prevent scattering by the wind and will be removed from the well site within 30 days after drilling and/or completion operations are finished.

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Surface Ownership

The surface is owned by the State. Keller RV LLC has a grazing lease. Minerals are owned by the U S Department of Interior and is administered by The Bureau of Land Management.

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Archaeological, Historical, and Other Cultural Sites
Don Clifton, Archaeological Consultant, of Pep, New Mexico, will be conducting an archaeological survey of the proposed well which covers the drilling location, production facilities, and access road, including a corridor along said access road for power and flow lines. His report will be filed under separate cover.

I. Senior Representative (Manager, Engineering & Production):

Ross Murphy
Apache Corporation
Suite 1500 – Two Warren Place
6120 South Yale Avenue
Tulsa, Oklahoma 74136

(918) 491-4834

Project (Operations Engineer):
Kevin Mayes
Apache Corporation
Suite 1500 – Two Warren Place
6120 South Yale Avenue
Tulsa, Oklahoma 74136
(918) 491-4972

Drilling Operations (Operations Engineer):
Sam Hampton
Apache Corporation
Suite 1500 – Two Warren Place
6120 South Yale Avenue
Tulsa, Oklahoma 74136
(918) 491-4954

WELL CONTROL EMERGENCY RESPONSE PLAN

I. GENERAL PHILOSOPHY

Our objective is to ensure that during an emergency, a predetermined procedure is followed so that prompt decisions can be made based on accurate information.

The best way to handle an emergency is with an experienced organization set up for the sole purpose of solving the problem. The Well Control Emergency Response Team was organized to handle dangerous and expensive well control problems. The team is structured such that each individual can contribute the most from his area of expertise. Key decision-makers are determined prior to an emergency to avoid confusion about who is in charge.

If the well is flowing uncontrolled at the surface or subsurface, the Emergency Response Team will be mobilized. The Team is customized for the people currently on the Apache staff. Staff changes may require a change in the plan.

II. EMERGENCY PROCEDURE ON DRILLING OR COMPLETION OPERATIONS

A. In event of an emergency the Drilling Foreman or Tool-pusher will immediately contact only one of the following starting with the first name listed.

	Office	Home	Mobile
Danny Chaney	(405) 222-5040		(405)574-2107
Ross Murphy	(918) 491-4834	(918) 749-9454	(918) 691-9493
Tom Voytovich	(918) 491-4901	(918) 299-8820	(918) 381-0882

Emergency Telephone Conference Room: (888) 896-4185 and input code: 344855

This one phone call will free the Drilling Foreman to devote his full time to securing the safety of personnel and equipment. This call will initiate the process to mobilize the Well Control Emergency Response Team. Apache maintains an Emergency Telephone Conference Room in the Houston office. This room is available for use by the Mid-Continent Region. The room has 50 separate telephone lines.

B. The Apache employee contacted by the Drilling Foreman will begin contacting the rest of the team. If Ross Murphy is out of contact, Tom Voytovich will be notified.

C. If a member of the Emergency Response Team is away from the job, he must be available for call back. Telephone numbers should be left with secretaries or a key decision-maker.

D. Apache's reporting procedure for spills or releases of oil or hazardous materials will be implemented when spills or releases have occurred or are probable.

HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

I. Hydrogen Sulfide Training

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H_2S).
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H_2S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H_2S on metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H_2S Drilling Operations Plan and the Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H_2S zone (within 3 days or 500 feet) and weekly H_2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H_2S Drilling Operations Plan and the Public Protection Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received the proper training.

II. H_2S Safety Equipment and Systems

1. Well Control Equipment that will be available and installed if H2S is encountered:
   - A. Flare line with electronic igniter or continuous pilot.
   - B. Choke manifold with a minimum of one remote choke.
   - C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.
   - D. Auxiliary equipment to include annular preventer, mud-gas separator, rotating head, and flare gun with flares.
2. Protective equipment for essential personnel:
   - A. Mark II Surviveair 30-minute units located in the dog house and at briefing areas.
3. H_2S detection and monitoring equipment:
   - A. Two portable H_2S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H_2S levels of 20 ppm are reached.
   - B. One portable S02 monitor positioned near flare line.
4. Visual warning systems:
   - A. Wind direction indicators.
   - B. Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used when appropriate.
5. Mud program:
   - A. The mud program has been designed to minimize the volume of H_2S circulated to the surface. Proper mud weight, safe drilling practices, and the use of H_2S scavengers will minimize hazards when penetrating H_2S-bearing zones.
   - B. A mud-gas separator and an H_2S gas buster will be utilized if H2S is encountered.
6. Metallurgy:
   - A. All drill strings, casings, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H_2S service.
   - B. All elastomers used for packing and seals shall be H_2S trim.
7. Communication:
   - A. Radio communications in company vehicles including cellular telephone and 2-way radio.

If at this time the supervising person determines the release of H2S cannot be contained to the site location and the general public is in harms way he will take the necessary steps to protect the workers and the public.
EMERGENCY CALL LIST: (Start and continue until ONE of these people has been contacted)

	OFFICE	MOBILE	HOME

EMERGENCY RESPONSE NUMBERS:

State Police	Eddy County		505-748-9718
State Police	Lea County		505-392-5588
Sheriff	Eddy County		505-746-2701
Sheriff	Lea County		
Emergency Medical	Eddy County		911 or 505-746-2701
Service (Ambulance)	Lea County	Eunice	911 or 505-394-3258
Emergency Response	Eddy County SERC		505-476-9620
	Lea County		
Artesia Police Dept			505-746-5001
Artesia Fire Dept			505-746-5001
Carlsbad Police Dept			505-885-2111
Carlsbad Fire Dept			505-885-3125

EMERGENCY CALL LIST (CONT.)

Loco Hills Police Dept		505-677-2349
Jal Police Dept		505-395-2501
Jal Fire Dept		505-395-2221
Jal Ambulance		505-395-2221
Eunice Police Dept		505-394-0112
Eunice Fire Dept		505-394-3258
Eunice Ambulance		505-394-3258
Hobbs Police Dept		505-397-3365
Hobbs Fire Dept		505-397-9308
NMOCD	District 1 (Lea, Roosevelt, Curry)	505-393-6161
	District 2 (Eddy, Chavez)	505-748-1283
Lea County Information		505-393-8203
Callaway Safety	Eddy/Lea Counties	505-392-2973
BJ Services	Artesia	505-746-3140
	Hobbs	505-392-5556
Halliburton	Artesia	1-800-523-2482
	Hobbs	1-800-523-2482
Wild Well Control	Midland	432-550-6202
	Mobile	432-553-1166

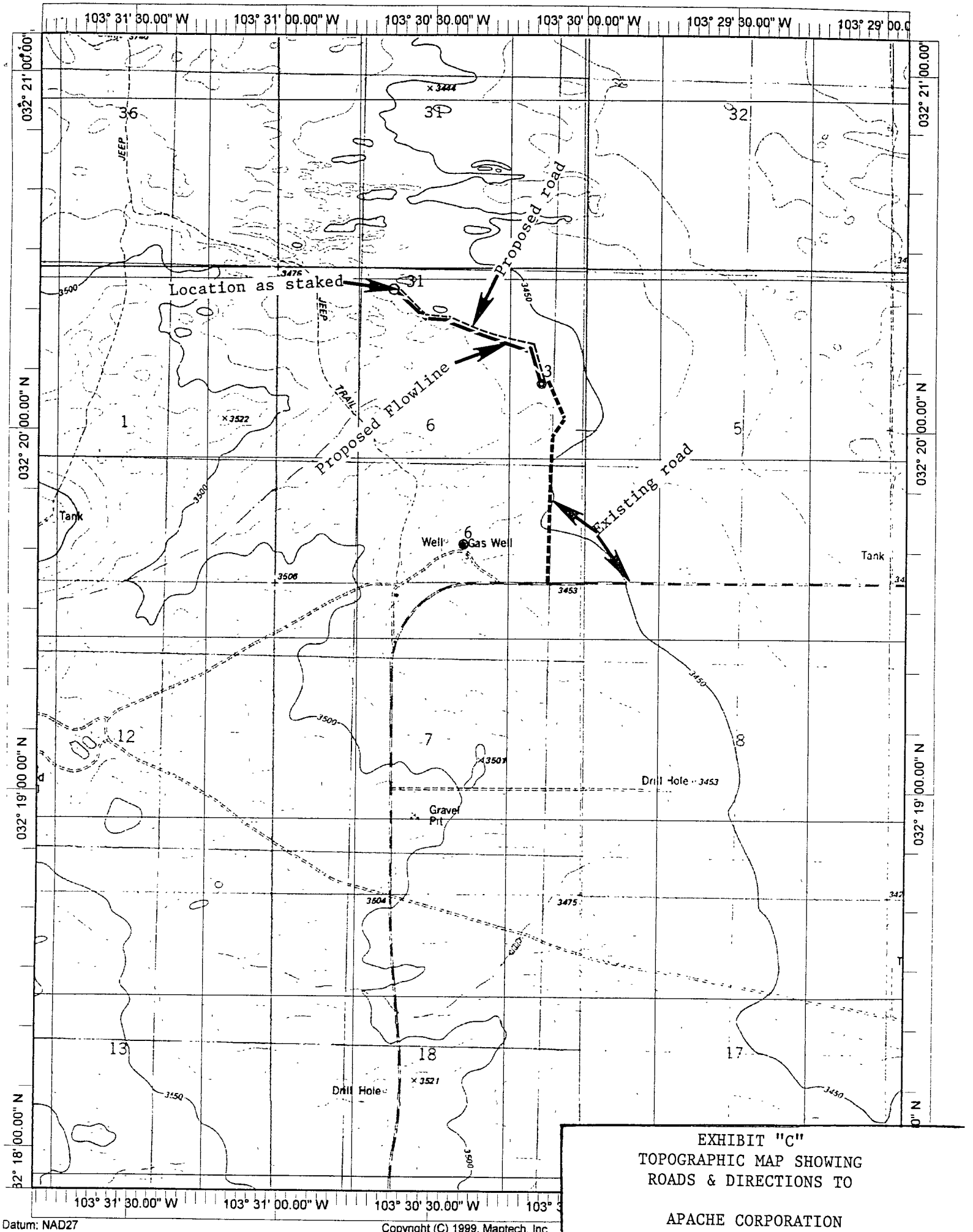


EXHIBIT "C"
TOPOGRAPHIC MAP SHOWING
ROADS & DIRECTIONS TO

APACHE CORPORATION
BELL LAKE UNIT #31
UNIT "C" SECTION 6
T23S-R34E LEA CO. NM

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Apache Corporation
LEASE NO.:	NM01244A
WELL NAME & NO.:	Bell Lake Unit No. 31
SURFACE HOLE FOOTAGE:	330' FNL & 1980' FWL
BOTTOM HOLE FOOTAGE	690' FNL & 1850' FWL
LOCATION:	Section 6, T. 23 S., R 34 E., NMPM
COUNTY:	Lea County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator 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 shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

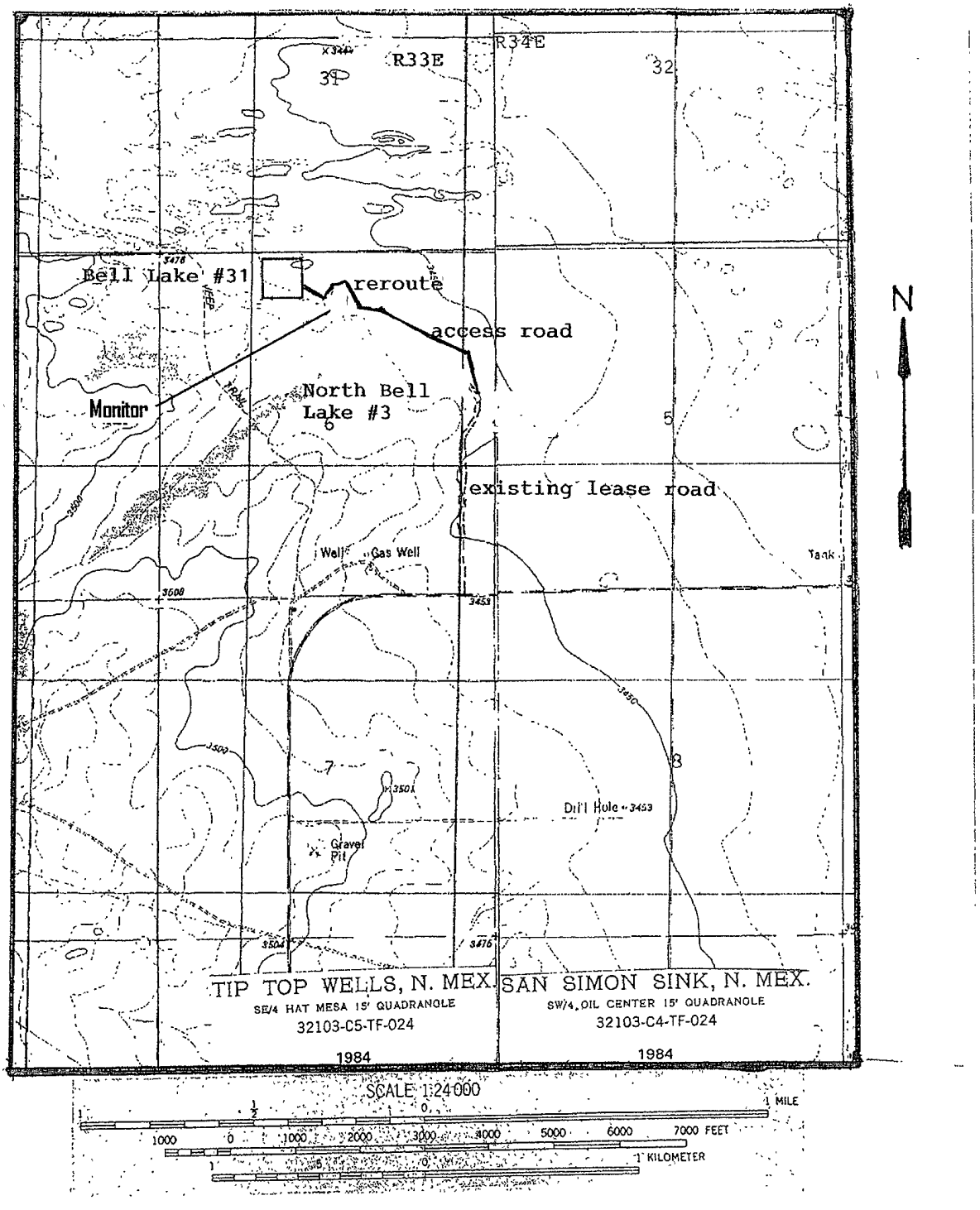
Historic properties in the vicinity of this project are protected by federal law. In order to ensure that they are not damaged or destroyed by construction activities, the project proponent and construction supervisors shall ensure that the following stipulations are implemented.

Project Name:	Bell Lake No. 31 Access Road
REQUIRED	***1). A 3-day preconstruction call-in notification.*** Contact BLM Inspection and Enforcement at (505) 234-5977, 5909, or 5995, to establish a construction start date.
REQUIRED	***2. Professional archaeological monitoring***. Contact your project archaeologist, or BLM's Cultural Resources Section at (505) 234-5980, 5917, or 5986, for assistance.
A. ☒	These stipulations must be given to your monitor at least **5 days** prior to the start of construction.
B. ☒	No construction, including vegetation removal or other site prep may begin prior to the arrival of the monitor.
NO	***3. Cultural site barrier fencing.*** (Your monitor will assist you).
A. ☐	A temporary site protection barrier(s) shall be erected prior to all ground-disturbing activities. The minimum barrier(s) shall consist of upright wooden survey lath spaced no more than ten (10) feet apart and marked with blue ribbon flagging or blue paint. There shall be no construction activities or vehicular traffic past the barrier(s) at any time.
B. ☐	A permanent, 4-strand barbed wire fence strung on standard "T-posts" shall be erected prior to all ground-disturbing activities. No construction activities or vehicle traffic are allowed past the fence.
	4. The archaeological monitor shall:
A. ☒	Ensure that all site protection barriers are located as indicated on the attached map(s).
B. ☒	Observe all ground-disturbing activities within 100 feet of cultural site no. (s) LA133247 , as shown on the attached map(s).
C. ☒	Ensure that all reroutes are adhered to avoid cultural site no.(s) LA 133247
D. ☐	Ensure the proposed is/are located as shown on the attached map(s).
E. ☒	Submit a brief monitoring report within 30 days of completion of monitoring.
Other:	

Site Protection and Employee Education: It is the responsibility of the project proponent and his construction supervisor to inform all employees and subcontractors that cultural and archaeological sites are to be avoided by all personnel, vehicles, and equipment; and that it is illegal to collect, damage, or disturb cultural resources on Public Lands.

For assistance, contact BLM Cultural Resources: Martin Stein (575) 234-5980, Bruce Boeke (575) 234-5917, James Smith (575) 234-5986, George MacDonell (575) 234-2228

Exhibit 2 – Map of Alternate Route for the Access Road and Monitor Area



Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 15 through June 15 annually. 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 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this 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 existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (505) 234-5972 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

There is no measurable soil on this well pad to stockpile. No topsoil stockpile is required.

C. RESERVE PITS

The operator has applied for a closed-loop system. The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

If the operator elects to surface the access road and/or well pad, mineral materials extracted during construction of the reserve pit may be used for surfacing the well pad and access road and other facilities on the lease.

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. Call the
Carlsbad Field Office at (505) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

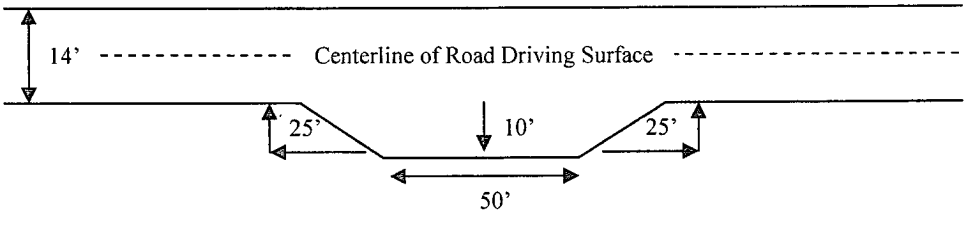
The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching
Ditching shall be required on both sides of the road.

Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:

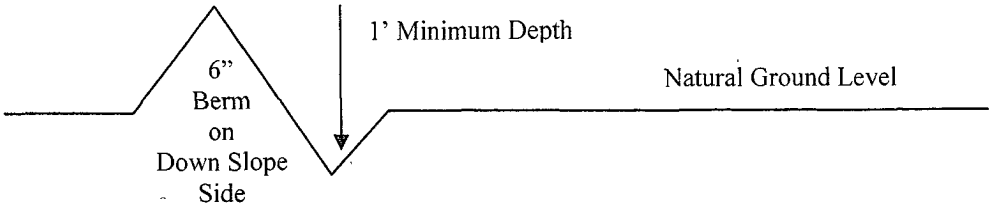
Standard Turnout – Plan View



Drainage
Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$\text{400 foot road with 4\% road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

Culvert Installations
Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

Cattleguards
An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

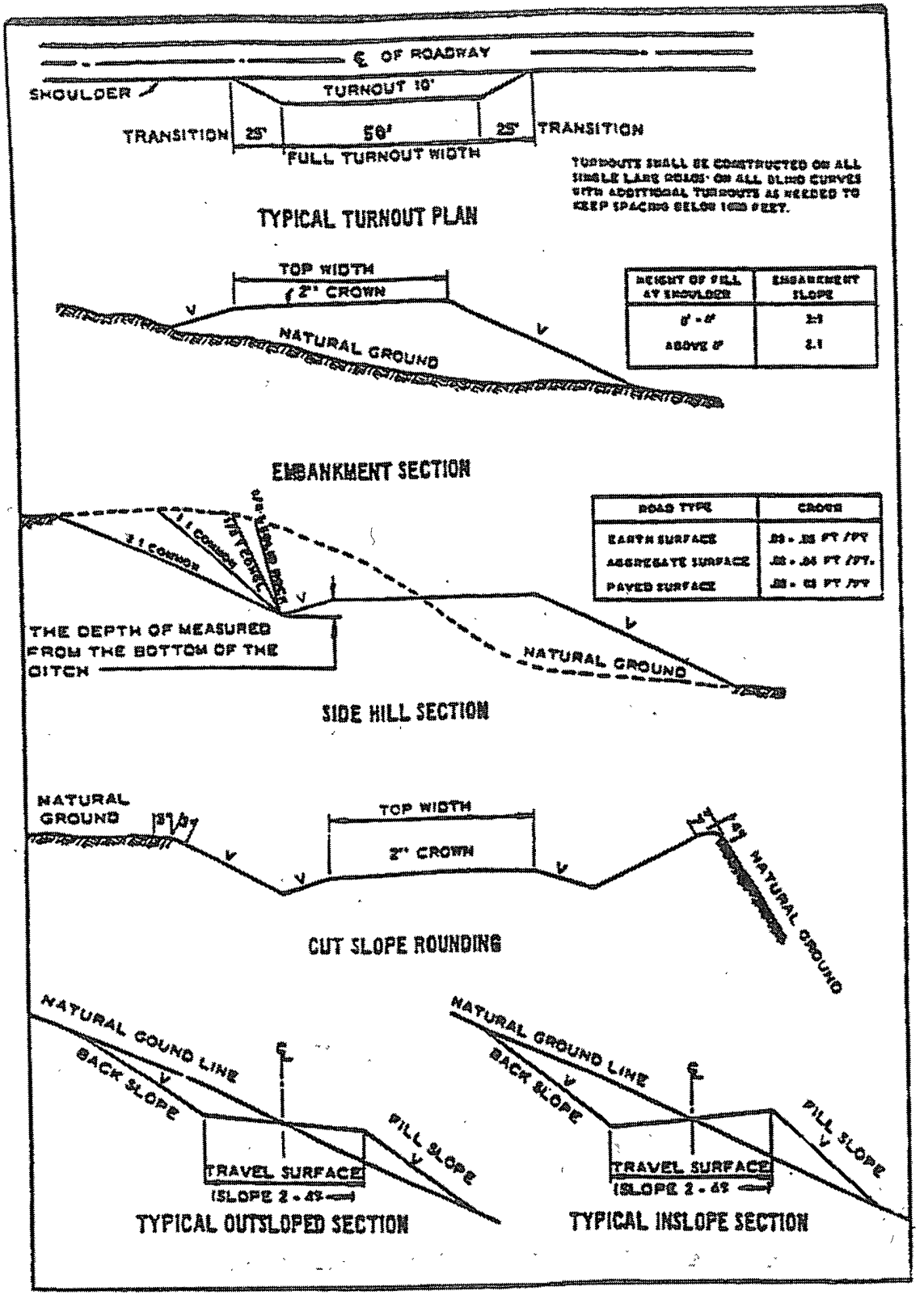
A gate shall be constructed and fastened securely to H-braces.

Fence Requirement
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Public Access
Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Figure 1 – Cross Sections and Plans For Typical Road Sections



VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

a. Spudding well
b. Setting and/or Cementing of all casing strings
c. BOPE tests

☒ **Lea County**
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,
(575) 393-3612

1. A Hydrogen Sulfide (H2S) Drilling Plan should be activated 500 feet prior to drilling into the **Delaware** formation. **If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**

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. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

B. CASING

Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Possible lost circulation in the Delaware and Bone Spring formations.
Possible high pressure in the Wolfcamp and Atoka Clastics.

1. The **13-3/8** inch surface casing shall be set **at approximately 1200 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface. **Fresh water mud to be used to setting depth.**

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.

    b. Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement).

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

    ☒ Cement to surface. If cement does not circulate see B.1.a-d above.

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i.

3. The minimum required fill of cement behind the 7 inch intermediate casing is:

    ☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification.

Formation below the 7" shoe to be tested according to Onshore Order 2.III.B.1.i.

4. The minimum required fill of cement behind the **4-1/2** inch production casing is:

    ☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification. **The 15.1# casing to be installed on the bottom of casing string to meet collapse safety factor.**

5. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. The tests shall be done by an independent service company.

    b. The results of the test shall be reported to the appropriate BLM office.

    c. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

    d. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

    e. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation **if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days.** This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

D. 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.

E. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

WWI 071908

VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Containment Structures
The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color
Shale Green, Munsell Soil Color Chart # 5Y 4/2

B. PIPELINES

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the APD and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

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 activity of 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.

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 **25** feet.

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 of 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 requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; 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 is 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 hehalf, 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.

(March 1989)

IX. INTERIM RECLAMATION & RESERVE PIT CLOSURE

A. INTERIM RECLAMATION

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting interim reclamation.

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

Seed Mixture for LPC Sand/Shinnery Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A
**Four-winged Saltbush	5lbs/A

* This can be used around well pads and other areas where caliche cannot be removed.

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

Upon abandonment of the well and/or when the access road is no longer in service the Authorized Officer shall issue instructions and/or orders for surface reclamation and restoration of all disturbed areas.

On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the private surface land owner agreement.