ATS-09-64

RECEIVED Split Estate
MAR 04 2009
HOBBSOCD

OCD-HOBBS

Form 3160-3
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No 1004-0137
Expires July 31, 2010

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☑ DRILL ☐ REENTER	5 Lease Serial No. NMLC 032096-B
	6. If Indian, Allotee or Tribe Name N/A
	7 If Unit or CA Agreement, Name and No. East Blinebry Drinkard Unit
1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone	8. Lease Name and Well No. EBDU # 73 (35023)
2. Name of Operator Apache Corporation (873)	9 API Well No. 30-025- 39380
3a. Address 6120 S. Yale Suite 1500 / 3b Phone No. (include area code) (918) 491-4900	10 Field and Pool, or Exploratory N Eunice Blinebry Tubb-Drinkard Pool
4. Location of Well (Report location clearly and in accordance with any State requirements.*) At surface 1440' FNL & 2450' FEL Unit G / At proposed prod. zone Same	11. Sec., T. R. M. or Blk. and Survey or Area Sec. 11, T. 21 S., R. 37 E
14 Distance in miles and direction from nearest town or post office* 4 1/2 Miles NNE of Eunice, NM	12 County or Parish LEA / 13 State NM
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line, if any) 1440 ' to the North (Lease)	16. No. of acres in lease 1920.00 / 17. Spacing Unit dedicated to this well 40 ~~80~~.00
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 265 ft NW of EBDU # 26	19 Proposed Depth 6975 Ft / 20 BLM/BIA Bond No. on file CO 1463 Nationwide
21 Elevations (Show whether DF, KDB, RT, GL, etc.) 3445'	22. Approximate date work will start* 03/01/2009 / 23. Estimated duration 7 - 10 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must 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 must 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 BLM.

25 Signature Vernon D. Dyer	Name (Printed/Typed) Vernon D. Dyer	Date 11/17/2008
Title Agent		
Approved by (Signature) /s/ Don Peterson	Name (Printed/Typed) /s/ Don Peterson	Date FEB 27 2009
Title FOR 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.

(Continued on page 2)

*(Instructions on page 2)

CAPITAN CONTROLLED WATER BASIN

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

TWO-WARREN PLACE, SUITE 1500 / TULSA, OK 74136-4224

Apache CORPORATION

January 27, 2009

Mrs. Betty Hill
U.S. Department of the Interior
Bureau of Land Management
Carlsbad Field Office
620 Greene St.
Carlsbad, NM 88220

RE: Letter of Authorization

Dear Betty,

Please see attached letter of authorization designating Vernon D. Dyer dba D Oil & Gas Properties an agent for Apache Corporation. Also please see attached original plats for the East Blinebry Drinkard Unit #73 and the West Blinebry Drinkard Unit #127.

Per our telephone conversation today I understand these to be the only outstanding items for these to applications for permits to drill. If you require anything else please feel free to contact me.

Thank you for your time and help in processing these applications.

Sincerely,

Sam Hampton
Drilling Engineer
Apache Corporation

cc: Vernon D. Dyer

Attachments:
- Letter of Authorization
- Plat – East Blinebry Drinkard Unit #73
- Plat – West Blinebry Drinkard Unit #127

RECEIVED
MAR 0 4 2009
HOBBSOCD

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
30-025-39380	22900	N Eunice Blinebry-Tubb-Drinkard

Property Code	Property Name	Well Number
35023	EAST BLINEBRY DRINKARD UNIT	73

OGRID No.	Operator Name	Elevation
873	APACHE CORPORATION	3445'

Surface Location

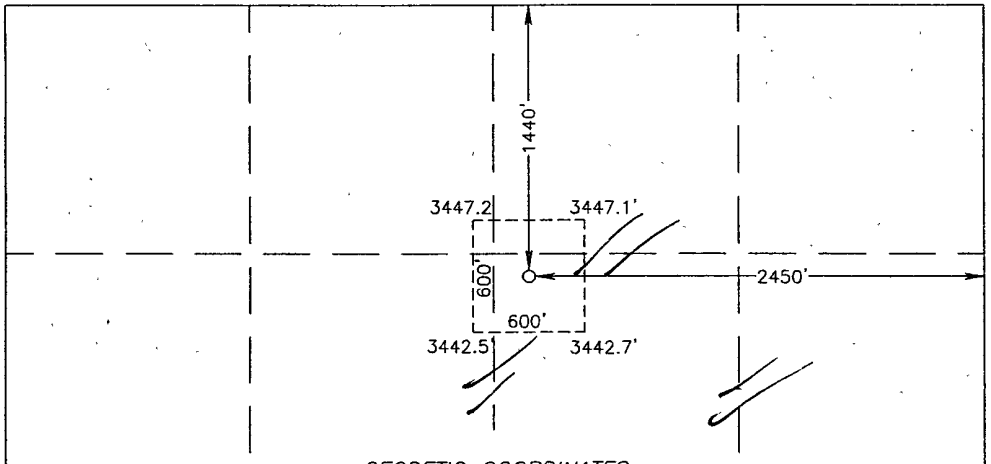
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	11	21-S	37-E		1440	NORTH	2450	EAST	LEA

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

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
40			

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



GEODETIC COORDINATES
NAD 27 NME

Y=546479.5 N
X=870178.2 E

LAT.=32.496654° N
LONG.=103.132710° W
LAT. = 32°29'47.95" N
LONG. = 103°07'57.76" W

OPERATOR CERTIFICATION

I hereby certify that the information 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 or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature — Date: 1/27/09

SAM HAMPTON
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 supervision, and that the same is true and correct to the best of my belief.

RONALD J. EIDSON
NEW MEXICO
3239
REGISTERED PROFESSIONAL SURVEYOR

OCTOBER 08, 2008
Date Surveyed JC

Signature & Seal of Professional Surveyor

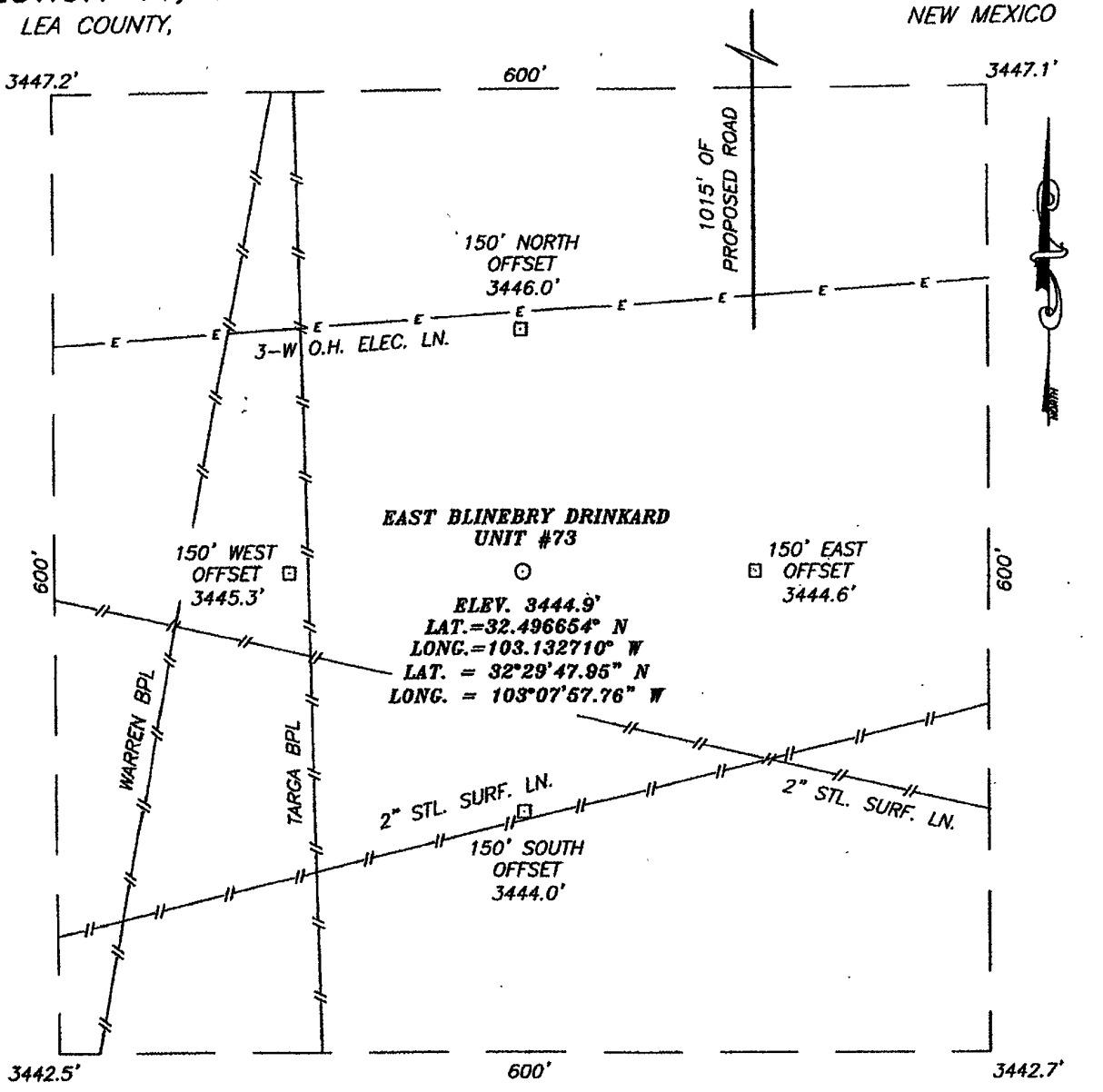
Ronald J. Eidson 10/17/08

08.11.1559

Certificate No. GARY EIDSON 12641
RONALD J. EIDSON 3239

SECTION 11, TOWNSHIP 21 SOUTH, RANGE 37 EAST, N.M.P.M.,

LEA COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF STATE HWY. #18 AND STATE HWY. #207, GO SOUTH ON HWY. #18 APPROX. 1.1 MILES, TURN RIGHT AND GO WEST APPROX. 0.4 MILES TO A PROPOSED ROAD SURVEY. FOLLOW PROPOSED ROAD SURVEY SOUTH APPROX. 1015 FEET TO THIS LOCATION.

100 0 100 200 Feet

Scale: 1"=100'

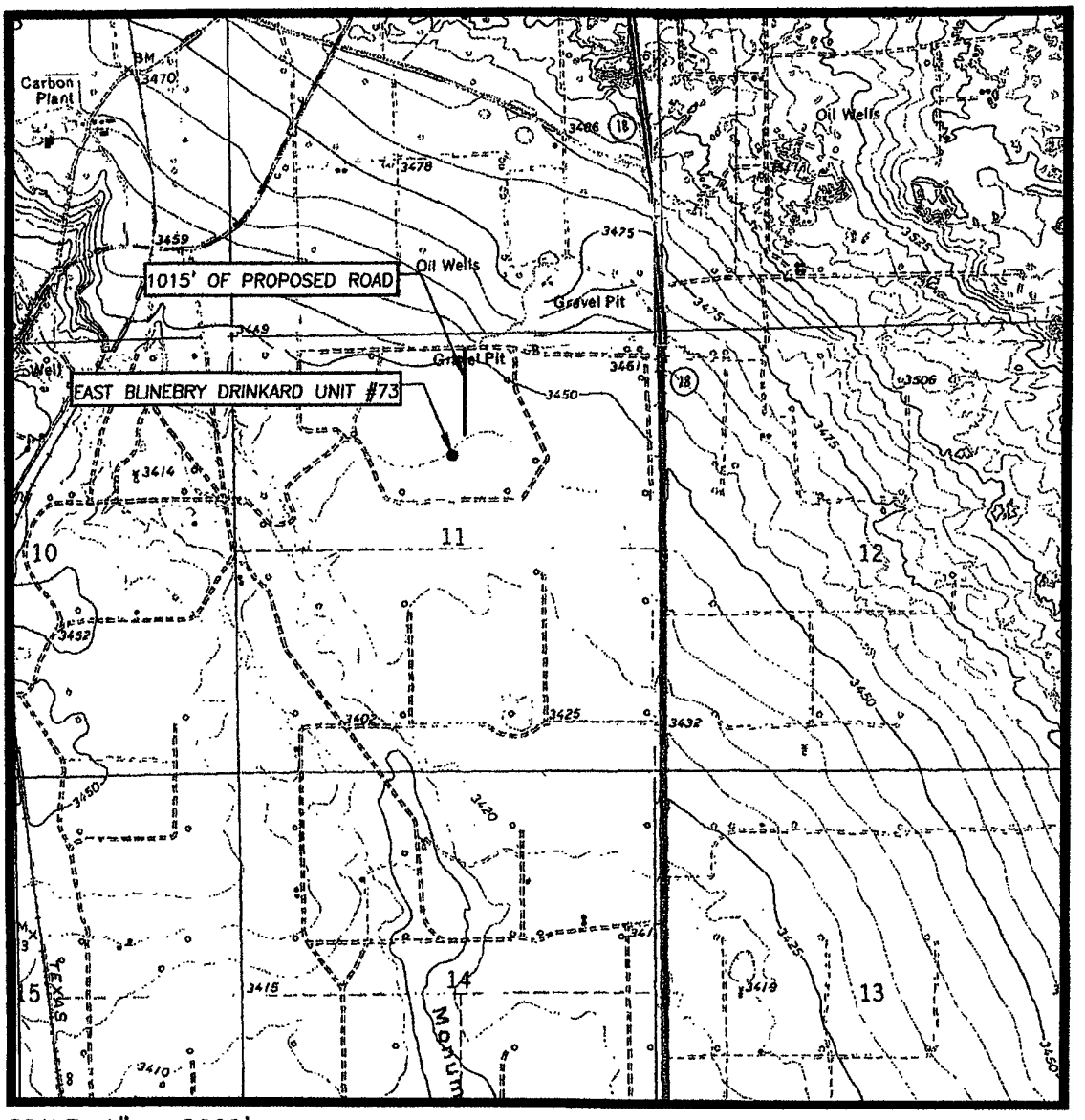
PROVIDING SURVEYING SERVICES SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(505) 393-3117

APACHE CORPORATION

EAST BLINEBRY DRINKARD UNIT #73 WELL
LOCATED 1440 FEET FROM THE NORTH LINE
AND 2450 FEET FROM THE EAST LINE OF SECTION 11,
TOWNSHIP 21 SOUTH, RANGE 37 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.

Survey Date: 10/08/08	Sheet 1 of 1 Sheets		
W.O. Number: 08.11.1559	Dr By: JC		Rev 1:N/A
Date: 10/16/08		08111559	Scale: 1"=100'

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
EUNICE, N.M. – 10'
HOBBS SW, N.M. – 5'
EUNICE NE, N.M. – 5'
HOBBS SE, N.M. – 5'

SEC. 11 TWP. 21-S RGE. 37-E

SURVEY N.M.P.M.

COUNTY LEA STATE NEW MEXICO

DESCRIPTION 1440' FNL & 2450' FEL

ELEVATION 3445'

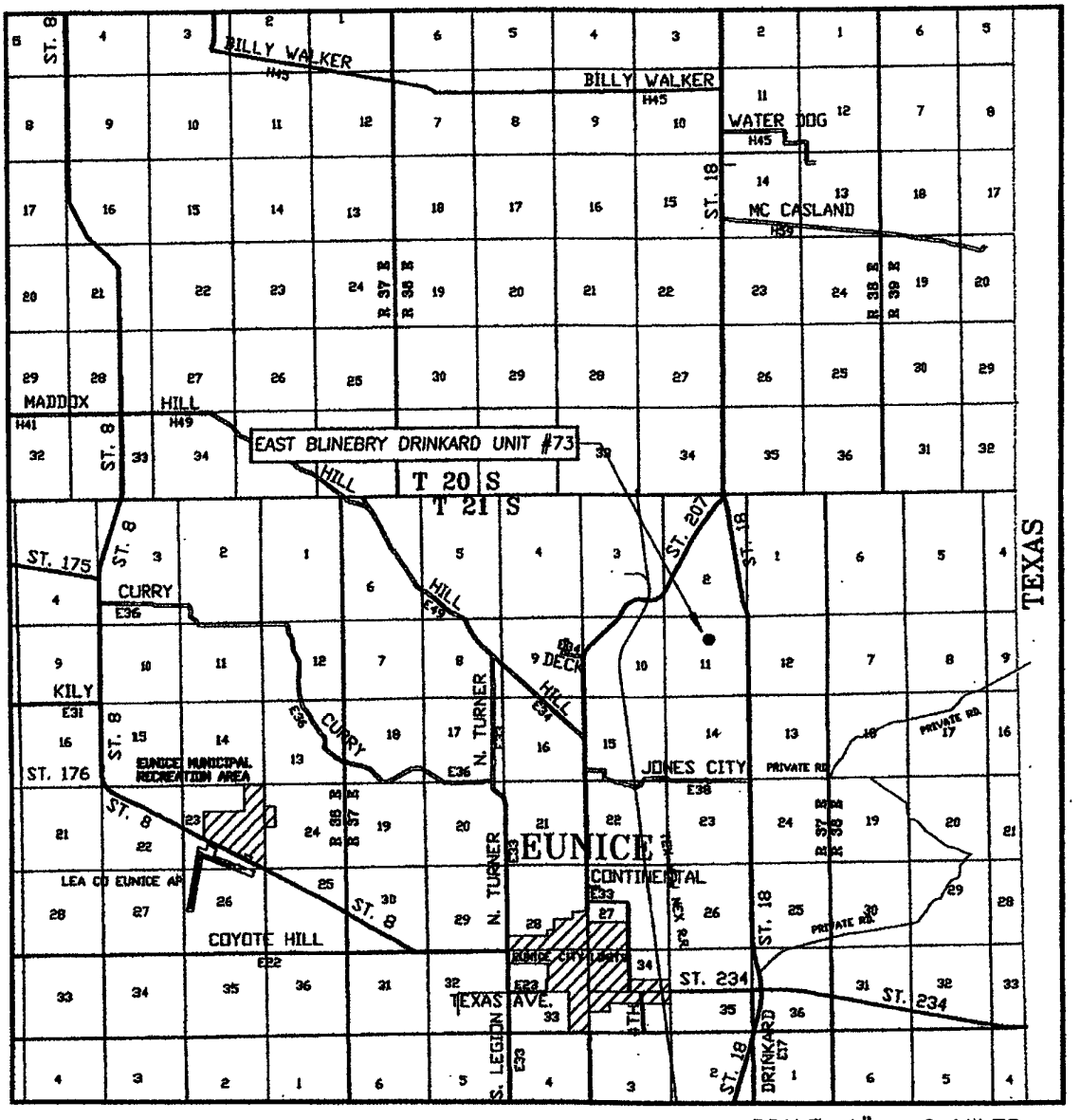
OPERATOR APACHE CORPORATION

LEASE EAST BLINEBY DRINKARD UNIT

U.S.G.S. TOPOGRAPHIC MAP
EUNICE, N.M.

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(505) 393-3117

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 11 TWP. 21-S RGE. 37-E

SURVEY N.M.P.M.

COUNTY LEA STATE NEW MEXICO

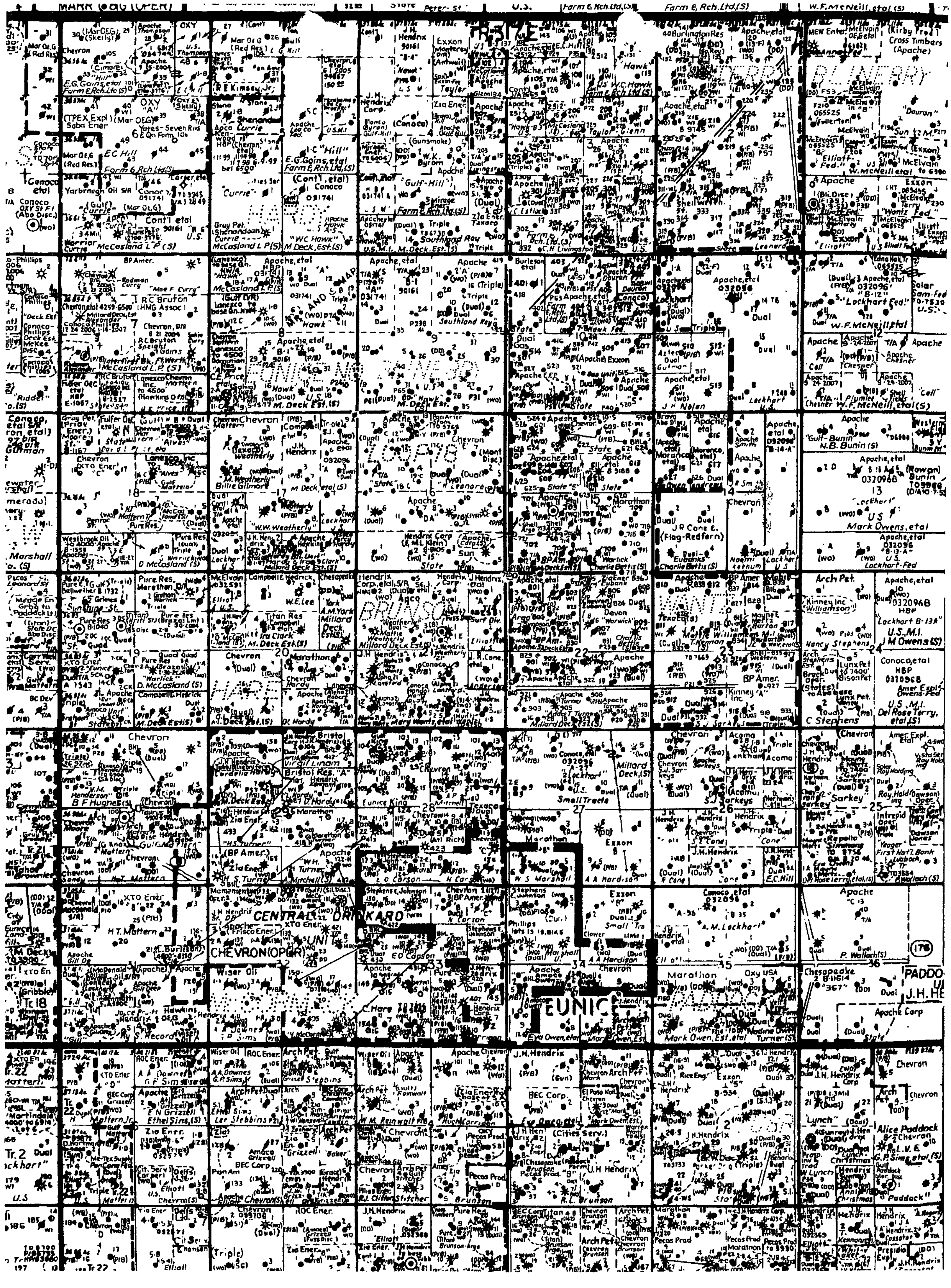
DESCRIPTION 1440' FNL & 2450' FEL

ELEVATION 3445'

OPERATOR APACHE CORPORATION

LEASE NORTHEAST DRINKARD UNIT

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(505) 393-3117



EUNICE
CENTRAL DRINKARD UNIT
CHEVRON(OPER)
Farm & Rch.Ltd.(S)
W.F.McNeill,etal(S)
M.Deck Est.(S)
Millard Deck Est.(S)
Mark Owens,etal
J.R.Cone E.(Flag-Redfern)
Small Tracts
Alice Paddock
H.T.Mattern
B F Hughes
Marathon
Chevron
Apache
Exxon
J.H.Hendrix
Wiser Oil
Arch Pet.
Conoco
Lockhart Fed

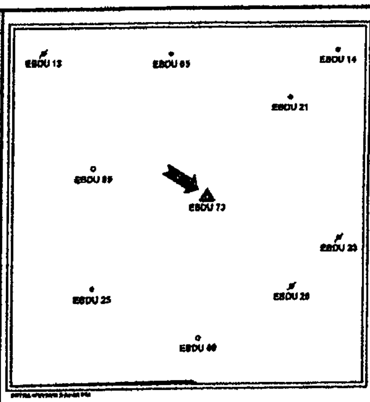
VERTICAL GEOLOGIC WELL PROGNOSIS

[X] NEW WELL FOR ECONOMICS
[ ] DEEPENING

NM 5514

WELL NAME & NUMBER	OPERATOR	PROSPECT NAME	
East Blinebry Drinkard Unit #73	APACHE CORPORATION	DRINKARD, NE PROSPECT (NM5514)	
LOCATION ([illegible])		COUNTY	STATE
1330 FNL & 2565 FEL Section 11, T21S-R37E		LEA	NM
DEEPEST OBJECTIVE	[illegible]	[illegible]	TOTAL DEPTH
Drinkard	360	Oil & Gas - Pumping	6975
SPACING	[illegible]	[illegible]	[illegible]
40	69.0000%	56.0600%	

LOCATION OF NEAREST [illegible]				
Apache Corporation	E Blinebry Drinkard U	26	Lea	NM



FORMATION TOPS

EST ELEV: 3456 REFERENCE: KB

FORMATION	TOPS Estimated	TOPS Actual	SUBSEA ELEV Estimated	SUBSEA ELEV Actual	STRUCTURAL COMPARISON Estimated	STRUCTURAL COMPARISON Actual
Rustler	1337		2119		1	
Yates	2641		815		-6	
Seven Rivers	2873		583		-4	
Queen	3443		13		-1	
Grayburg	3779		-323		5	
San Andres	4036		-580		23	
Glorieta	5273		-1817		-8	
Blinebry Marker	5695		-2239		71	
Tubb	6173		-2717		57	
Drinkard	6522		-3066		27	
Abo	6778		-3322		40	

CORRELATION WELL

OPERATOR	Apache Corp	
Well Name & No	E Blinebry Drinkard U # 26	
LOCATION	COUNTY	STATE
1980 FNL & 1980 FEL Section 11, T21S-R37E	Lea	NM
ELEV: 3456	REFERENCE: KB	
ELECTRIC LOG	SUBSEA	
1338	2118	
2635	821	
2869	587	
3442	14	
3784	-328	
4059	-603	
5265	-1809	
5766	-2310	
6230	-2774	
6549	-3093	
6818	-3362	

[illegible] ZONES CAPABLE OF PRODUCING HYDROCARBONS

ZONE	TOPS Est.	TOPS Actual	TYPE OBJECTIVE Primary	TYPE OBJECTIVE Secondary	DEPLETED (BHP)	GEO PRESSURED (BHP)	THICKNESS Gross	THICKNESS Net	CORE/DST
Blinebry	5695		Acid & Frac		1800		610	220	
Tubb	6173		Acid & Frac		1900		360	50	
Drinkard	6522		Acid & Frac		2000		240	80	

ANALOGOUS COMPLETIONS	MUD LOGGER		
Apache EBDU #72	UNIT ON BY:		
	SAMPLES FROM:	TO:	TD
	SAMPLE INTERVAL (FT.):		

APACHE CONTACT		NAME	ADDRESS	AREA	HOME	CELL	OFFICE
GEOL		Bob Curtis	APACHE CORPORATION 6120 S. Yale, Ste 1500 Tulsa, Oklahoma 74136	918	252-3911	906-5342	491-4924
GEOPHY							
LAND		Michelle Hanson		918		230-7809	491-4838
ENGINEER	RES	Keevin Barnes		918		557-8888	491-4919
	DLG	Sam Hampton		918	493-1623	978-0121	491-4954
	PROD	Darren Steed		918		619-3135	491-4842

[illegible]

E-Log Program:	Spectral Gamma Ray, Spectral Density/Compensated Neutron, Dual Laterolog/MSFL, Sonic	Cost:	$15,000
Mud Log Program:		Cost:	

COMMENTS

FED Lease
North Eunice Blinebry, Tubb, Drinkard Pool (40 A)
Expect gas inflow at top Seven Rivers. Weatherford will be logging contractor because they can log through drillpipe.

GEOLOGIST:	Robert E Curtis/hej	DATE:	10/7/2008	AUTHORIZED BY: (Explor Mgr)	David M Allard	DATE:	

EAST BLINEBRY DRINKARD UNIT # 73
DRILLING PROGRAM

Surface Location
1440' ~~1980'~~ FNL, ~~1980'~~ 2450' FEL BA
NE ¼ of Section 11-G, Township 21 South, Range 37 East, N.M.P.M.
Lea County, New Mexico

DRILLING PROGRAM

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

2. Estimated Tops of Geological Markers:

FORMATION	DEPTH
Quaternary alluvials	Surface
Rustler	1337'
Yates	2641'
Seven Rivers	2873'
Queen	3443'
Grayburg	3779'
San Andres	4036'
Glorieta	5273'
Blinebry Marker	5695'
Tubb	6173'
Drinkard	6522'
Abo	6778'
TD	6975'

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

SUBSTANCE	DEPTH
Oil	Blinebry @ 5695' Tubb @ 6173' Drinkard @ 6522'
Gas	None anticipated
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.

3. **Proposed Casing Program:**

HOLE SIZE	CASING SIZE OD / ID	GRADE	WEIGHT PER FOOT	DEPTH LENGTH	SACKS CEMENT	ESTIMATED TOC - REMARKS
12 ¼"	8 5/8" 8.097"	J55 STC	24#	1,400'	650	TOC - Surface 8.9 ppg Water-based Mud; 89 ° F Est. Static Temp; 83 ° F Est. Circ. Temp.
7 7/8"	5 ½" 4.892"	L80 LTC	17#	0-1000'	1,200	TOC – Surface Float Collar set @ 6931"/ 10.10 ppg Brine Mud; 141° F Est. Static Temp; 117° F Est. Circ. Temp.
7 7/8''	5 ½ " 4.892"	J55 LTC	17#	1,000-6,975'		10.10 ppg Brine Mud 141 F Est. Static Temp 117 F Est. Circ.Temp

3.

Proposed Casing Program:

HOLE SIZE	CASING SIZE OD / ID	GRADE	WEIGHT PER FOOT	DEPTH/LENGTH	SACKS CEMENT	ESTIMATED TOC - REMARKS
12 ¼"	8 5/8" 8.097"	J55 STC	24#	1,300' / 1,300'	650	TOC - Surface 8.9 ppg Water-based Mud; 89 ° F Est. Static Temp; 83 ° F Est. Circ. Temp.
7 7/8"	5 ½" 4.892"	J55 LTC	17#	6,825' / 6,825'	1,150	TOC – Surface Float Collar set @ 4,360"/ 10.10 ppg Brine Mud; 109 ° F Est. Static Temp; 100 ° F Est. Circ. Temp.

Casing condition is new pipe and the Safety Factors in accordance with Onshore Orders are:

Collapse =1.125 psi,

Burst = 1.0 psi

Factors don't have units.

Tension = 1.3 psi 1.8

4. Proposed Cement Program:

CASING	LEAD SLURRY	TAIL SLURRY	DISPLACEMENT
8 5/8"	450 sacks Class C Cmt + 3% Salt + 4% bentonite + 3 lbs/sk LCM-1 + 0.125 lbs/sk Cello Flake 795 Vol. Cu Ft 1.7 Vol. Factor Slurry Weight (ppg) 13.5 Slurry Yield (cf/sack) 1.767 Amount of Mix Water (gps) 9.025 Estimated Pumping Time – 70 BC (HH:MM) 4:08	200 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Cello Flake + 270 Vol. Cu Ft 1.3 Vol. Factor Slurry Weight (ppg) 14.8 Slurry Yield (cf/sack) 1.35 Amount of Mix Water (gps)6.35 Estimated Pumping Time – 70 BC (HH:MM)-2:47;	79.9 bbls Fresh Water @ 8.33 ppg

4. **Proposed Cement Program:**

CASING	LEAD SLURRY	TAIL SLURRY	DISPLACEMENT
8 5/8"	450 sacks Premium Class C Cmt + 3% bwoc Sodium Chloride + 0.25 lbs/sack Cello Flake + 3 lbs/sack LCM-1 + 0.005 gps FP-6L + 4% bwoc Bentonite Gel 796 Vol Cu Ft., 1.7 Vol. Factor Slurry Weight 13.5 ppg Slurry yield 1.77 cf/sack Amount of Water mix 9.02 gps Estimated Pumping Time – 70 BC (HH:MM) 4:18	200 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 0.005 gps FP-L6+56.3% Fresh Water, 270 Vol. Cu Ft 1.3 Vol. Factor Slurry Weight (ppg) 14.8 Slurry Yield (cf/sack) 1.35 Amount of Mix Water (gps)6.35 Estimated Pumping Time – 70 BC (HH:MM)-2:33	80.3 bbls Fresh Water @ 8.33 ppg

8 5/8" Casing: Volume Calculations:

1,400 ft	x	0.4127 cf/ft	with	75% excess	=	1,010.7 cf
42 ft	x	0.3576 cf/ft	with	0% excess	=	15.7 cf (inside pipe)
		TOTAL SLURRY VOLUME			=	954.2 cf
					=	182.6 bbls

Spacer 20.0 bbls Water @ 8.33 ppg

CASING	LEAD SLURRY	TAIL SLURRY	DISPLACEMENT
5 ½"	800 sacks (35:65) Poz (Fly Ash): Class C Cement + 5% bwow Sodium Chloride + 0.25 lbs/sack Cello Flake + 3 lbs/sk LCM + 0.005 gps FP-6L + 0.5% bwoc FL-52A + 0.5% bwoc BA-10A +3lb/sack LCM-1 + 6% bwoc 1,520 Vol. Cu Ft 2.0 Vol. Factor Slurry Weight (ppg) 12.8 Slurry Yield (cf/sack) 1.9 Amount of Mix Water (gps) 9.82; Estimated Pumping Time – 70 BC (HH:MM)-4:00;	400 sacks (50:50) Poz (Fly Ash):Class C Cement + 5% bwow Sodium Chloride +0.2% bwoc FL-25 + 0.25 bwoc FL-25 + 0.25 lb/sk Cello Flake + 3 lbs/sk LCM-1+0.6% bwoc FL-25 +0.005 gpsFP-L6 + 2% bwoc Bentonite 520 Vol. Cu Ft 1.3 Vol. Factor Slurry Weight (ppg) 14.2 Slurry Yield (cf/sack) 1.30 Amount of Mix Water (gps) 5.55; Estimated Pumping Time – 70 BC (HH:MM)-4:12;	161.6 bbls 2% Kcl Water @ 8.43 ppg

5 ½" Casing: Volume Calculations:

1,400 ft	x	0.1926 cf/ft	with	0% excess	=	269.3 cf
3,650 ft	x	0.1733 cf/ft	with	100% excess	=	1,264.4 cf
1,925 ft	x	0.1733 cf/ft	with	50% excess	=	500.0 cf
40 ft	x	0.1305 cf/ft	with	0% excess	=	5.2 cf (inside pipe)
	TOTAL SLURRY VOLUME				=	2,038.8 cf
	Total Volume in BBLS:				=	363.1 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.

5. **Proposed Pressure Control Equipment:**

Will install on the 8 5/8" surface casing a 9" x 3000 psi WP Double Ram BOP with Annular, and will test using a 3rd party tester before drilling out of surface casing. **As maximum anticipated surface pressures do not exceed 2,000 psi, we will test the BOPE as a 2,000 psi system.** Bottom hole pressure calculations are included below. See Exhibit I, 3,000 psi BOPE attached.

Bottom Hole Pressure Calculations

The maximum anticipated bottom hole pressure is calculated y multiplying the depth of the well by 0.44. The maximum anticipated surface pressure is calculated assuming one half of the hole is evacuated of the drilling fluid required to control the maximum anticipated bottom hole pressure.

For the ~~West~~ East Blinebry Drinkard Unit # 73 the maximum anticipated bottom hole pressure is 6,975' x 0.44 psi/ft. = 3,069 psi.

The maximum anticipated surface pressure assuming a hole where one half of the mud required to contain the bottom hole pressure has been evacuated is 3,069 psi – (3,069 psi/2) – 1,535 psi.

6. Proposed Mud Program

DEPTH	MUD PROPERTIES	REMARKS
0 – 1,400'	Weight: 8.6 – 9.2 ppg Viscosity: 34 – 36 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.
1,400'-6,300'	Weight: 10.0 – 10.2 ppg Viscosity: 28 – 32 sec/qt pH: 9.5 – 10 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. Mix one gallon of New-55 at flowline every 250 feet drilled to promote solids settling. Sweep hole with 3-ppb of Super Sweep every 500 feet.
6,300' – TD	Weight: 10.0 – 10.2 ppg Viscosity: 34 – 42 sec/qt pH: 9-10 Filtrate: 8-10 cc/30 min	From 6,300' to Total Depth, it is recommended the system be restricted to the working pits. Adjust and maintain pH with Caustic Soda. 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'

7. Auxiliary Equipment:

9" x 3000 psi double BOP/blind & pipe rams and annular
41/2" x 3000 psi Kelly valve
9" x 3000 psi mud cross – H_2S detector on production hole
Gate-type safety valve 3" choke line from BOP to manifold
2" adjustable chokes – 3" blowdown line

8. Logging Program:
The following logs may be run:
CNL, Litho Density, GR, CAL, Dual Laterolog/MSFL, Sonic from TD-1300'
CNL, GR from TD-Surface

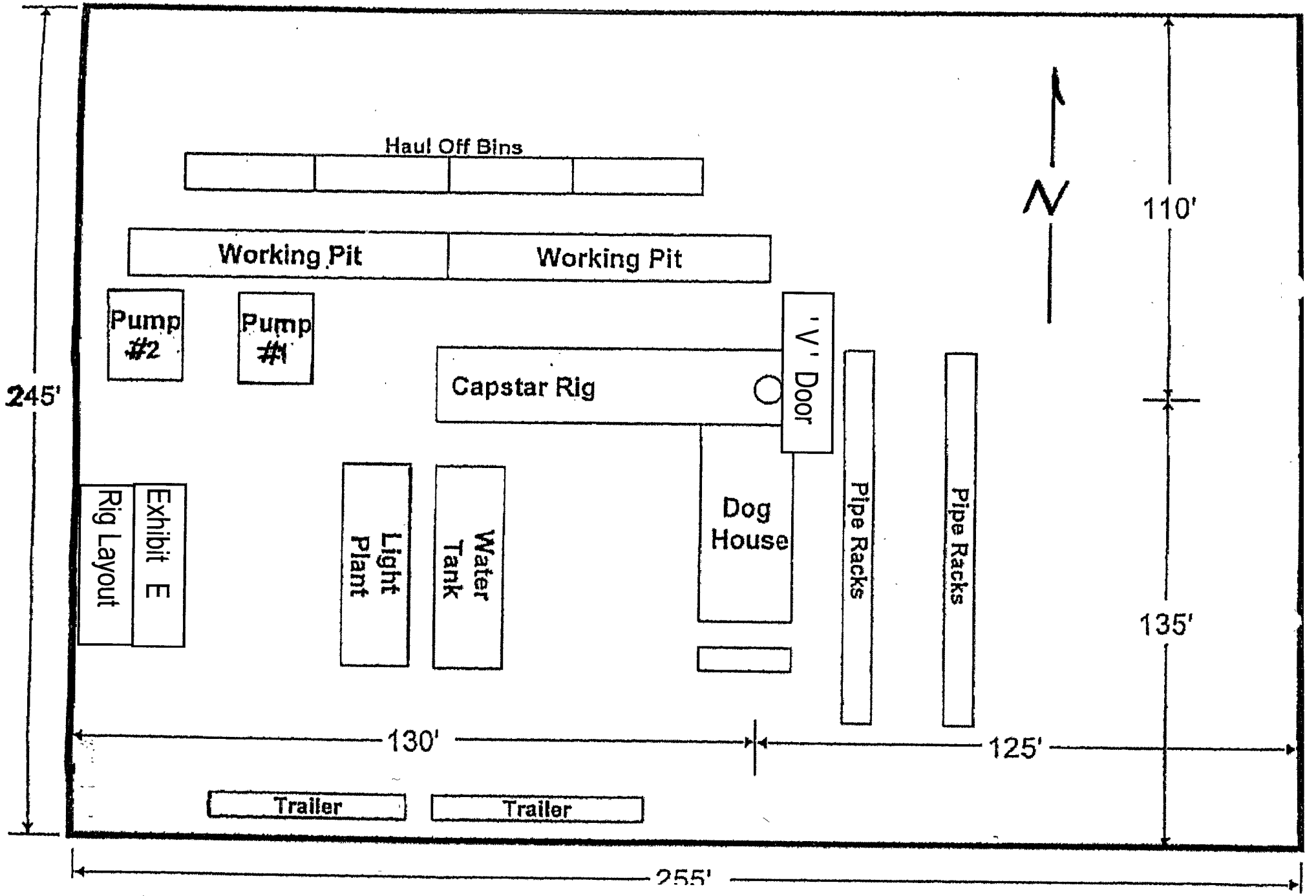
Mudlogging Program:
There are no plans to utilize a mud logging service on this well.

9. Potential Hazards:

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 2,000 psi., estimated BHT is 115°F. No H_2S is anticipated.

10. Anticipated Starting Date:

When drilling rig becomes available.


Haul Off Bins
Working Pit
Working Pit
Pump #2
Pump #1
Capstar Rig
'V' Door
Dog House
Pipe Racks
Pipe Racks
Exhibit E
Rig Layout
Light Plant
Water Tank
Trailer
Trailer
245'
110'
135'
130'
125'
255'

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Apache Corporation
LEASE NO.:	LC-032096B
WELL NAME & NO.:	East Blinebry Drinkard Unit 73
SURFACE HOLE FOOTAGE:	1440' FNL & 2450' FEL
BOTTOM HOLE FOOTAGE	' F L & ' F L
LOCATION:	Section 11, T. 21 S., R 37 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. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Hobbs Field Station at (575) 393-3612 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 (575) 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.

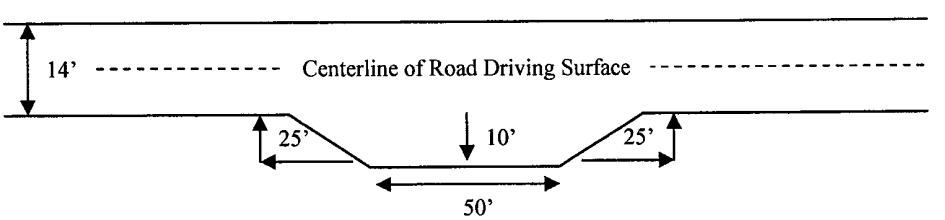
The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing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

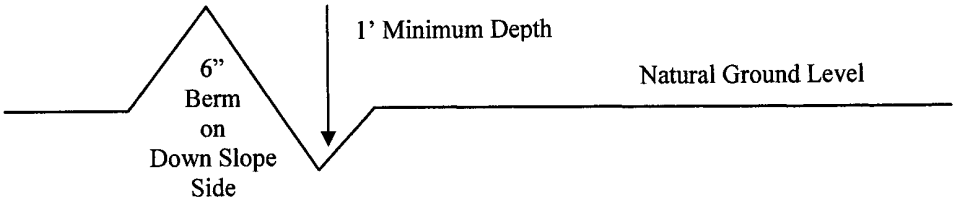
Standard Turnout – Plan View



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:

400 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ 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.

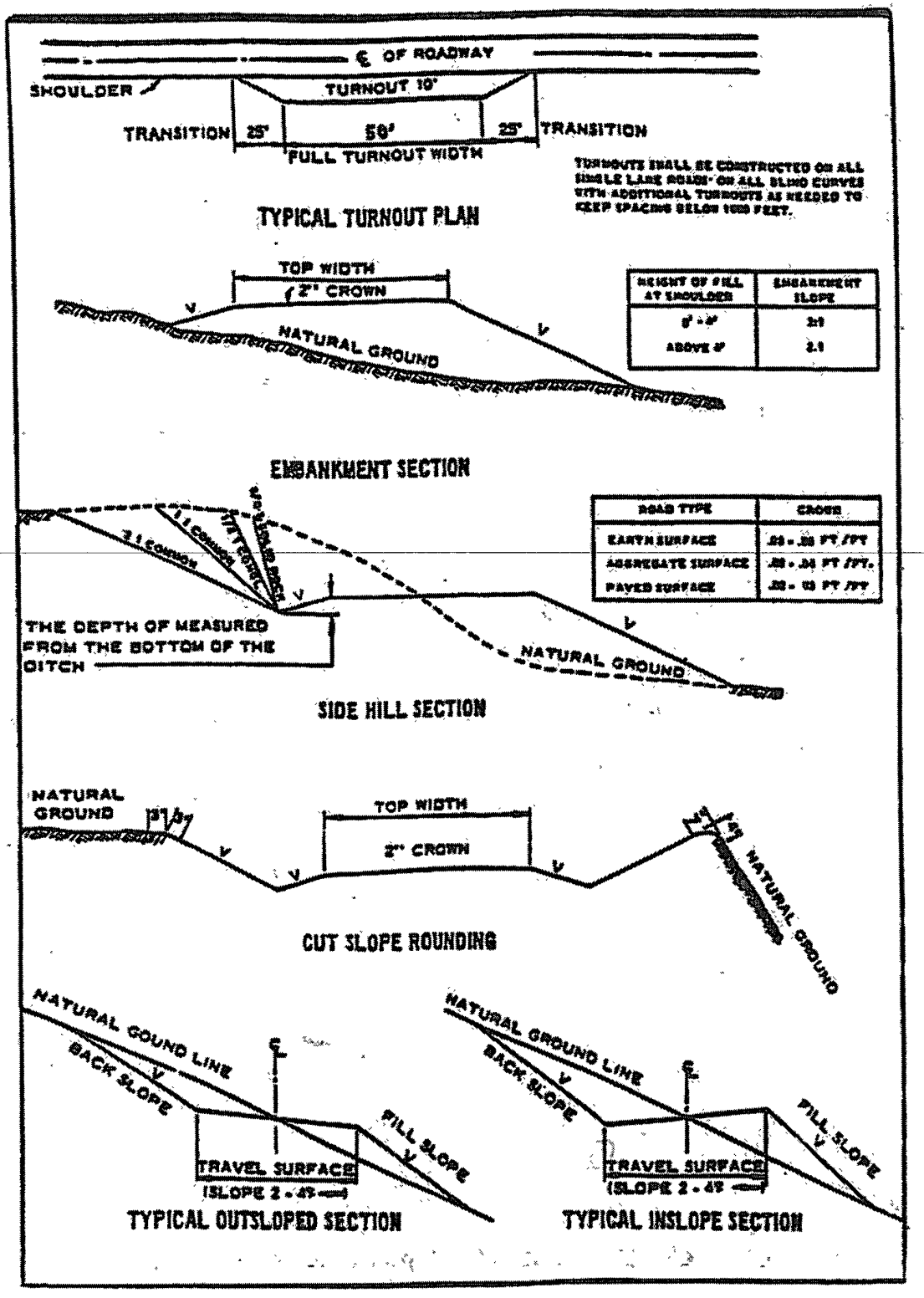
A gate shall be constructed and fastened securely to H-braces.

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



VI. 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 **Blinebry** formation. **Hydrogen Sulfide has been reported measuring 200-800 ppm in gas streams and 400-130,000 ppm in STVs. 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.

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.

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 for all casing strings. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

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

Possible lost circulation in the Glorietta formation.

1. The **8-5/8 inch** surface casing shall be set at approximately **1400 feet** (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.

    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 is to include the lead cement slurry.

    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 **5-1/2** inch production casing is:

    ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office.

3. 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. **Operator has calculated a BHP based on the pressure gradient for the formation which indicates the BHP will not exceed 2000 psi. Therefore, a 2M system is approved.**

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.

D. DRILL STEM TEST

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

RGH 022009

VII. 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

VIII. 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 1, for Loamy 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 regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (small/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 lovegrass (Eragrostis intermedia)	0.5
Sand dropseed (Sporobolus cryptandrus)	1.0
Sideoats grama (Bouteloua curtipendula)	5.0

*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.