ATS-08-1083

OCD-ARTESIA

Form 3160-3
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SECRETARY'S POTASH

51

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

JAN 13 2009
OCD-ARTESIA

APPLICATION FOR PERMIT TO DRILL OR REENTER

UNORTHODOX LOCATION

1a Type of work: ☑ DRILL ☐ REENTER	5 Lease Serial No. NMLC 069144B A
1b. Type of Well: ☐ Oil Well ☑ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone	6 If Indian, Allotee or Tribe Name
2. Name of Operator **BOPCO, L. P.**	7 If Unit or CA Agreement, Name and No.
3a Address **P. O. Box 2760 Midland, TX 79702**	3b Phone No. (include area code) **432-683-2277**
4 Location of Well (Report location clearly and in accordance with any State requirements *) At surface **NENW, 660' FNL, 2030' FWL, LAT N 32.455831, LONG W 103.974442** At proposed prod zone **Same**	8. Lease Name and Well No. **Big Eddy Unit #221**
	9 API Well No. **30-015-36896**
	10 Field and Pool, or Exploratory **Quahada Ridge (Morrow)**
	11. Sec., T R M. or Blk. and Survey or Area **Sec 27, T21S, R29E**
14 Distance in miles and direction from nearest town or post office* **15 miles east of Carlsbad, NM**	12 County or Parish **Eddy County** / 13 State **NM**

15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line, if any) **610'**	16 No. of acres in lease **400**	17 Spacing Unit dedicated to this well **320**
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft **1,343'**	19 Proposed Depth **13,450'**	20 BLM/BIA Bond No. on file **COB 000050**
21 Elevations (Show whether DF, KDB, RT, GL, etc.) **3,470' GL** operator	22 Approximate date work will start* **03/05/2009**	23. Estimated duration **40 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 Annette Childers	Name (Printed/Typed) **Annette Childers**	Date 4-26-08
Title **Administrative Assistant**		
Approved by (Signature) /s/ Ron Dunton	Name (Printed/Typed) /s/ Ron Dunton	Date **JAN 09 2009**
Title ACTING **STATE DIRECTOR**	Office **NM STATE 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)

ENTERED 1-14-09

CARLSBAD CONTROLLED WATER BASIN

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

SEE ATTACHED FOR CONDITIONS OF APPROVAL

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 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
30-015-36896	83240	QUAHADA RIDGE (MORROW)

Property Code	Property Name	Well Number
~~069144B~~ 305860	BIG EDDY UNIT	221

OGRID No.	Operator Name	Elevation
260737	BOPCO, L.P.	3470'

Surface Location

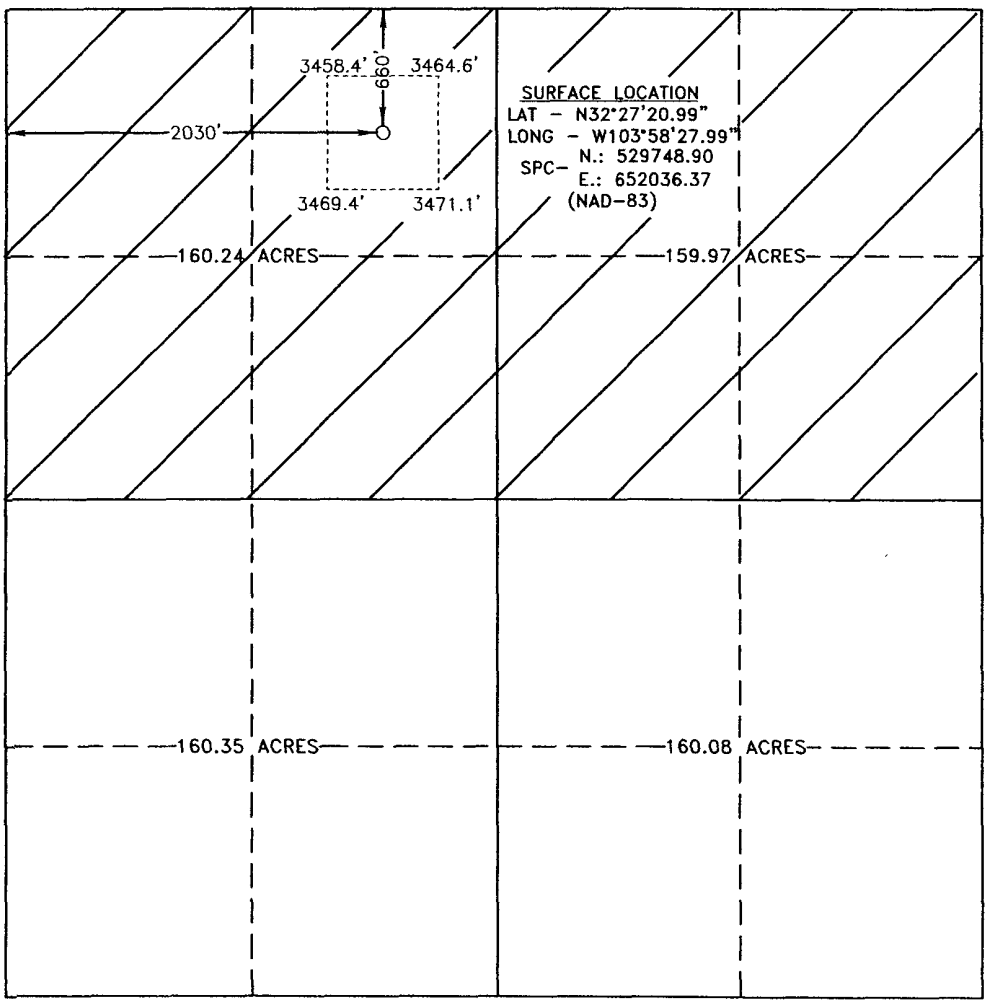
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	27	21 S	29 E		660	NORTH	2030	WEST	EDDY

Bottom Hole Location If Different From Surface

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

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320	N		

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.

9/23/2008
Signature Date

STEPHEN M. MARTINEZ
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.

APRIL 24, 2008
Date Surveyed

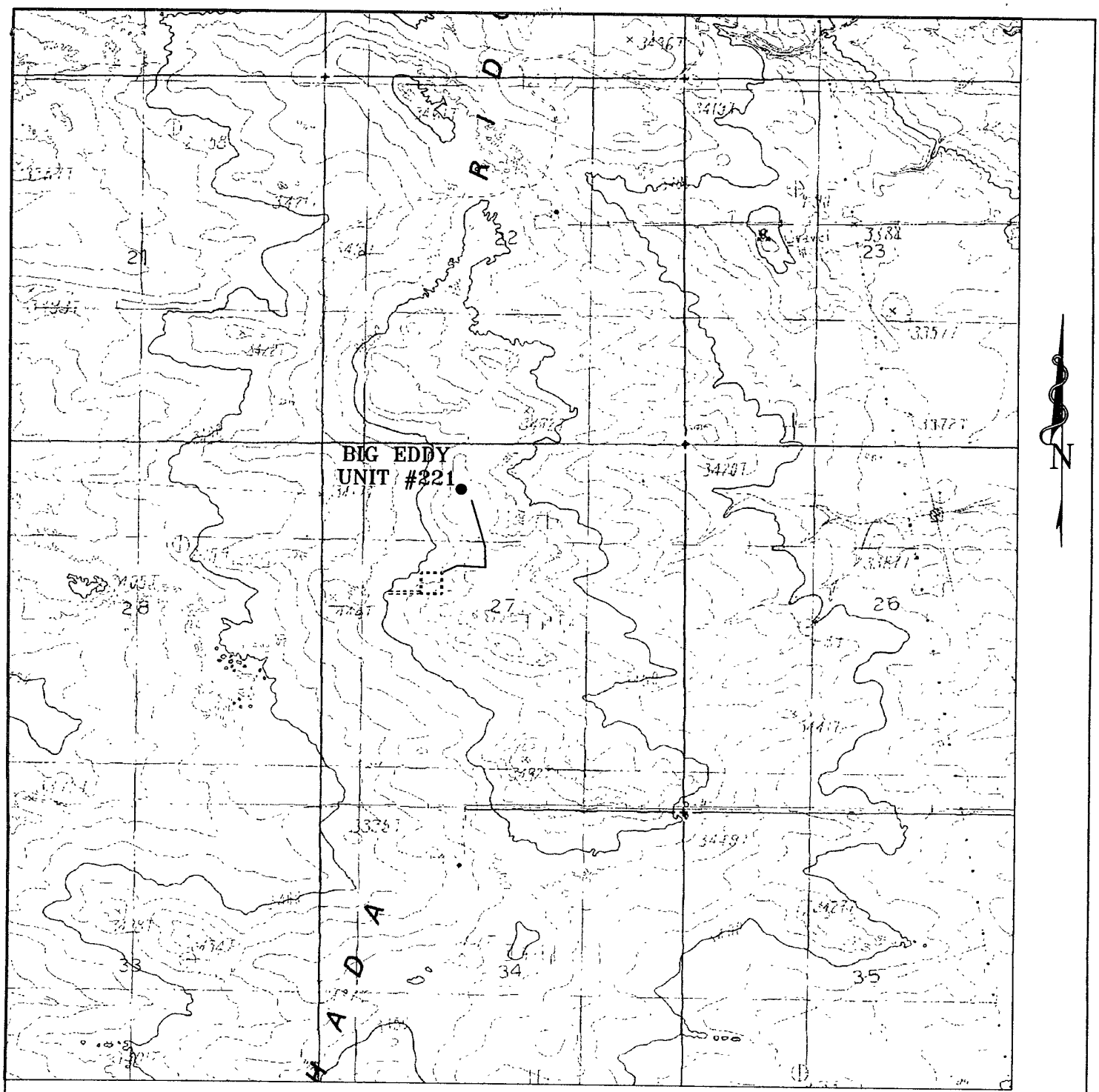
Signature & Seal of Professional Surveyor

GARY L. JONES
NEW MEXICO
7977
REGISTERED PROFESSIONAL SURVEYOR

W.O. 19

Certificate No. Gary L. Jones 7977

BASIN SURVEYS



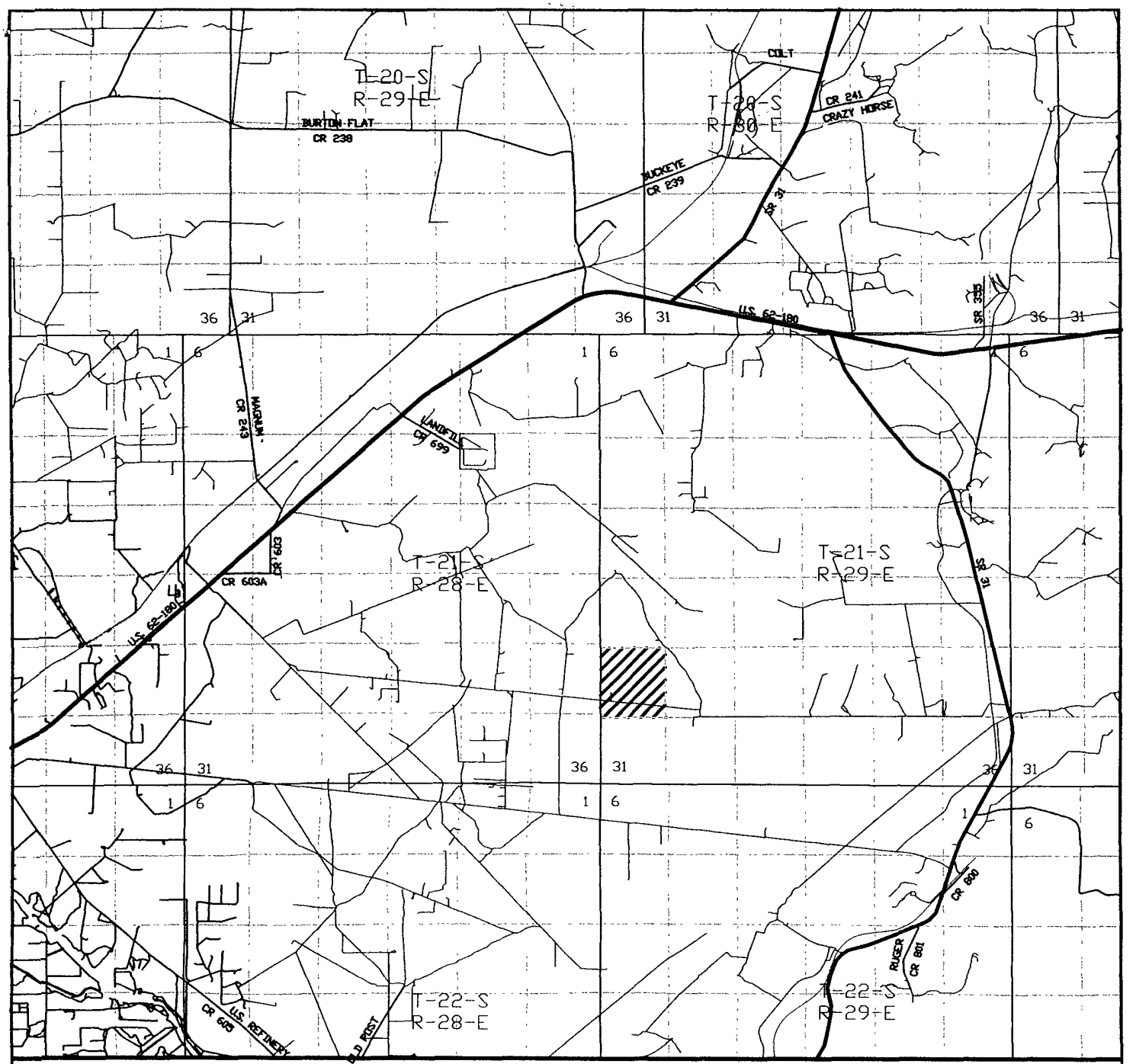
BIG EDDY UNIT #221
660' FNL and 2030' FWL
Section 27, Township 21 South, Range 29 East,
N.M.P.M., Eddy County, New Mexico.

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	JMS 19171T
Survey Date:	04-24-2008
Scale	1" = 2000'
Date.	04-29-2008

BOPCO, L.P.



BIG EDDY UNIT #221
660' FNL and 2030' FWL
Section 27, Township 21 South, Range 29 East,
N.M.P.M., Eddy County, New Mexico.

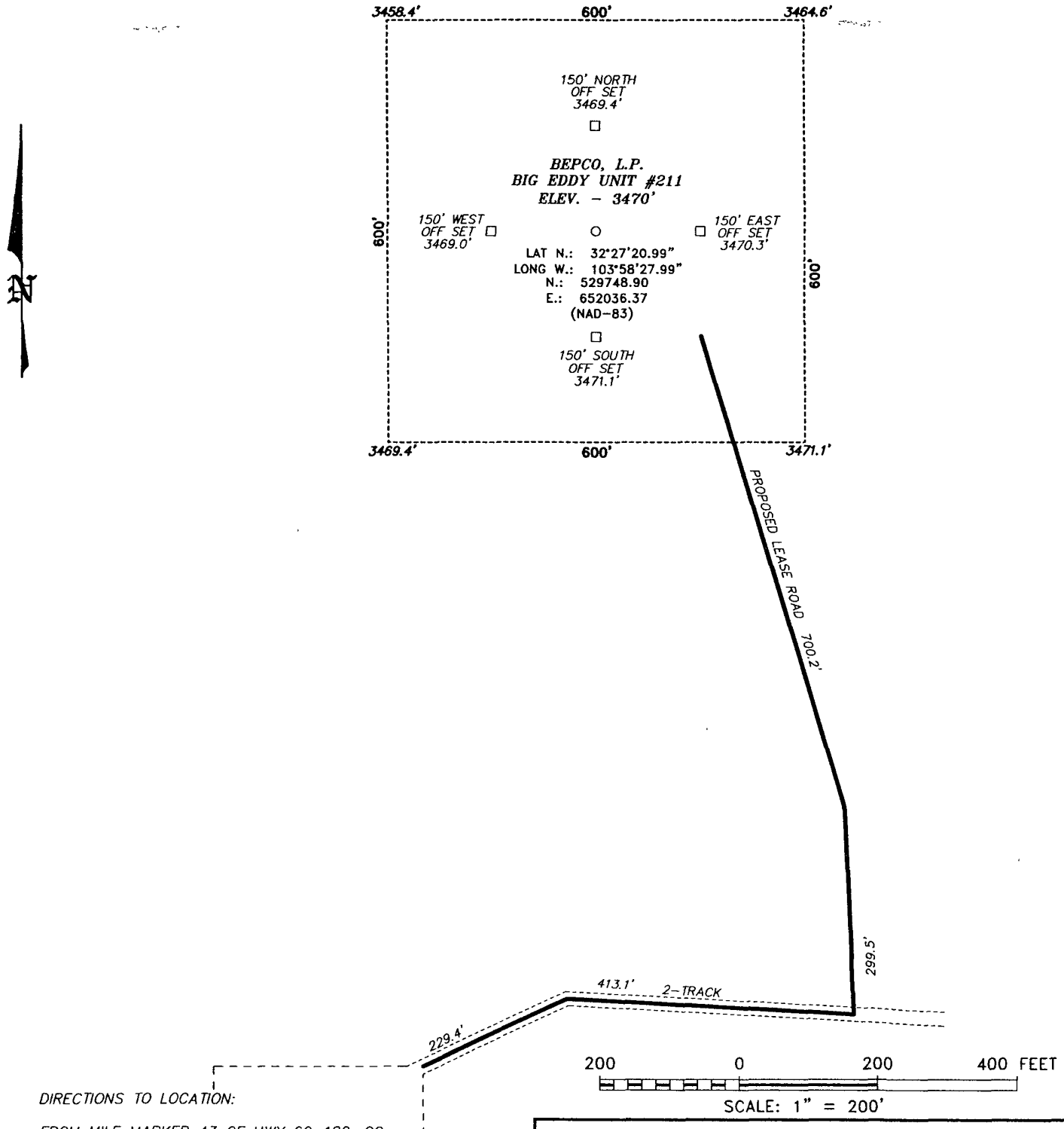
basin surveys
focused on excellence in the oilfield

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: JMS 19171TR	BOPCO, L.P.
Survey Date: 04-24-2008	
Scale: 1" = 2 MILES	
Date: 04-29-2008	

SECTION 27, TOWNSHIP 21 SOUTH, RANGE 29 EAST, N.M.P.M.,

EDDY COUNTY, **NEW MEXICO.**



DIRECTIONS TO LOCATION:

FROM MILE MARKER 43 OF HWY 62-180, GO SOUTHWEST 0.4 MILES TO LEASE ROAD, ON LEASE ROAD GO EAST 1.9 MILES TO LEASE ROAD, ON LEASE ROAD GO NORTH FOR 1.6 MILES WINDING EASTERLY FOR 2.9 MILES TO LEASE ROAD, THENCE GO NORTH 0.6 MILES TO WELL PAD AND PROPOSED LEASE ROAD.

BOPCO, L.P.

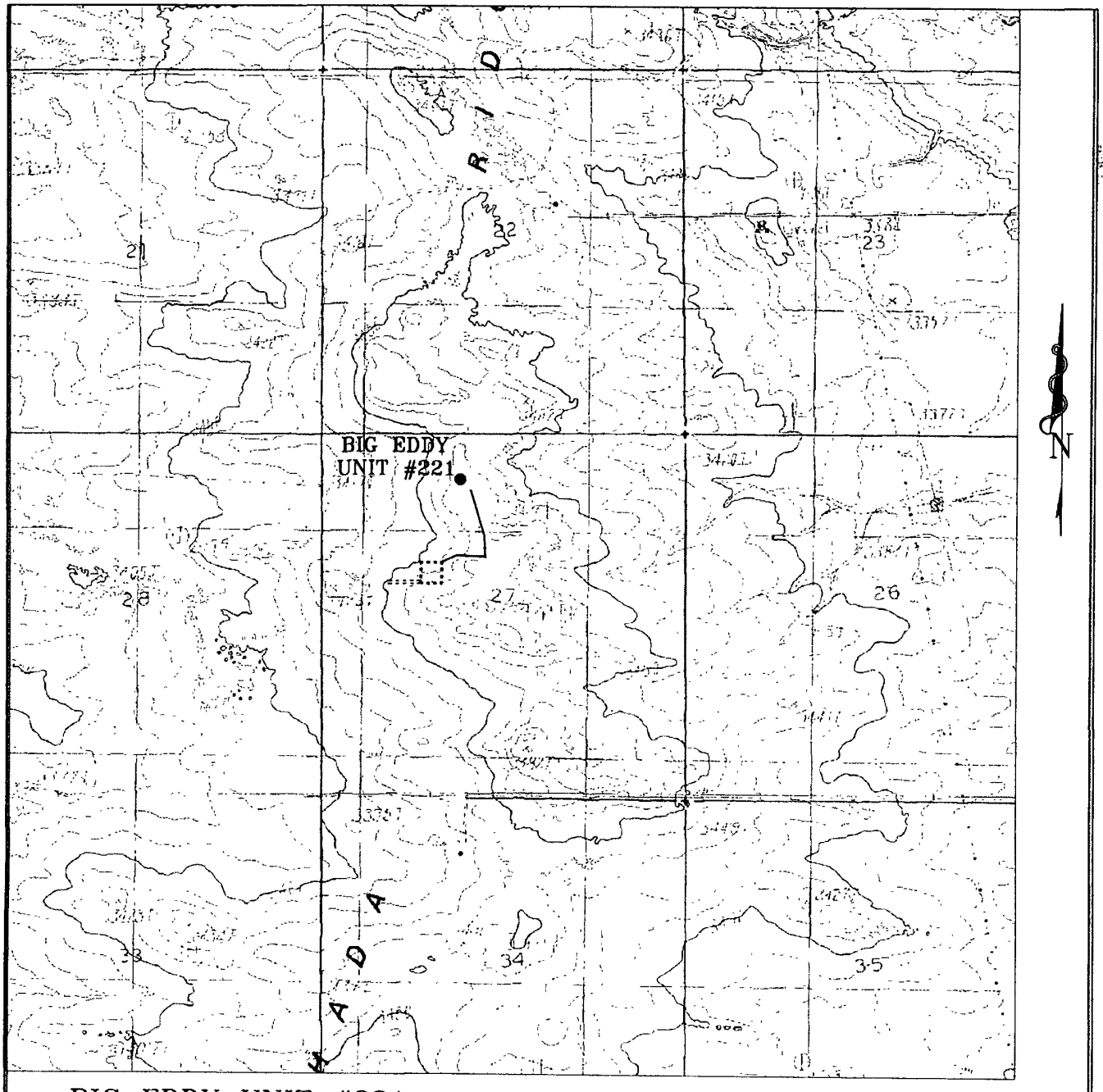
REF: BIG EDDY UNIT #221 / WELL PAD AND TOPO

THE BIG EDDY UNIT #221 LOCATED 660' FROM THE NORTH LINE AND 2030' FROM THE WEST LINE OF SECTION 27, TOWNSHIP 21 SOUTH, RANGE 29 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

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

W.O. Number: 19171	Drawn By: J. SMALL		
Date: 04-29-2008	Disk: 19171W JMS	Survey Date: 04-24-2008	Sheet 1 of 1 Sheets

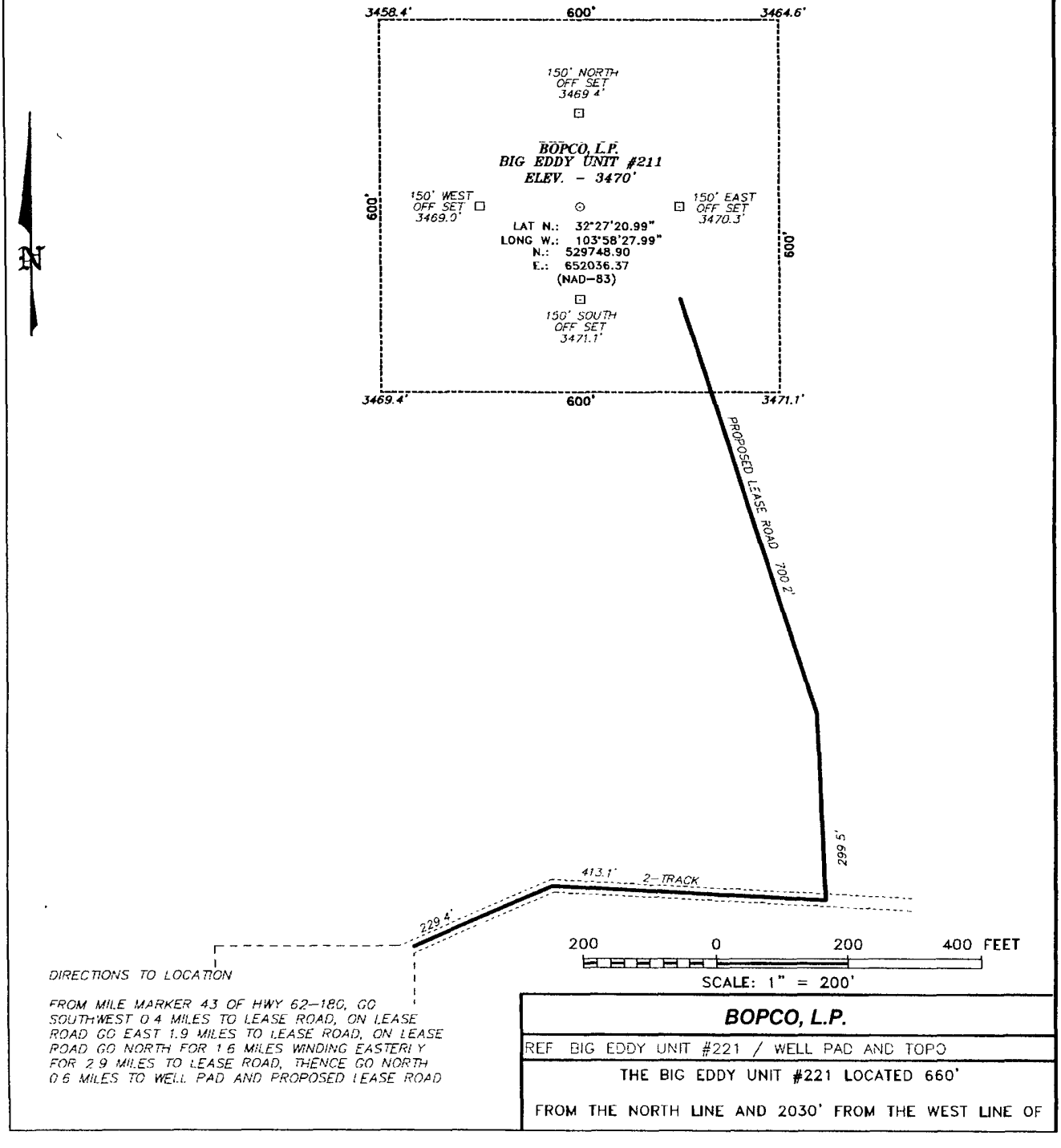
Big Eddy Unit #221
Exhibit "A"



BIG EDDY UNIT #221
660' FNL and 2030' FWL
Section 27, Township 21 South, Range 29 East,
N.M.P.M., Eddy County, New Mexico.

Big Eddy Unit #221
Exhibit "B"

SECTION 27, TOWNSHIP 21 SOUTH, RANGE 29 EAST, N.M.P.M.,
EDDY COUNTY, **NEW MEXICO.**



DIRECTIONS TO LOCATION

FROM MILE MARKER 43 OF HWY 62-180, GO SOUTHWEST 0.4 MILES TO LEASE ROAD, ON LEASE ROAD GO EAST 1.9 MILES TO LEASE ROAD, ON LEASE ROAD GO NORTH FOR 1.6 MILES WINDING EASTERLY FOR 2.9 MILES TO LEASE ROAD, THENCE GO NORTH 0.6 MILES TO WELL PAD AND PROPOSED LEASE ROAD

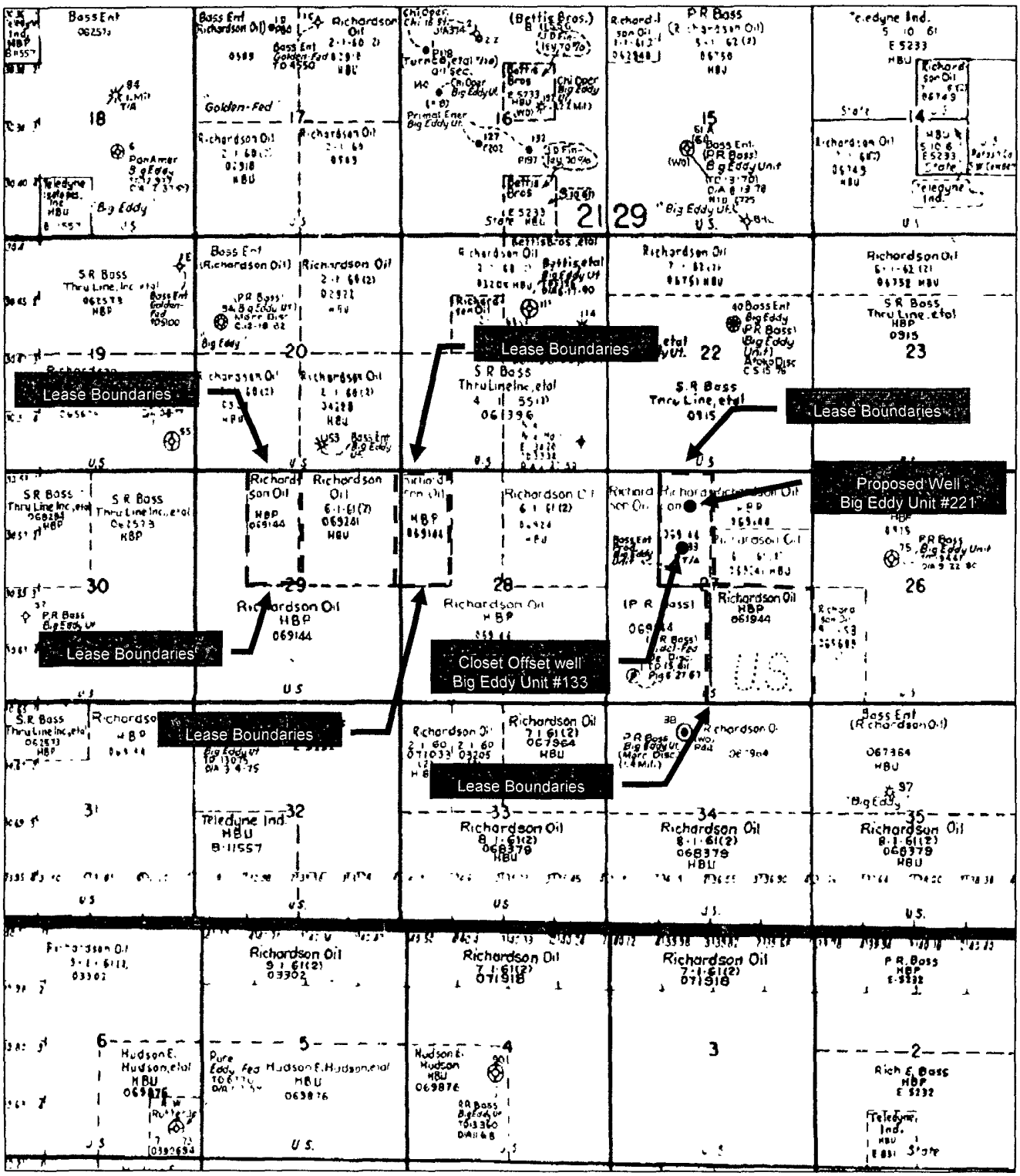
BOPCO, L.P.

REF BIG EDDY UNIT #221 / WELL PAD AND TOPO

THE BIG EDDY UNIT #221 LOCATED 660'

FROM THE NORTH LINE AND 2030' FROM THE WEST LINE OF

Big Eddy Unit #221
Exhibit "C"



Surface casing to be set into the Rustler below all fresh water sands.
Production casing will be cemented using Halliburton Class "H" plus additives with TOC 500' into intermediate casing. Drilling procedure, BOP diagram, anticipated tops and surface plans attached.

This well is located inside the Secretary's Potash area and outside the R-111 Potash area. There are no potash leases within 3 miles of the location.

BOPCO, L.P., at P. O. Box 2760, Midland, TX, 79702 is a division office of BOPCO, L.P., 201 Main Street, Ft. Worth, TX 76102, Bond No. COB 000050 (Nationwide).

EIGHT POINT DRILLING PROGRAM
BOPCO, L.P.

NAME OF WELL: BIG EDDY UNIT #221

LEGAL DESCRIPTION - SURFACE: 660' FNL & 2,030' FWL, Section 27, T21S, R29E, Eddy County, New Mexico.

POINT 1: ESTIMATED FORMATION TOPS

(See No. 2 Below)

POINT 2: WATER, OIL, GAS AND/OR MINERAL BEARING FORMATIONS

Anticipated Formation Tops: KB 3,488'
GL 3,470'

Formation	Estimated Top From KB	Estimated Subsea Top	BEARING
T/Rustler	358'	3,130'	Barren
T/Salt	693'	2,795'	Barren
B/Salt	2,968'	520'	Oil/Gas
T/Delaware Lime	3,273'	215'	Oil/Gas
T/Delaware Sand	3,358'	130'	Oil/Gas
T/Old Indian Draw	4,213'	-725'	Oil/Gas
T/Bone Spring Lime	7,013'	-3,525'	Oil/Gas
T/Wolfcamp	10,288'	-6,800'	Oil/Gas
T/Strawn	11,398'	-7,910'	Oil/Gas
T/Atoka	11,898'	-8,410'	Oil/Gas
T/Upper Morrow	12,528'	-9,040'	Oil/Gas
T/Middle Morrow	12,748'	-9,260'	Oil/Gas
T/Lower Morrow	13,088'	-9,600'	Oil/Gas
TD	13,450'	-9,962'	Oil/Gas

POINT 3: CASING PROGRAM

TYPE	HOLE SIZE	INTERVALS	PURPOSE	CONDITION
20", 94#, H-40, STC	26"	0' – 60'	Conductor	Contractor Discretion
13-3/8", 48#, H-40, STC	17-1/2"	0' – 683'	Surface	New
9-5/8", 36#, J-55, LTC	12-1/4"	0' – 3,303'	Intermediate	New
5-1/2", 17#, HCP-110, LTC	8-3/4"	0' – 11,000'	Production Casing	New
5-1/2", 20#, P-110, LTC	8-3/4"	11,000' – 13,450'	Production Casing	New

CASING DESIGN SAFETY FACTORS:

TYPE	TENSION	COLLAPSE	BURST
13-3/8", 48#, H-40, STC	19.13	2.28	4.54
9-5/8", 36#, J-55, LTC	5.52	1.18	1.91
5-1/2", 17#, HCP-110, LTC	2.76	1.14	2.22
5-1/2", 20#, P-110, LTC	15.60	1.48	2.46

DESIGN CRITERIA AND CASING LOADING ASSUMPTIONS:

SURFACE CASING

Tension — A 1.6 design factor utilizing the effects of buoyancy (9.0 ppg).

Collapse — A 1.0 design factor with full internal evacuation and a collapse force equal to the mud gradient in which the casing will be run (0.468 psi/ft). The effects of axial load on collapse will be considered.

Burst — A 1.3 design factor with a surface pressure equal to the fracture gradient at setting depth less a gas gradient to the surface. Internal burst force at the shoe will be fracture pressure a that depth. Backup pressure will be formation pore pressure. In all cases a conservative fracture pressure will be used such that it represents the upper limit of potential fracture resistance up to a 1.0 psi/ft gradient. The effects of tension on burst will not be utilized.

PROTECTIVE CASING

Tension — A 1.6 design factor utilizing the effects of buoyancy (9.2 ppg).

Collapse — A 1.0 design factor with full internal evacuation and a collapse force equal to the mud gradient in which the casing will be run (0.478 psi/ft). The effects of axial load on collapse will be considered.

In the case of development drilling, collapse design should be analyzed using internal evacuation equal to 1/3 the proposed total depth of the well. This criterion will be used when there is absolutely no potential of the protective string being used as a production casing string.

Burst — A 1.0 surface design factor and a 1.3 downhole design factor with a surface pressure equivalent to the fracture gradient at setting depth less a gas gradient to the surface. Internal burst force at the shoe will be fracture pressure at that depth. Back pressure will be formation pore pressure. In all cases a conservative fracture pressure will be used such that it represents the upper limit of potential fracture resistance up to a 1.0 psi/ft gradient.

PRODUCTION CASING

Tension — A 1.6 design factor utilizing the effects of buoyancy (10.5 ppg).

Collapse — A 1.0 design factor with full internal evacuation and a collapse force equal to the mud gradient in which the casing will be run (0.546 psi/ft). The effects of axial load on collapse will be considered.

Burst — A 1.25 design factor with anticipated maximum tubing pressure (4,886 psig) on top of the maximum anticipated packer fluid gradient. Backup on production strings will be formation pore pressure (0.546 psi/ft). The effects of tension on burst will not be utilized.

POINT 4: PRESSURE CONTROL EQUIPMENT (SEE ATTACHED DIAGRAM)

A rotating head will be nippled up on the intermediate casing. The rotating head will not be hydro-tested.

A BOP equivalent to Diagram 1 will be nippled up on the surface casing head and the intermediate casing. The BOP stack, choke, etc. when rigged up on surface casing, will be tested to 70% of interval yield of casing or 1,000 psig whichever is less. On the intermediate casing, the BOP stack, choke, kill lines, kelly cocks, inside BOP, etc. will be hydro-tested to 5,000 psi on the intermediate casing. The annular will be tested to 2500 psi. In addition to the rated working pressure test, a low pressure (250 psi) test will be required. These tests will be performed as per Onshore Oil and Gas Order No. 2, Drilling Operations, paragraph III.A.2.h.iv:

See COA

a) When initially installed
b) Whenever any seal subject to test pressure is broken
c) Following related repairs
d) At 30 day intervals

A function test to insure that the preventers are operating correctly will be performed on each trip. See the attached Diagram 1 for the minimum criteria for the choke manifold.

POINT 5: MUD PROGRAM

DEPTH	MUD TYPE	WEIGHT	FV	PV	YP	FL	Ph
0' – 683'	FW/Gel Spud Mud	8.6 - 9.0	60-40	NC	NC	NC	9.5-10.0
683' – 3,303'	BW	10.0	28-29	NC	NC	NC	9.5-10.0
3,303' – 10,000'	FW	8.4 - 8.6	28-29	NC	NC	NC	9.5-10.0
10,000' – 11,100'	BW	10.0	28-32	NC	NC	NC	9.0-10.0
11,500' – 13,450'	XCD/Polymer	10.0 - 10.5	30-36	6-10	6-10	<10	9.0-10.0

POINT 6: TECHNICAL STAGES OF OPERATION

A) TESTING

Drill stem tests may be performed on significant shows in zones of interest, but none are anticipated.

B) LOGGING

Run #1:
PEX (GR-CNL/LDT-HRLA) run from TD to ICP, GR-CNL to surface. Possible GR-CNL/LDT-AIT over Delaware.

C) CORING

No cores are anticipated.

D) CEMENT ← See COA

INTERVAL	AMOUNT SX	FT OF FILL	TYPE	GALS/SX	PPG	FT^3/SX
SURFACE						
Lead 0' -383 (100% excess)	250	383'	Light Premium Plus + 0.125 lbm/sk Poly-E-Flake	10.30	12.80	1.89
Tail 383' – 683' (100% excess)	310	300'	Premium Plus + 2% $CaCl_2$ + 0.125 lbm/sk Pol-E-flake	6.32	14.80	1.34
INTERMEDIATE						
Lead 0 –2,803' (100% Excess)	600	2,803'	Interfill C + 0.125 lbm/sk Pol-E-Flake	16.43	11.50	2.76
Tail 2,803' -3,303' (100% Excess)	250	500'	Premium Plus Cement +.2% $CaCl_2$	6.34	14 80	1.34
PRODUCTION 1st Stage	(Two stage w/DV tool @7,500' and circulate cement to 2,800')					
Lead 7,500'-11,450' (50% excess)	625	3,950'	Interfill H + 0 25 lbm/skFlocele+5 lbm/sk Gilsonite + 0.5 % Halad®-9	13.63	11 90	2 47
Tail 11,450'-13,450' (50% excess)	455	2,000'	Super H + 0.5% Halad 344 + 0.4% CFR3 + 5 pps Gilsonite + 1 pps Salt + 0.2% HR7	8.23	13 00	1.67
2nd Stage						
Lead 2,800'-6,500' (50% excess)	650	3,700'	Interfill H + .125 pps Pol-e-flake + 0.5% Halad 9	14 08	11.90	2.46
Tail 6,500-7,500' (50% excess)	225	1000'	Super H + 0.5% Halad 344 + 0.4% CFR3 + 5 pps Gilsonite + 1 pps Salt + 0.2% HR7	8.23	13.00	1.67

CEMENTING SUMMARY

CASING	HOLE SIZE	INTERVAL	TOC	COMPRESSIVE STRENGTH
20", 94#, H-40, STC	26"	0' – 40'	Surface	N/A
13-3/8", 48#, H-40, STC	17-1/2"	0' – 683'	Surface	950 psi
9-5/8", 36#, J-55, LTC	12-1/4"	0' – 3,303'	Surface	2250 psi
5-1/2", 17#, HCP-110, LTC	8-3/4"	0' – 11,000'	2,800'	1700 psi
5-1/2", 20#, P-110, LTC	8-3/4"	11,000' – 13,450'	2,800'	1700 psi

E) DIRECTIONAL DRILLING

No directional services anticipated. A straight hole will be drilled to 13,450' TD.

POINT 7: ANTICIPATED RESERVOIR CONDITIONS

Normal pressures are anticipated throughout the Delaware, Bone Spring & Wolfcamp sections. The Strawn expected BHP is 5,926 or an equivalent mud weight of 10.0 ppg The Atoka may have pressures of 6,400 – 6,900 psi (10.5 ppg). The Morrow will be normally pressured. Due to the tight nature of the reservoir rock (high pressure, low volume), the well will be drilled under balanced utilizing a rotating head. The expected BHT at TD is 200°F. No H_2S is expected, however; in the event that H_2S is encountered, a Hydrogen Sulfide Drilling Operations Plan as detailed in **Exhibit "E"** will be implemented.

POINT 8: OTHER PERTINENT INFORMATION

A) Auxiliary Equipment

Upper and lower kelly cocks. Full opening stab in valve on the rig floor.

B) Anticipated Starting Date

Spud date is 12/20/2008.

40 days drilling operations

20 days completion operations

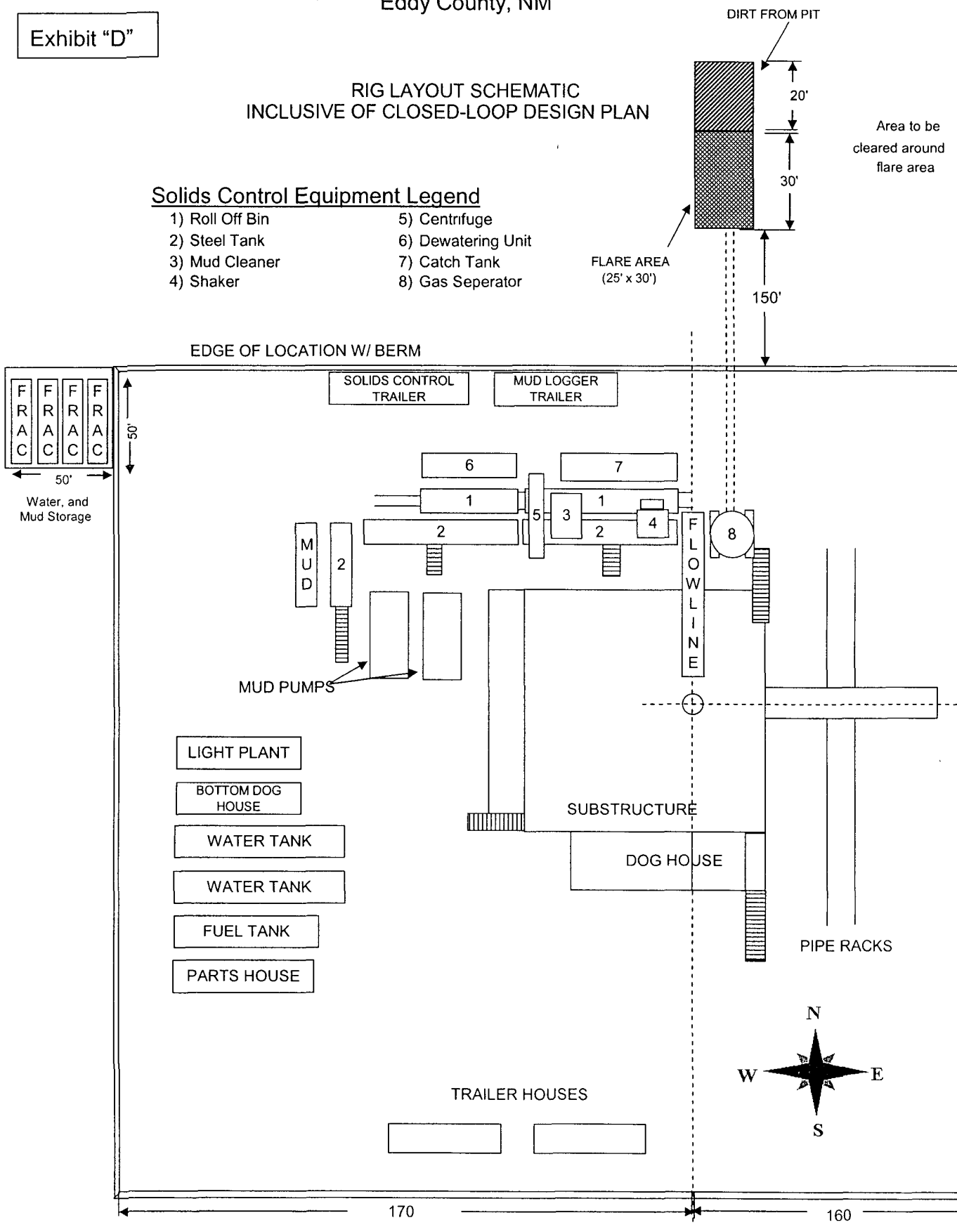
SMM/jdb

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

BOPCO, L.P.
Big Eddy Unit #221
Section 27, T-21-S, R-29-E
Eddy County, NM

Exhibit "D"

RIG LAYOUT SCHEMATIC
INCLUSIVE OF CLOSED-LOOP DESIGN PLAN



Solids Control Equipment Legend

1) Roll Off Bin
2) Steel Tank
3) Mud Cleaner
4) Shaker
5) Centrifuge
6) Dewatering Unit
7) Catch Tank
8) Gas Seperator

BOPCO, L. P.

5-M WP BOPE WITH 5-M WP ANNULAR

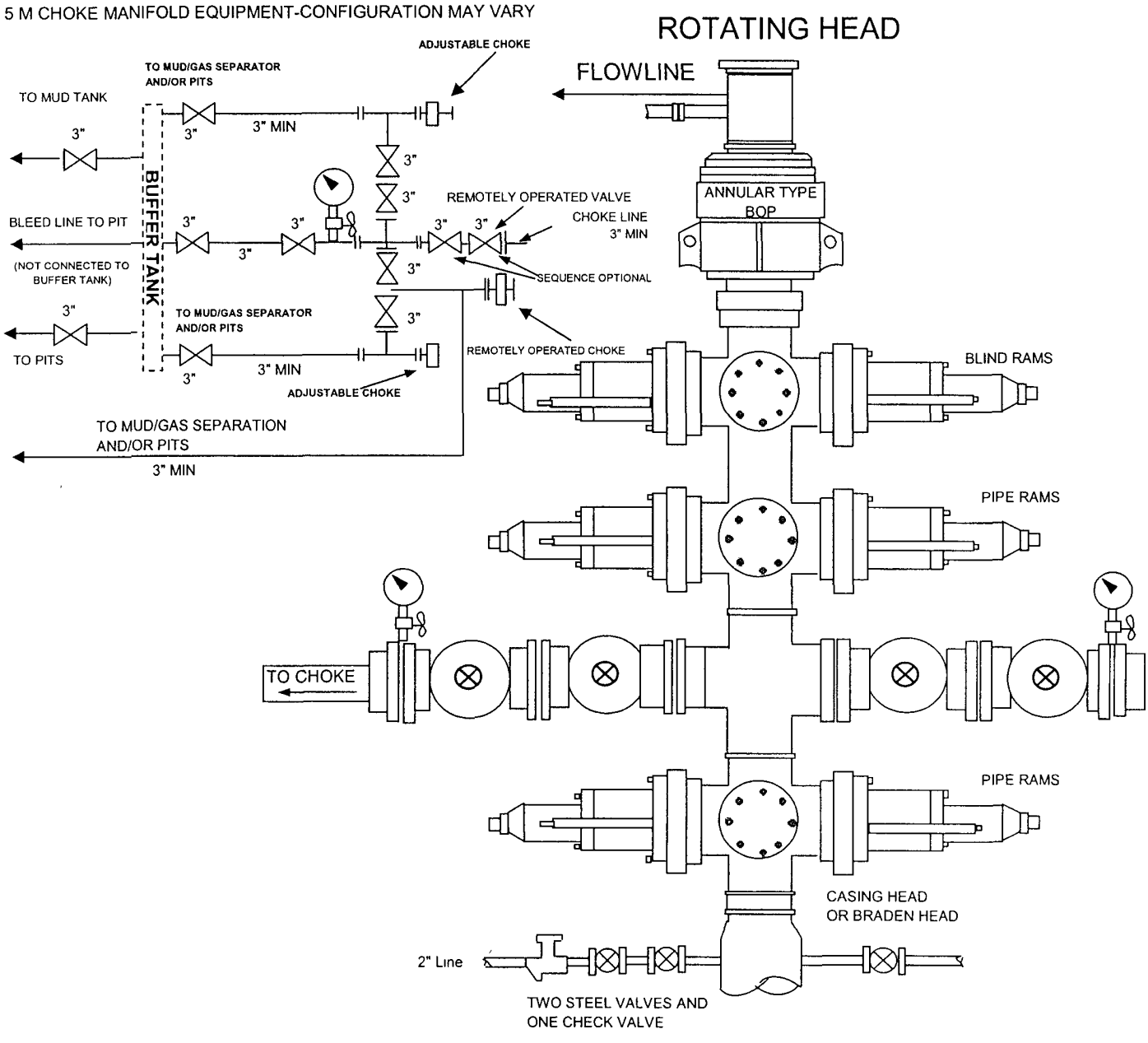


DIAGRAM 1

Big Eddy Unit #221
Exhibit"E"

HYDROGEN SULFIDE (H_2S) CONTINGENCY PLAN

Assumed 100 ppm ROE = 3000'

100 ppm H_2S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H_2S, the first responder(s) must

- **Isolate the area and prevent entry by other persons into the 100 ppm ROE.**
- **Evacuate any public places encompassed by the 100 ppm ROE.**
- **Be equipped with H_2S monitors and air packs in order to control the release.**
- **Use the "buddy system" to ensure no injuries occur during the response**
- **Take precautions to avoid personal injury during this operation.**
- **Contact operator and/or local officials to aid in operation. See list of phone numbers attached.**
- **Have received training in the**
  - **Detection of H_2S, and**
  - **Measures for protection against the gas,**
  - **Equipment used for protection and emergency response.**

Ignition of Gas source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO_2). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever this is an ignition of the gas.

Characteristics of H_2S and SO_2

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H_2S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO_2	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

BOPCO L.P. personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with

all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. (Operator Name)'s response must be in coordination with the State of New México's "Hazardous Materials Emergency Response Plan" (HMER).

H_2S CONTINGENCY PLAN EMERGENCY CONTACTS

BOPCO L.P. Midland Office 432-683-2277

Key Personnel

Name	Title	Cell Phone Number
Bill Dannels	Drilling Supt.	432-638-9463
Buddy Jenkins	Assistant Supt.	432-238-3295
Stephen Martinez	Engineer	432-556-0262
Gary Gerhard	Engineer	432-238-2197

Ambulance	911
State Police	575-746-2703
City Police	575-746-2703
Sheriff's Office	575-746-9888
Fire Department	575-746-2701
Local Emergency Planning Committee	575-746-2122
New Mexico Oil Conservation Division	575-748-1283

Carlsbad

Ambulance	911
State Police	575-8885-3137
City Police	575-885-2111
Sheriff's Office	575-887-7551
Fire Department	575-887-3798
Local Emergency Planning Committee	575-887-6544
US Bureau of Land Management	575-887-6544

New Mexico Emergency Response Commission (Santa Fe)	505-476-9600
24 Hour	505-827-9126
New Mexico State Emergency Operations Center	505-476-9635
National Emergency Response Center (Washington, DC)	800-424-8802

Other

Boots & Coots IWC	800-256-9688 or 281-931-8884
Cudd PressureControl	432-580-3544 or 432-570-5300
Halliburton	575-746-2757
B. J. Services	575-746-3569
Flight For Life – 4000 24th St. Lubbock, Texas	806-743-9911
Aerocare – R3, Box 49F, Lubbock, Texas	806-747-8923
Med Flight Air Amb – 2301 Yale Blvd SE #D3, Albuq., NM	505-842-4433
S B Air Med Service – 2505 Clark Carr Loop SE, Albuq., NM	505-842-4949

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	BOPCO, L.P.
LEASE NO.:	LC-069144A
WELL NAME & NO.:	BIG EDDY UNIT #221
SURFACE HOLE FOOTAGE:	660' FNL & 2030' FWL
BOTTOM HOLE FOOTAGE	
LOCATION:	Section 27, T. 21 S., R 29 E., NMPM
COUNTY:	Eddy 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.

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.

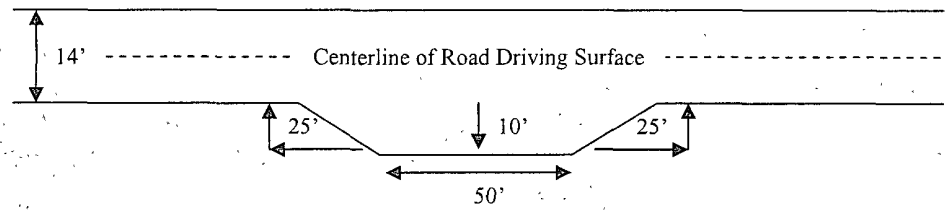
Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

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:

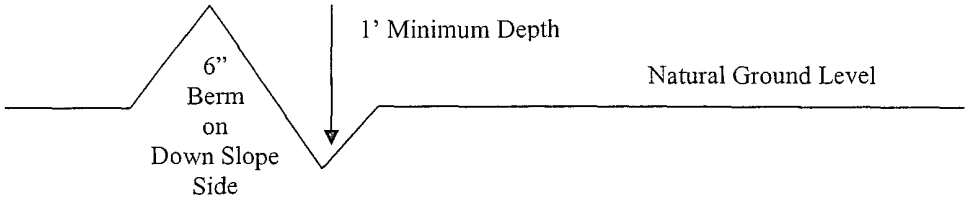
Standard Turnout – Plan View



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.

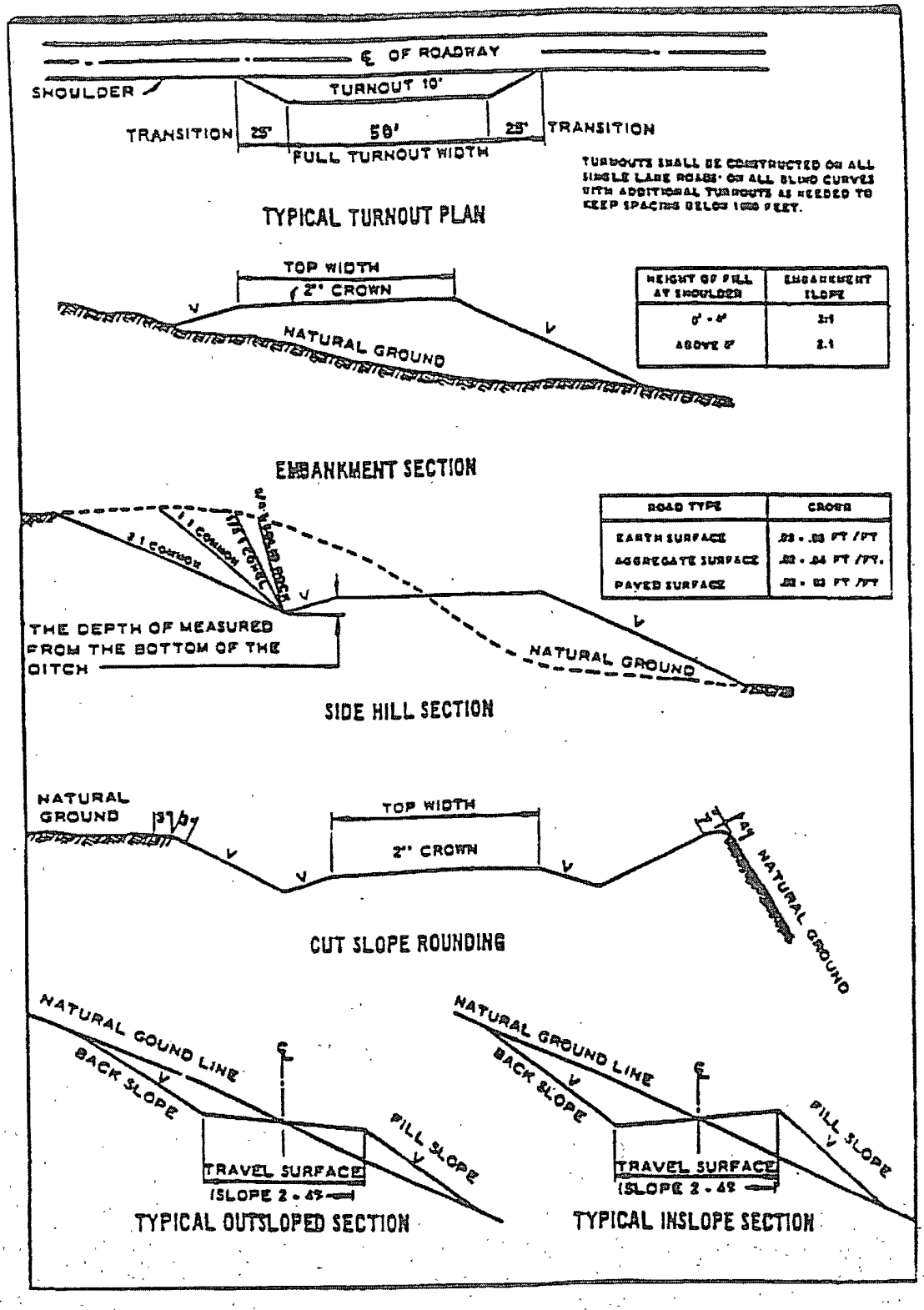
A gate shall be constructed and fastened securely to H-braces.

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



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

☒ **Eddy County**
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. **Although Hydrogen Sulfide has not been reported in this section, it is always a possible hazard. If Hydrogen Sulfide is encountered, please report measured amounts 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, (3M or Greater) 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.

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.

Secretary's Potash
Medium cave/karst.
Possible lost circulation in the Artesia Group, Delaware and Bone Spring formations.
Possibility of high pressure gas bursts within the Wolfcamp formation and over pressure in the Pennsylvanian section.

1. The **13 3/8 inch** surface casing shall be set **at approximately 683 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface. **If salt is penetrated surface casing shall be set 25 feet above the salt.**

    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 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 action will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8 inch** intermediate casing **(to be set in the top of the Delaware Lamar Lime at approximately 3300')** is:

    ☒ Cement to surface. If cement does not circulate see B.1.a-d above.
    Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to potash and cave/karst.

If 75% or greater lost circulation occurs while drilling the intermediate casing hole, the cement on the production casing must come to surface.

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. If formation fails test, casing design will require review. Report results to BLM office.

3. The minimum required fill of cement behind the **5-1/2 inch** production casing is:

   a. **First stage to DV tool, cement shall:**

   ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office, before proceeding with second stage cement job.

   b. **Second stage above DV tool, cement shall:**

   ☒ Cement should tie-back at least **500** feet into previous casing string **since the well is in Secretary's Potash. Operator shall provide method of verification.**

4. 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. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

3. 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**. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

f. **Effective November 1, 2008, no variances will be granted on reduced pressure tests on the surface casing and BOP/BOPE. Onshore Order 2 requirements will be in effect.**

D. DRILLING MUD

Proposed mud weight may not be adequate for drilling through Atoka Clastics.

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 110308

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.

The 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 2, for Sandy 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 see 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
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

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

(Insert Seed Mixture Here)

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.