

BCO, Inc.

OIL WELL OPERATOR
135 GRANT
SANTA FE, N. M. 87501

AREA CODE 505
983-1228

OIL CONSERVATION DIVISION
RECEIVED

'92 SEP 18 AM 9 19

16 September 1992

Mr. William J. LeMay
Director
New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Re: Non-Standard Location Application
Federal "B" No. 14
1152' FNL x 420' FEL (UL "A") Sec 27 T23N R7W
Sandoval County, New Mexico
Lybrook Gallup Pool

Dear Mr. LeMay:

BCO, Inc. requests OCD administrative approval to drill the above referenced Gallup oil well in an unorthodox location. A mesa with steep slopes prevents us from selecting a legal location in the proration unit.

This application includes a copy of the APD which has been filed with the BLM. Also included are the exhibits required per the guidelines in OCD Memorandum 1-90 dated 21 March 1990. For your convenience, a list which describes the nature and purpose of each exhibit follows this letter.

Archaeological clearance has been recommended by the Division of Conservation Archaeology. Bill Leiss of the BLM made a field inspection of the site on September 8th, 1992 and has indicated approval.

Directional drilling is not feasible to reach a legal bottom-hole location. Straight hole drilling economics are marginally profitable (rate of return less than 15%) and an additional \$48,083 in horizontal displacement costs would kill the project by bringing the rate of return down below the cost of money. Additionally, the well will have to be produced on beam lift and as you are aware this creates serious operational problems in deviated holes.

Offset operators have been notified of our application. An affidavit of service, list of operators, and a sample letter are provided in Exhibit H. **Please note that the proposed location is unorthodox only with respect to our own acreage and the correlative rights of the offset operators are protected.**

Respectfully,



Neel L. Duncan
Petroleum Engineer & Production Manager

c: Frank T. Chavez - Aztec

LIST OF EXHIBITS
Non-Standard Location Application
Federal "B" No. 14

<u>Exhibit</u>	<u>Description & Purpose</u>
A	Copy of Application for Permit to Drill
B	OCD Form C-102. Shows location & dedicated acreage.
C	Ownership Plat showing proposed wellsite, offset operators, and offset wells.
D	Listing of working interest owners for offset wells.
E	Topographic map showing proposed location, orthodox windows, and terrain features.
F	Enlarged topographic map showing details of the mesa and slope.
G	Copy of cover letter for archaeological report recommending clearance for the proposed wellsite.
H	Affidavit that notice has been sent & list of operators notified. Sample letter also attached.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK
 DRILL DEEPEN PLUG BACK

b. TYPE OF WELL
 OIL WELL GAS WELL OTHER
 SINGLE ZONE MULTIPLE ZONE

2. NAME OF OPERATOR
 BCO, Inc.

3. ADDRESS OF OPERATOR
 135 Grant Avenue, Santa Fe, New Mexico 87501

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)*
 At surface
 1152' FNL x 420' FEL Sec 27 T23N R7W
 At proposed prod. zone
 1152' FNL x 420' FEL Sec 27 T23N R7W

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
 2 miles South of Lybrook, New Mexico

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)

16. NO. OF ACRES IN LEASE
 2080

17. NO. OF ACRES ASSIGNED TO THIS WELL
 40

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

19. PROPOSED DEPTH
 5800

20. ROTARY OR CABLE TOOLS
 Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
 GL: 7276 KB: 7288

22. APPROX. DATE WORK WILL START*
 01 January 1993

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12.250	8.625"	24#	360'	275 Sacks
7.875	4.500"	11.6#	5800'	689 Sacks

Operator plans to drill from the surface through the Base of the Gallup Formation. If determined productive, production casing will be set and cemented. Potentially productive zones will be opened and stimulated as necessary.

Exhibits

- A - Location Plat - (OCD Form C-102)
- B - Ten Point Compliance Plan - Operations
- C - Blowout Preventer Diagram
- D - Multi-Point Requirements Program
- E - Topography Map Showing Roads

- F - Drilling Rig Layout
- G - Completion Rig Layout
- H - Location Profile Plat
- I - Facilities Layout
- J - Central Gathering Facility Layout
- K - R/W Land Use Plat

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. SIGNED [Signature] TITLE Petroleum Engineer DATE September 10, 1993

(This space for Federal or State office use)

PERMIT NO. _____ APPRO _____

APPROVED BY _____ TITLE _____
 CONDITIONS OF APPROVAL, IF ANY:

*** Note: A Form 2800-14 signed in blank accompa

*See Instructions On f

EXHIBIT "A"

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised 1-1-89

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

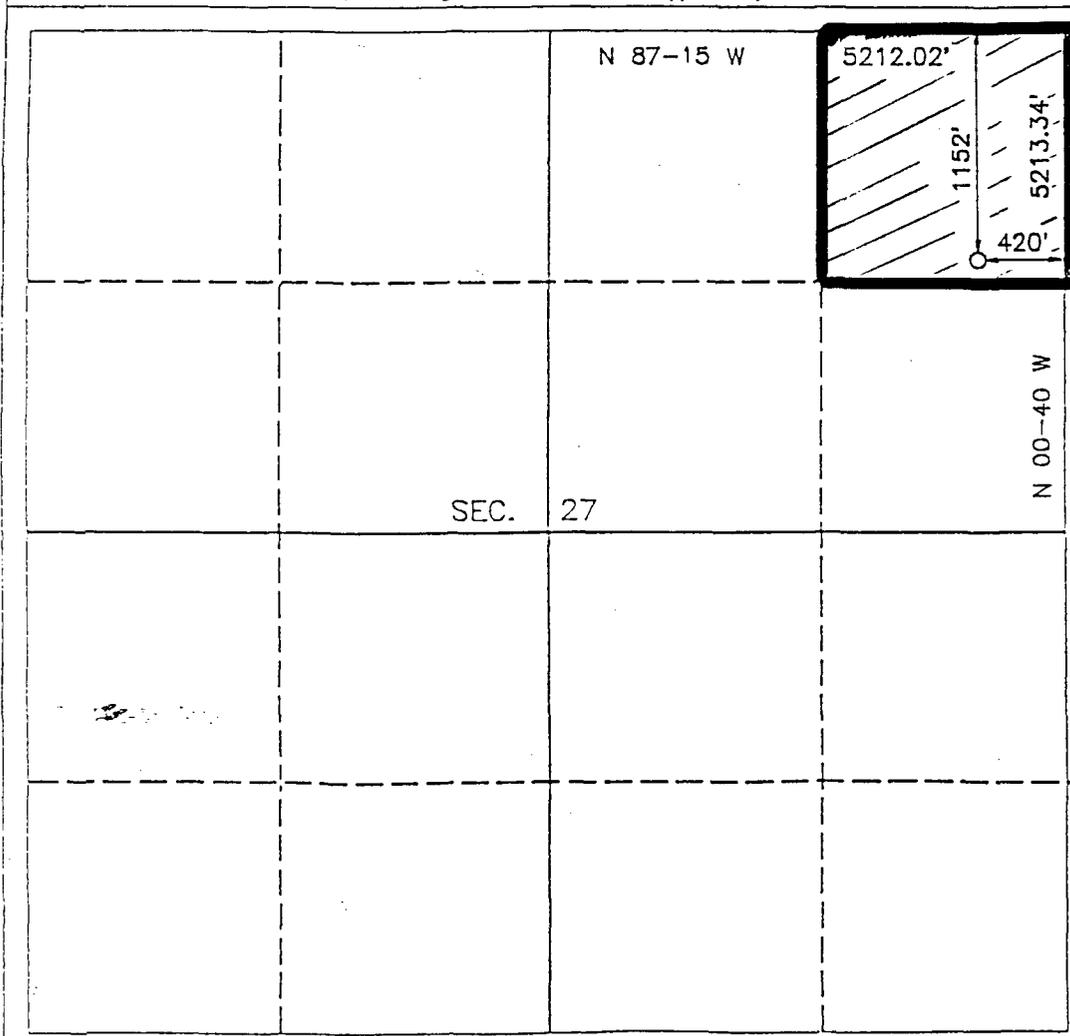
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator B.C.O. INC.		Lease FEDERAL "B"		Well No. 14
Unit Letter A	Section 27	Township T.23 N.	Range R.7 W.	County SANDOVAL
Actual Footage Location of Well: 1152 feet from the NORTH line and 420 feet from the EAST line				
Ground level Elev. 7276'	Producing Formation GALLUP	Pool LYBROOK GALLUP	Dedicated Acreage: 40 Acres	

- Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
 - If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
 - If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?
 - Yes No If answer is "yes" type of consolidation _____
 If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary).
- No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



OPERATOR CERTIFICATION

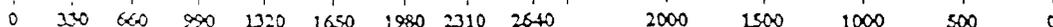
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Signature: *[Signature]*
 Printed Name: **NEEL L. DUNCAN**
 Position: **PETROLEUM ENGINEER**
 Company: **BCO, INC.**
 Date: **10 SEP 92**

SURVEYOR CERTIFICATION

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

Date Surveyed: **AUGUST 1992**
 Signature & Seal of Professional Surveyor: *[Signature]*
 Certificate No.: **8894**



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

State of New Mexico
 Energy, Minerals and Natural Resources Department

Form C-102
 Revised 1-1-89

OIL CONSERVATION DIVISION

P.O. Box 2088
 Santa Fe, New Mexico 87504-2088

DISTRICT I
 P.O. Box 1980, Hobbs, NM 88240

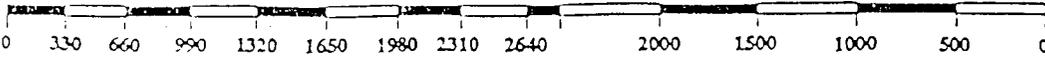
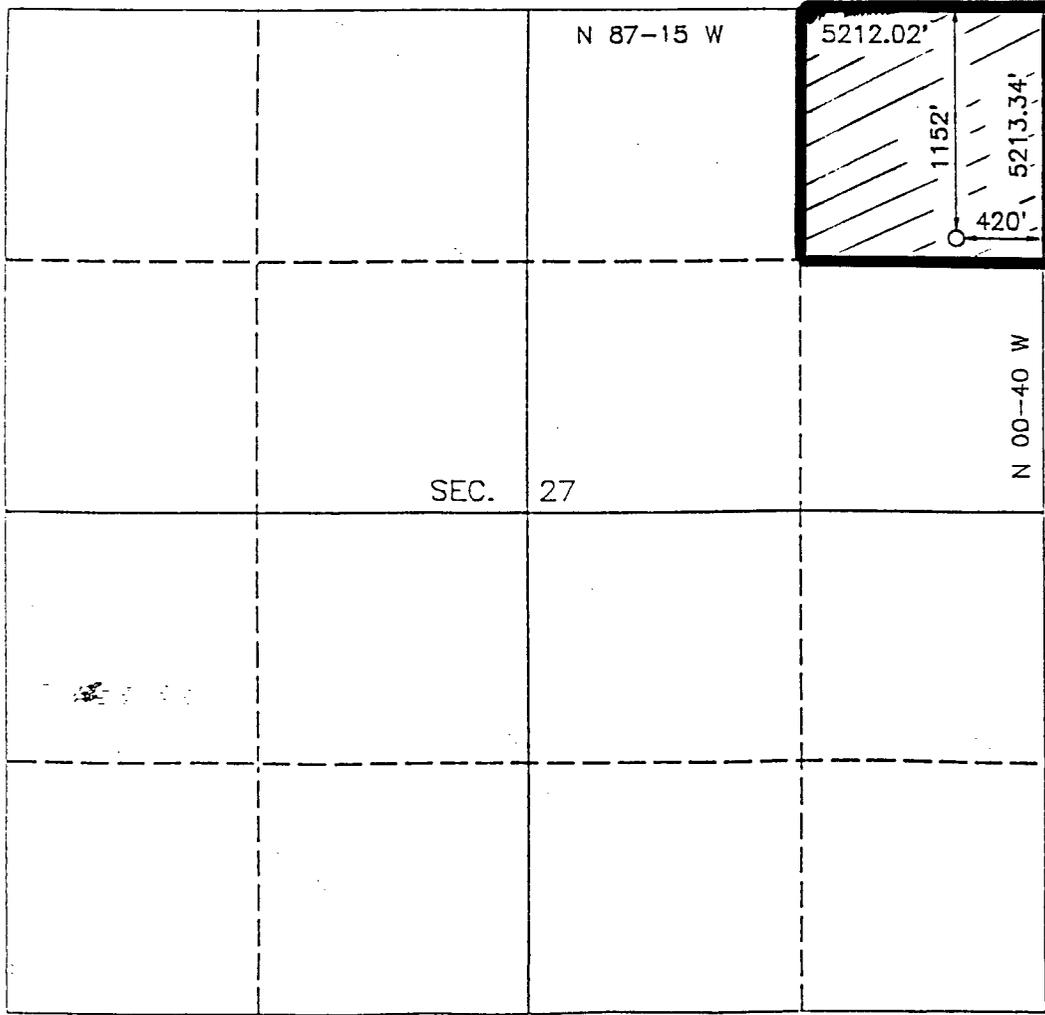
DISTRICT II
 P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
 1000 Rio Brazos Rd., Aztec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT
 All Distances must be from the outer boundaries of the section

Operator B.C.O. INC.		Lease FEDERAL "B"		Well No. 14
Unit Letter A	Section 27	Township T.23 N.	Range R.7 W.	County SANDOVAL
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 Yes No If answer is "yes" type of consolidation _____
 If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary).
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OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Signature

Printed Name
NEEL L. DUNCAN

Position
PETROLEUM ENGINEER

Company
B.C.O. INC.

Date
10 SEP 92

SURVEYOR CERTIFICATION

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

Date Surveyed
AUGUST 1992

Signature & Seal of Professional Surveyor

Certificate No. **8894**

EXHIBIT "B"

TEN POINT COMPLIANCE PROGRAM
OF NTL-6 APPROVAL OF OPERATIONS

OPERATOR: BCO, Inc.
WELL NAME: Federal "B" No. 14
LOCATION: 1152' FNL x 420' FEL Sec 27 T23N R7W
STATE, COUNTY: Sandoval County, New Mexico

1. The Geological Surface Formation is **NACIEMENTO**.
2. The Estimated Tops of Important Geologic Markers (feet, TVD):

Ojo Alamo	1396	Cliffhouse	3532
Kirtland	1676	Menefee	3582
Fruitland	1830	Point Lookout	4380
Pictured Cliffs	2036	Gallup	5244
Chacra	2442	TD	5800

3. Estimated Depths of Anticipated Water, Oil, Gas, or Minerals:

Substance	Formation	Anticipated Depth (feet, TVD)
Gas and Wtr	Pictured Cliffs	2036
Gas and Wtr	Chacra	2442
Gas	Menefee	3582
Gas and Wtr	Point Lookout	4380
Gas and Oil	Gallup	5244

4. The proposed casing program will be as follows:

Depth (feet)	Hole Size (inches)	Casing		Grade	Type	New/Used
		O.D. (inches)	Weight (lbm/ft)			
0 - 360	12.250	8.625	24.00	J-55	ST&C	New
0 - 200	7.875	4.500	11.60	N-80	LT&C	New
200 - T.D.	7.875	4.500	11.60	J-55	LT&C	New

The proposed cement program will be as follows:

Surface: 275 sacks Class "B" with 0.25 lb/sx Flocele and 3% calcium chloride.

Production: Single Stage Cementing.

Lead: 50 bbl chemical flush followed by 531 sx 65/35 poz with 12% gel, 6 lb/sx gilsonite, 0.6% Halad-322, and 0.25 lb/sx flocele. Cement will be mixed at 11.3 lb/gal for zero free water and will yield 2.64 ft³/sx.

Tail: 158 sx Class "G" with 8 lb/sx salt, 0.5 lb/sx flocele and 6.25 lb/sx gilsonite. Cement will be mixed at 15.8 lb/gal to yield 1.15 ft³/sx.

TEN POINT COMPLIANCE PROGRAM
OF NTL-6 APPROVAL OF OPERATIONS

OPERATOR: BCO, Inc.
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STATE, COUNTY: Sandoval County, New Mexico

Note: Cement volumes will be adjusted after logging to ensure that all annular space behind 4-1/2" casing is full of cement.

5. Operator's Minimum Specifications for Pressure Control.

Exhibit "C" is a schematic of the blowout preventer equipment. A "2M" BOP system will be used. The BOP's will be hydraulically tested prior to drilling out from under surface and operational checks will be made daily thereafter and recorded in the drilling tour report. The following specifications will apply:

- a. The "2M" BOP system will consist of two rams, one pipe and one blind ram. All Connections subject to well pressure will be flanged. All lines and associated valves connecting to the BOP stack will be two inch (2"). (See attached BOP diagram.)
- b. A two inch kill line will be used.
- c. Two 2" kill line valves will be used. One of the valves will be a check valve.
- d. The choke manifold will contain two variable chokes and the manifold will be constructed of two inch (2") pipe. All connections will be flanged. A pressure gauge will be installed on the manifold.
- e. A safety valve and subs to fit all drill strings will be used.
- f. A two inch fill-up line above the uppermost preventer will be used.

6. Type and Characteristics of the Proposed Circulating Muds.

Mud system will be gel-chemical with adequate stocks of sorptive agents on location to handle possible spills of fuel and oil at the surface. Heavier muds will be made on location and added if pressure requires.

Interval (feet, MD)	Mud Weight (lbm/gal)	Viscosity (Marsh sec)	Fluid Loss (cc/30 min)	pH	Additives
0 - 370	9.0	50	---	9.0	None.
370 - T.D.	9.0	38 - 40	6.0	9.0	Chemicals

7. Auxiliary equipment to be used is as follows:

- a. Float above bit.

- b. Monitoring of mud system will be visual.
 - c. A sub with a full opening valve will be on the floor when the kelly is not in use.
8. Testing, logging, and coring will be as follows:
- a. Cores - None will be cut.
 - b. Drill Stem Tests - None anticipated.
 - c. Logging - Formation Density and Compensated Neutron over Gallup formation and selected segments between Gallup and surface. Dual Induction, Gamma Ray, and Calliper from TD to surface.

9. Anticipated Abnormal Pressures and Temperatures

No abnormal pressures, temperatures, or presence of hydrogen sulfide gas is anticipated during the course of drilling to TD. The maximum bottom hole pressure to be expected is 1800 psig.

10. Anticipated Starting Date and Duration of Operations

The anticipated starting date is set for *January 1st, 1993*, or as soon as possible after examination and approval of drilling requirements. Operations should be completed within 15 days.

Note: NTL FRA 90-1 will be complied with regarding cementing precautions for protection of fresh water sands, specifically the Ojo Alamo. The hole size is equal to or greater than 1.5 inches larger diameter than the casing outside diameter across usable water zones. An adequate spacer will be pumped ahead of the cement slurry to help prevent mud contamination of the cement. An adequate number of casing centralizers will be run through usable water zones to ensure that casing is properly centered. The number of centralizers will be determined by API specification 11-D. Centralizers which impart a swirling action (Halliburton's Fluidmaster type) will be used just below and into the base of the lowest usable water zone. These devices will assist mud displacement, increase cement bonding potential and create an effective hydraulic seal. A chronological log will be kept which records pump rate, pump pressure, slurry density, and slurry volume for the cement job. The log will be sent to the BLM Farmington Resource Area after completion of the job.

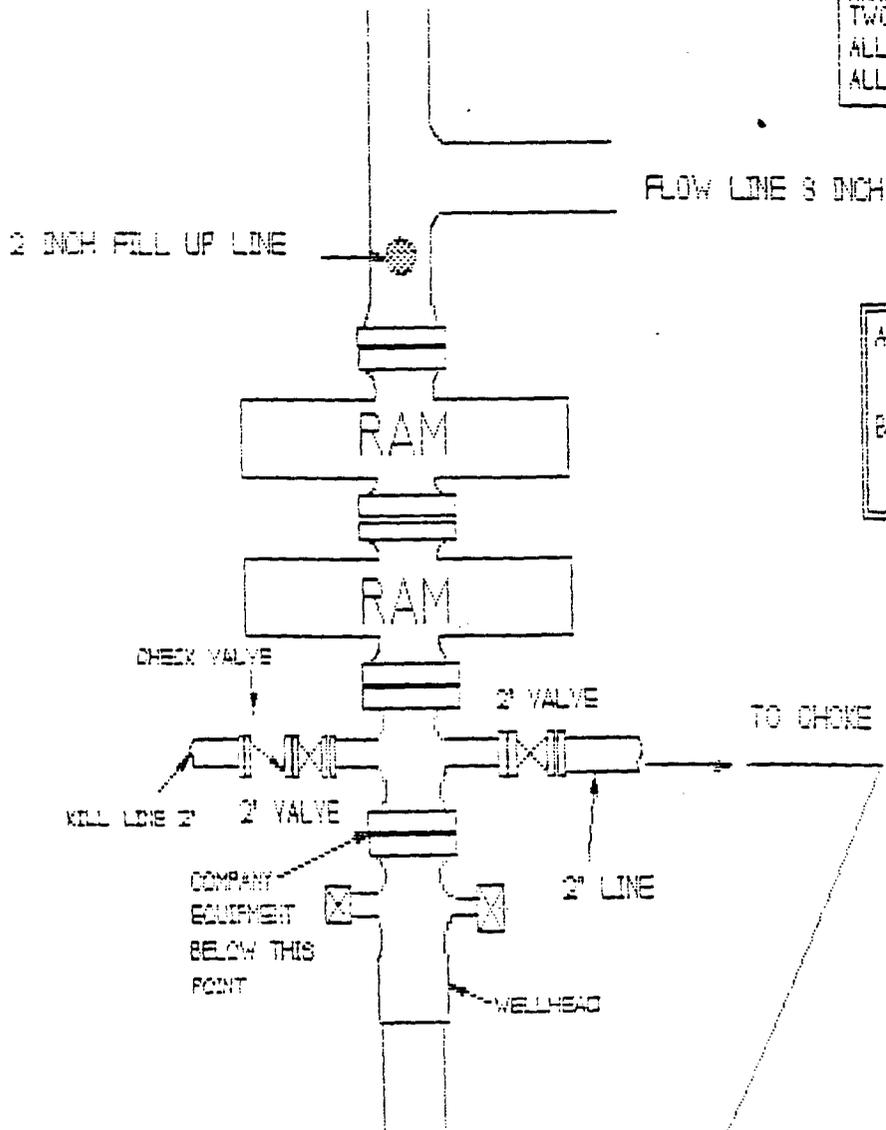
Addendum to Ten Point Compliance Plan:

If productive, a flowline for produced fluids and gas will be run from wellhead to central tank battery at 2400' FSL x 650' FEL Sec 27 T23N R7W. Description as follows:

General:	Surface line, buried only where required.	Working Pres:	6160 psi
		Operating Pres:	100 psi
Length:	1800'	Test Pres:	1000 psi
Diameter:	2" I.D.		
Type:	4.6 lb/ft oilfield tubing.		
Wall:	0.380 inch		

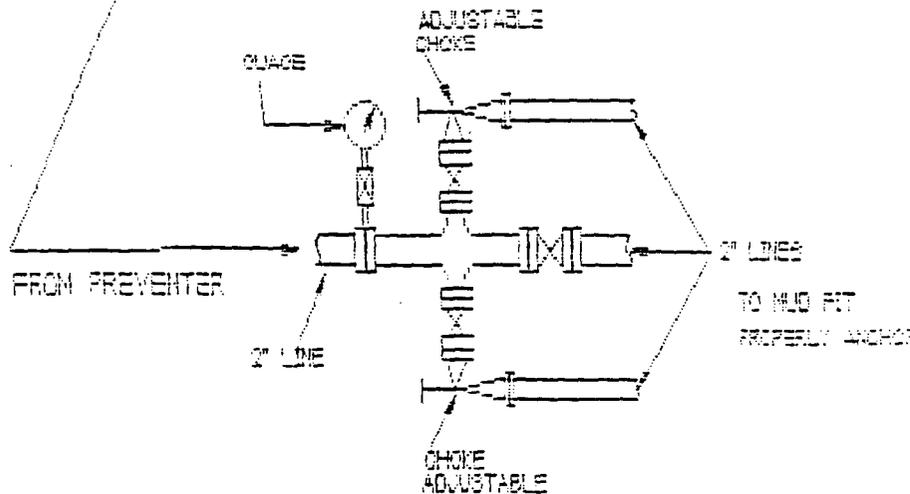
BCO, Inc.
 Exhibit "C"

BLOWOUT PREVENTER ASSEMBLY
 ANNULAR PREVENTERS CONSIST OF -
 TWO RAMS - ONE PIPE RAM AND ONE BLIND RAM
 ALL CONNECTIONS ARE FLANGED
 ALL PORT VALVES ARE 2 INCH



A. NOTE UPPER KELLY COCK VALVE WITH HANDLE WILL BE AVAILABLE
 B. SAFETY VALE AND GUES TO FIT ALL DRILL STRING CONNECTIONS WILL BE USED.

CHOKING MANIFOLD ASSEMBLY
 LOCATED AWAY FROM SUBSTRUCTURE
 ALL CONNECTIONS ARE FLANGED
 ALL VALVES ARE 2 INCH



"2-H" BOP SYSTEM

EXHIBIT "D"

Attachment to Form 3160-3

MULTI-POINT REQUIREMENTS TO ACCOMPANY APPLICATION FOR PERMIT TO DRILL

OPERATOR: BCO, Inc.
WELL NAME: Federal "B" No. 14
LOCATION: 1152' FNL x 420' FEL Sec 27 T23N R7W
STATE, COUNTY: Sandoval County, New Mexico

1. Existing Roads

- a. Plan to improve or maintain existing roads as required. Application is being made for right-of-way to an existing state or county road. Land use plat for R/W is included as Exhibit "K". Plan to utilize R/W NMNM 86682 from State Highway 44 to starting point of new access road. Request that NMNM 86682 be amended to include new access road in NE/4 SE/4 Sec 27 and SE/4 & NE/4 of NE/4 Sec 27 T23N R7W.
- b. Directions: From Farmington, turn right (south) off of State Highway 44 on west side of Lybrook Elementary School. Proceed 2.8 miles and turn right (west). Proceed 1.1 miles and turn right (north) onto new access road and follow to location.
- c. All existing roads within a one mile radius are shown in Exhibit "E".
- d. This is a development well.

2. Planned Access Roads

- a. The new access road is 1800' in length and is shown on Exhibit "E". Request that NMNM 86682 be amended to include new access road NE/4 SE/4 and SE/4 & NE/4 NE/4 Sec 27 T23N R7W. Attached to the Original APD is a form 2800-14 signed in blank. A surface ownership and right-of-way map is included as Exhibit "K".
- b. The grade will be 10% or less, or consistent with local terrain.
- c. Turnouts constructed as required by BLM.
- d. Any necessary water bars will be installed.
- e. Culverts will be installed as necessary. No major cuts and fills are planned on BLM land.
- f. Only native materials will be used.
- g. Gates or cattleguards will be installed where necessary.
- h. The new access road will be crowned and ditched.

MULTI-POINT REQUIREMENTS TO ACCOMPANY APPLICATION FOR PERMIT TO DRILL

OPERATOR: BCO, Inc.
WELL NAME: Federal "B" No. 14
LOCATION: 1152' FNL x 420' FEL Sec 27 T23N R7W
STATE, COUNTY: Sandoval County, New Mexico

3. Location of Existing Wells within a One Mile Radius (Refer to Exhibit "E")

- a. Water wells - none.
- b. Abandoned wells - None.
- c. Temporarily Abandoned (TA) wells - none.
- d. Disposal wells - none.
- e. Drilling wells - none.
- f. Producing wells - BCO, Inc - 7 wells
- g. Shut-in wells - none.
- h. Injection wells - none.
- i. Monitoring observation wells - none.

4. Location of Existing and/or Proposed Facilities

- a. There are four production facilities (batteries) owned and controlled by the Operator within a mile radius of the proposed well. One additional facility is applied for in a separate APD for a well within a one mile radius.
- b. New facilities contemplated in the event of production are shown approximately as Exhibit "I" and "J"
 - 1. Central gathering facility will be required and will be located off of the well pad as shown on map Exhibit "E". A sketch of the facility is provided in Exhibit "J". Right of way for this on-lease facility, located in NE/4 SE/4 sec 22 T23N R7W is requested in this APD. Archaeological clearance has been recommended by the Division of Conservation Archaeology.

The central facility will gather gas and oil for three wells (Federal B-12, B-14, and B-15). The purpose of central collection is to simplify operations, reduce road travel of oil trucks, and maximize the amount of well pad that can be re-vegetated.

- 2. A surface flowline to connect wellhead to the central gathering facility will be constructed and will parallel road. Complete description of the line is provided in the addendum to the

MULTI-POINT REQUIREMENTS TO ACCOMPANY APPLICATION FOR PERMIT TO DRILL

OPERATOR: BCO, Inc.
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STATE, COUNTY: Sandoval County, New Mexico

10-point plan. Right of way for the flowline is requested in this APD.

3. Only native materials will be used except for gravel.
4. An earthen berm will be built around tanks. Wellhead will be fenced to keep domestic animals and wildlife out.
5. The reserve pit will be fenced and allowed to dry. Rehabilitation, whether the well is productive or dry will be made on all unused areas in accordance with BLM stipulations.

5. Location and Type of Water Supply

- a. Water will be provided by the Drilling Contractor, Walters Drilling, Inc. Contractor's source of water will be the Chapman water hole.
- b. Water will be trucked to the location over the roads.
- c. No water well will be drilled.

6. Source of Construction Materials

- a. Only native soils will be utilized.
- b. No construction materials will be taken off Federal or Indian lands.
- c. Surface and subsoil materials in the immediate area will be utilized. Any gravel will be purchased from a commercial source.

7. Methods of Handling Waste Materials

- a. Drill cuttings are to be contained and buried in the reserve pit.
- b. Drilling fluids are to be contained in the reserve pit.
- c. The produced fluids will be stored in a production tank. Any spills of oil, gas, or water, or other production fluids will be cleaned up and removed.
- d. Chemical facilities will be provided for human waste.

MULTI-POINT REQUIREMENTS TO ACCOMPANY APPLICATION FOR PERMIT TO DRILL

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STATE, COUNTY: Sandoval County, New Mexico

- e. Garbage and non-flammable waste are to be contained in trash containers. Trash will be removed periodically and the remains removed when the well is completed. The reserve pit will be fenced on three sides during drilling operations and the fourth side will be fenced when the rig is moved off location.
 - f. Reserve and mud pits will be allowed to dry after drilling and completion operations and then adequately filled and leveled.
8. Ancillary Facilities: Non Required.
9. Well Site Layout.
- a. Wellsite layout and Profile are shown in Exhibit "H".
 - b. Drilling Rig layout is shown in Exhibit "F".
 - c. Completion Rig layout is shown in Exhibit "G".
 - d. Final producing well layout is shown in Exhibit "I"
10. Plans for Restoration of Surface.
- a. Restoration of the well site and access road will begin as soon as all pits have dried. Waste disposal and spoils materials will be buried or hauled away immediately after drilling is completed. If production is obtained, the unused area will be restored as soon as possible.
 - b. Should the well be abandoned, the drilling site will be reshaped as closely to the original countour as possible. The access road will be plowed and shaped. Both road and location will have topsoil replaced and and will be reseeded when germination can occur. The portion of the location needed for daily operations and access road will be kept in good repair and clean.
 - c. In either case, cleanup of the well site will include burning or removal of all waste, revoval of accumulated oil on pits, fencing of pits until filled, and filling of the pits.
11. Other Information
- a. General Topography is shown on Exhibit "E"

MULTI-POINT REQUIREMENTS TO ACCOMPANY APPLICATION FOR PERMIT TO DRILL

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STATE, COUNTY: Sandoval County, New Mexico

- b. There are no known archaeological or cultural sites near the proposed roadway or location.
- c. Animal life: Domestic livestock, mule deer, and native rodents and scavengers.
- d. Dwellings - Closest occupied dwelling is 1 mile.
- e. Surface Owner - *Federal Lands under jurisdiction of the Bureau of Land Management.*
- f. Restrictions: None.
- g. Drilling is planned for on or about *January 1st, 1993* and operations should be completed within 15 days of start-up.

12. Leesee's or Operator's Representative

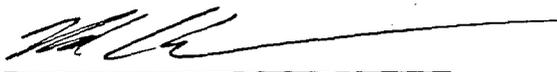
Neel L. Duncan, Petroleum Engineer
135 Grant Ave.
Santa Fe, New Mexico 87501

Telephone: (505) 983-1228

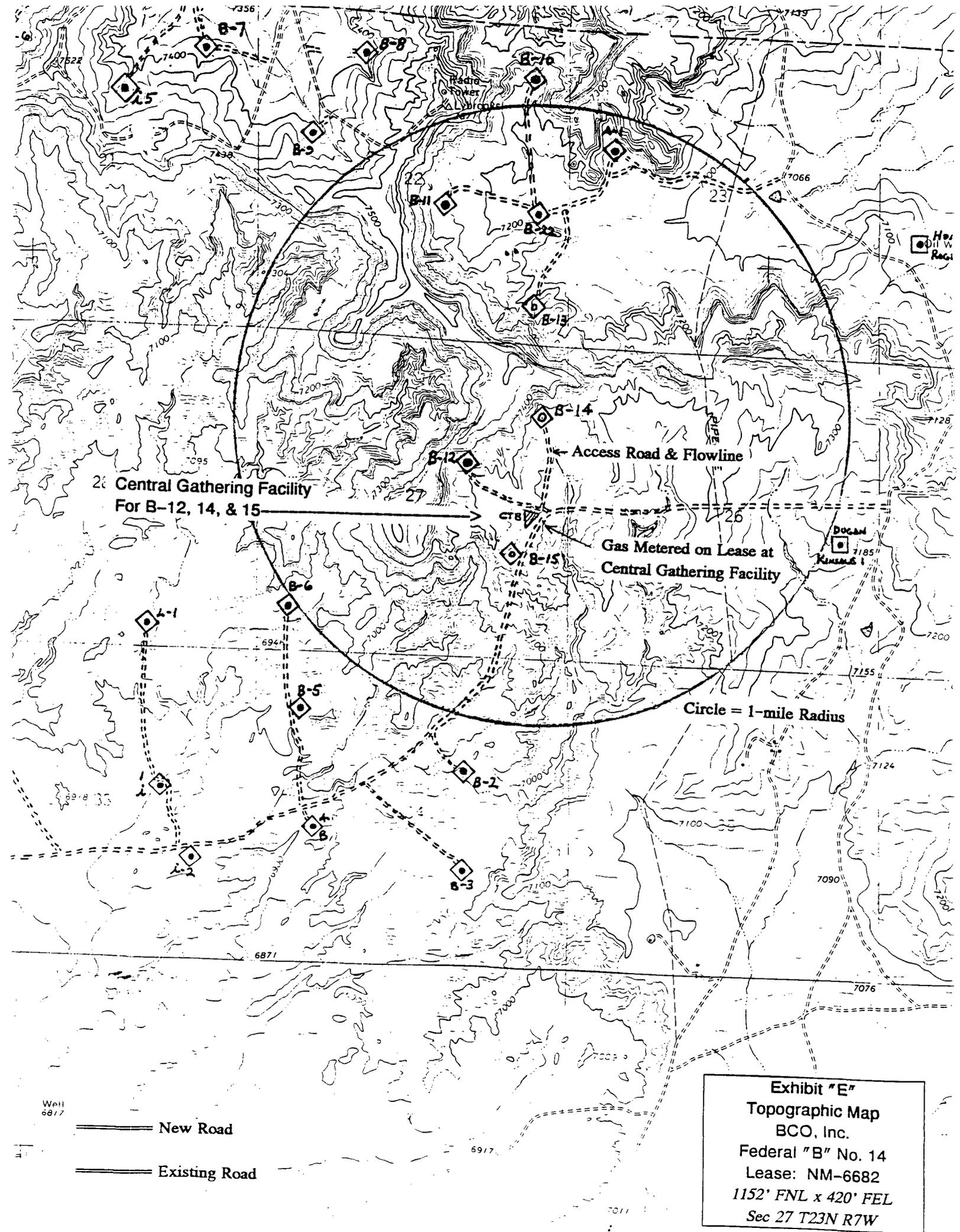
13. CERTIFICATION

I hereby certify that I or someone under my direct supervision have inspected the proposed drill site and access road; that I am familiar with the conditions that presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by the Operator, his contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

Date: 09 September 1992



Neel L. Duncan
Petroleum Engineer & Production Manager



Central Gathering Facility
For B-12, 14, & 15

Access Road & Flowline

Gas Metered on Lease at
Central Gathering Facility

Circle = 1-mile Radius

Well
6817

==== New Road

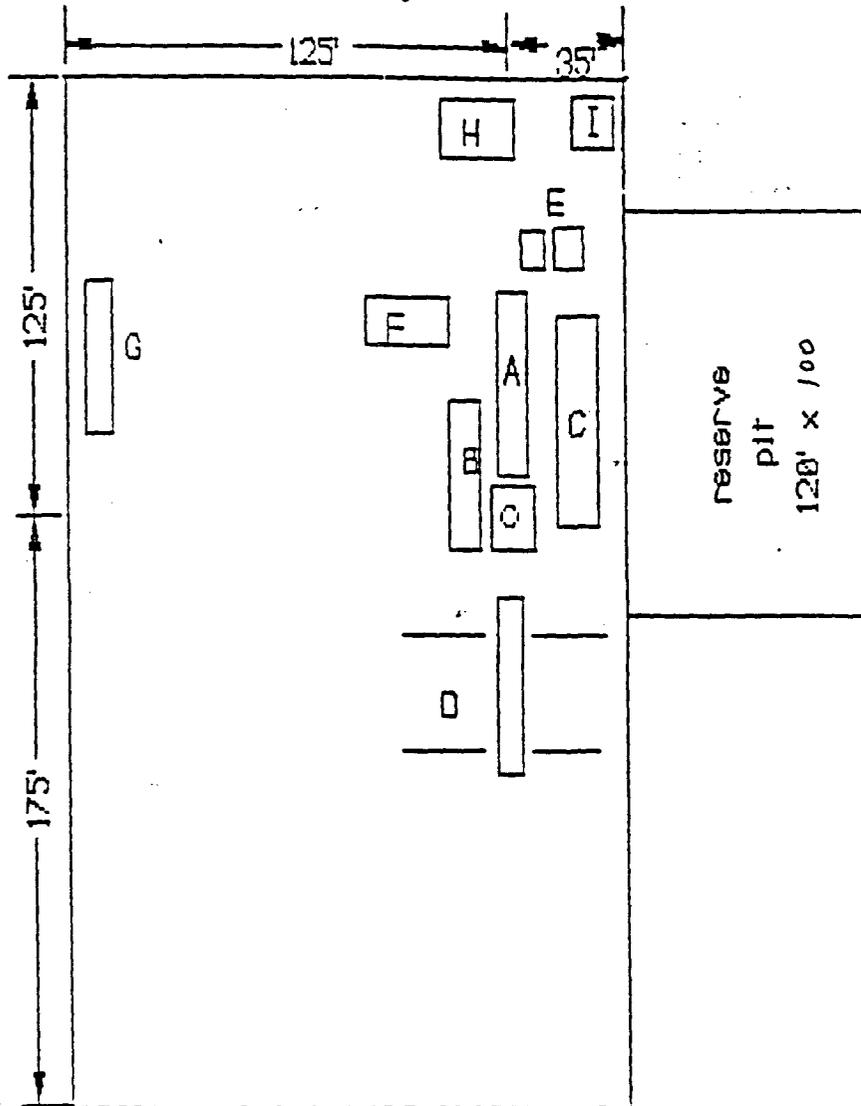
==== Existing Road

Exhibit "E"
Topographic Map
 BCO, Inc.
 Federal "B" No. 14
 Lease: NM-6682
 1152' FNL x 420' FEL
 Sec 27 T23N R7W

EXHIBIT F

DRILLING RIG LAYOUT

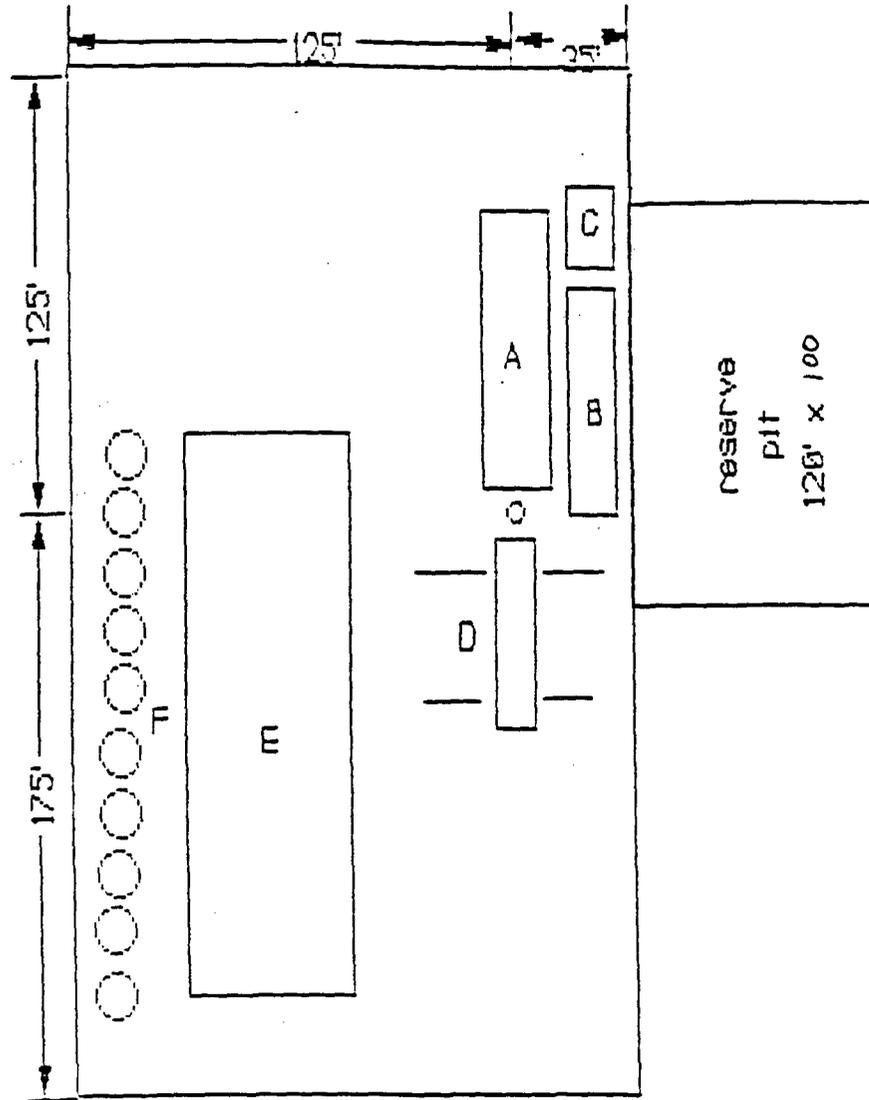
BCO, Inc.



- A RIG
- B DOG HOUSE AND WATER
- C MUD PIT
- D PIPE RACKS
- E MUD PUMPS
- F LIGHT PLANT
- G TRAILER HOUSE
- H TRASH BIN
- I TOILET

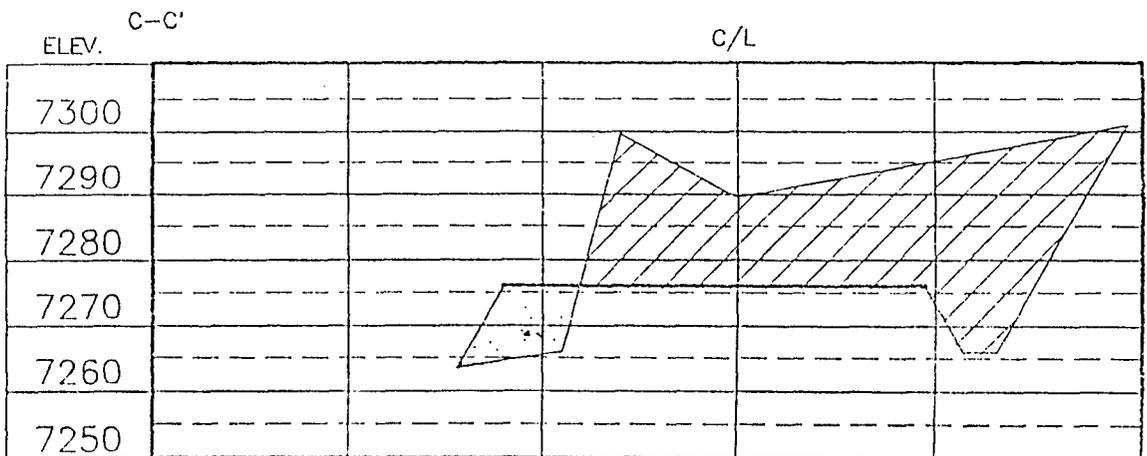
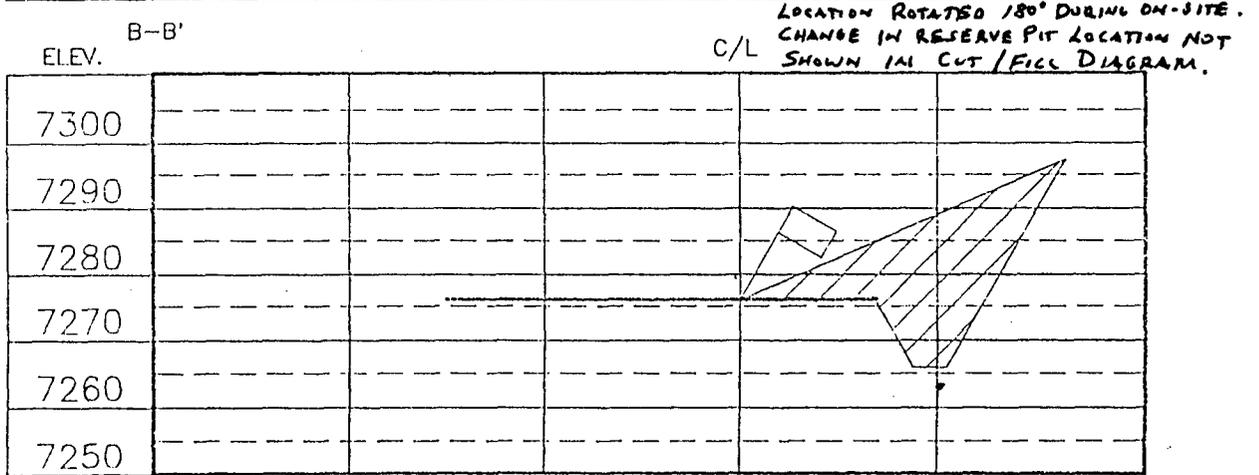
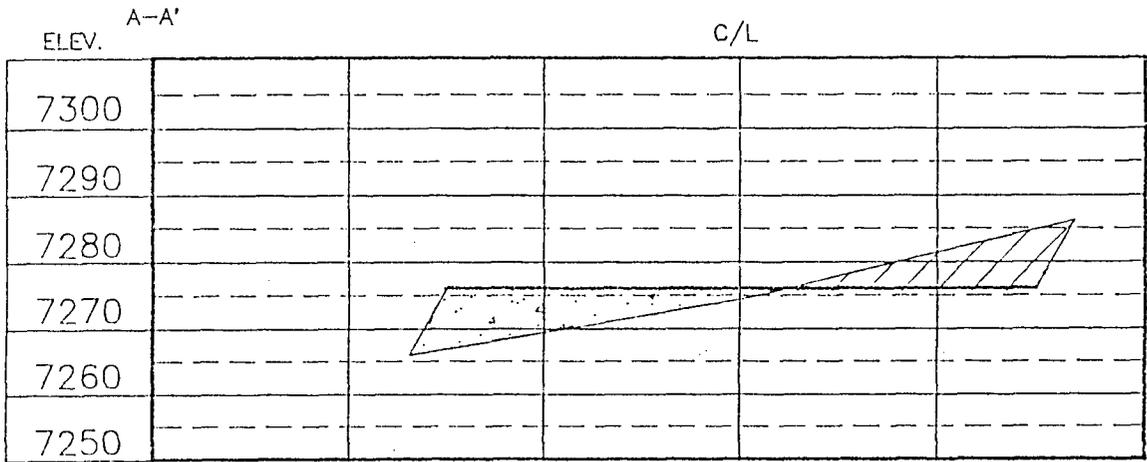
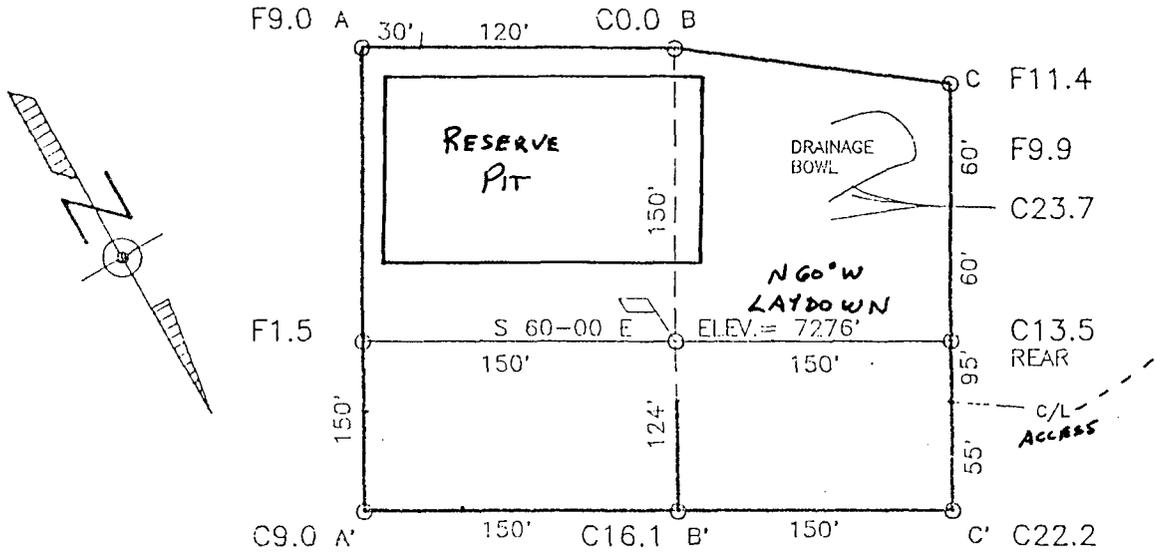
EXHIBIT G
COMPLETION RIG LAYOUT

BCO, Inc.



- A COMPLETION RIG
- B CIRCULATING PIT
- C PUMP
- D PIPE RACKS
- E FRAC EQUIPMENT AREA
- F FRAC TANKS

COMPANY: B.C.O. INC.
 LEASE: FEDERAL B-14
 FOOTAGE: 1152 FNL, 420 FEL
 SEC.: 27, TWN: T.23 N., RNG: R.7 W., NMPM
 ELEVATION: 7276'

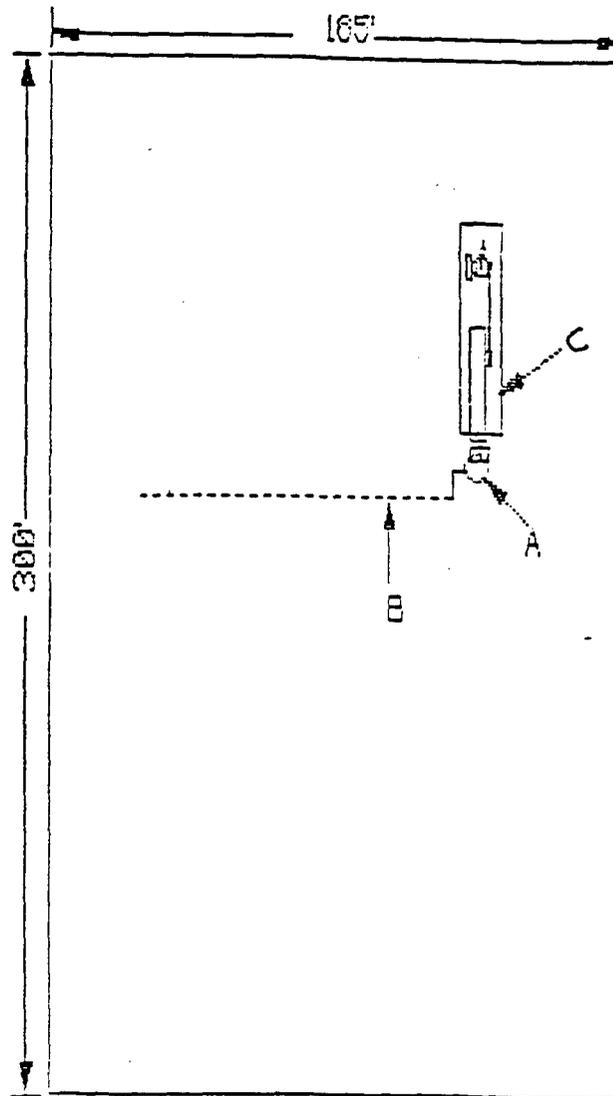


Daggett Surveying, Inc.

3539 E. 30th. Street Suite No. 7B Ph. (505) 328-1772
 Farmington, New Mexico 87401

EXHIBIT 'I'
PRODUCTION FACILITIES LAYOUT

BCO, Inc.



- A WELLHEAD
- B FLOWLINE - TO OFF-SITE FACILITY
- C PUMPJACK (IF NECESSARY)

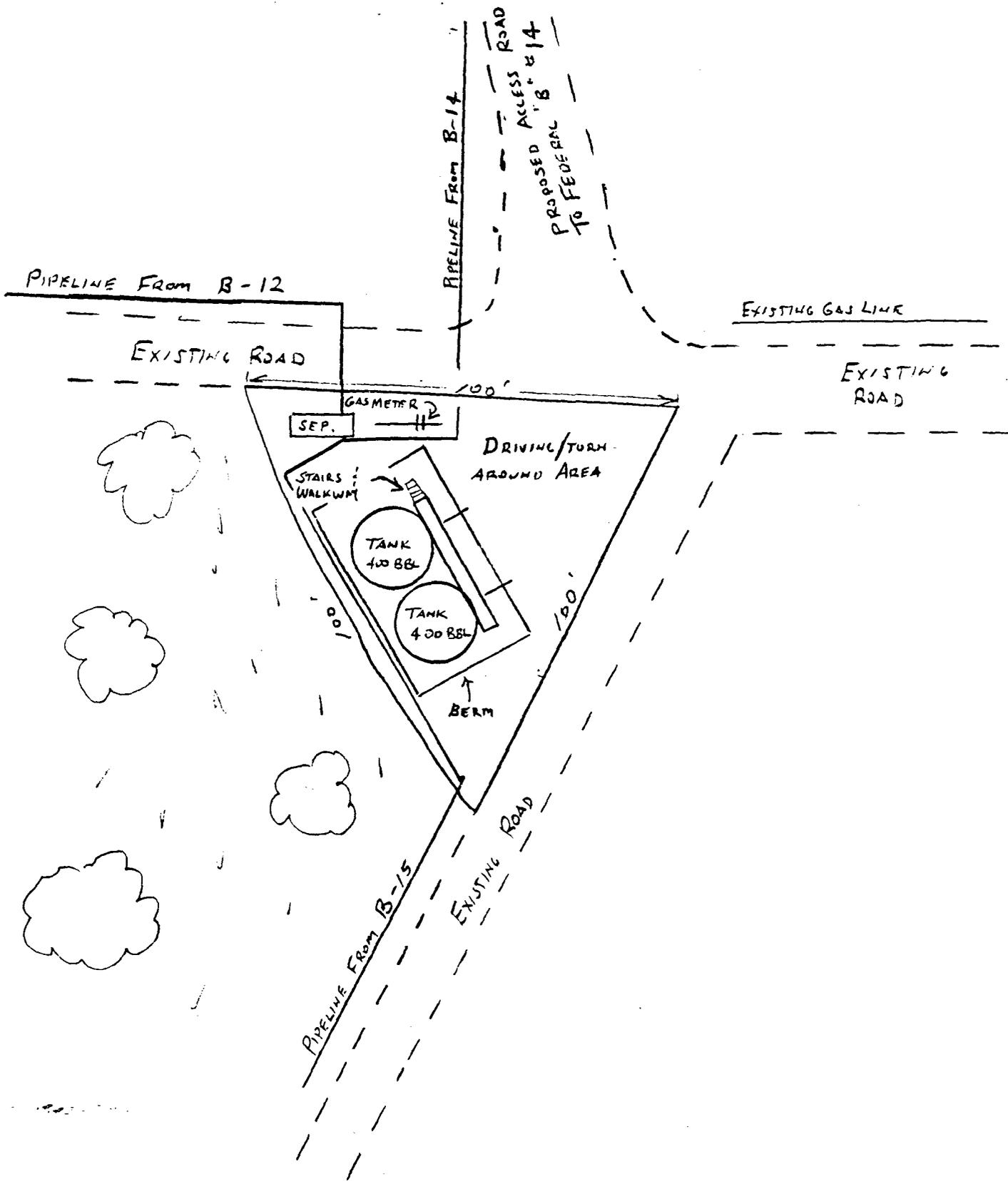


Exhibit "J" Central Facility Layout Federal "B" No. 12, 14, & 15 2400' FSL x 650' FEL Sec 27 T23N R7W Sandoval County, NM
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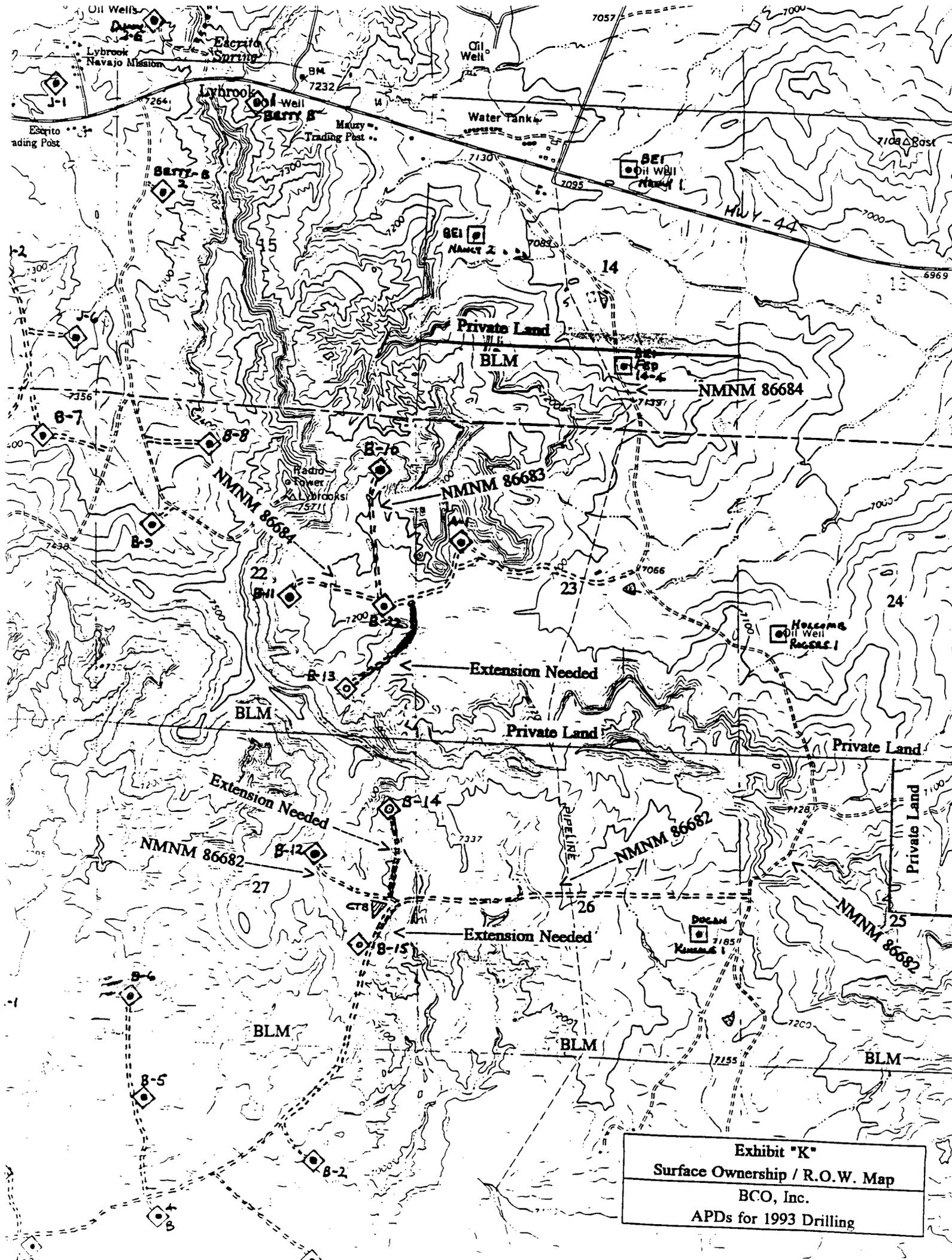


Exhibit "K"
 Surface Ownership / R.O.W. Map
 BCO, Inc.
 APDs for 1993 Drilling

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Issuing Office

Serial Number

RIGHT-OF-WAY GRANT/TEMPORARY USE PERMIT

1. A (right-of-way) (permit) is hereby granted pursuant to:

- a. Title V of the Federal Land Policy and Management Act of October 21, 1976 (90 Stat. 2776; 43 U.S.C. 1761);
- b. Section 28 of the Mineral Leasing Act of 1920, as amended (30 U.S.C. 185);
- c. Other (describe) _____

2. Nature of Interest:

a. By this instrument, the holder _____ receives a right to construct, operate, maintain, and terminate a _____ on public lands (or Federal land for MLA Rights-of-Way) described as follows:

b. The right-of-way or permit area granted herein is _____ feet wide, _____ feet long and contains _____ acres, more or less. If a site type facility, the facility contains _____ acres.

c. This instrument shall terminate on _____, _____ years from its effective date unless, prior thereto, it is relinquished, abandoned, terminated, or modified pursuant to the terms and conditions of this instrument or of any applicable Federal law or regulation.

d. This instrument may may not be renewed. If renewed, the right-of-way or permit shall be subject to the regulations existing at the time of renewal and any other terms and conditions that the authorized officer deems necessary to protect the public interest.

e. Notwithstanding the expiration of this instrument or any renewal thereof, early relinquishment, abandonment, or termination, the provisions of this instrument, to the extent applicable, shall continue in effect and shall be binding on the holder, its successors, or assigns, until they have fully satisfied the obligations and/or liabilities accruing herein before or on account of the expiration, or prior termination, of the grant.

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

State of New Mexico
 Energy, Minerals and Natural Resources Department

Form C-102
 Revised 1-1-89

OIL CONSERVATION DIVISION

P.O. Box 2088
 Santa Fe, New Mexico 87504-2088

DISTRICT I
 P.O. Box 1980, Hobbs, NM 88240

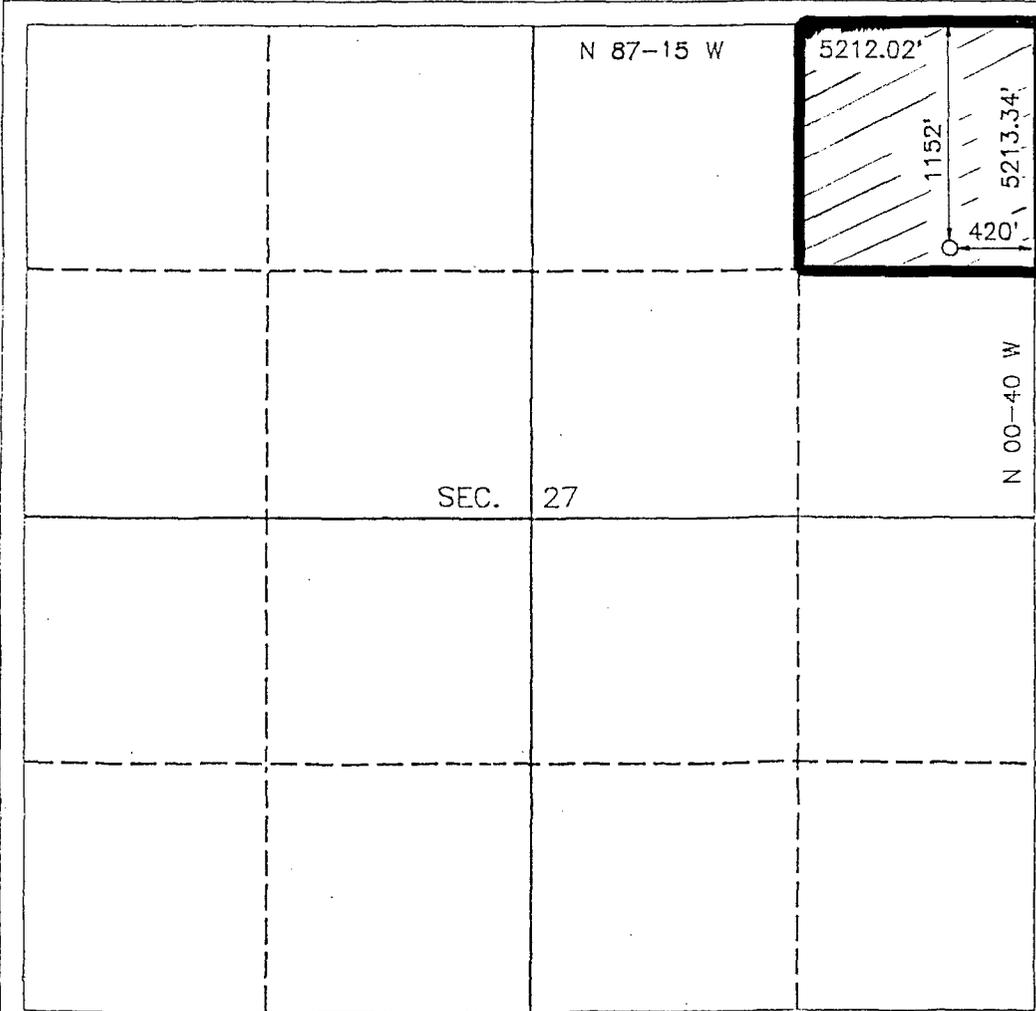
DISTRICT II
 P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
 1000 Rio Brazos Rd., Aztec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT
 All Distances must be from the outer boundaries of the section

Operator B.C.O. INC.		Lease FEDERAL "B"		Well No. 14
Unit Letter A	Section 27	Township T.23 N.	Range R.7 W.	County SANDOVAL
Actual Footage Location of Well: 1152 feet from the NORTH line and 420 feet from the EAST line				
Ground level Elev. 7276'	Producing Formation GALLUP	Pool LYBROOK GALLUP	Dedicated Acreage: 40 Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc?
 Yes No If answer is "yes" type of consolidation _____
 If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary). _____
 No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, 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.

Signature

Printed Name
NEEL L. DUNCAN

Position
PETROLEUM ENGINEER

Company
BCO, INC.

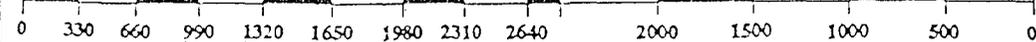
Date
10 SEP 92

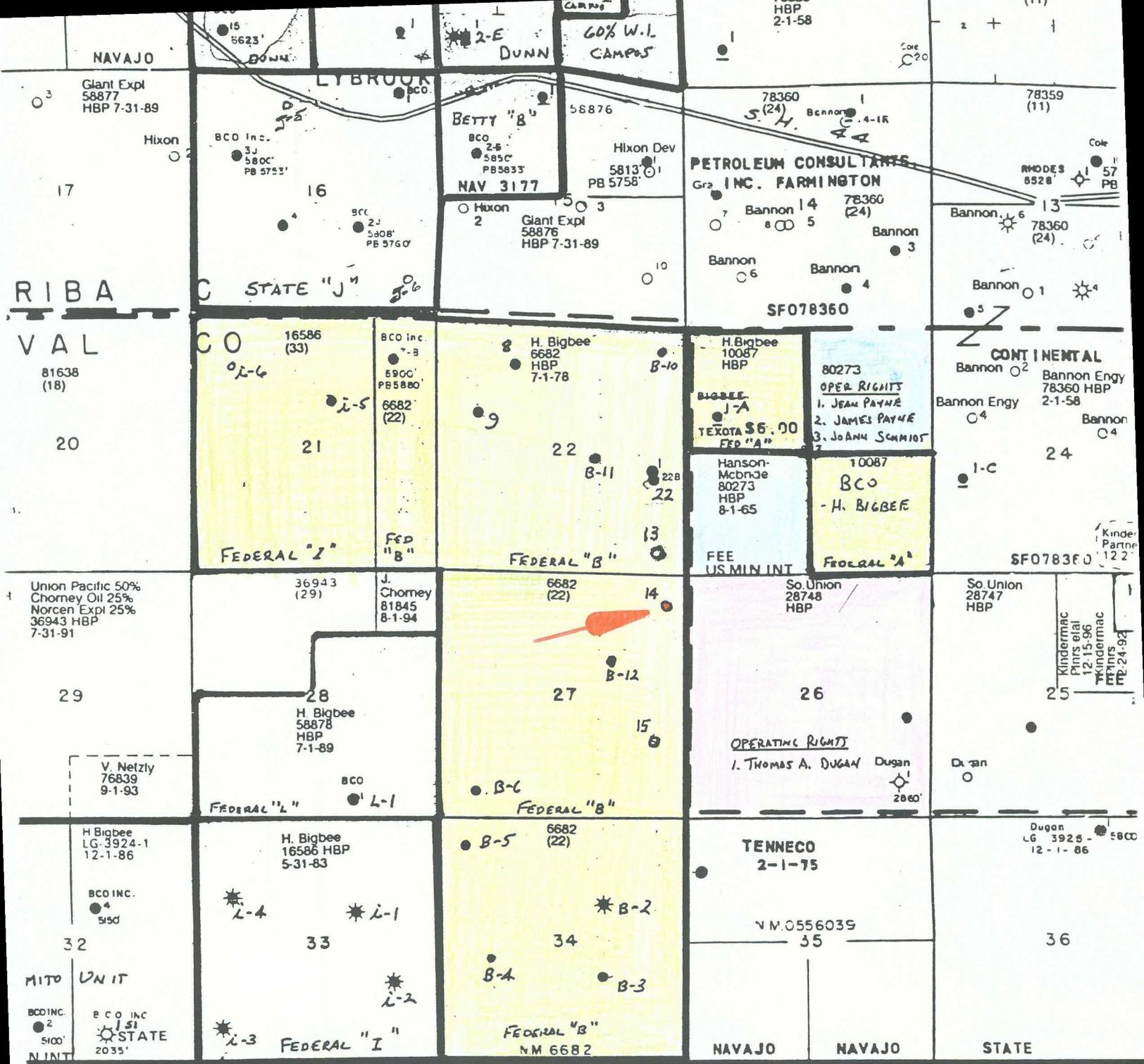
SURVEYOR CERTIFICATION
 I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed
AUGUST 1992

Signature & Seal of Professional Surveyor

Certificate No. **8894**





OPERATING RIGHTS:

- BCO
- DUGAN
- PAYNE & SCHMIDT

EXHIBIT "C"
OWNERSHIP PLAT

NAVAJO

NAVAJO

NAVAJO

NAVAJO

Union Pac et al
42046
7-1-91

5569
8-7-85

(11)

EXHIBIT "D"
NON-STANDARD LOCATION APPLICATION
Offset Well WI Owners
to Proposed Federal "B" No. 14

Well: Federal "B" No. 12
Operator: BCO, Inc.

Location: SW/4 NE/4 Sec 27 T23N R7W
N.M.P.M. Sandoval Co., NM

1. Harry L. Bigbee
2. Harry R. Bigbee
3. Nancy P. Bigbee
4. Elizabeth B. Keeshan
5. Donnan Stephenson

** No other wells within proximity **

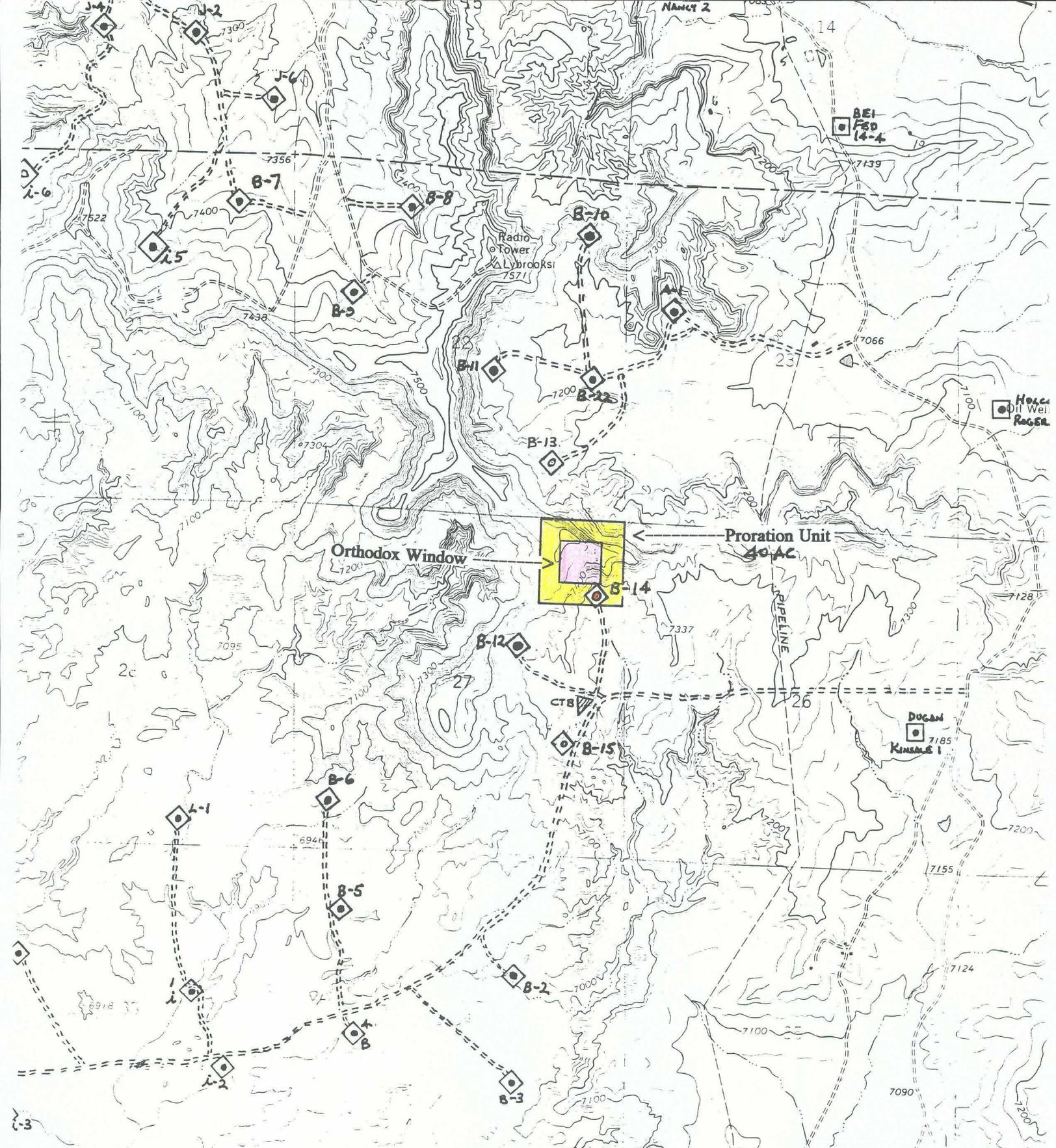


Exhibit "E"
Topographic Map
BCO, Inc.
Federal "B" No. 14
Lease: NM-6682
1152' FNL x 420' FEL
Sec 27 T23N R7W

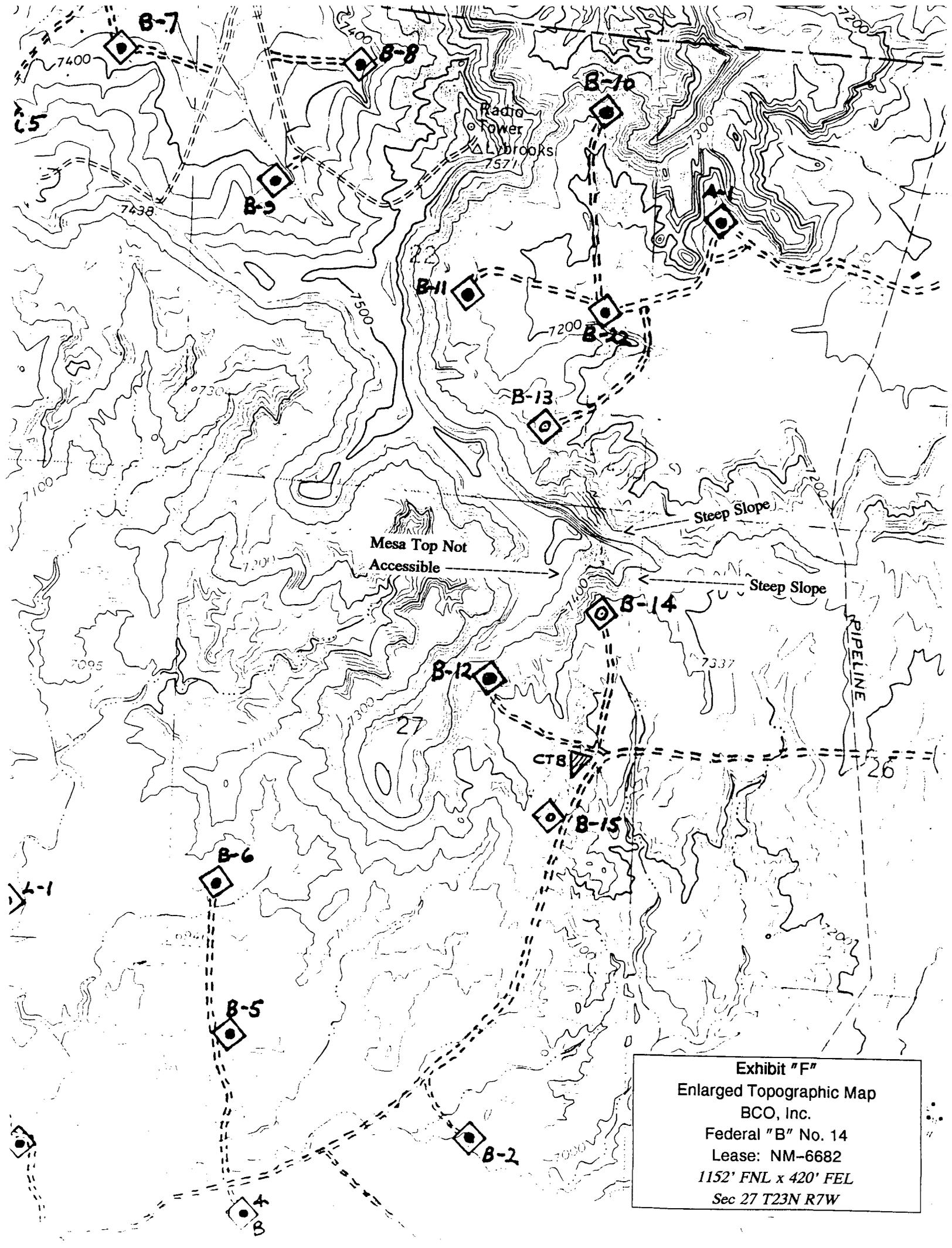


Exhibit "F"
Enlarged Topographic Map
BCO, Inc.
Federal "B" No. 14
Lease: NM-6682
1152' FNL x 420' FEL
Sec 27 T23N R7W



DIVISION OF CONSERVATION ARCHAEOLOGY

San Juan County
Museum Association

September 14, 1992

Neel L. Duncan
BCO, Inc.
135 Grant Avenue
Santa Fe, New Mexico 87501

Dear Mr. Duncan:

Our report on the archaeological survey of three proposed well pads (Federal "B" 13, 14 and 15), access roads and pipelines and the proposed Federal "B" 12, 14 and 15 Central Tank Battery is enclosed.

Six isolates were located during the survey. These are discussed in the Cultural Resources section of the report.

We have recommended clearance with the stipulations as discussed in the Recommendations section of the report.

The Bureau of Land Management will review this report and make the final decision on archaeological clearance for your project.

Also enclosed is an invoice for our services. Please contact us if you have any questions concerning the report or invoice.

Sincerely,

Deborah V. Gibson
Staff Archaeologist

cc: Resource Area Manager, Bureau of Land Management, Farmington (2)

EXHIBIT "G"

Federal "B" #14

Exhibit "H"
CERTIFICATE OF SERVICE - OFFSET OPERATORS
Non-Standard Location Application
BCO, Inc.

I certify that notice has been served to the following operators of BCO Inc.'s application for permit to drill Federal "B" No. 14 in a non-standard location at 1152' FNL x 420' FEL Sec 27 T23N R7W, Lybrook Gallup, Sandoval County, New Mexico.

1. Dugan Production Corporation
Attn: Thomas A. Dugan
P.O. Box 420
Farmington, New Mexico 87499

2. Southern Union Exploration, Inc.
Attn: Martin Boggs
324 Hwy 64 NBU 3001
Farmington, New Mexico 87401


16SEP92
Neel L. Duncan Date
Petroleum Engineer
& Production Manager