



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

RECEIVED
90 OCT 5 AM 9 29

1000 MIDWAY ROAD
AZTEC, NEW MEXICO 87410
(505) 334-0170

GARREY CARRUTHERS
GOVERNOR

Date: 10-3-90

ATTN: Mr. Stogner

Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504-2088

Re: Proposed MC _____
Proposed DHC _____
Proposed NSL X _____
Proposed SWD _____
Proposed WFX _____
Proposed PMX _____

Gentlemen:

I have examined the application dated 9-14-90
for the Applicant's Name: Rose Unit # 240
Operator Lease & Well No.

J-1-31W-6W and my recommendations are as follows:
Unit, S-T-R

Approve

Yours truly,

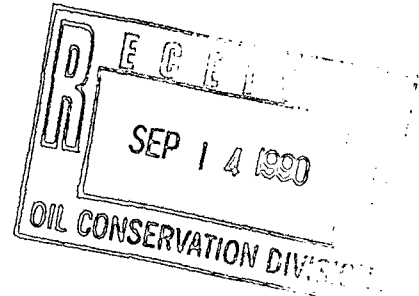
Ernie Bernal

MERIDIAN OIL

*Verbal OK
by E. Bush
10/4/90*

September 13, 1990

Mr. William LeMay
New Mexico Oil Conservation Division
Post Office Box 2088
Santa Fe, New Mexico 87501



Re: Meridian Oil Inc. Rosa Unit #240
1900'FSL, 900'FEL, Section 1, T-31-N, R-6-W
Rio Arriba County, New Mexico
NSP-1579(L)

Dear Mr. LeMay:

Meridian Oil Inc. is applying for amendment to NSP-1579(L) for the referenced location in the Fruitland Coal formation.

This well was originally approved for NSL-NSP and APD at 1310'FSL, 945'FEL, with Northwest Pipeline Corp. as operator. Meridian Oil Inc. took over operatorship on October 20, 1989. That application for permit to drill expired July 12, 1990, and was rescinded. Meridian Oil Inc. has now submitted an application for permit to drill at the referenced location.

This application for amendment to NSP-1579(L) is due to the presence of an eagle nest in the southwest quarter, Navajo Lake, topography and archaeological concerns. The Bureau of Land Management has told us no location will be allowed in the SW/4 of the section due to the eagle nesting concerns. All of Section 1 (Lots 5-10, W/2 SE/4 and the SW/4) is dedicated to this well, for a total of 303.88 acres.

The following attachments are for your review:

1. Application for Permit to Drill.
2. Completed C-102 at referenced footages.
3. Offset operators/owners plat. All surrounding lands are within Rosa Unit boundaries - Meridian Oil Inc. operator.
4. 7.5 minute topographic map showing the orthodox windows for the south-half dedication, and enlargement of the map to define topographic features.

Mr. William LeMay
Page Two
September 13, 1990

5. This well would be deemed economically unfeasible if directionally drilled to a standard bottom hole location in the SW/4 due to incremental directional drilling costs of \$110,000.00.
6. Archaeological report.
7. NSP-1579(L).

Please let me know if you require any other information.

Sincerely,




Peggy Bradfield
Regulatory Affairs

xc: Bureau of Land Management, Farmington
New Mexico Oil Conservation Division, Aztec District

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK DRILL	5. LEASE NUMBER SF-078772
1b. TYPE OF WELL GAS	6. IF INDIAN, ALL. OR TRIBE NAME
2. OPERATOR MERIDIAN OIL INC.	7. UNIT AGREEMENT NAME ROSA UNIT
3. ADDRESS & PHONE NO. OF OPERATOR P O BOX 4289 FARMINGTON, NM 87499	8. FARM OR LEASE NAME ROSA UNIT
4. LOCATION OF WELL 1900' FSL 900' FEL	9. WELL NO. 240
10. FIELD, POOL, OR WILDCAT BASIN FRUITLAND COAL	11. SEC. T. R. M OR BLK. SEC. 1 T31N R06W NMPM
14. DISTANCE IN MILES FROM NEAREST TOWN 15 MILES FROM NAVAJO DAM	12. COUNTY RIO ARRIBA
	13. STATE NM
15. DISTANCE FROM PROPOSED LOCATION 900' TO NEAREST PROPERTY OR LEASE LINE.	16. ACRES IN LEASE 17. ACRES ASSIGNED TO WELL 303.88
18. DISTANCE FROM PROPOSED LOCATION TO NEAREST WELL DR. 4000' COMPL., OR APPLIED FOR ON THIS LEASE.	19. PROPOSED DEPTH 20. ROTARY OR CABLE TOOLS 3187' ROTARY
21. ELEVATIONS (DF, FT, GR, ETC.) 6346' GL	22. APPROX. DATE WORK WILL START
23. PROPOSED CASING AND CEMENTING PROGRAM	
*SEE OPERATIONS PLAN	
24. AUTHORIZED BY:  REG. DRILLING ENGR.	<u>9/12/90</u> DATE

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE _____

NOTE: THIS FORMAT IS ISSUED IN LIEU OF US BLM FORM 3160-3.

Submit to Appropriate
District Office
State Leases - 4 copies
Fee Leases - 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

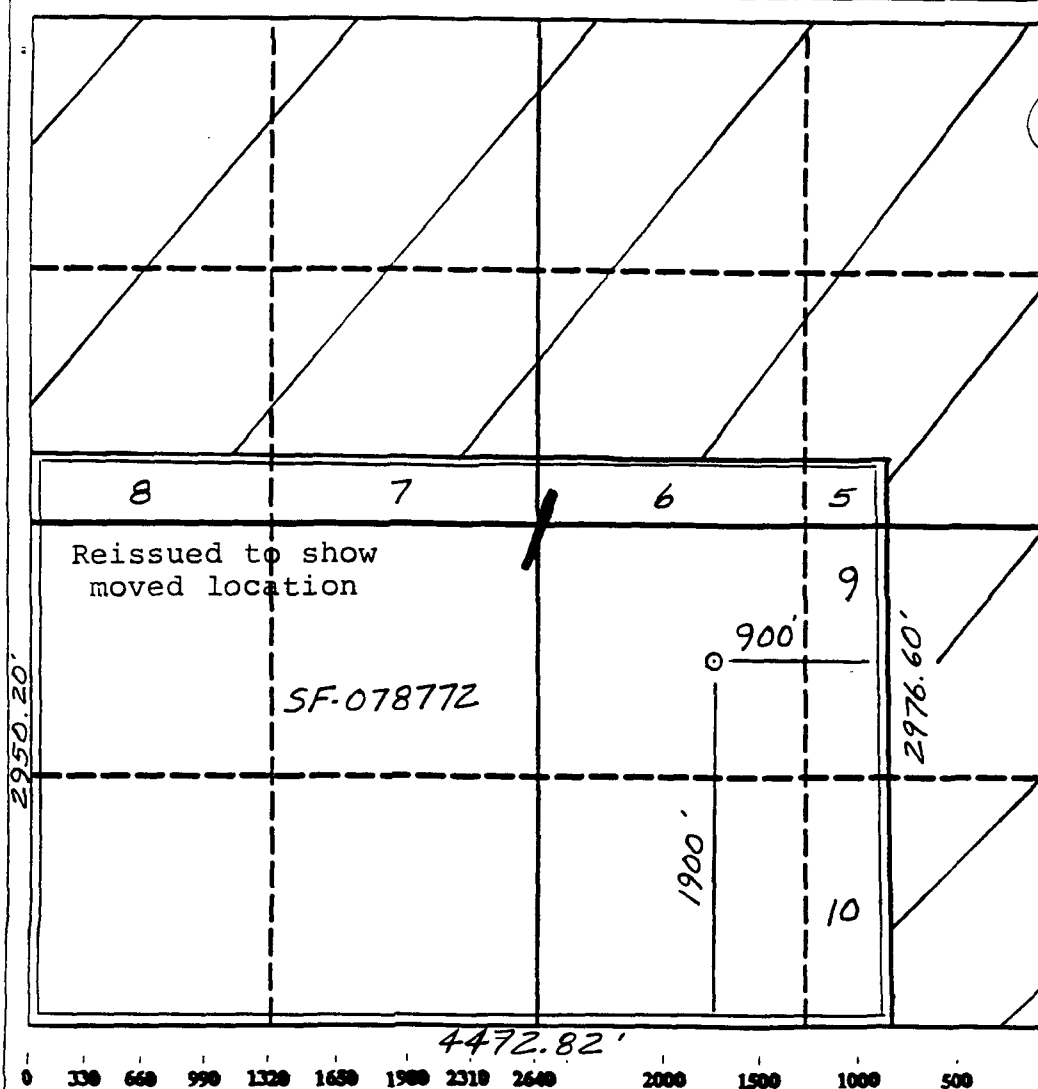
All Distances must be from the outer boundaries of the section

Operator Meridian Oil Inc.		Lease Rosa Unit (SF-078772)		Well No. 240
Unit Letter J	Section 1	Township 31 North	Range 6 West	County Rio Arriba
Actual Footage Location of Well: 1900 feet from the South line and 900 feet from the East line				
Ground level Elev. 6346'	Producing Formation Fruitland Coal		Pool Basin	Dedicated Acreage: 303.88 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 unitization

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.

Peggy Bradfield
Signature

Peggy Bradfield
Printed Name

Regulatory Affairs
Position

Meridian Oil Inc.
Company

9-10-90
Date

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.

12-7-89
Date Surveyed

Neale C. Edwards
Signature

Professional Surveyor

NEW MEXICO
6857

REGISTERED LAND SURVEYOR
6857

Neale C. Edwards

Well Name: 240 ROSA UNIT
 Sec. 1 T31N R06W
 BASIN FRUITLAND COAL

1900' FSL 900' FEL
 RIO ARRIBA NEW MEXICO
 Elevation 6346' GL

Formation tops: Surface- SAN JOSE

Ojo Alamo- 2425

Kirtland- 2530

Fruitland- 2960

Fruitland Coal Top- 3044

Fruitland Coal Base- 3184

Pictured Cliffs- 3191

Intermediate TD- 3002

Total Depth- 3187

Logging Program: Mud logs from intermediate to total depth.

Mud Program:	Interval	Type	Weight	Visc.	Fl. Loss
	0 - 300	Spud	8.4 - 8.9	40-50	no contro
	300 - 3002	Non-dispersed	8.4 - 9.1	30-60	no contro
	3002 - 3187	Formation Water	8.4		no contro

Casing Program:	Hole Size	Depth Interval	Csg. Size	Weight	Grade
	12 1/4"	0 - 300	9 5/8"	32.3#	H-40
	8 3/4"	0 - 3002	7"	20.0#	K-55
	6 1/4"	2952 - 3187	5 1/2"	15.5#	K-55

Tubing Program:	Depth Interval	Csg. Size	Weight	Grade
	0 - 3187	2 7/8"	6.5#	J-55

Float Equipment: 9 5/8" surface casing - saw tooth guide shoe. Centralizers will be run in accordance with Onshore Order #2.

7" intermediate casing - guide shoe and self-fill insert float valve. Three centralizers run every other joint above shoe. Run insert float one joint above the guide shoe. Two turbolizing type centralizers - one below and one into the base of the Ojo Alamo @ 2530'. Standard centralizers thereafter every fourth joint up to the base of the surface pipe.

5 1/2" production casing - float shoe on bottom and a pre-drilled liner run to the 7" casing with a minimum 50' overlap. Liner hanger is a double slip grip type.

Wellhead Equipment: 9 5/8" x 7" x 2 7/8" x 11" 3000 psi xmas tree assembly.

Cementing:

9 5/8" surface casing - cement with 239 sacks of class "B" cement with 1/4# flocele/sack and 3% calcium chloride (282 cu ft. of slurry, 200% excess to circulate to surface). WOC 12 hours. Test casing to 600 psi for 30 minutes.

7" intermediate casing - lead with 437 sacks of 65/35 class "B" poz with 6% gel, 2% calcium chloride and 1/2 cu ft. Perlite/sack (10.3 gallons of water/sack) tail with 100 sacks of class "B" with 2% calcium chloride. 963 cu ft. of slurry, 110% excess to circulate to surface. If hole conditions permit, a 600 ft spacer will be run ahead of the cement slurry to avoid mud contamination of the cement. WOC 12 hours. If cement does not circulate to surface, a temperature log will be run after 8 hours to determine TOC.

5 1/2" liner - do not cement.

BOP and Tests:

Surface to intermediate TD - 11" 2000 psi(minimum) double gate BOP stack (Reference Figure #1). Prior to drilling out surface casing, test rams to 600 psi for 30 minutes.

Intermediate TD to TD - 7 1/16" 2000 psi(minimum) double gate BOP stack (Reference Figure #2). Prior to drilling out intermediate casing, test blind rams and casing to 2500 psi for 30 minutes; all pipe rams and casing to 2500 psi for 30 minutes each.

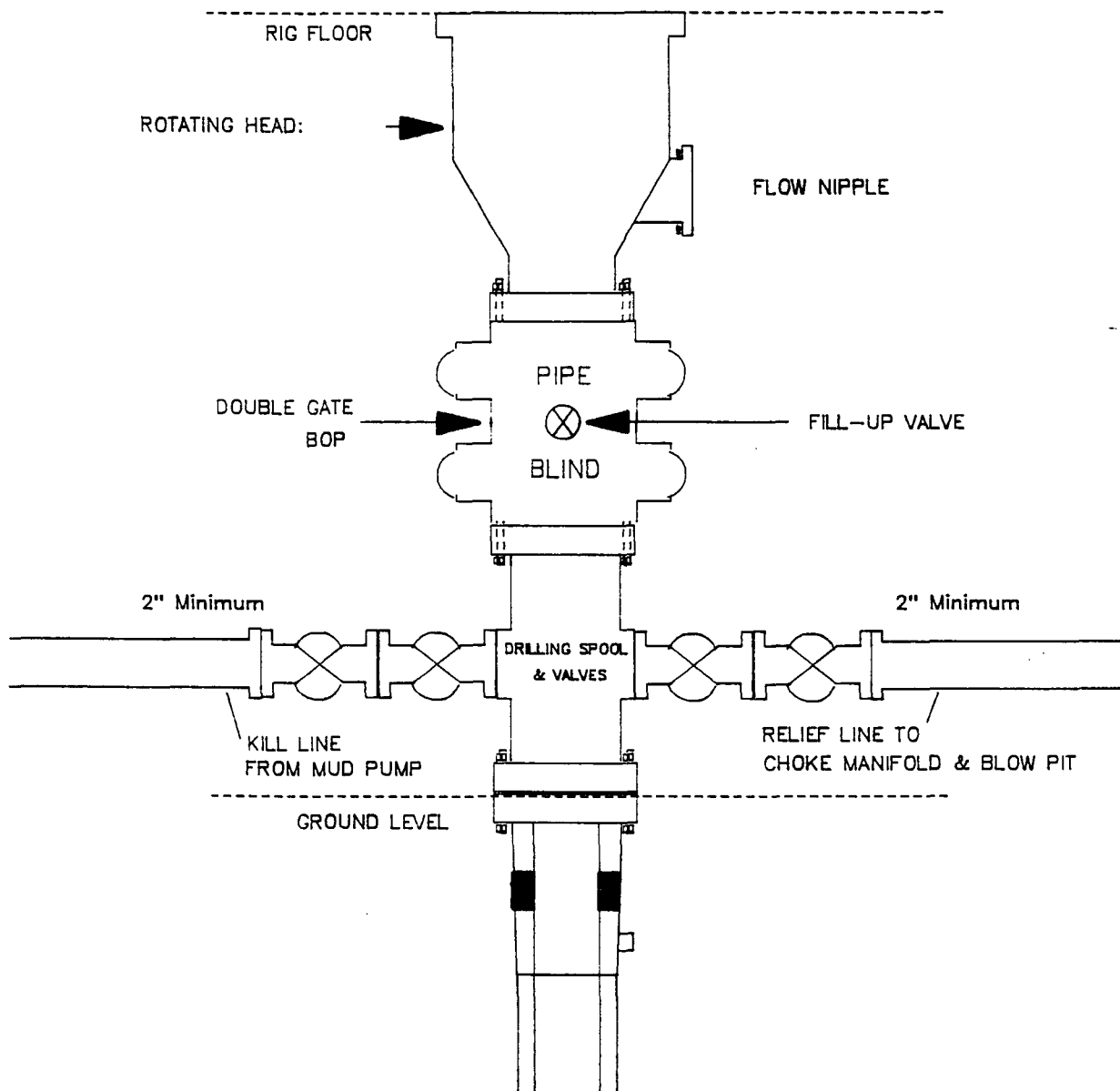
From surface to TD - choke manifold (Reference Figure #3).

Pipe rams will be actuated at least once each day and blind rams actuated once each trip to test proper functioning. An upper kelly cock valve with handle and drill string safety valves to fit each drill string will be maintained and available on the rig floor.

Additional Information:

- * The Fruitland coal formation will be completed.
- * Anticipated Fruitland pore pressure is 1705 psi.
- * This gas is dedicated.
- * The S/2 of Section 1 is dedicated to this well.
- * New casing will be utilized.
- * Cementing Contractor will provide the BLM with a chronological log including the pump rate and pressure, and the slurry density and volume for all cement jobs.
- * Pipe movement (either rotation or reciprocation) will be done if hole conditions permit.

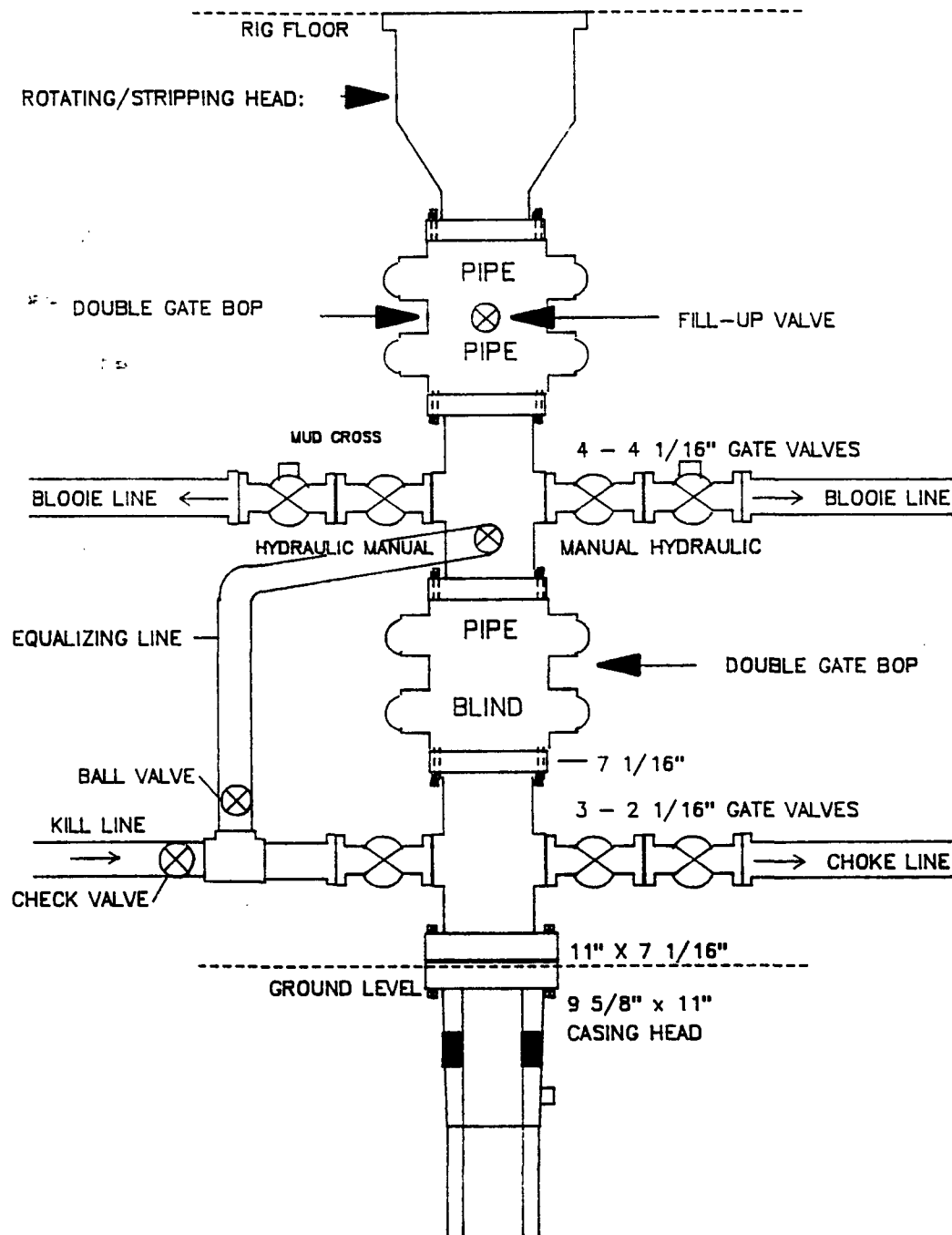
MERIDIAN OIL INC.
Drilling Rig
BOP Configuration



Minimum BOP installation for a typical Fruitland Coal well from surface to Intermediate casing point. 11" Bore (10" Nominal), 2000psi minimum working pressure double gate BOP to be equipped with blind and pipe rams. A Schaffer Type 50 equivalent rotating head to be installed on the top of BOP. All equipment is 2000psi working pressure/or greater.

Figure #1

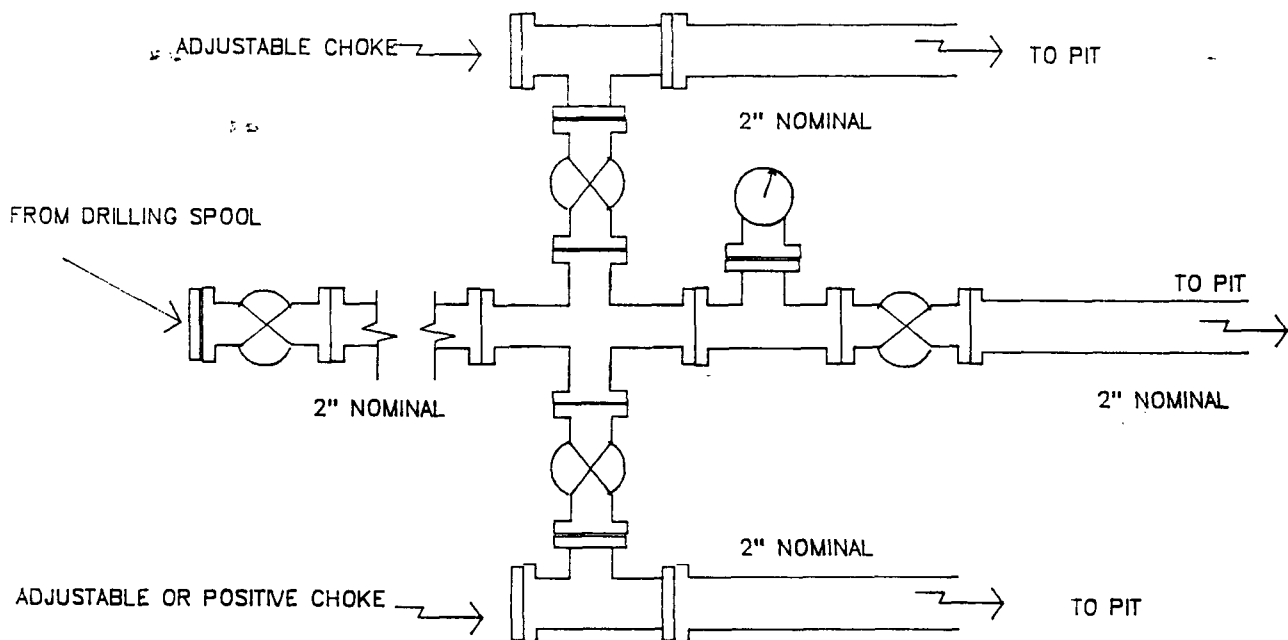
MERIDIAN OIL INC.
Completion Rig
BOP Configuration



Minimum BOP installation for a typical open-hole Fruitland Coal well from intermediate TD to TD. 7 1/16" Bore (6" Nominal), 2000psi working pressure/ or greater double stack double gate BOP equipped with three pipe and one blind ram.

Figure #2

MERIDIAN OIL INC.
Typical Fruitland Coal Well
Choke Manifold Configuration



Minimum choke manifold installation for a typical Fruitland Coal well from surface to Total Depth. 2", 2000psi working pressure equipment with two chokes.

Figure #3

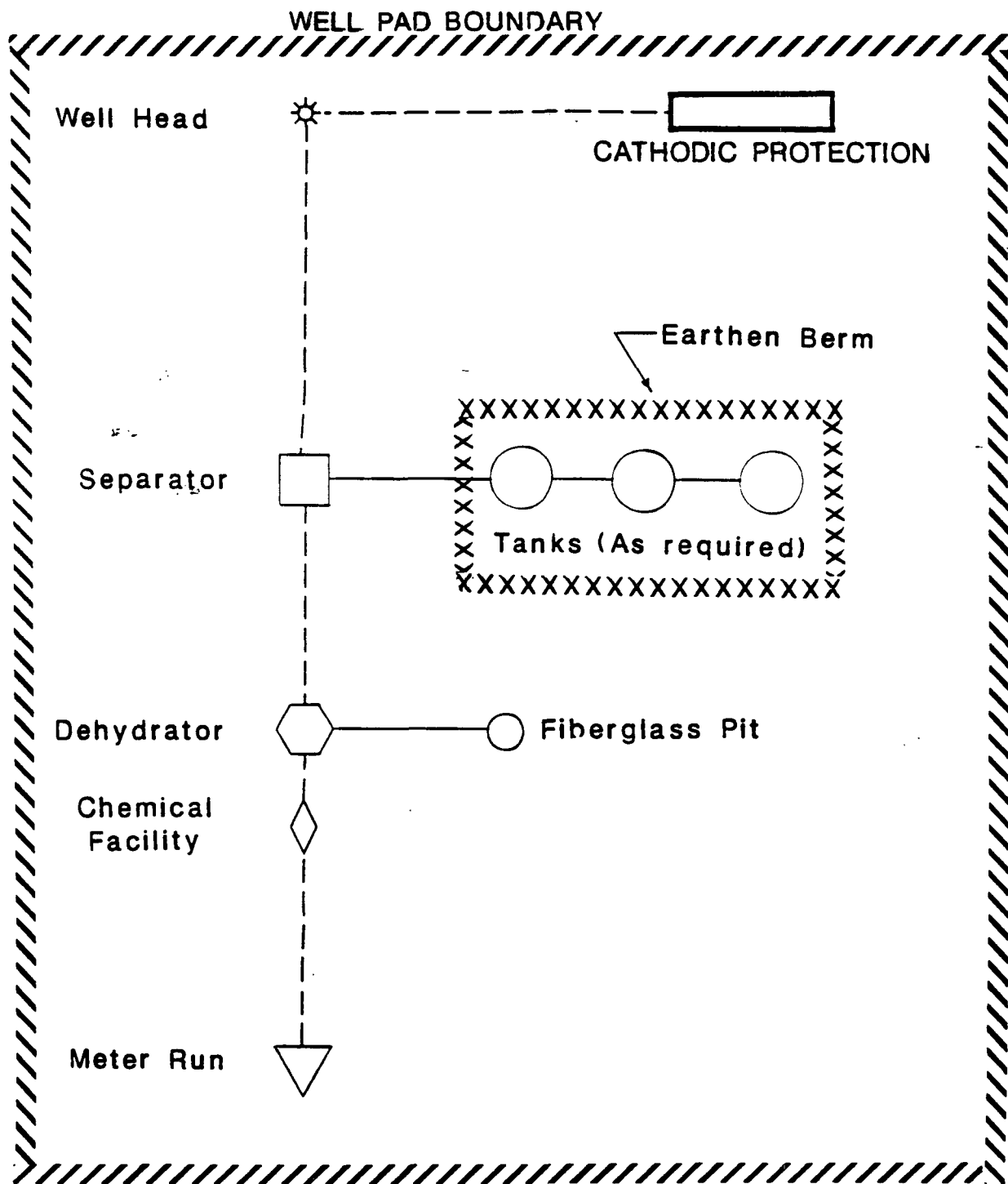
Multi-Point Surface Use Plan
Meridian Oil Inc.
Rosa Unit #240

1. Existing Roads - Refer to Map No. 1. Existing roads used to access the proposed location will be properly maintained for the duration of the project. Bureau of Land Management right-of-way has been applied for as shown on Map No. 1.
2. Planned Access Road - Refer to Map No. 1. The required new access road is shown on Map No. 1. The gradient, shoulder, crowning and other design elements will meet or exceed those specified by the responsible government agency. The new access road surface will not exceed twenty feet (20') in width. No additional turnarounds or turnouts will be required. Upon completion of the project, the access road will be adequately drained to control soil erosion. Approximately 2,000' of access road will be constructed. Pipelines are indicated on Map No. 1A.
3. Location of Existing Wells - Refer to Map No. 1A.
4. Location of Existing and/or Proposed Facilities if Well is Productive -
 - a. On the Well Pad - Refer to Plat No. 1, anticipated production facilities plat.
 - b. Off the Well Pad - Anticipated facilities off the well pad will be applied for as required.
5. Location and Type of Water Supply - Water will be hauled by truck for the proposed project and will be obtained from La Jara Water Hole located in SW/4 Section 11, T-30-N, R-06-W, New Mexico.
6. Source of Construction Materials - If construction materials are required for the proposed project, such materials will be obtained from a commercial quarry.
7. Methods of Handling Waste Materials - All garbage and trash materials will be removed from the site for proper disposal. A portable toilet will be provided for human waste and serviced in a proper manner. If liquids are left in the reserve pit after completion of the project, the pit will be fenced until the liquids have had adequate time to dry. The location clean-up will not take place until such time as the reserve pit can be properly covered over to prevent run-off from carrying waste materials into the watershed. All earthen pits will be so constructed as to prevent leakage from occurring; no earthen pit will be located on natural drainage. Hazardous waste will be disposed of in accordance with Federal Regulations.
8. Ancillary Facilities - None anticipated.
9. Wellsite Layout - Refer to the location diagram (Plat No. 2) and to the wellsite cut and fill diagram (Plat No. 2A). The Blow Pit will be constructed with a 2'/160' grade to allow positive drainage to the Reserve Pit and prevent standing liquids in the Blow Pit.

10. Plans for Restoration of the Surface - After completion of the proposed project, the location will be cleaned and leveled. The location will be left in such a condition that will enable reseeding operations to be carried out. Seed mixture as designated by the responsible government agency will be used. The reseeding operations will be performed during the time period set forth by the responsible government agency. The permanent location facilities will be painted as designated by the responsible government agency.
11. Surface Ownership - Bureau of Land Management.
12. Other Information - Environmental stipulations as outlined by the responsible government agency will be adhered to. Refer to the archaeological report for a description of the topography, flora, fauna, soil characteristics, dwellings, historical and cultural sites.
13. Operator's Representative and Certification - Meridian Oil Regional Drilling Manager, Post Office Box 4289, Farmington, NM 87499, telephone (505) 326-9700. I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which 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 Meridian Oil Inc. and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

 9/12/90
Regional Drilling Engineer

JWC/adw



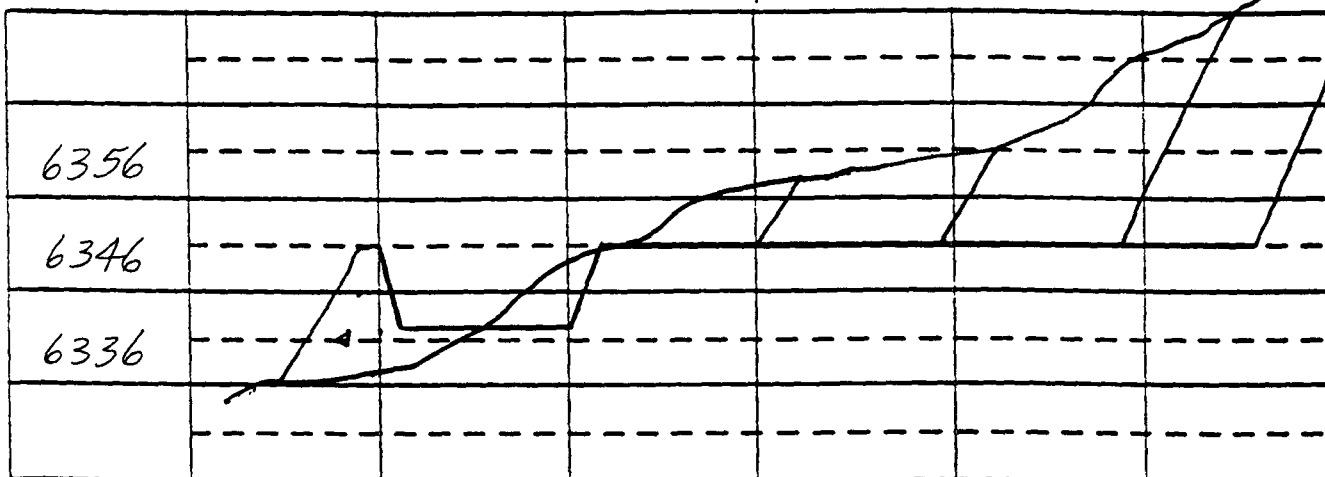
PLAT #1

MERIDIAN OIL
ANTICIPATED
PRODUCTION FACILITIES
FOR A
FRUITLAND WELL

KFR 2/90

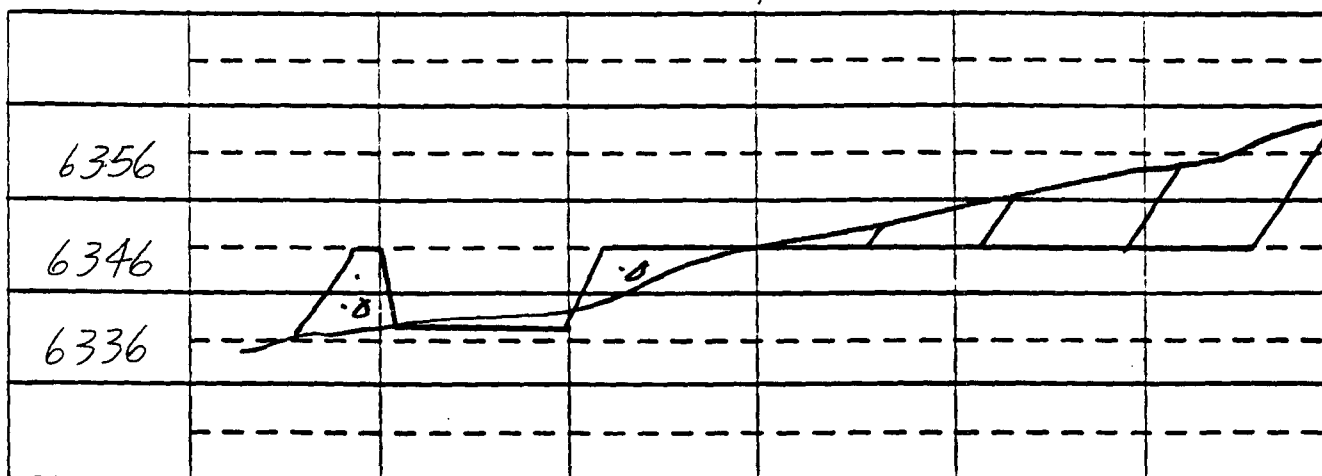
A - A' Vert: 1" = 20' Horiz: 1" = 50'

C/L



B - B'

C/L



C - C'

C/L

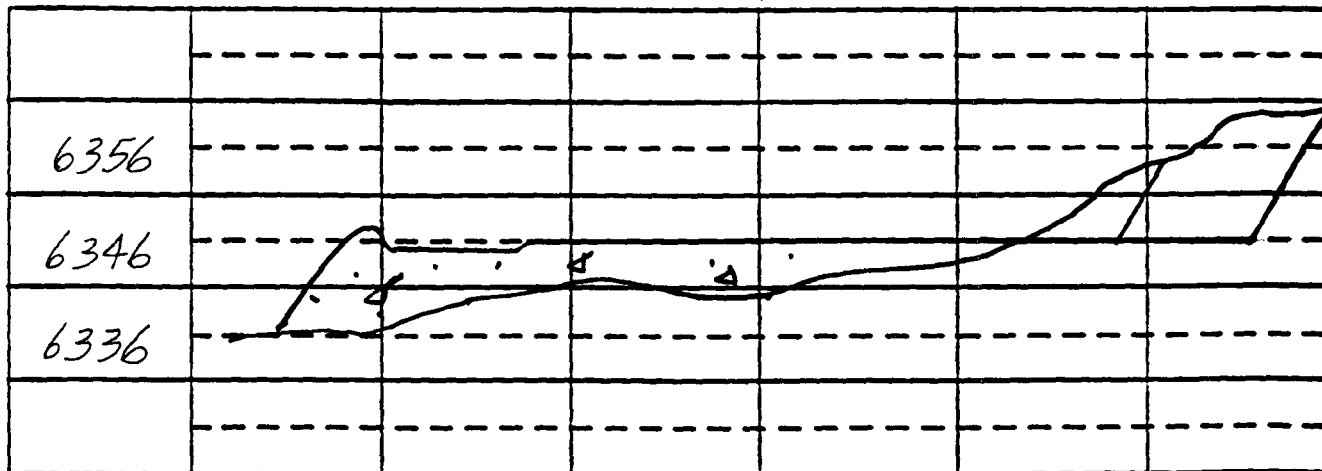


EXHIBIT: PLAT #2A

Name: MOI ROSA UNIT #240

Footage: 1900 FSL 900 FEL

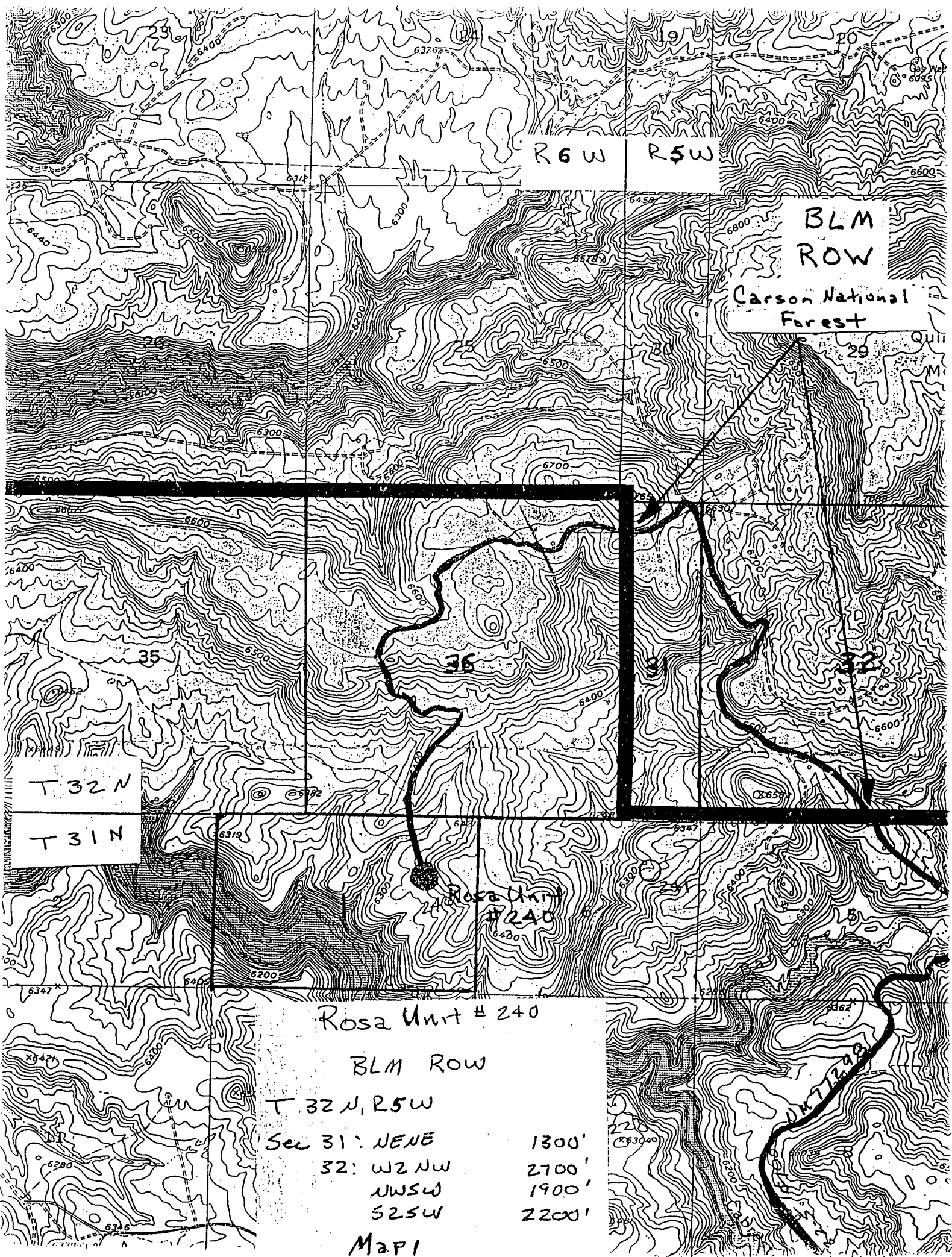
Sec 1 T- 31 -N,R- 6 -W NMPM

Co. RIO ARRIBA St. NM

Elevation: 6346' Date: 12-7-89

REVISED 9-6-90

Plot XC
2/4/90



R6W

R5W

BLM
ROW

Carson National
Forest

Quill
M

T 32 N

T 31 N

Rosa Unit
#240

Rosa Unit # 240

BLM ROW

T 32 N, R 5 W

Sec 31: NENE

1300'

32: W2 NW

2700'

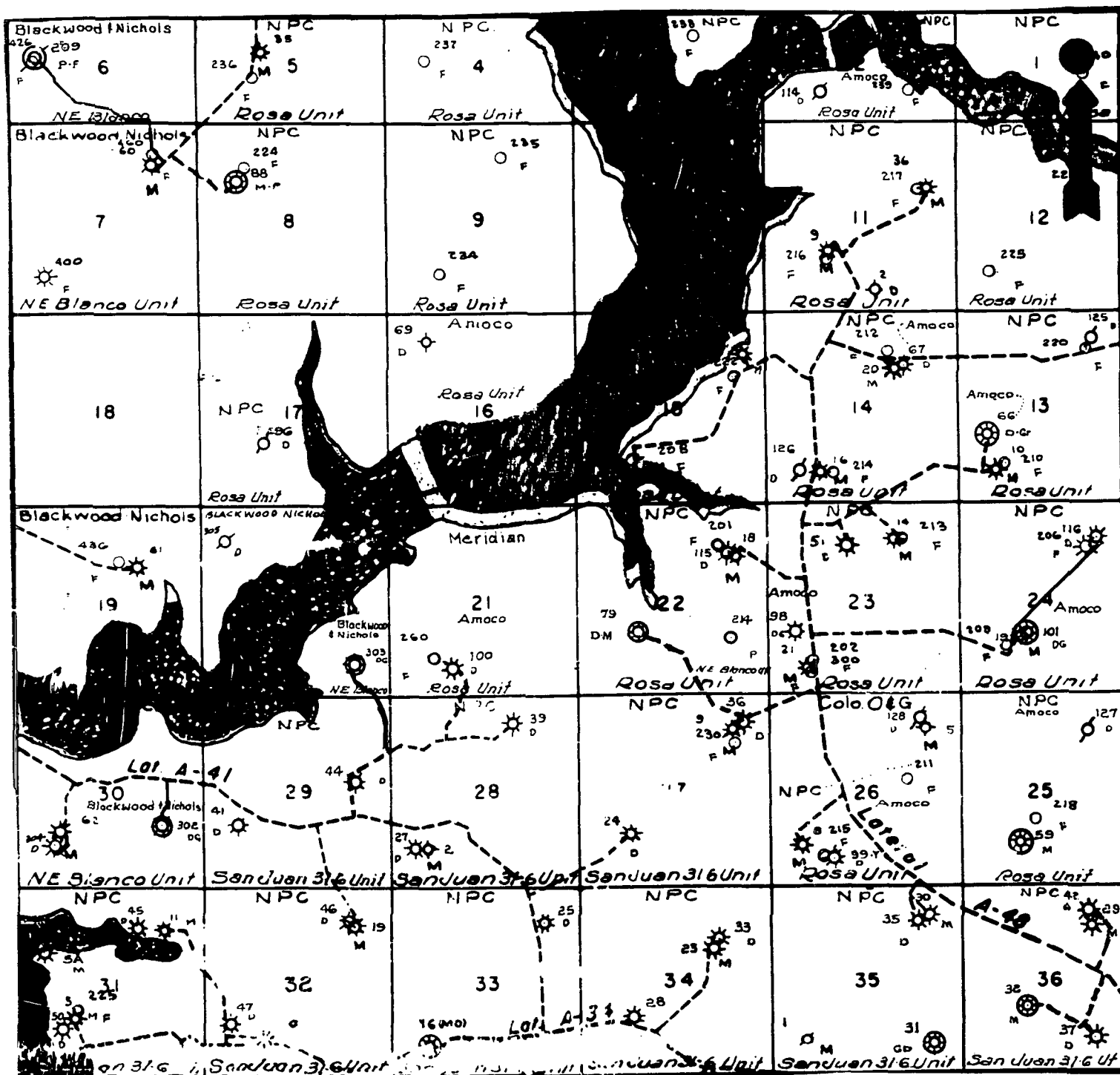
NWSW

1900'

S2SW

2200'

Map 1



MERIDIAN OIL INC.
 Pipeline Map
 T-31-N, R-06-W
 San Juan and Rio Arriba Counties, New Mexico

MAP 1A

ROSA UNIT #240

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised 1-1-89

OIL CONSERVATION DIVISION

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

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

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

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

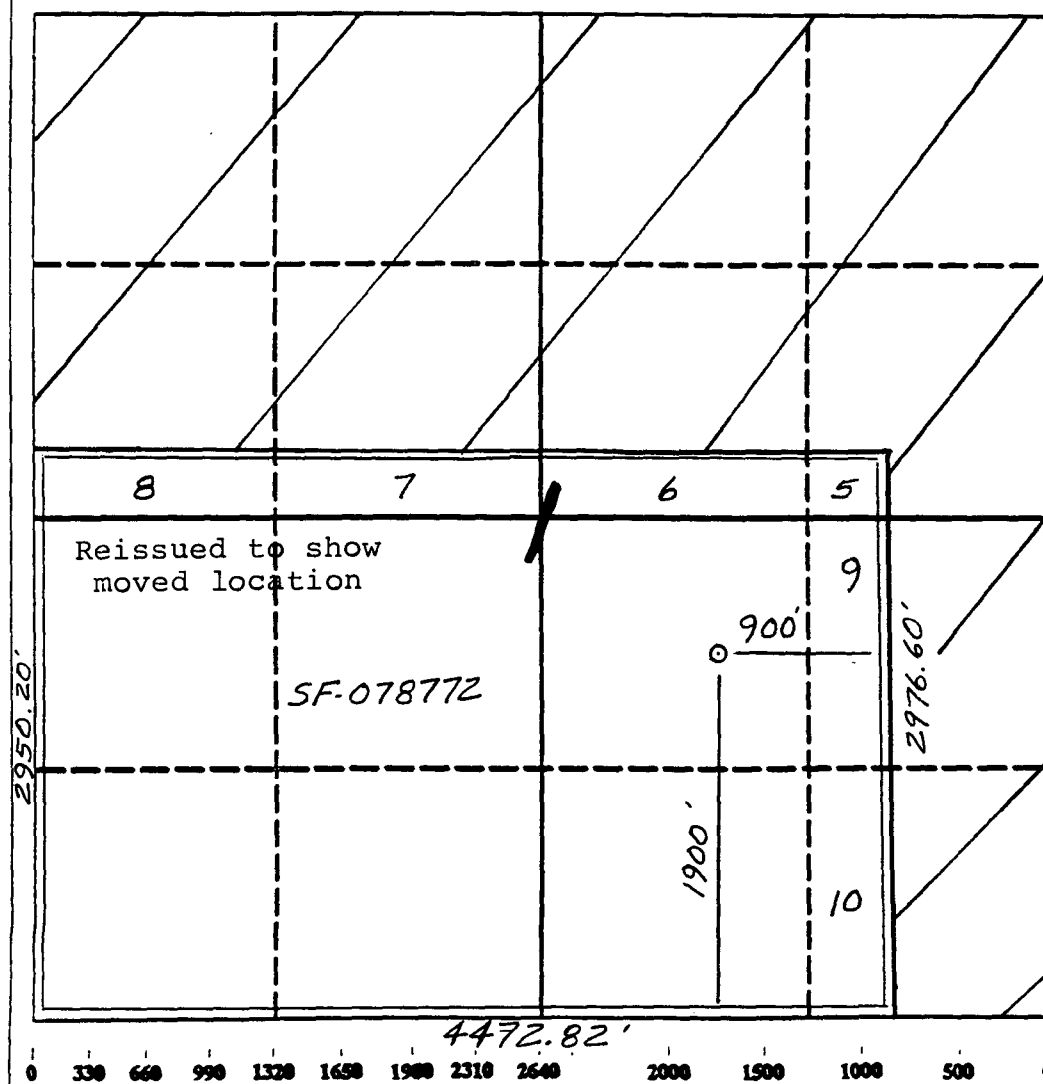
All Distances must be from the outer boundaries of the section

Operator Meridian Oil Inc.			Lease Rosa Unit (SF-078772)		Well No. 240
Unit Letter J	Section 1	Township 31 North	Range 6 West	County Rio Arriba	
Actual Footage Location of Well: 1900 feet from the South line and 900 feet from the East line					
Ground level Elev. 6346'	Producing Formation Fruitland Coal		Pool Basin	Dedicated Acreage: 303.88 Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure 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 unitization

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.

Peggy Bradfield
Signature

Peggy Bradfield

Printed Name

Regulatory Affairs

Position

Meridian Oil Inc.

Company

9-13-90

Date

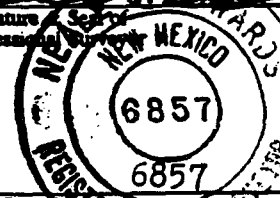
SURVEYOR CERTIFICATION

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.

12-7-89

Date Surveyed

Neale C. Edwards
Signature
Professional Surveyor



Certificate No.

Neale C. Edwards

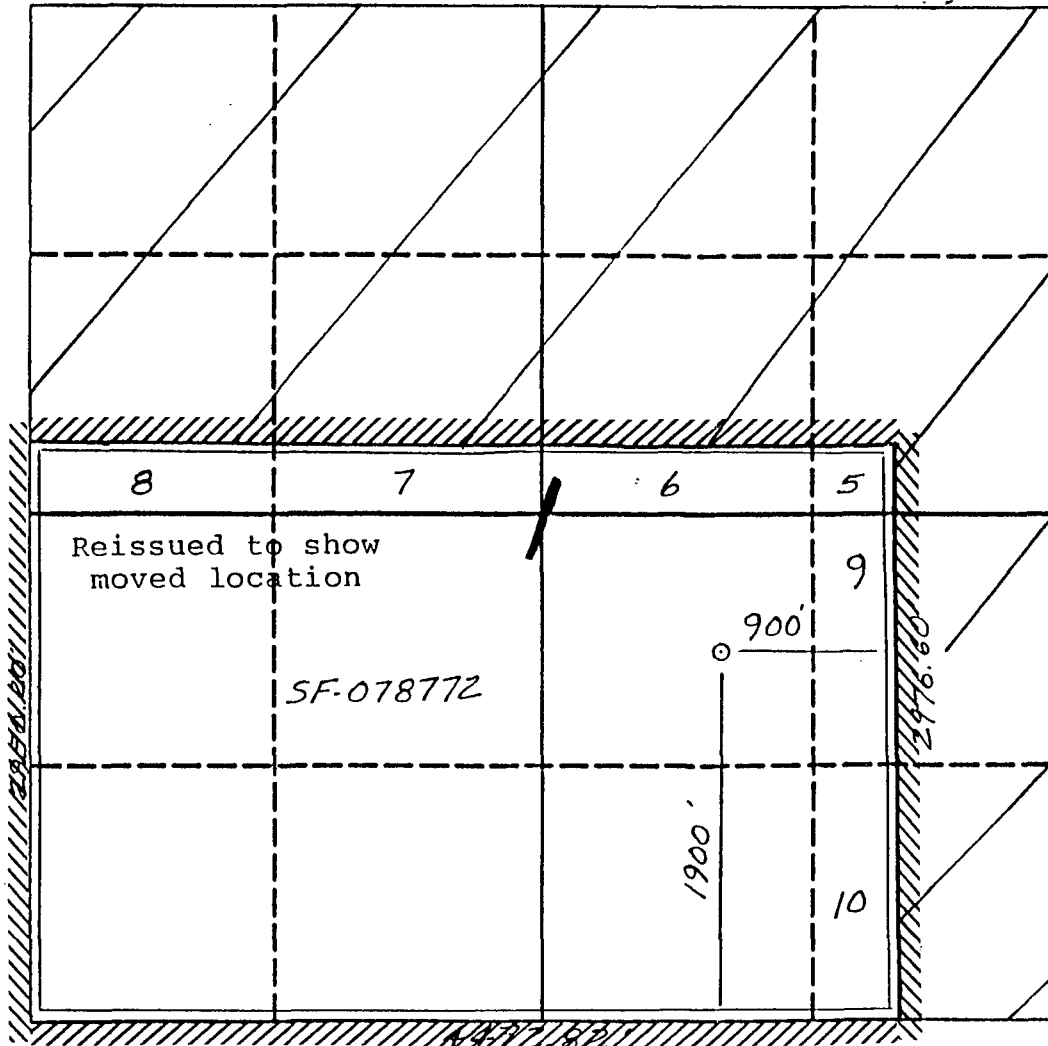
MERIDIAN OIL INC

Well Name Rosa Unit #240

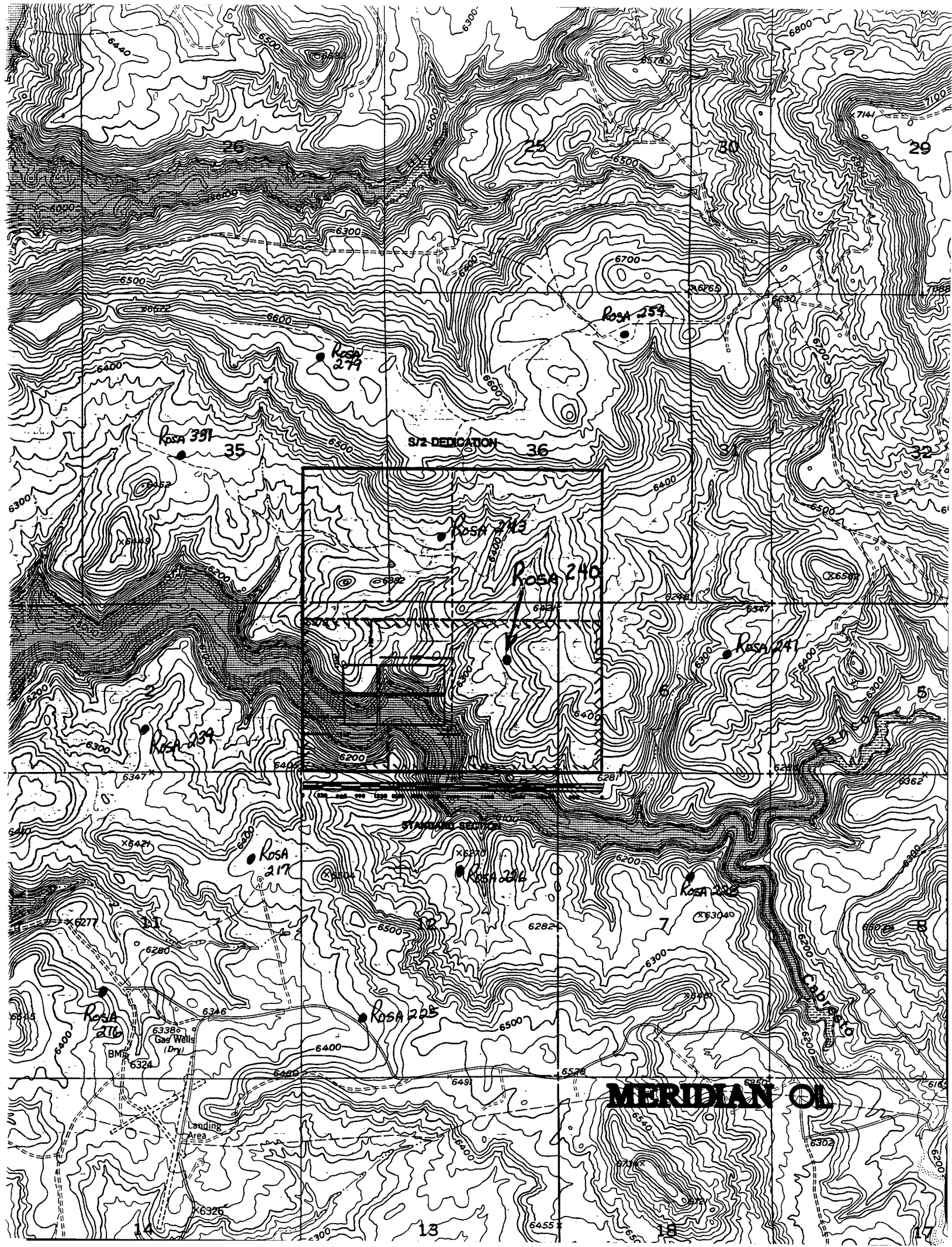
Footage 1900' FSL, 900' FEL

APPLICATION FOR NON-STANDARD LOCATION

County Rio Arriba State New Mexico Section 1 Township 31N Range 6W



Remarks All surrounding lands are within the Rosa Unit boundaries
Meridian Oil Inc., Operator



ROSA 391

ROSA 379

ROSA 359

3/2 DEDICATION

ROSA 343

ROSA 240

ROSA 241

ROSA 239

ROSA 217

ROSA 216

ROSA 212

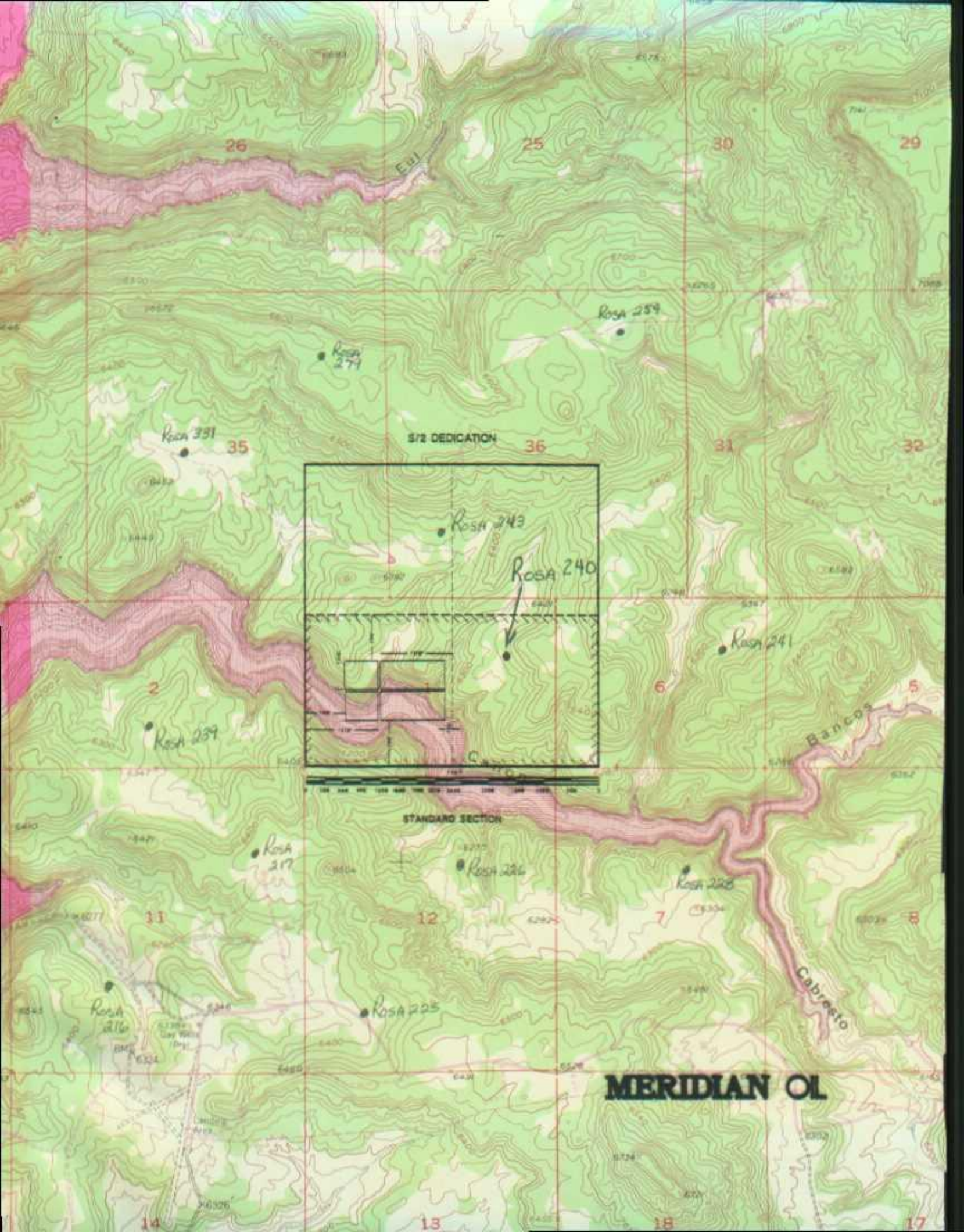
ROSA 216

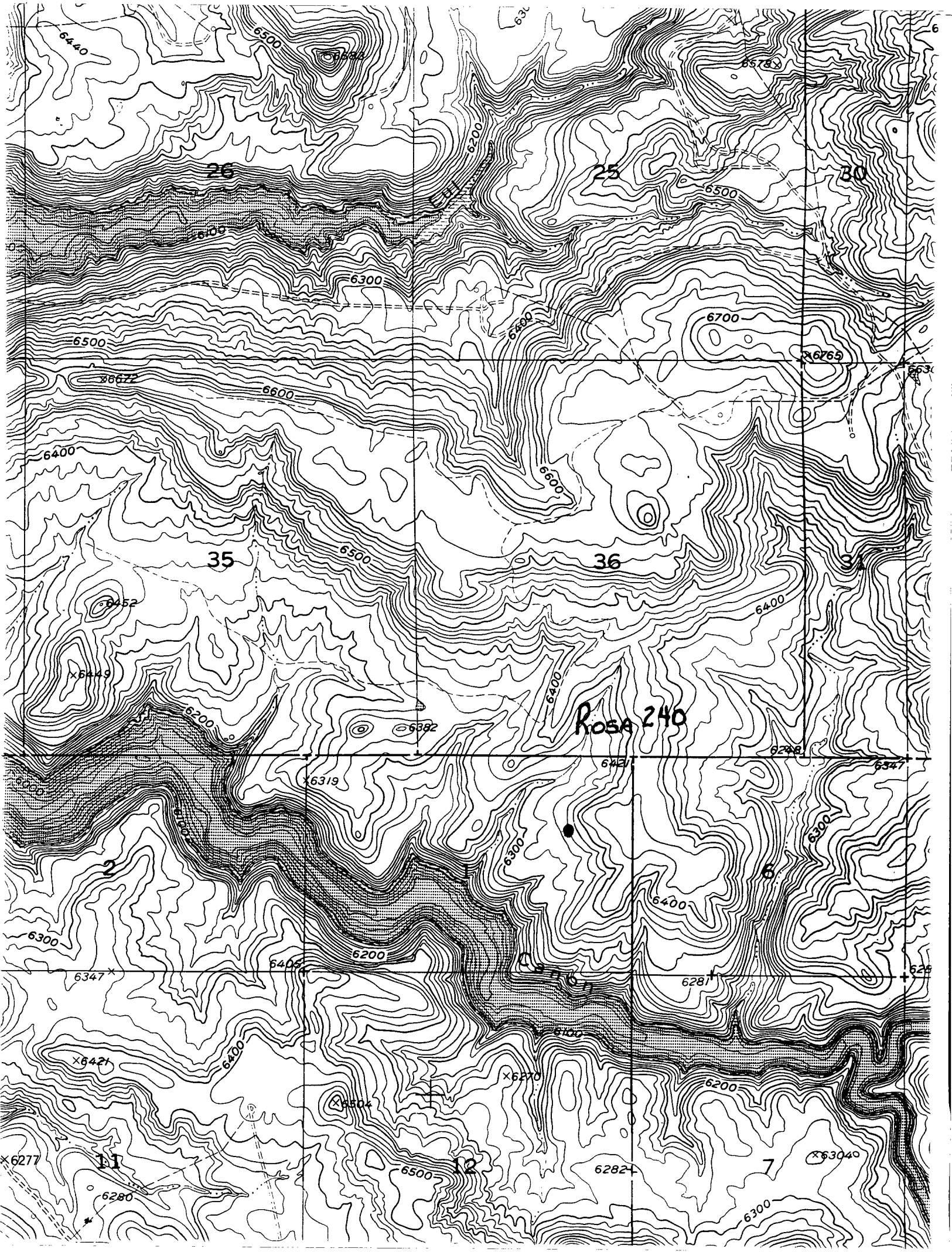
ROSA 225

MERIDIAN OIL

Gas Wells (Dry)

Landing Area





**ARCHAEOLOGICAL SURVEY OF
MERIDIAN OIL INCORPORATED'S
ROSA UNIT 240 WELL PAD AND ACCESS ROAD
RIO ARriba COUNTY, NEW MEXICO**

1 900 S 900 E

LAC REPORT 89142

By
Steven L. Fuller

LA PLATA ARCHAEOLOGICAL CONSULTANTS
P.O. Box 783
Dolores, Colorado 81323

(303) 882-4933

New Mexico Cultural Resource Use Permit No. 19-2920-89-F
New Mexico State Blanket Permit 89-30

January 18, 1989

Prepared For:
Meridian Oil Incorporated
P.O. Box 4289
Farmington, New Mexico 87499-4289

INTRODUCTION

The archaeological survey of Meridian Oil Incorporated's Rosa Unit 240 well pad and access road near Laguna Seca Draw east of Navajo Reservoir was conducted by personnel of La Plata Archaeological Consultants on December 2 and 3, 1989. The field work was conducted by Steven L. Fuller and Rich Fleming; Fuller also acted as administrator for the project. The well pad had been previously staked by personnel of Northwest pipeline and restaked recently by Meridian Oil personnel. The survey was conducted at the request of Mr. Charles Werner of Meridian Oil.

The project is located partially on lands administered by the Farmington Resource Area of the Bureau of Land Management's Albuquerque District and is within Rio Arriba County, New Mexico (Figure 1). The south edge of the well pad survey area extends into lands managed by the Bureau of Reclamation and the access road crosses through about 4000 feet of State of New Mexico lands. The BLM portion of the survey was conducted under the authority of Cultural Resource Use Permit No. 19-2920-89-F issued to La Plata Archaeological Consultants. The work on State lands was conducted under the authority of New Mexico Blanket permit 89-30.

The area was surveyed for a well pad and access road. An 8.6 acre block was surveyed around the well pad and a corridor measuring 150 feet by 6000 feet was surveyed for the access road alignment. Two archaeological sites were encountered; one was previously recorded and was rerecorded for this project. Both sites were on the southwest edge of the original wellpad location and the pad was subsequently moved 150 feet to the northwest. An additional 660 by 150 foot area was examined to expand the buffer zone to the northwest. Two isolated occurrences were encountered and recorded along the access route. The two sites are avoided by the final project location and archaeological clearance is recommended for the Rosa Unit 240 well pad and access road, given certain protective stipulations.

PREFIELD RECORDS SEARCH

On November 30, 1989, the records located in the Farmington Resource Area Office were reviewed. Survey work that has been conducted in the vicinity of the project area includes only a few well pad surveys and pipeline segments. The access road and well pad was probably surveyed in 1988 by Archaeological Consultants for Northwest Pipeline (Karlson 1989) and one site was recorded then that was rerecorded for this survey. A small portion of the Val Verde Gathering System lies within one mile of the north end of the access road. A total of seven previously recorded sites are within one mile of the proposed well pad and access road and the nearest is adjacent to the edge of the original well pad location. The one previously recorded site (BLM35422) has been

avoided and no portions of any of the other previously recorded sites will be impacted by this proposed action. These seven sites are shown on Figure 1a which are included only with BLM copies of this report. The seven sites are described as follows:

- LA6529 - Gobernador Phase Navajo habitation
- LA6530 - Gobernador Phase Navajo habitation
- BLM33246 - Piedra Phase habitation
- BLM35422 - Anasazi Rosa Piedra Phase sherd and lithic scatter
- BLM35995 - Anasazi Pueblo I habitation
- BLM36009 - Anasazi BMIII-PI habitation
- BLM35996 - Unknown Activity locus

FIELD METHODS

Prior to the survey, the proposed well pad was staked at the center and the four corners. When the well pad was relocated, it was staked at the center and at four points around the perimeter. Off-pad construction areas on the resurveyed pad were delimited with black and gold flagging tape extending from 50 to 75 feet from the edge of the staked pad. A 6.8 acre block (580 by 510 feet) was surveyed centered on the original well pad center stake, which was designed to cover the 280 by 210 foot well pad, a 50 foot construction zone, and a 100 foot buffer for cultural resources. The 6.8 acre block was expanded 150 feet to the northwest to include room to move the relocated well pad. The final survey block measured 730 by 510 feet (8.5 acres) and was surveyed by pedestrian transects which were no further than 15 m or 50 feet apart.

The access road extends about 6000 feet south from an existing bladed oilfield road. The access road corridor was surveyed by the two archaeologists who walked parallel transects down one side of the flagged centerline and returned down the opposite side, covering a total width of about 150 feet, or 37.5 feet per transect.

The one new archaeological site was recorded on a Laboratory of Anthropology site form, mapped, and photographed. The previously recorded site was fully rerecorded using the same methods. The two isolated occurrences were fully recorded in the field.

ENVIRONMENT

The proposed project well pad is located on a bench just north of Bancos Canyon in the area east of Navajo Reservoir. The bench extends to the southwest of the well pad and a sandstone slope extends to the northeast up to a higher bench or mesa. The access road starts on a high mesa that separates Bancos Canyon from Eul Canyon to the north. The road drops off a steep slope to the south and follows a narrow ridge to the south before dropping off of another steep rocky slope.

Soils are variable due to the changing topography and range from nonexistent on steep rocky slopes and ridges to fairly deep sandy loam loess deposits on the bench to the west of the well pad.

The steep portions of the project area are covered by a pinyon-juniper woodland except for some areas along the road that have been chained. The well pad is covered by pinyon and juniper except for the southwest edge that is characterized by an open sagebrush shrubland.

Water sources are probably present in the bottom of Bancos Canyon several thousand feet northwest of the wellpad. The area is currently used for livestock grazing with only minor oil and gas development in the immediate vicinity.

PROJECT LOCATION AND DESCRIPTION

Rosa #240 Well Pad and access road

Legal Description: Well pad is within T31N, R6W, Section 1, SE 1/4 NW 1/4 SE 1/4, NMPM; 1900 FSL, 900 FEL, Rio Arriba County, New Mexico (See Figure 2, well location plat); Access road will cross through T32N, R6W, Section 36, W 1/2 and extend through T31N, R6W, Section 1 NE 1/4.

Elevation: 6320 to 6630 feet

Map Reference: USGS Bancos Mesa NW, New Mexico 7.5' 1954 (photorevised 1982)

Land Jurisdiction: Bureau of Land Management, Farmington Resource Area; State of New Mexico; Bureau of Reclamation

Project Area: Well pad will measure 280 by 210 feet. Access road will measure 6000 feet in length by 20 feet in width

Surveyed Area: A 730 by 510 foot block surrounding the well center stake (8.5 acres) was surveyed to cover the original location and the expanded area to the northwest to cover the relocation. Access road survey covered a 6000 by 150 foot corridor (20.7 acres). Total survey area includes 29.3 acres.

Results: Site LA75670 is located approximately 135 feet west of the southwest corner of the relocated well pad (Figure 2). Site BLM35422 is located

11/11/88

Footage: 1900 FSL 900 FEL

Sec 1 T- 31 -N.R- 6 -W NMPM

Co. RIO ARRIBA St. NM

12-7-89

Buffer Zone

Construction Zone

Proposed fence

LA75670

BLM35422

Area surveyed for original well location

Figure 2

50' 100'

approximately 175 feet south of the southwest corner of the relocated well pad (Figure 2). Isolated Occurrences 1 and 2 were encountered and recorded along the access road (Figure 1).

CULTURAL RESOURCES

One previously recorded archaeological site was rerecorded and a new archaeological site was recorded during this survey. Both sites appear to be habitations or seasonal habitations and both are likely to contain abundant data on the prehistory of this area. Consequently, both are considered eligible for nomination to the National Register of Historic Places and both should be considered Category 2 sites. They are described as follows:

Site Number: BLM35422

Description: This Anasazi site consists of a series of rubble artifact scatters that may represent surface structures (Figure 3). The site was recorded in 1988 and defined as a probable campsite. Also noted during the reevaluation were two midden areas. The site is located on an alluvial fan at the base of a steep rocky slope and post-occupational deposition has probably buried significant portions of the site including other structural areas. Based on the artifact density and the presence of several structural areas, the site is interpreted to represent a habitation, although a seasonal habitation function is also possible. The ceramic assemblage includes hundreds of early Pueblo gray body sherds, a Rosa Black-on-white bowl sherd, and a Bluff Black-on-red bowl sherd. The site likely dates to the Rosa Phase or between about A.D. 700 and 800. Also noted were numerous mano fragments and one metate fragment.

Site Number: LA75670

Description: This possible Basketmaker III habitation consists of three discontinuous rubble scatters that may represent small surface structures and a large midden deposit to the south (Figure 4). A very faint depression may exist in the center of the site and probably represents a pithouse. Based on the layout of the site and the apparently discontinuous nature of the surface structures, the site may be a Basketmaker III single unit habitation. The ceramic assemblage is small, consisting only of less than 20 early Pueblo gray sherds, despite the presence of a rich and extensive midden deposit. A large assemblage of one and two-hand mano fragments and a basin metate fragment implies that an earlier component may also be present, possibly dating to the Basketmaker II period.

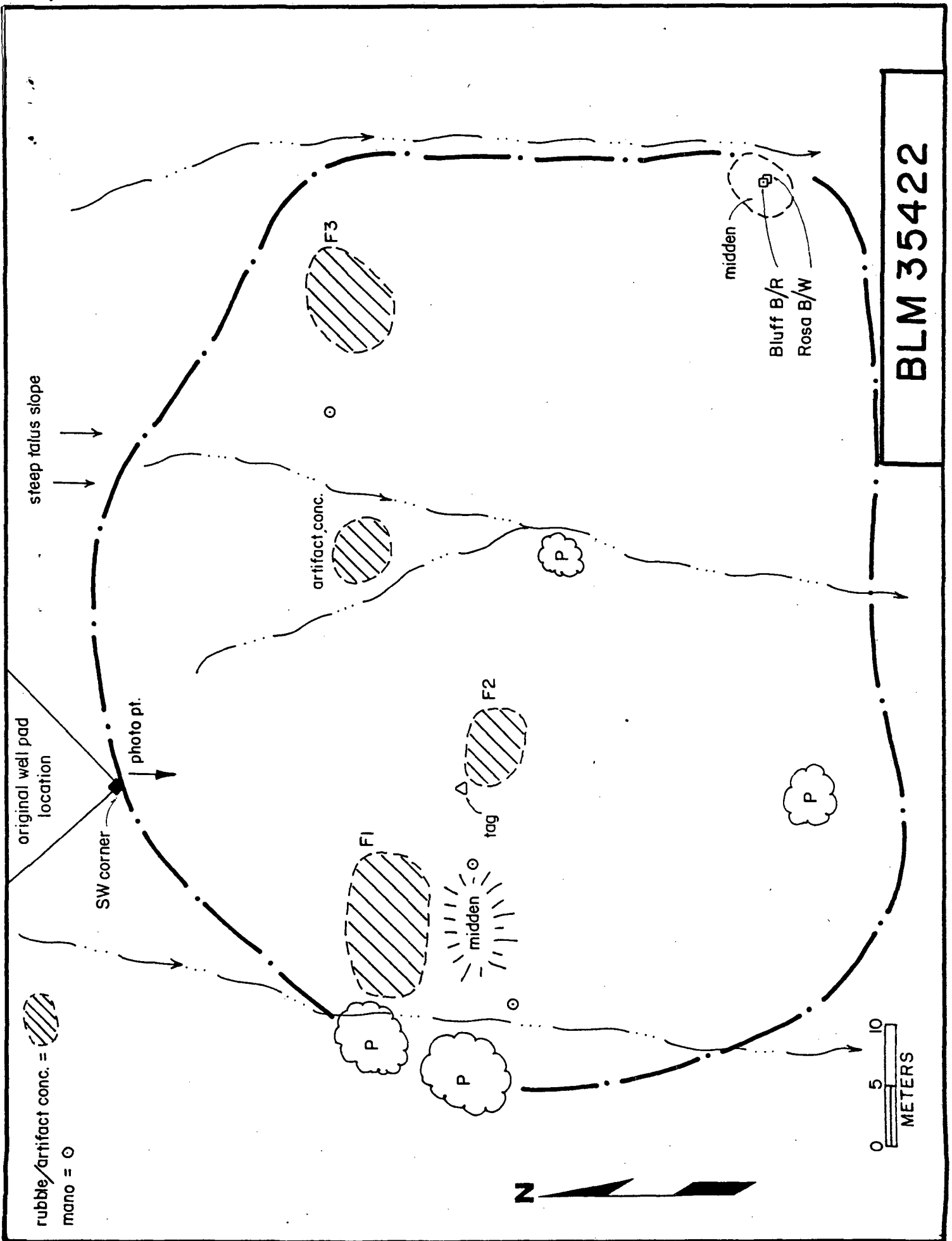


Figure 3

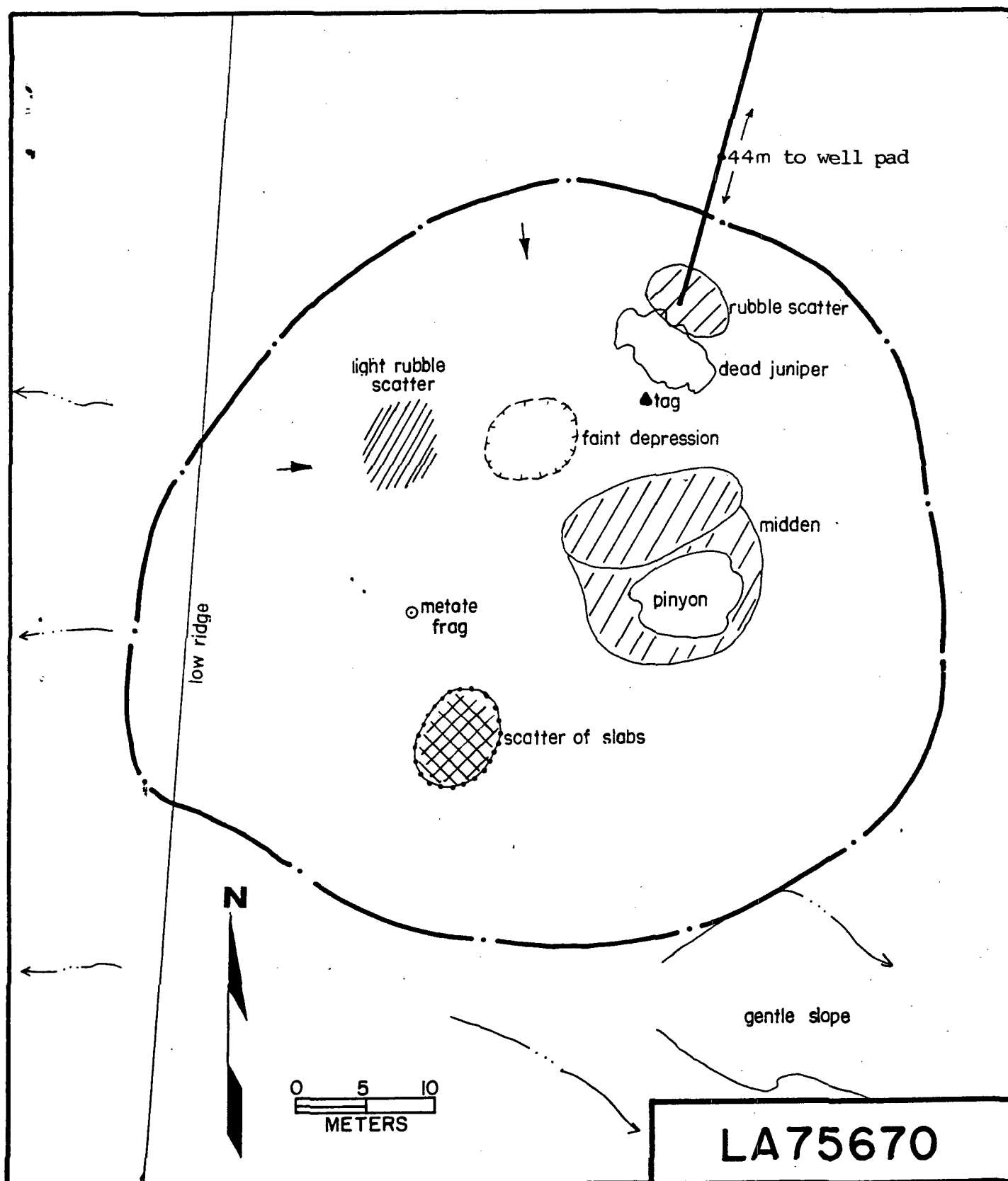


Figure 4

Isolated Occurrence 1

Description: IO 1 an obsidian projectile point fragment that was found on a steep rocky slope, probably representing a hunting loss. The point was extensively modified by retouch and appears to represent a short, wide side-notched specimen. Only about one-half of the point was present.

Isolated Occurrence 2

Description: This projectile point fragment was also found on a steep rocky slope and also appears to represent a hunting loss. The fragment is the base of a side-notched specimen that appears to have been 3 cm in length by 1.2 cm in width. The point was manufactured from white/purple mottled chert.

RECOMMENDATIONS

The two sites that were encountered during the survey for the well pad have been avoided by relocation of the proposed well pad. The two site specific recommendations are as follows:

BLM35422: The site has been avoided by about 175 feet by relocating the well pad to the northwest of the original location. A protective fence, as indicated on Figure 2, is recommended to prevent inadvertent disturbance to this site.

LA75670: This site is about 135 feet southwest of the southwest edge of the relocated well pad and should not be affected by the proposed action. A fence placed around the southwest corner of the well pad, as indicated on Figure 2, will insure that the site remains protected.

The data related to IO 1 and IO 2 were fully recorded in the field and no data remain to be collected or protected. Archaeological clearance is recommended for the Rosa 240 well pad and access road.

REFERENCES

Karlson, Jamie A.

1989 Survey of cultural resources for 39 proposed Northwest Pipeline Corporation Rosa Unit well sites and access roads. AC Project Report 634. Durango.



GARREY CARRUTHERS
GOVERNOR

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

**NORTHWEST PIPELINE
CORPORATION**

JUL 21 1989

PRODUCTION AND DRILLING

**NWP
WELL FILE**

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

July 19, 1989

Northwest Pipeline Corporation
3539 East 30th Street
Farmington, NM 87401

Attention: Mike Turnbaugh
Senior Engineer

Administrative Order NSP-1579(L)

Dear Mr. Turnbaugh:

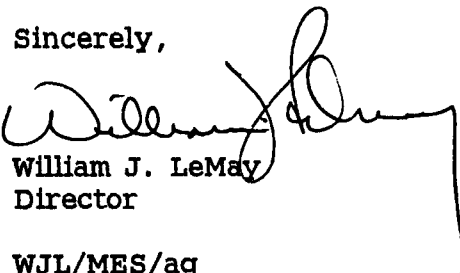
Reference is made to your applications of December 6, 1988 and February 14, 1989 for a 303.88-acre non-standard gas proration unit consisting of the following acreage in the Basin-Fruitland Coal (Gas) Pool:

RIO ARriba COUNTY, NEW MEXICO
TOWNSHIP 31 NORTH, RANGE 6 WEST, NMPM
Section 1: All

It is my understanding that this unit is to be dedicated to your Rosa Unit Well No. 240 to be drilled at an unorthodox coal gas well location 1310 feet from the South line and 945 feet from the East line (Unit O) of said Section 1, hereby approved under provisions of Rule 8 of the Special Rules and Regulations for this pool as promulgated by Division Order No. R-8768.

Also, by authority granted me under the provisions of Rule 6 of said Order No. R-8768, the above non-standard gas proration unit is hereby approved.

Sincerely,



William J. LeMay
Director

WJL/MES/ag

cc: Oil Conservation Division - Aztec
NM Oil and Gas Engineering Committee - Hobbs
US Bureau of Land Management - Farmington



STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

Copy sent to E. Busch
5/1/89

GARREY CARRUTHERS
GOVERNOR

January 12, 1989

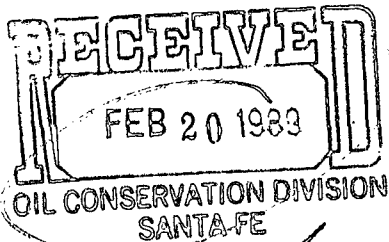
POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

Northwest Pipeline Corporation
P.O. Box 90
Farmington, NM 87499
Attention: Mike Turnbaugh
Sr. Engineer

NORTHWEST PIPELINE
CORPORATION

FEB 8 1989

PRODUCTION AND DRILLING



Re: Application for Non-Standard
Gas Production Unit
Rosa Unit Well No. 240
SE/4 Sec. 1, T31N, R5W

Dear Turnbaugh,

The subject application shows that the proposed Rosa Unit Well No. 240 will be located in the SE/4 of said Section 1, which, pursuant to RULE 7 of the Shovel Rules and Regulations for the Basin Foothill Coal (bas) Pool, as promulgated by Division Order No. R-8768, is an unauthorized coal gas well location. I am therefore going to hold this application until such time as an administrative request for this well location is received.

If you should have any questions concerning this matter, please contact me.

Sincerely,
Michael E. Hogan

c.c. OGD Byline
Vicki

NORTHWEST PIPELINE CORPORATION

PRODUCTION & DRILLING
3539 East 30th Street
Farmington, New Mexico 87401
4320-PD-041-89

February 14, 1989

NMOCD
Michael Stogner
210 Old Santa Fe Trail
Room #206
Santa Fe, NM 87503

Re: Non-standard Proration Unit
Rosa Unit #240
SE/4 Sec. 1, T31N, R6W

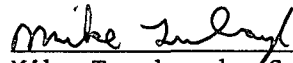
Dear Mr. Stogner:

Attached please find the original application for a non-standard proration unit on the subject well. Also attached is an application for an unorthodox location.

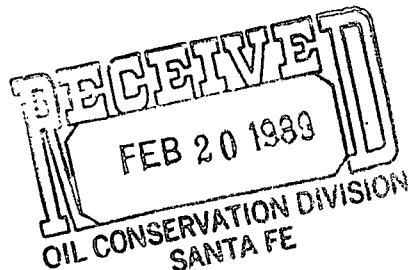
As can be seen from the attached map there are no offset operators requiring notification on this particular well.

Should you need anything else to proceed with administrative approval of this well please let me know.

Sincerely,


Mike Turnbaugh, Senior Engineer

MJT/ch



NORTHWEST PIPELINE CORPORATION

PRODUCTION & DRILLING
3539 East 30th Street
Farmington, New Mexico 87401
4320-PD-050-89

February 14, 1989

NMOCD
Michael Stogner
310 Old Santa Fe Trail
Room #206
Santa Fe, NM 87503

Re: Unorthodox Location
Rosa Unit #240
SE/4 Sec. 1, T31N, R6W

Dear Mr. Stogner:

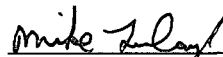
The subject well has been staked in the SE/4 of Sec. 1 which violates Rule 7 of Order R-8768.

Navajo Lake covers the SW/4 of Sec. 3 making a standard location very difficult (see attached map).

Northwest Pipeline seeks administrative approval for this unorthodox location.

No offset operators exist thus notification will not be required.

Sincerely,


Mike Turnbaugh, Senior Engineer

MJT/ch

NORTHWEST PIPELINE CORPORATION

PRODUCTION & DRILLING
3539 East 30th Street
Farmington, New Mexico 87401
4320-PD-146-88

December 8, 1988

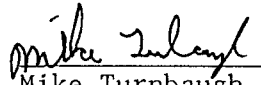
NMOCD
Attn: Bill Lemay
310 Old Santa Fe Trail
Room #206
Santa Fe, NM 87503

Re: Application for Non-Standard
Gas Proration Unit
Rosa Unit #240
SE/4 Sec. 1, T31N, R6W
Dedicated Acreage: 303.88 (all of Sec. 1)

Dear Mr. Lemay:

Northwest Pipeline Corporation requests permission to produce the above captioned well as a Non-Standard Gas Unit. The unorthodox size of this unit is necessitated by a variation in the legal subdivision of the U.S. Public Land Survey. The offset operators have been notified where applicable of our intentions by certified mail and they will forward any objections directly to your office. Copies of these letters along with the receipts for certified mail are enclosed.

Sincerely,


Mike Turnbaugh
Senior Engineer

MJT/ch

OIL CONSERVATION DIVISION

NORTHWEST PIPELINE CORPORATION

Form C-102
Revised 10-1-78STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENTP. O. BOX 2088
SANTA FE, NEW MEXICO 87501

All distances must be from the outer boundaries of the Section.

OCT 27 1988

Operator Northwest Pipeline Corporation			Lease Rosa Unit		Well No. 240
Unit Letter 0	Section 1	Township 31 North	Range 6 West	County Rio Arriba	
Actual Footage Location of Well:					
1310 feet from the South line and		945 feet from the East line			
Ground Level Elev. 6320	Producing Formation Fruitland		Pool Basin Fruitland Pool		Dedicated Acreage: 303.88 Acres

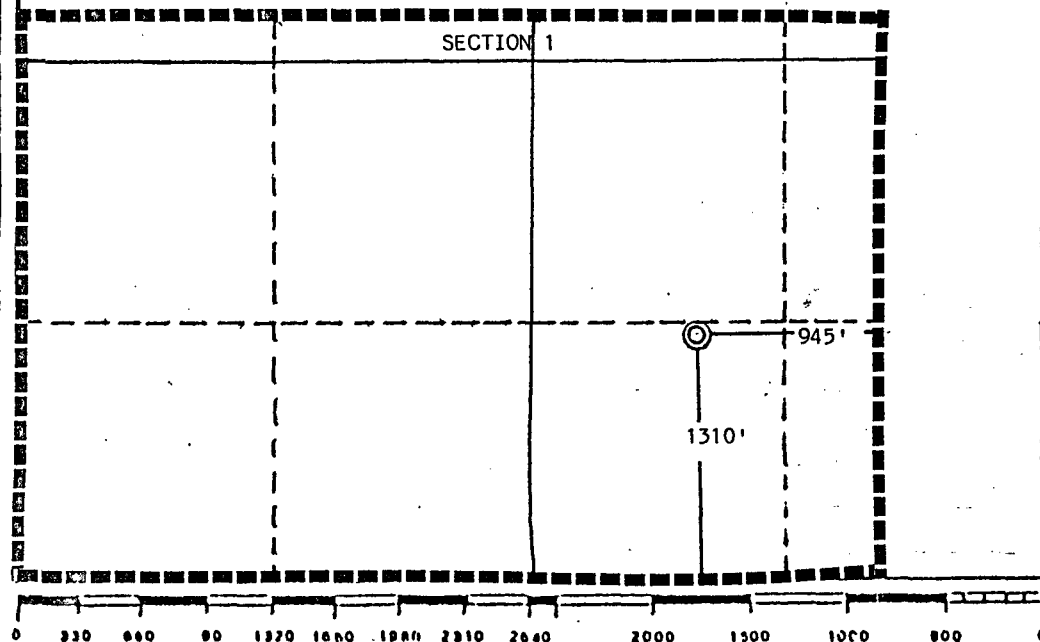
1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☒ Yes ☐ No If answer is "yes," type of consolidation unitization

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 interests, has been approved by the Division.

- No Other Well in Unit



CERTIFICATION

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

Mike Turnbaugh

Name

Mike Turnbaugh

Position

Senior Engineer

Company

Northwest Pipeline Corp.

Date

11-1-88

I hereby certify that the 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

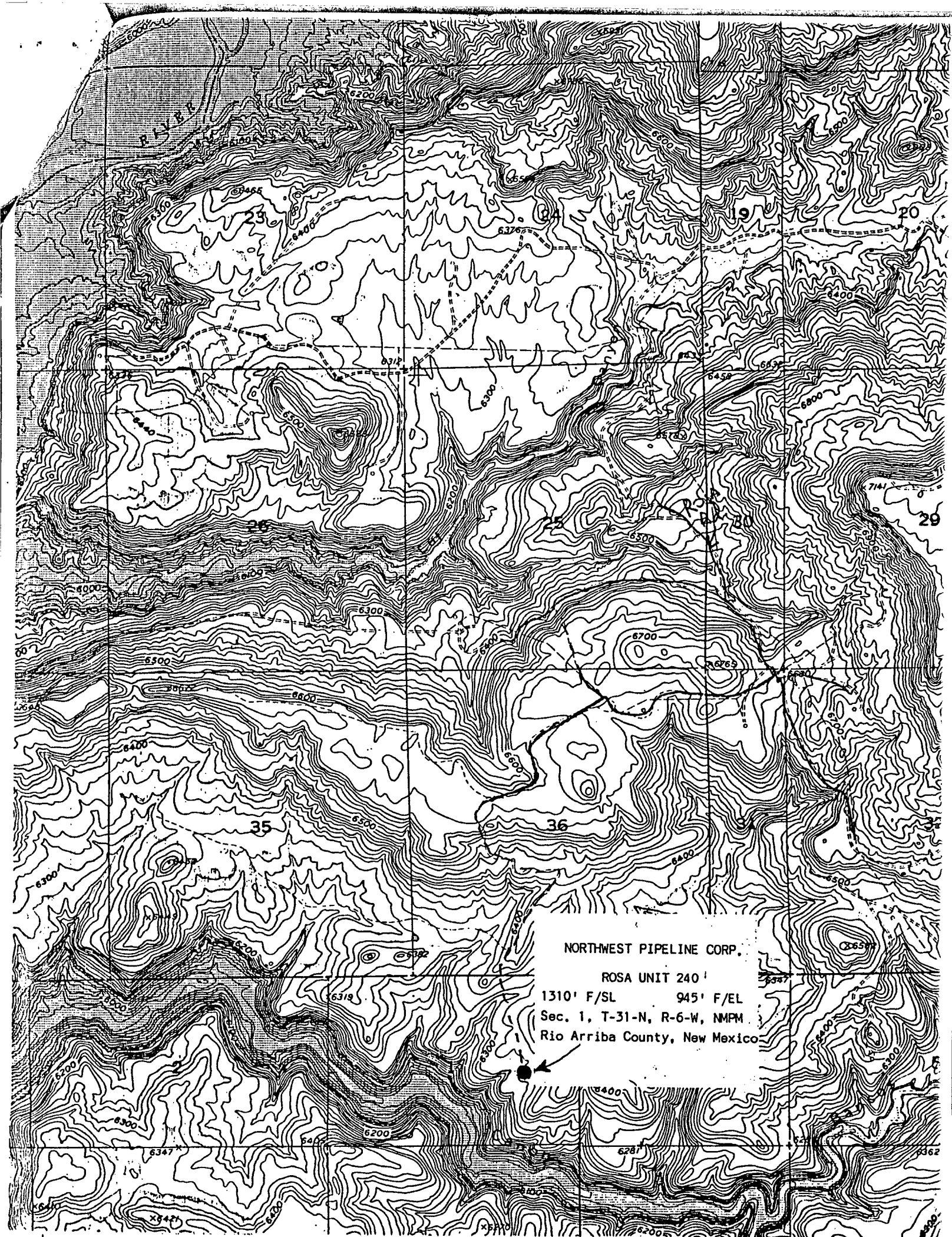
October 18, 1988

Registered Professional Engineer
and/or Land Surveyor

Edgar L. Risenhoover

Certificate No. 5979

Edgar L. Risenhoover, L.S.



NORTHWEST PIPELINE CORP.

ROSA UNIT 240

1310' F/SL 945' F/EL

Sec. 1, T-31-N, R-6-W, NMPM

Rio Arriba County, New Mexico

ROSA UNIT

San Juan and Rio Arriba Counties, New Mexico

Order No. 759, Approving Rosa Unit, San Juan and Rio Arriba Counties, New Mexico, Dated April 22, 1948.

Note: Present Operator of Unit: Pacific Northwest Pipeline (August, 1959.)

The Application of Stanolind Oil and Gas Company, Petitioner, for an Order of Approval of proposed Rosa Area Unit Agreement, the Unit Area of which embraces 54,209.49 acres, more or less, in Township 31 North, Ranges 4, 5, and 6 West and Township 32 North, Range 6 West, in the Counties of San Juan and Rio Arriba, New Mexico.

CASE NO. 133
Order No. 759**ORDER OF THE COMMISSION**

BY THE COMMISSION: This cause came on for hearing at 10:00 o'clock a.m. April 22, 1948, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission".

NOW, on this the 22nd day of April, 1948, the Commission having before it for consideration the testimony and other evidence adduced at the hearing of said case and the application of petitioner and being fully advised in the premises:

FINDS that the proposed unit plan will in principle tend to promote the conservation of oil and gas and the prevention of waste, and that such plan is fair to the royalty owners and other interest owners;

IT IS THEREFORE ORDERED:

That the order herein shall be known as the:

"ROSA UNIT AGREEMENT ORDER"

SECTION 1. (a) That the project herein shall be known as the Rosa Unit Agreement and shall hereinafter be referred to as the Project.

(b) That the plan by which the Project shall be operated shall be embraced in the form of unit agreement for the development and operation of the Rosa Unit Area referred to in the petitioner's application and as finally submitted to the Commission in definitive revised form as a part of the testimony adduced at said hearing of April 22, 1948; and such plan shall be known as the Rosa Unit Agreement Plan.

SECTION 2. That the Rosa Agreement Plan shall be and is hereby approved in principle as a proper conservation measure; provided, however, that notwithstanding any of the provisions contained in said Unit Agreement, this approval of said agreement shall not be considered as waiving or relinquishing in any manner any rights, duties or obligations which are now

or may hereafter be vested in the New Mexico Oil Conservation Commission by law relative to the supervision and control of operations for exploration and development of any lands committed to said Rosa Unit Agreement or relative to the production of oil and gas therefrom.

SECTION 3. (a) That the Unit area shall consist of: NEW MEXICO PRINCIPAL MERIDIAN, NEW MEXICO, (San Juan and Rio Arriba Counties)

TOWNSHIP 31 NORTH, RANGE 4 WEST

Sections 1, 2, 3, 4, 5, 6, 7, 8,
9, 10, 11, 12, 13, 14,
15, 16, 17, 18, 19, 20,
21, 22, 23, 24, 25, 26,
27, 28, 29, 30, 31: All

TOWNSHIP 31 NORTH, RANGE 5 WEST

Sections 3, 4, 5, 6, 7, 8, 9, 10,
11, 12, 13, 14, 15, 16,
17, 18, 19, 20, 21, 22,
23, 24, 25, 26, 27, 28,
29, 30, 31, 32, 33, 34
35, 36: All

TOWNSHIP 31 NORTH, RANGE 6 WEST

Sections 1, 2, 3, 4, 5, 8, 9, 10,
11, 12, 13, 14, 15, 16,
17, 21, 22, 23, 24, 25,
26: All

TOWNSHIP 32 NORTH, RANGE 6 WEST

Sections 32, 33, 34, 35, 36: All
total unit area 54,209.49 acres more or less.

(b) That the Unit area may be enlarged or diminished as provided in said plan.

SECTION 4. That the unit operator shall file with the Commission an executed original, or executed counterparts thereof, of the Rosa Unit Agreement not later than 30 days after the effective date thereof.

SECTION 5. That any party owning rights in the unitized substances who does not commit such rights to said Unit Agreement before the effective date thereof may thereafter become a party thereto by subscribing to such Agreement or a counterpart thereof in the manner and with the effect therein expressly provided. The unit operator shall file with the Commission within 30 days thereafter an original of any such counterpart.

SECTION 6. That the order herein shall become effective as of the first day of the calendar month next following the approval of said Unit Agreement by the Commissioner of Public Lands and the Secretary of the Interior of the United States, and it shall terminate ipso facto upon the termination of said Unit Agreement. The last unit operator shall immediately notify the Commission in writing of any such termination.

#240

NORTHWEST PIPELINE CORPORATION

PRODUCTION & DRILLING
P.O. BOX 90
FARMINGTON, NEW MEXICO 87499
4320-PD-127-88

December 6, 1988

Rec. 12/22/88

NMOCD
Attn: Mike Stogner
310 Old Santa Fe Trail
Room #206
Santa Fe, NM 87503


Dear Mr. Stogner:

In reference to the Rosa Unit #231 unorthodox location (SW/4 Sec. 31, T31N, R5W). Northwest Pipeline is the operator of both the San Juan 30-5 and San Juan 31-6 Units, thus no notification of offset operators is needed.

Also enclosed for your review are the "Applications for Non-Standard Proration Units" of the Rosa wells: 209, 210, 218, 219, 220, 221, 223, 225, 226, 227, 228, 230, 231, 233, 236, 237, 238, 239, 240 & 241.

All the offset operators outside the Rosa Unit have been notified where necessary, via certified mail and those letters are also attached.

Sincerely,


Mike Turnbaugh
Senior Engineer

MJT/ch

copy sent to E. Busch 11/12/89

NORTHWEST PIPELINE CORPORATION

PRODUCTION & DRILLING
3539 East 30th Street
Farmington, New Mexico 87401
4320-PD-146-88

December 8, 1988

NMOCD
Attn: Bill Lemay
310 Old Santa Fe Trail
Room #206
Santa Fe, NM 87503

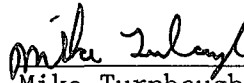
Re: Application for Non-Standard
Gas Proration Unit
Rosa Unit #240
SE/4 Sec. 1, T31N, R6W
Dedicated Acreage: 303.88 (all of Sec. 1)

303.88

Dear Mr. Lemay:

Northwest Pipeline Corporation requests permission to produce the above captioned well as a Non-Standard Gas Unit. The unorthodox size of this unit is necessitated by a variation in the legal subdivision of the U.S. Public Land Survey. The offset operators have been notified where applicable of our intentions by certified mail and they will forward any objections directly to your office. Copies of these letters along with the receipts for certified mail are enclosed.

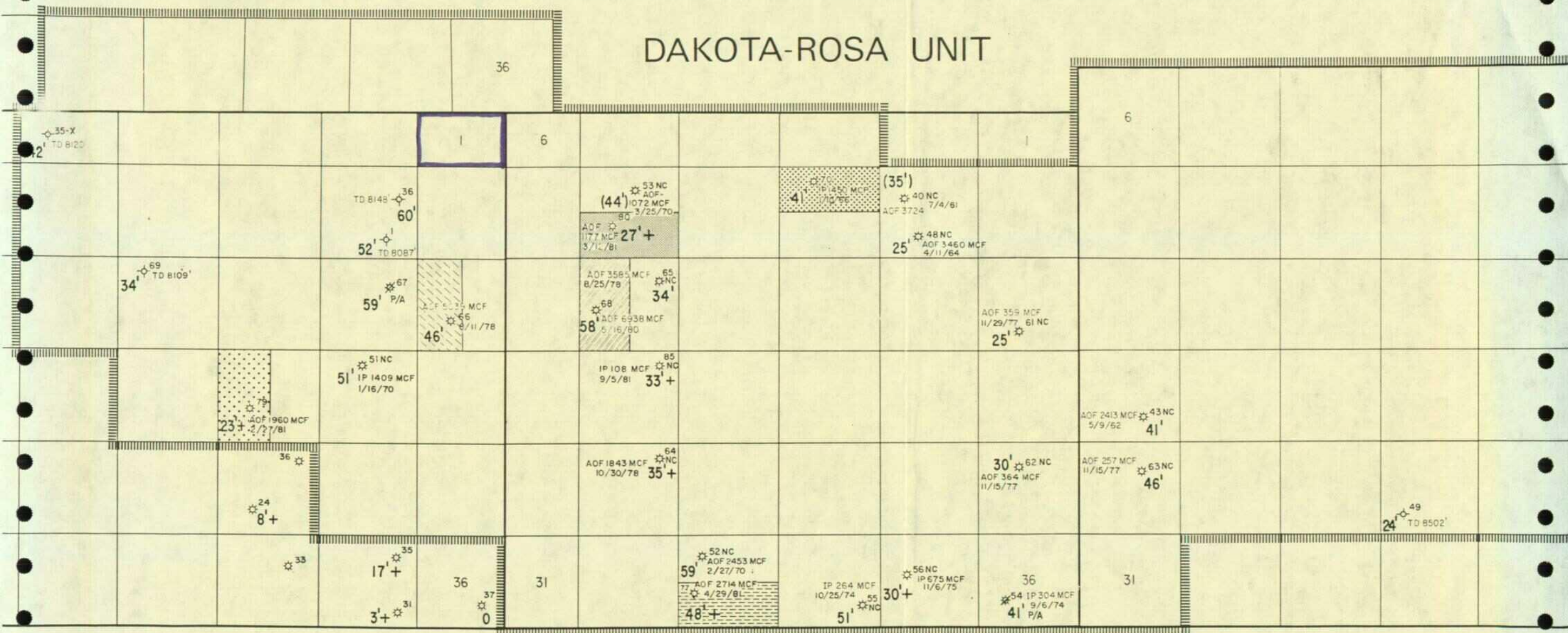
Sincerely,


Mike Turnbaugh
Senior Engineer

MJT/ch

Case File #133

DAKOTA-ROSA UNIT



R 6 W

R 5 W

R 4 W

*No Well File on record
- No Other wells in Unit*

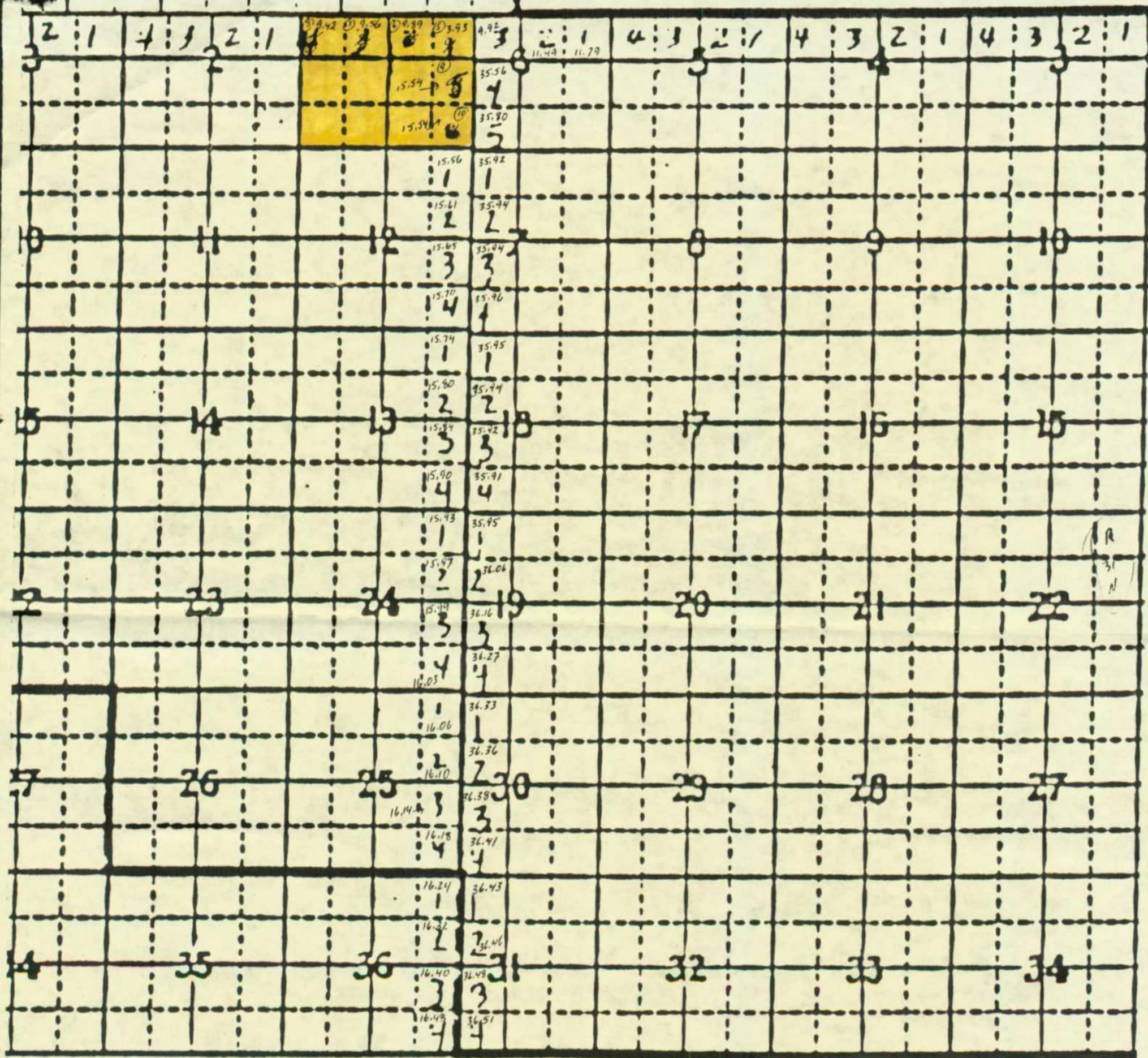
- Initial Dakota Participating Area Effective 1-10-66
- First Expansion of the Dakota Participating Area; Effective Date 9-1-78
- Second Expansion of the Dakota Participating Area; Effective Date 6-1-80
- Third Expansion of the Dakota Participating Area; Effective Date 3-1-81
- Fourth Expansion of the Dakota Participating Area; Effective Date 4-1-81
- Fifth Expansion of the Dakota Participating Area; Effective Date 5-1-81

Commercial Production
Formation Wells
and Abandoned

0 2 4

DAKOTA
SAN JUAN
GROSS
M

Compiled: K.C. Bowman
Drafting: M.B. Anderson



T6W

T5W

5 W

9.42
9.56
9.89
3.93
15.54
15.54
80
160
303.88