

District I  
PO Box 1980, Hobbs, NM 88241-1980  
District II  
PO Drawer DD, Artesia, NM 88211-0719  
District III  
1000 Rio Brazos Rd., Aztec, NM 87410  
District IV  
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico  
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION  
PO Box 2088  
Santa Fe, NM 87504-2088

RECEIVED  
MAR 17 1995  
OIL CON. DIV.  
DIST. 3

Form C-101  
Revised February 10, 1994  
Instructions on back  
Submit to Appropriate District Office  
State Lease - 6 Copies  
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☐ AMENDED REPORT

# APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

<sup>1</sup> Operator Name and Address. NORTHWEST PIPELINE CORPORATION c/o Walsh Engr. & Prod. Corp. 7415 E. Main Farmington, New Mexico 87402		<sup>1</sup> OGRID Number 16189
		<sup>1</sup> API Number 30 - 039-25494
<sup>4</sup> Property Code 008480	<sup>5</sup> Property Name ROSA UNIT	<sup>6</sup> Well No. 152

## <sup>7</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
E	36	32N	6W		1880	North	800	West	Rio Arriba

## <sup>8</sup> Proposed Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
<sup>9</sup> Proposed Pool 1 72319 BLANCO MESA VERDE w/320					<sup>10</sup> Proposed Pool 2				

<sup>11</sup> Work Type Code N	<sup>12</sup> Well Type Code G	<sup>13</sup> Cable/Rotary R	<sup>14</sup> Lease Type Code S	<sup>15</sup> Ground Level Elevation 6641
<sup>16</sup> Multiple N	<sup>17</sup> Proposed Depth 6230	<sup>18</sup> Formation Mancos	<sup>19</sup> Contractor N/A	<sup>20</sup> Spud Date 5/15/95

## <sup>21</sup> Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
12-1/4"	9-5/8"	36.0	250-320	135 (161 cuft)	Surface
8-3/4"	7"	20.0	3890'	630 (1147 cuft)	Surface
6-1/4"	4-1/2"	10.5	3790'-6230'	235 (407 cuft)	3790'

<sup>22</sup> Describe the proposed program. If this application is to DEEPEN or PLUG BACK give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

NORTHWEST PIPELINE proposes to drill a vertical well to develop the Mesa Verde formation at the above described location in accordance with the attached drilling plan. After surface pipe is set, a 3000# BOP will be installed for the remainder of the well. Please refer to the attached BOP and Choke Manifold Diagram.

<sup>23</sup> I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature:

Printed name:

Paul C. Thompson, PE

Title:

Agent

Date:

3/16/95

Phone:

505 327-4892

OIL CONSERVATION DIVISION 3-20-95

Approved by:

Title: DEPUTY OIL & GAS INSPECTOR, DIST. #3

Approval Date:

MAR 20 1995

Expiration Date:

MAR 20 1996

Conditions of Approval:

Attached ☐

District I  
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State of New Mexico  
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION  
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Form C-102  
Revised February 21, 1994  
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☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number <u>30-039-25494</u>		1 Pool Code 72319		1 Pool Name BLANCO MESA VERDE		
1 Property Code 008480		1 Property Name Rosa Unit			1 Well Number 152	
1 OGRID No. 16189		1 Operator Name Northwest Pipeline Production			1 Elevation 6641'	

10 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	36	32 N	6 W		1880	North	800	West	R.A.

11 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

12 Dedicated Acres <u>320</u>	13 Joint or Infill N	14 Consolidation Code U	15 Order No.
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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

<p>8/1/2012</p>	<p>17 OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief</p> <p><u>Paul C. Thompson</u> Signature Paul C. Thompson, PE (AGENT) Printed Name President Walsh Engr. &amp; Prod. Corp. Title 3/16/95 Date</p>	
	<p>18 SURVEYOR CERTIFICATION</p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>2-24-95 Date of Survey <u>NEALE C. EDWARDS</u> Signature and Seal of Professional Surveyor 8857 8857 Certificate Number</p>	

**NORTHWEST PIPELINE CORPORATION**  
**OPERATIONS PLAN**

DATE: 02/06/95

WELLNAME: ROSA UNIT #152

FIELD: Blanco MV

LOCATION: SE/4 NW/4 Sec. 36, T32N, R6W  
Rio Arriba Co., NM

SURFACE: State

ELEVATION: 6641' GR

MINERALS: State

TOTAL DEPTH: 6230'

LEASE # E-346

**I. GEOLOGY:** Surface formation - San Jose

**A. FORMATION TOPS:**

Ojo Alamo	2533'	Cliff House	5628'
Kirtland	2743'	Menefee	5673'
Fruitland	3133'	Point Lookout	5830'
Pictured Cliffs	3418'	Mancos	6083'
Lewis	3740'	Total Depth	6230'

**B. LOGGING PROGRAM:** IND/GR, CDL/SNL. Log the Pictured Cliffs from TD to the Kirtland. Log the Mesa Verde from TD to 500' above the Cliff House.

**C. NATURAL GAUGES:** Gauge any noticeable increases in gas flow. Record all gauges in Tour book and on morning reports.

**II. DRILLING**

**A. MUD PROGRAM:** Clear water with benex to 7" casing point. LSND to log and run pipe.

**B. BOP TESTING:** While drill pipe is in use, the pipe rams will be tested not less than once each day. The blind rams will be tested once each trip. The drum brakes will inspected and tested each tour. All tests and inspections will be recorded in the tour book as to time and results.

**III. MATERIALS**

**A. CASING PROGRAM:**

<u>CASING TYPE</u>	<u>HOLE SIZE</u>	<u>DEPTH</u>	<u>CASING SIZE</u>	<u>WT. &amp; GRADE</u>
Surface	12-1/4"	250'	9-5/8"	36# K-55
Intermediate	8-3/4"	3890'	7"	20# K-55
Prod. Liner	6-1/4"	3790'-6230'	4-1/2"	10.5# K-55

**B. FLOAT EQUIPMENT:**

1. **SURFACE CASING:** 9-5/8" notched regular pattern guide shoe.
2. **INTERMEDIATE CASING:** 7" cement nose guide shoe with a self- fill insert float. Place float one(1) joint above the shoe and five(5) centralizers, spaced every other joint, starting with the float collar. Place turbulent centralizers, at 120' intervals, starting at 2743' to the surface. Total centralizers: 5 regular & 23 turbulent.
3. **PRODUCTION CASING:** 4-1/2" whirler type cement nose guide shoe with a float collar and an insert float on top of bottom joint.

**C. CEMENTING:**

1. **SURFACE:** Use 135 sx (161 cu.ft.) of class "B" with 3% CaCl<sub>2</sub> and 1/4# of cello-flake/sk (Yield = 1.19 cu.ft./sk, Weight = 15.6 #/gal.). Use 100% excess to circulate the surface. WOC 12 hours. Test to 1500#.
2. **INTERMEDIATE:** Lead - 460 sx (943 cu.ft.) of class "B" 65/35 poz with 2% CaCl<sub>2</sub>, 8% gel and 1/4# cello-flake/sk (Yield = 2.05 cu.ft./sk, Weight = 12.1 #/gal.). Tail - 170 sx (204 cu.ft.) of class "B", 1/4# cello-flake/sk and 2% CaCl<sub>2</sub> (Yield = 1.18 cu.ft./sk, Weight = 15.6 #/gal.). Use 100% excess in lead to circulate surface and 75% excess in tail to circulate Fruitland. Reciprocate pipe while cementing. Total volume = 1127 cu.ft. WOC 12 hours. Run a temperature survey after 8 hours if cement is not circulated. Test to 1500#.
3. **PRODUCTION LINER:** Use 235 sx (407 cu.ft.) of class "B" with 4% gel, 6-1/4# fine gilsonite/sk and CF14 (Yield = 1.73 cu.ft./sk, Weight = 13.5 #/gal.). Displace cement at a minimum of 10 BPM. Use 60% excess to cover liner top. WOC 12 hours. Run a temperature survey after 8 hours if liner top is not circulated. Test to 1500#.

**GENERAL ROSA UNIT DRILLING PLAN**  
Mesa Verde

**ROSA UNIT BOUNDARIES:** T31N, R04W: All - Except sections 32-36; T31N, R05W: All - Except sections 1 & 2;  
T31N, R06W: All - Except sections 6,7, 18, 20, 27-36; T32N, R06W: Sections 32-36.

**FORMATION CHARACTERISTICS:**

FORMATION	LITHOLOGY	WATER	GAS	OIL	OVER PRES.	LOST CIRC.
NACIMIENTO	Interbedded shales, siltstones & sandstones	no	no	no	no	no
OJO ALAMO	Sandstone & conglomerates w/ lenses of shales	fresh	no	no	no	no
KIRTLAND	Shale w/ interbedded sandstones	no	poss.	no	no	no
FRUITLAND	Inter. SS, SltSt, SH & Coals w/ Carb. SS, SltSt, SH	yes	yes	no	poss.	no
PICTURED CLIFFS	Massive Sandstone w/ thin Interbedded Shales	poss.	yes	poss.	no	poss.
LEWIS	Shale w/ thin Interbedded sandstones & siltstones	no	poss.	no	no	no
CLIFF HOUSE	Transgressive sandstone	poss.	yes	no	no	no
MENEFEE	Sandstones, Carb shales & coal	poss.	yes	no	no	no
POINT LOOKOUT	Regressive coastal barrier sandstone	poss.	yes	poss.	no	yes
MANCOS	Marine shale	no	no	no	no	no

**DRILLING**

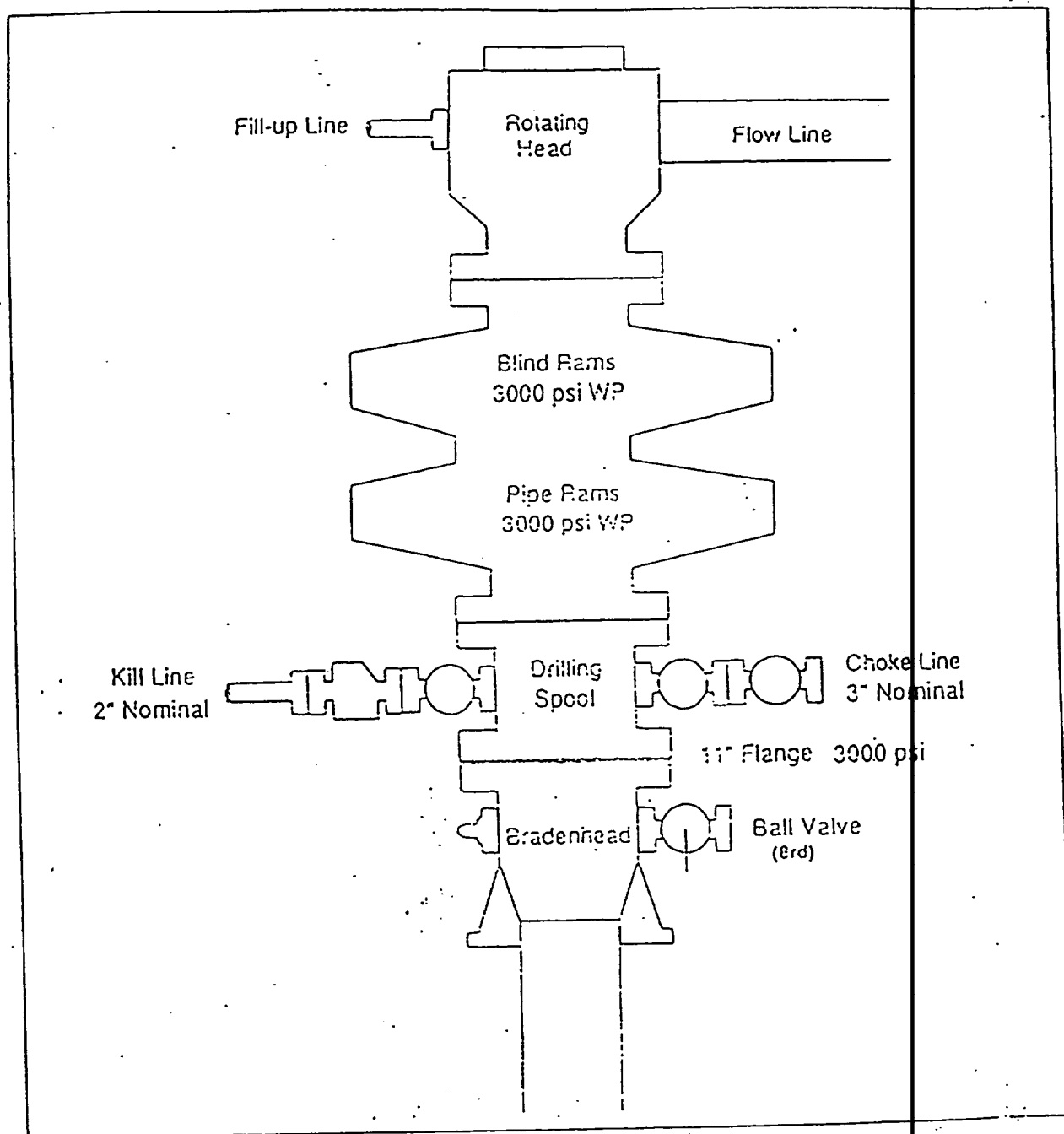
**Potential Hazards**

1. There are no overpressured zones expected in this well.
2. No H<sub>2</sub>S zones will be penetrated while drilling this well.

**Mud System**

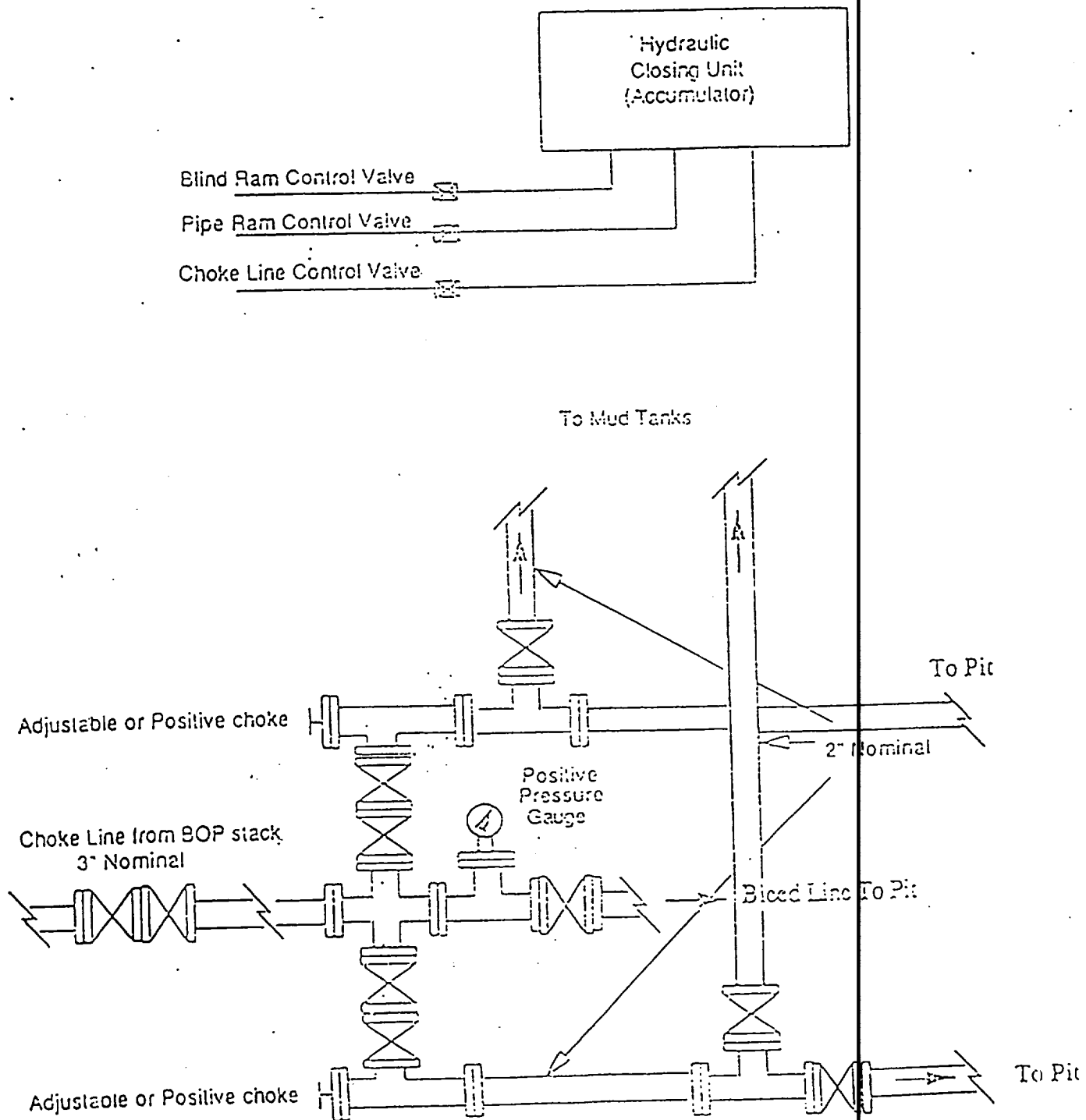
1. Surface: The surface hole will be drilled with a Low-solids Non-Dispersed system with starch and lost circulation material as needed. Expected mud weights will be in the 8.4 to 9.0 #/gal range. Viscosities will be in the 30 to 60 sec/qrt range as needed to remove drill cuttings.
2. Intermediate: The intermediate hole will be drilled with clear water and Benex to TD where the well will be mudded up to log and run casing. The mud system will be Low-solids Non-dispersed with mud weights in the 9 to 10 #/gal range as needed to control the well. Viscosities will be in the 45 to 55 range as needed to support any weight material. The weight material will consist of Barite.
3. Production: The well will be drilled using natural gas from the intermediate casing point to TD.

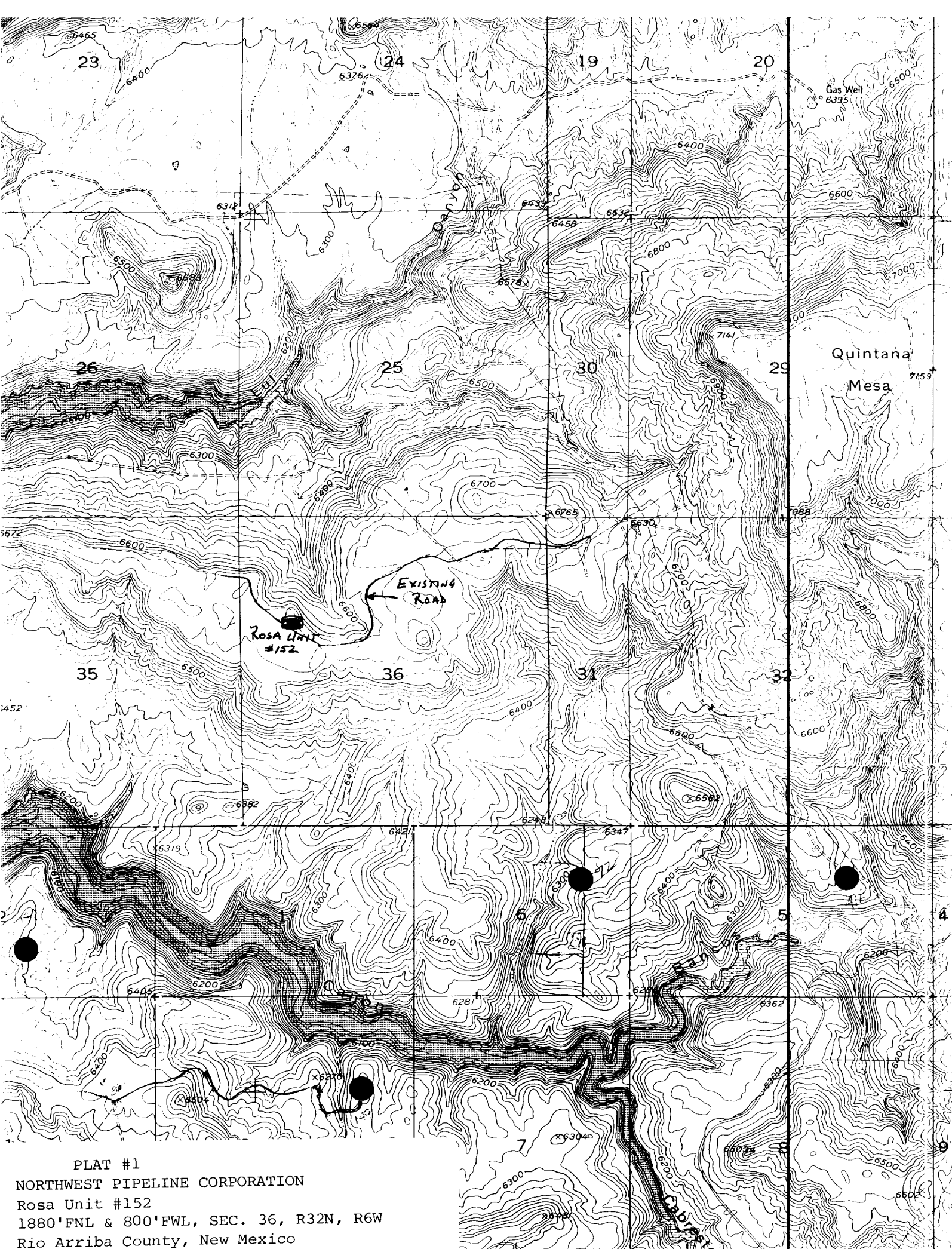
# BOP STACK ARRANGEMENT



All ram type preventers and related equipment will be hydraulically tested at nipple-up and after any use under pressure to 1500 psi. The blind rams will be hydraulically activated and checked for operational readiness each time pipe is pulled out of the hole. All checks of the BOP stack and equipment will be noted on the daily drilling report. The BOP equipment will include a kelly cock with handle, floor safety valve with change overs for each tool joint in the string, and choke manifold all rated to

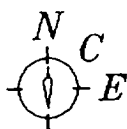
# Choke Manifold & Accumulator Schematic





PLAT #1  
NORTHWEST PIPELINE CORPORATION  
Rosa Unit #152  
1880'FNL & 800'FWL, SEC. 36, R32N, R6W  
Rio Arriba County, New Mexico



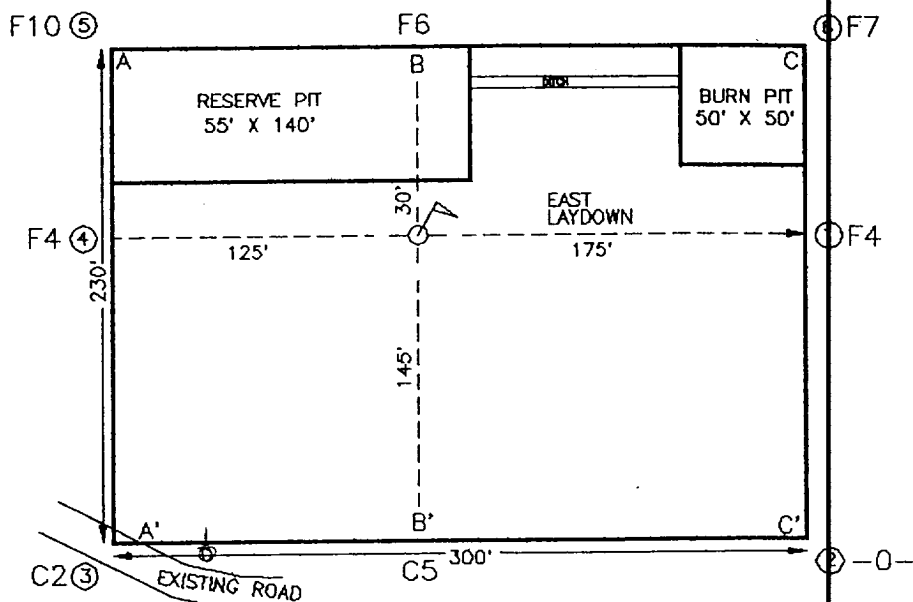


P.O. BOX 6612  
FARMINGTON, NEW MEXICO 87402  
(505) 325-2654

**SURVEYS, INC.**

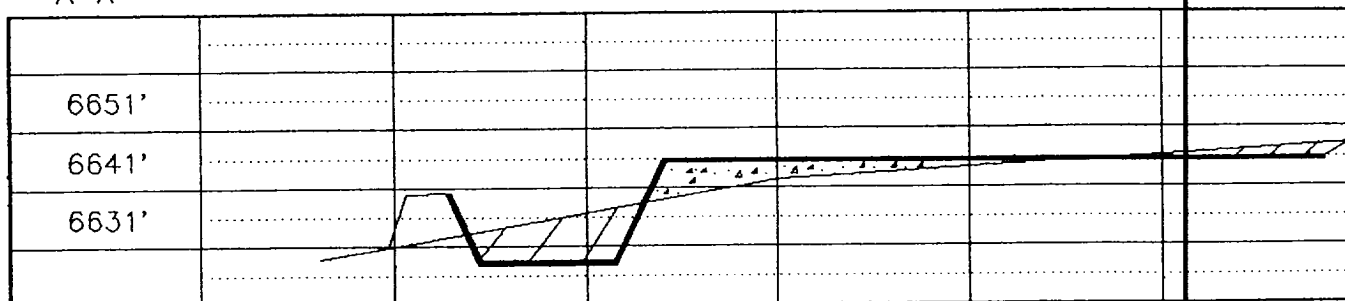
NAME: NORTHWEST PIPELINE PROD. ROSA UNIT #152  
FOOTAGE: 1880' FNL 800' FWL  
SECTION: 36 T 32 N, R 6 W, NMPM  
COUNTY: RIO ARriba STATE: NEW MEXICO  
ELEVATION: 6641' DATE: 2/22/95

PLAT #2



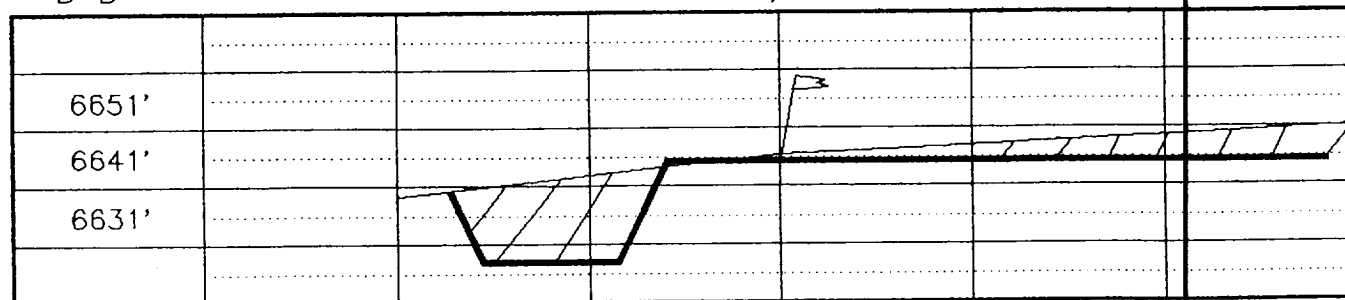
A-A'

C/L



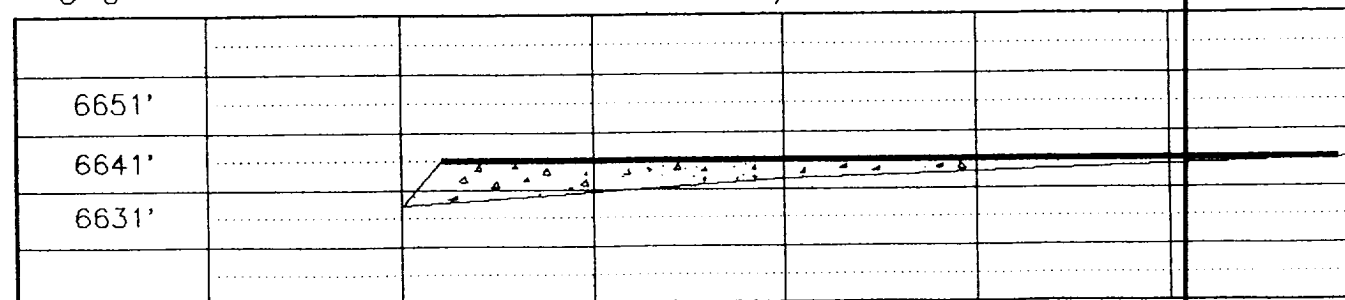
B-B'

C/L



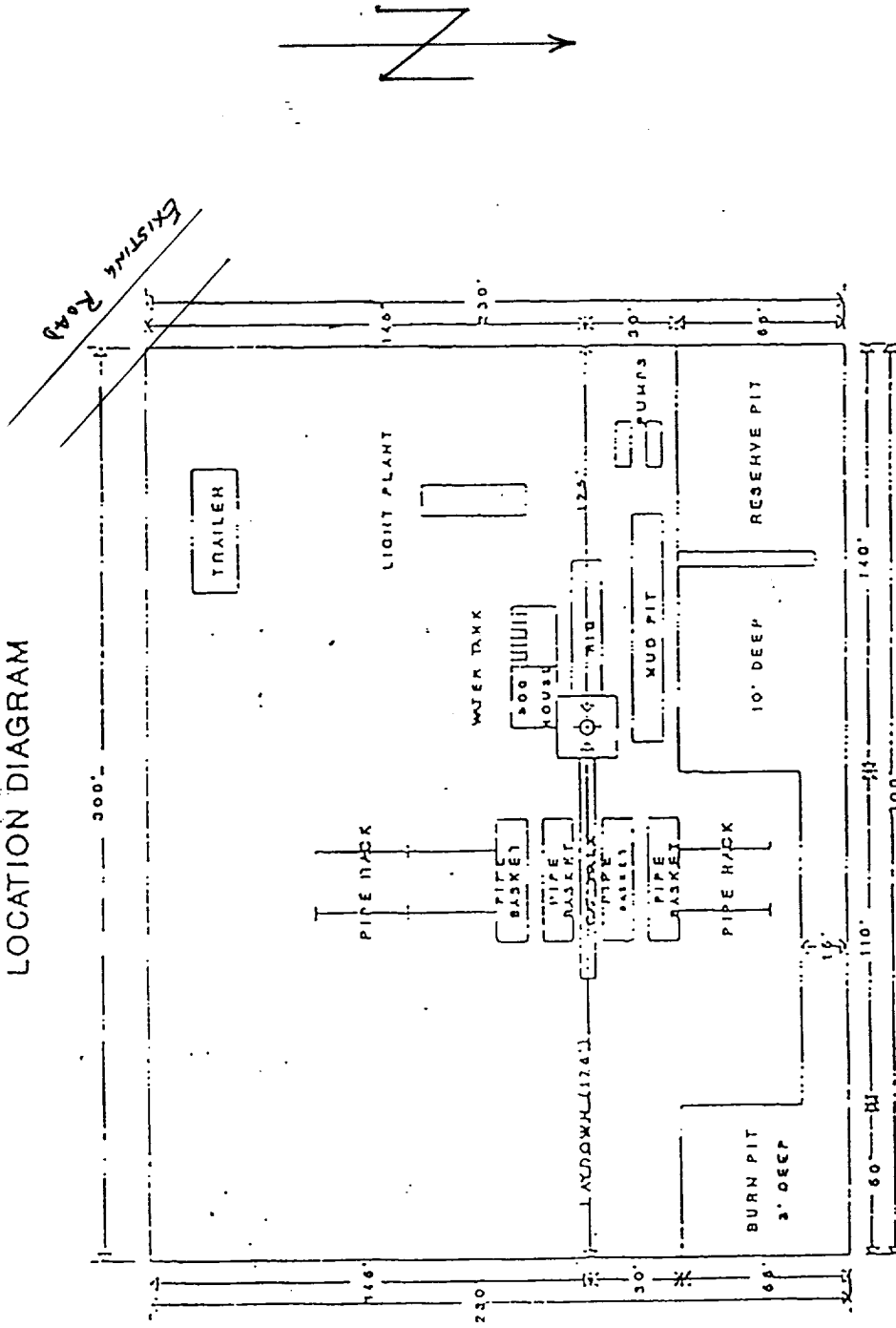
C-C'

C/L



# NORTHWEST PIPELINE CORPORATION

## LOCATION DIAGRAM



NORTHWEST PIPELINE CORPORATION  
 ROSA UNIT #152  
 1880'FNL & 800'FWL, SEC. 36, T32N, R6W  
 Rio Arriba County, New Mexico