

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

070 Farmington, NM

APPLICATION FOR PERMIT TO DRILL OR REENTER

RECEIVED

FORM APPROVED
OMB No. 1004-0136
Expires January 31, 2004

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMNM 101552
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input checked="" type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name N/A
2. Name of Operator Richardson Operating Company		7. If Unit or CA Agreement, Name and No. N/A
3a. Address 3100 La Plata Highway, Farm. NM 87401	3b. Phone No. (include area code) 564-3100	8. Lease Name and Well No. WF Federal 1 #2
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface 1200' FNL & 1835' FWL-Section 1 At proposed prod. zone Same		9. API Well No. 30-045- 32269
14. Distance in miles and direction from nearest town or post office* 7 miles NW of Farmington, New Mexico		10. Field and Pool, or Exploratory Basin Fruitland Coal/Harper Hill PC
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1200'		11. Sec., T., R., M., or Blk. and Survey or Area C, Sec. 1-T30N-R14W, NMPM
16. No. of Acres in lease 635.16		12. County or Parish San Juan
17. Spacing Unit dedicated to this well NW/4-PC (160.36 Acres) W/2-FC (320.36 Acres)		13. State NM
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 7545'		19. Proposed Depth 1,850'
20. BLM/BIA Bond No. on file BLM Nationwide # 158293308		21. Elevations (Show whether DF, KDB, RT, GL, etc.) 5872' GL
22. Approximate date work will start* Upon approval		23. Estimated duration 2 Weeks

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall be attached to this form:

- Well plat certified by a registered surveyor.
- A Drilling Plan.
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- Operator certification.
- Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature 	Name (Printed/Typed) Paul Lehrman	Date 4-1-04
Title Landman		
Approved by (Signature) 	Name (Printed/Typed) AFM	Date 6-9-04
Title AFM	Office FFO	

Application approval does not warrant or certify the the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*(Instructions on reverse)

State of New Mexico
Energy, Minerals & Mining Resources Department
OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C - 102

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304 APR -4 AM 11:11 AM AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

APA Number 30-045- 32269	Pool Code 71629	Pool Name Basin Fruitland Coal
Property Code 29136	Property Name WF Federal I	Well Number 2
OGRIID No. 19219	Operator Name RICHARDSON OPERATING COMPANY	Elevation 5872'

Surface Location									
UL or Lot E	Sec. 1	Twp. 30 N.	Rge. 14 W.	Lot Id.	Feet from	North/South	Feet from	East/West	County SAN JUAN
					1200'	NORTH	1835'	WEST	

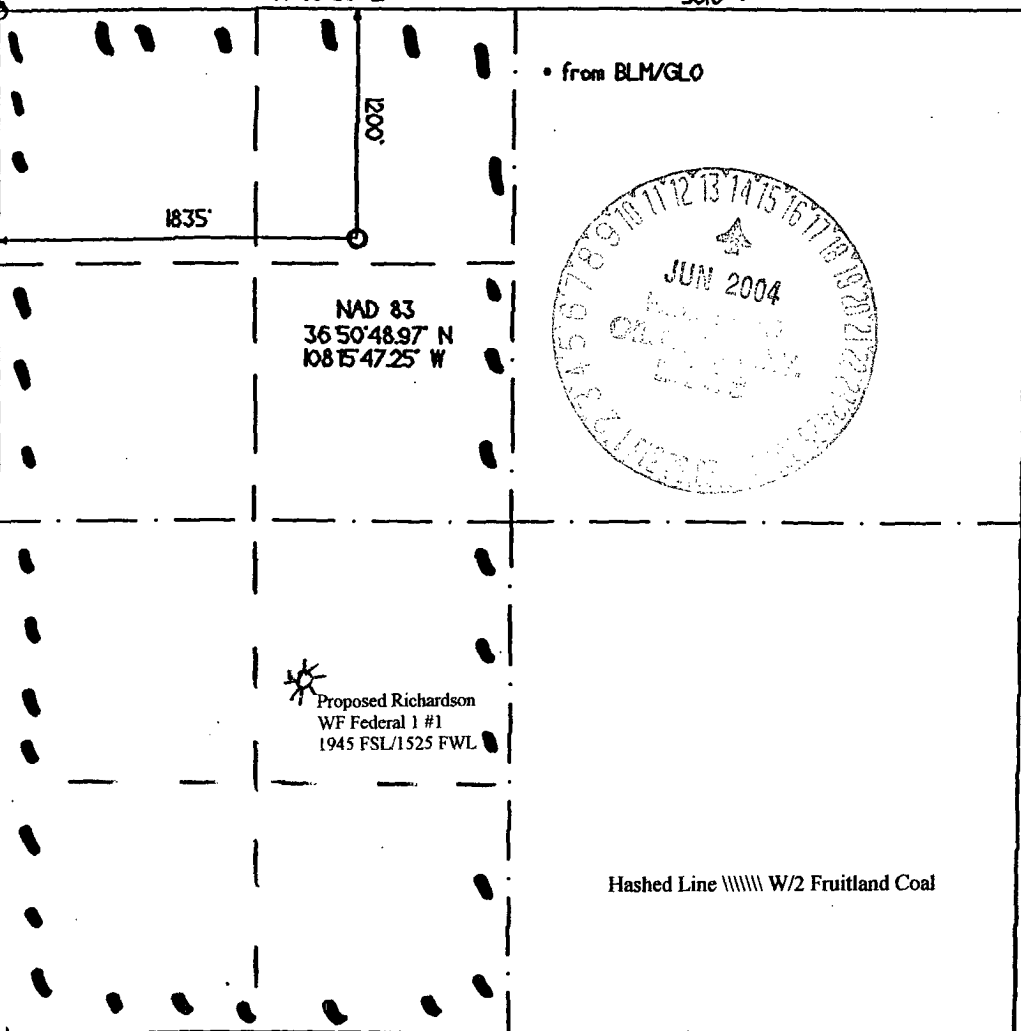
Bottom Hole Location if Different From Surface									
UL or Lot	Sec.	Twp.	Rge.	Lot Id.	Feet from	North/South	Feet from	East/West	County

Dedication W/2 320.36	Joint ?	Consolidation	Order No.
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NO ALLOWABLE WILL ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

N 89°58' E •

5310' •



East •

5238' •

OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief. Signature <i>[Signature]</i>	
Printed Name Paul Lehrman	
Title Landman	
Date 4-1-04	
SURVEYOR CERTIFICATION I hereby certify that the well location 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. Date of Survey	
Signature of Registered Professional Surveyor <i>[Signature]</i> 6844 REGISTERED LAND SURVEYOR	

State of New Mexico
Energy, Minerals & Mining Resources Department
OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C - 102

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2001 APR -4 AM 6:34 ☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

APA Number 30-045- 32269	Pool Code 78160	Pool Name 070 F. RICHARDSON, NMI Harper Hill Fruitland Sand PC (Gas)
Property Code	Property Name WF Federal 1	Well Number 2
OGRID No. 19219	Operator Name RICHARDSON OPERATING COMPANY	Elevation 5872'

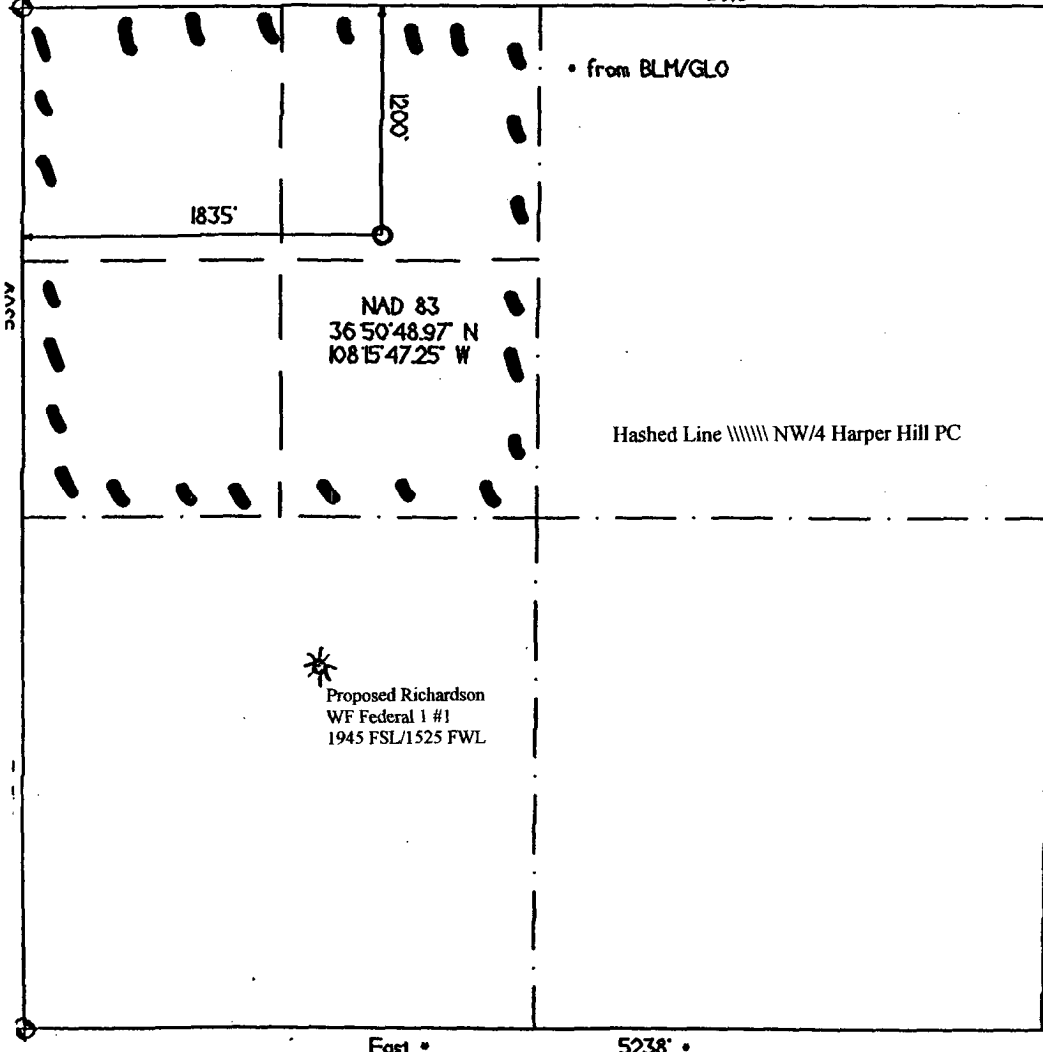
Surface Location									
U. or Lot F	Sec. 1	Twp. 30 N.	Rge. 14 W.	Lot Id.	Feet from >	North/South NORTH	Feet from >	East/West WEST	County SAN JUAN

Bottom Hole Location if Different From Surface									
U. or Lot	Sec.	Twp.	Rge.	Lot Id.	Feet from >	North/South	Feet from >	East/West	County

Dedication NW/4 160.36	Joint ?	Consolidation	Order No.
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N 89°58' E • 5310' •



OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief. Signature <i>Paul Lehrman</i>	
Printed Name Paul Lehrman	
Title Landman	
Date 4-1-04	
SURVEYOR CERTIFICATION I hereby certify that the well location 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. Date of Survey	
Signature and Seal of Professional Surveyor 	

**Richardson Operating Company
WF Federal 1 #2
1200' FNL & 1835' FWL
Section 1, T30N, R14W, NMPM
San Juan County, New Mexico**

DRILLING PROGRAM

1. ESTIMATED FORMATION TOPS:

<u>Formation</u>	<u>GL Depth</u>	<u>KB Depth</u>	<u>Subsea Elevation</u>
Ojo Alamo Ss	610'	005'	+5,262'
Kirtland Shale	785'	105'	+5,087'
Fruitland Fm	1210'	1215'	+4,662'
Basal Fruitland Coal	1635'	1550'	+4,237'
Pictured Cliffs Ss	1650'	1565'	+4,222'
Total Depth (TD)*	1850'	1855'	+4,022'

*All elevations reflect the ungraded ground level of 5,872'

2. NOTABLE ZONES:

<u>Gas Zones</u>	<u>Water Zones</u>	<u>Coal Zones</u>
Fruitland	Fruitland Coal	Fruitland Coal
Pictured Cliffs		

Water zones will be protected with casing, cement, and water based mud. Fresh water encountered during drilling will be recorded by depth. Centralizers will be run through usable water zones to ensure that the casing is centralized through these zones. Number of centralizers will be based on API standards. A turbulizing centralizer will be run to ensure an adequate cement procedure just below the base of the lowest usable water zone. Oil and gas shows will be tested for commercial potential based on the well site representatives recommendations.

3. PRESSURE CONTROL:

The drilling contract has not yet been awarded, thus the exact BOP model to be used is unknown. (A typical 2,000 psi model has been attached to the end of the drilling program.) Double ram or annular system with a rotating head will be used. All ram preventers and related equipment will be hydraulically tested at nipple up and after any use under pressure to 1000 psi.

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. BOP equipment will include a floor safety valve and choke manifold rated to 2000 psi. Maximum expected pressure is less than 1000 psi.

Drilling Program
Richardson Operating Company

Page Two

4. CASING AND CEMENTING PROGRAM:

<u>Hole Size</u>	<u>O.D.</u>	<u>Weight (lb/ft)</u>	<u>Grade</u>	<u>Age</u>	<u>GL Setting Depth</u>
8 3/4"	7"	20	J-55	New	120'
6 1/4"	4 1/2"	10.5	J-55	New	1850'

Surface casing will be cemented to surface with ≈ 36 cu.ft. (³¹~~60~~ sx) Class B + 2% CaCl. Volume is based on 100% excess, yield of 1.18 cu.ft./sk, and slurry weight of 15.6 ppg. WOC = 12 hours. Pressure test surface casing to 600 psi for 30 minutes.

Production casing hole will first be cleaned of rock chips by circulating at least 150% of hole volume with drilling fluid to surface. Thirty barrels of fresh water will then be circulated. Lead with ≈ 150 cu.ft. (≈ 75 sx) Class B with 2% metasilicate (yield = 2.06 cu.ft./sk, slurry weight = 12.5 ppg). Tail in with ≈ 115 cu.ft. (≈ 100 sx) Class B with 2% CaCl (yield = 1.18 cu.ft./sk, weight = 15.6 ppg). Total cement volume is ≈ 265 cu.ft. based on 100% excess and circulating to surface.
²⁷³

Production casing will have 4 1/2" cement guide shoe and self fill float collar. Float will be placed one joint above the shoe. Six centralizers will be spaced every other joint starting above the shoe. Six turbolizers will be placed every other joint starting from the top of the well.

5. MUD PROGRAM:

Surface casing hole will be drilled with fresh water mud. Production casing hole will be drilled with a fresh water polymer mud. Weighting material will be drill solids or, if needed, barite. Maximum expected mud weight will be 8.7 ppg. Sufficient material to maintain mud properties, control lost circulation, and contain a blowout will be available at the well while drilling.

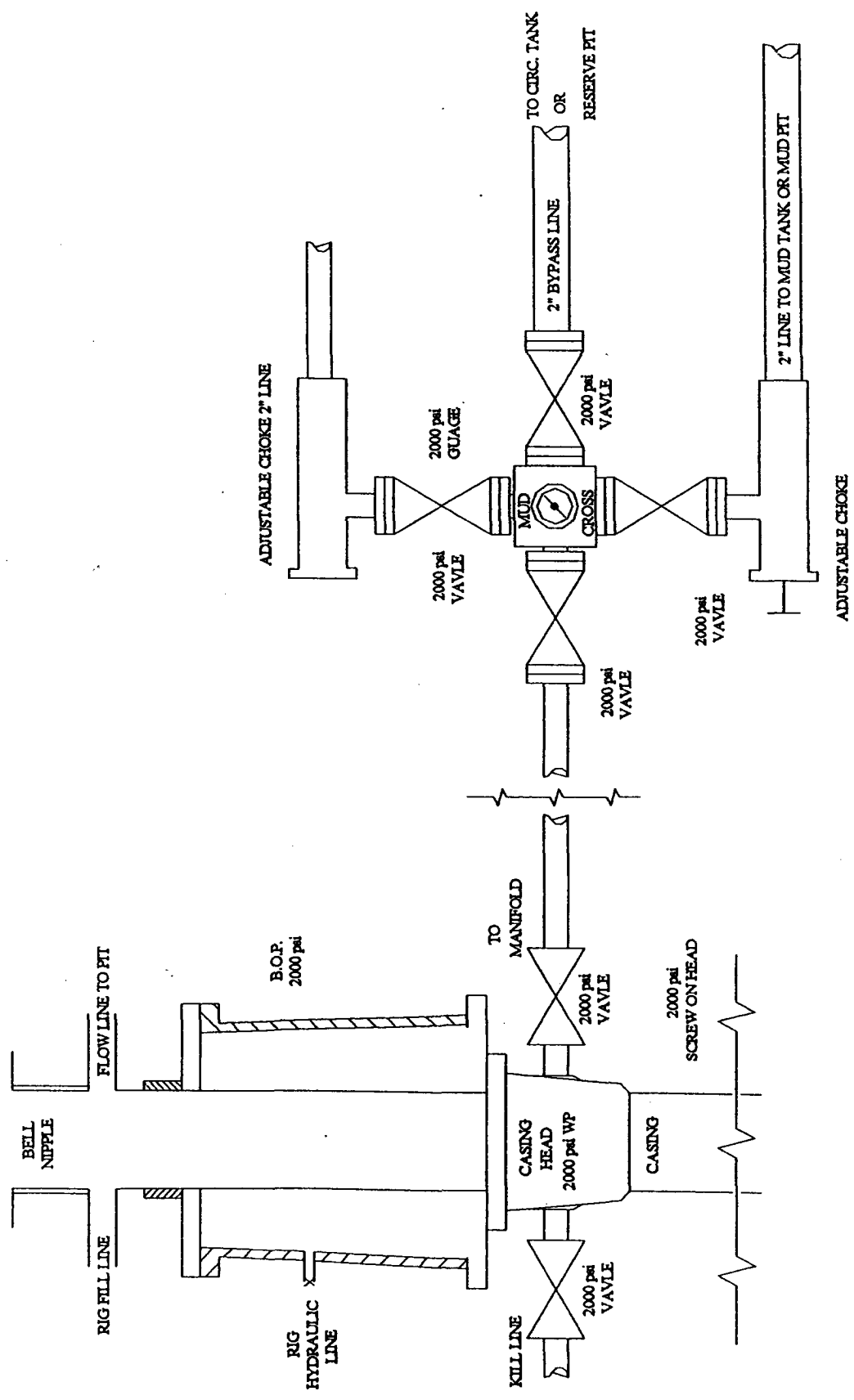
6. CORING, TESTING, & LOGGING:

No cores or DSTs are planned. A cased hole CNL/GR will be run from TD to surface.

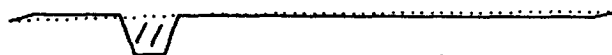
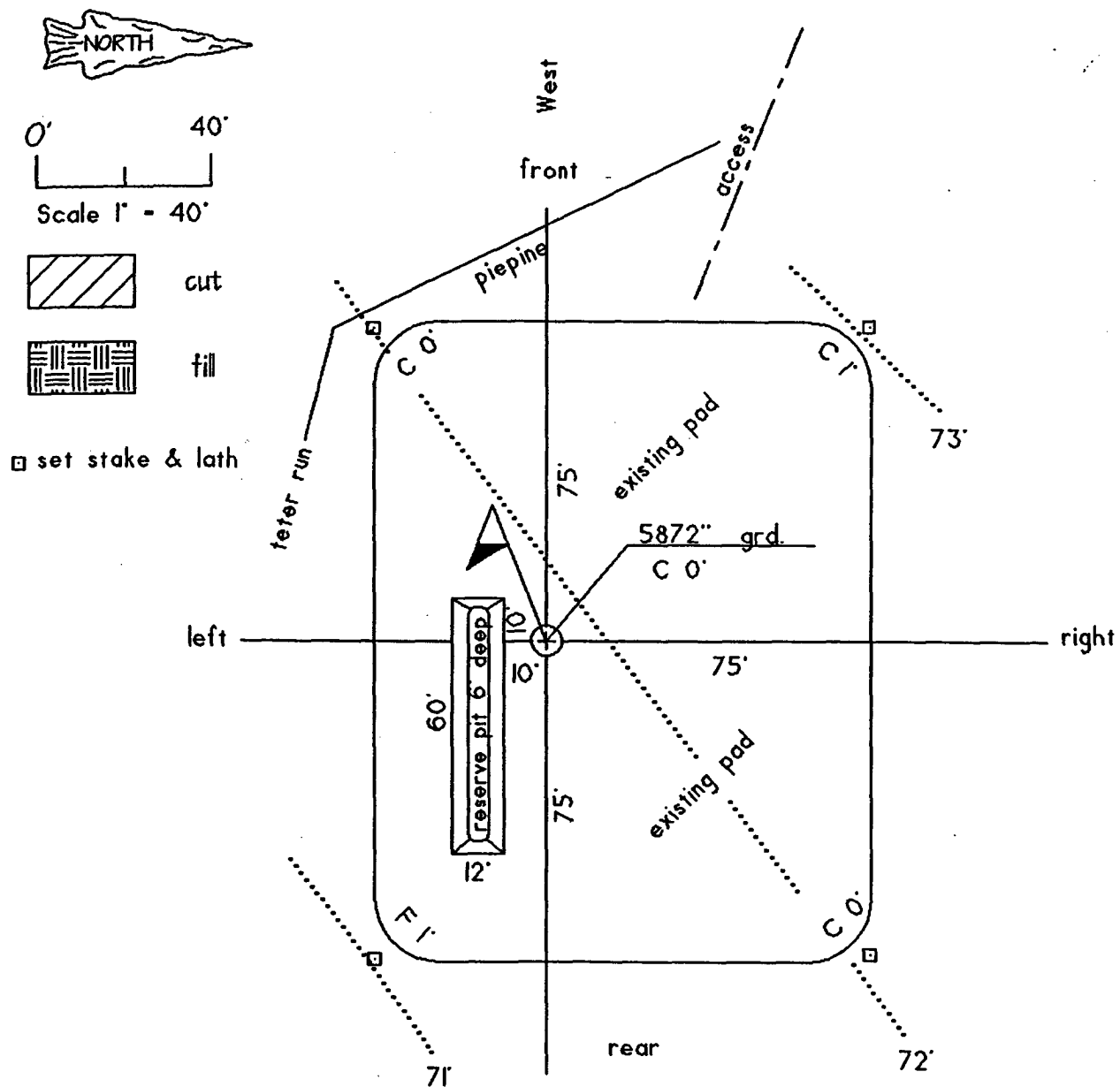
7. DOWNHOLE CONDITIONS:

No abnormal pressures, temperatures, nor hydrogen sulfide are expected. Maximum pressure will be approximately ≈ 520 psi. Although no hydrogen sulfide is expected while drilling, if encountered appropriate safety measures will be instituted. After the well is in production, if hydrogen sulfide is encountered, appropriate safety measures will be instituted to ensure the safety of the public, Richardson employees, contractors, or anyone expected to work or recreate in the vicinity. This may include, but not be limited to, monitoring, flagging or other measures appropriate for the

BLOW OUT PREVENTER (B.O.P.)



** 2000 psi Rubber hose will be used from Well Head to Manifold
& from Well Head to Kill Line.



section