

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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 ARCO Oil & Gas Company
Division of Atlantic Richfield3. ADDRESS OF OPERATOR Suite 501
1860 Lincoln Street, Denver, Colorado 802954. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)*
At surface

1785' FNL & 880' FWL Section #28-28N-11W

At proposed prod. zone

Approximately Same

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*

5 1/2 miles South of Broomfield, New Mexico

15. DISTANCE FROM PROPOSED*
LOCATION TO NEAREST
PROPERTY OR LEASE LINE, FT.
(Also to nearest drlg. unit line, if any) 1785'16. NO. OF ACRES IN LEASE
2560.0018. DISTANCE FROM PROPOSED LOCATION*
TO NEAREST WELL, DRILLING, COMPLETED,
OR APPLIED FOR, ON THIS LEASE, FT. 880'19. PROPOSED DEPTH
6500'

21. ELEVATIONS (Show whether DF, RT, GR, etc.)

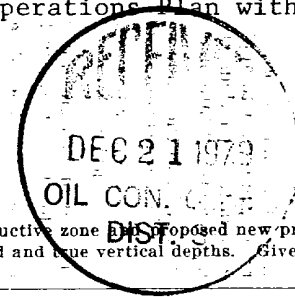
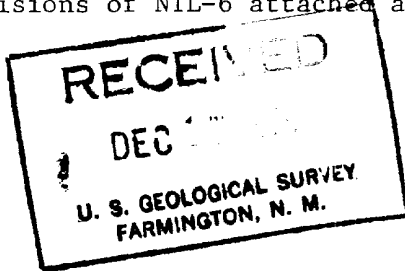
5802' GL. Ungraded

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12 1/4	8 5/8 OD	24#	300'	300 sx
7 7/8	4 1/2 OD	10.5#	T.D.	500 sx

Propose to drill well to a depth sufficient to test the Dakota Formation, setting surface casing and if productive setting production casing. If the Dakota Formation is productive will perforate, test and treat if necessary.

Pursuant to the provisions of NTL-6 attached are: Certified Location Plat
Drilling Plan with attachment
Surface Use and Operations Plan with
attachments.



IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present 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

TITLE Operations Manager

DATE

12/14/79

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

APPROVED BY

TITLE

DATE

CONDITIONS OF APPROVAL, IF ANY:

ok. Ench

12/14/79

NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

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

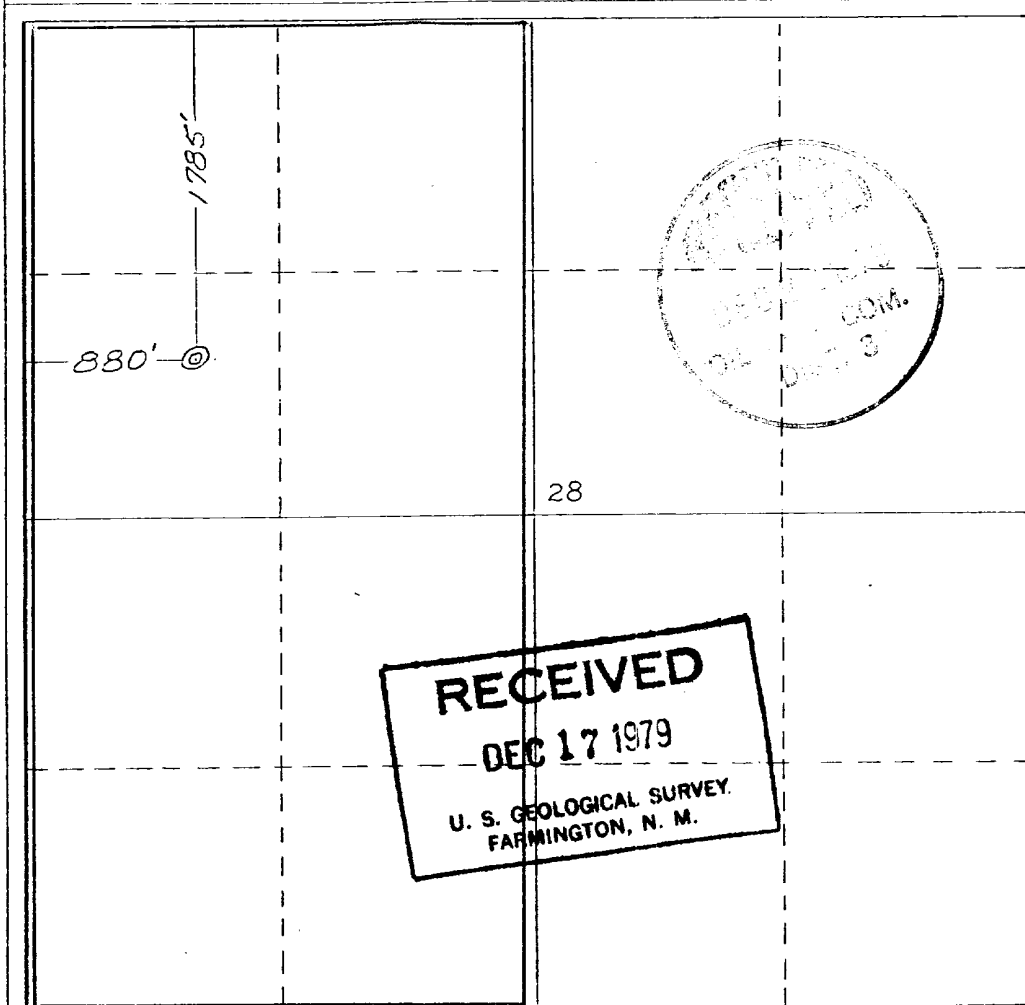
Operator ARCO OIL & GAS COMPANY			Lease KRAUSE WN FEDERAL		Well No. 5 E
Unit Letter E	Section 28	Township 28 NORTH	Range 11 WEST	County SAN JUAN	
Actual Footage Location of Well: 1785 feet from the NORTH line and 880 feet from the WEST line					
Ground Level Elev. 5802	Producing Formation Dakota		Pool Basin	Dedicated Acreage: 320 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 interests 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 interests, has been approved by the Commission.

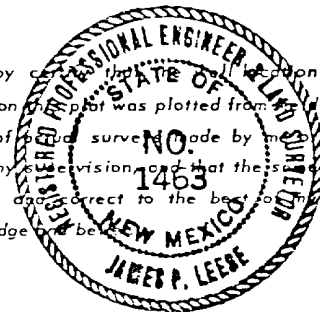


CERTIFICATION

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

Name *James P. Leese*
Position
Operations Manager
Company ARCO Oil & Gas Co.
Div. of Atlantic Richfield Co.
Date
12-12-79

I hereby certify that the information shown on this plat was plotted from the notes of a land survey made by me under my supervision and that the same is true and correct to the best of my knowledge and belief.



Date Surveyed
October 29, 1979
Registered Professional Engineer and/or Land Surveyor
James P. Leese
James P. Leese
Certificate No.
1463

0 330 660 990 1320 1650 1980 2310 2640 2000 1500 1000 500 0

DRILLING PLAN

KRAUSE WN FEDERAL 5E
NW¼ Section 28-T28N-R11W
San Juan County, New Mexico

1. SURFACE FORMATION: Tertiary

2. GEOLOGICAL MARKERS:

Kirtland	1161'	Upper Mancos	4409'
Fruitland	1513'	Gallup	5309'
Pictured Cliffs	1715'	Lower Mancos	5847'
Lewis	1793'	Greenhorn	6095'
Chacra	2645'	Graneros	6157'
Cliff House	3259'	Dakota	6272'
Point Lookout	4119'	Morrison	6502'

3. ANTICIPATED MINERAL BEARING FORMATIONS:

Fruitland	(Poss. Gas)
Pictured Cliffs	(Poss. Gas)
Cliff House	(Poss. Gas)
Gallup	(Poss. Gas)
Dakota	(Poss Oil/Gas)

4. CASING PROGRAM: Surface to 300' 8-5/8" 24# K55 ST&C,
Production to T.D. 4-1/2" 10.5# K55, ST&C

5. CONTROL EQUIPMENT: Blowout Preventor - Ram Type, hydraulic operated
Rams - Two: One blind ram and one pipe ram.
Series - 900 (3000#WP, 600#T)
Manufacturer - Cameron or Shaffer
Pressure test at 1000 psi prior to drilling out of casing string.
Operational checks to be made daily and on trips.
Sketch attached.

6. DRILLING FLUIDS: 0 to 300' Gel and lime to drill surface hole and set casing.
300' to T.D. Low solids non-dispersed 9.0-9.1#gal., 38-45 vis., WL 8 cc or less.

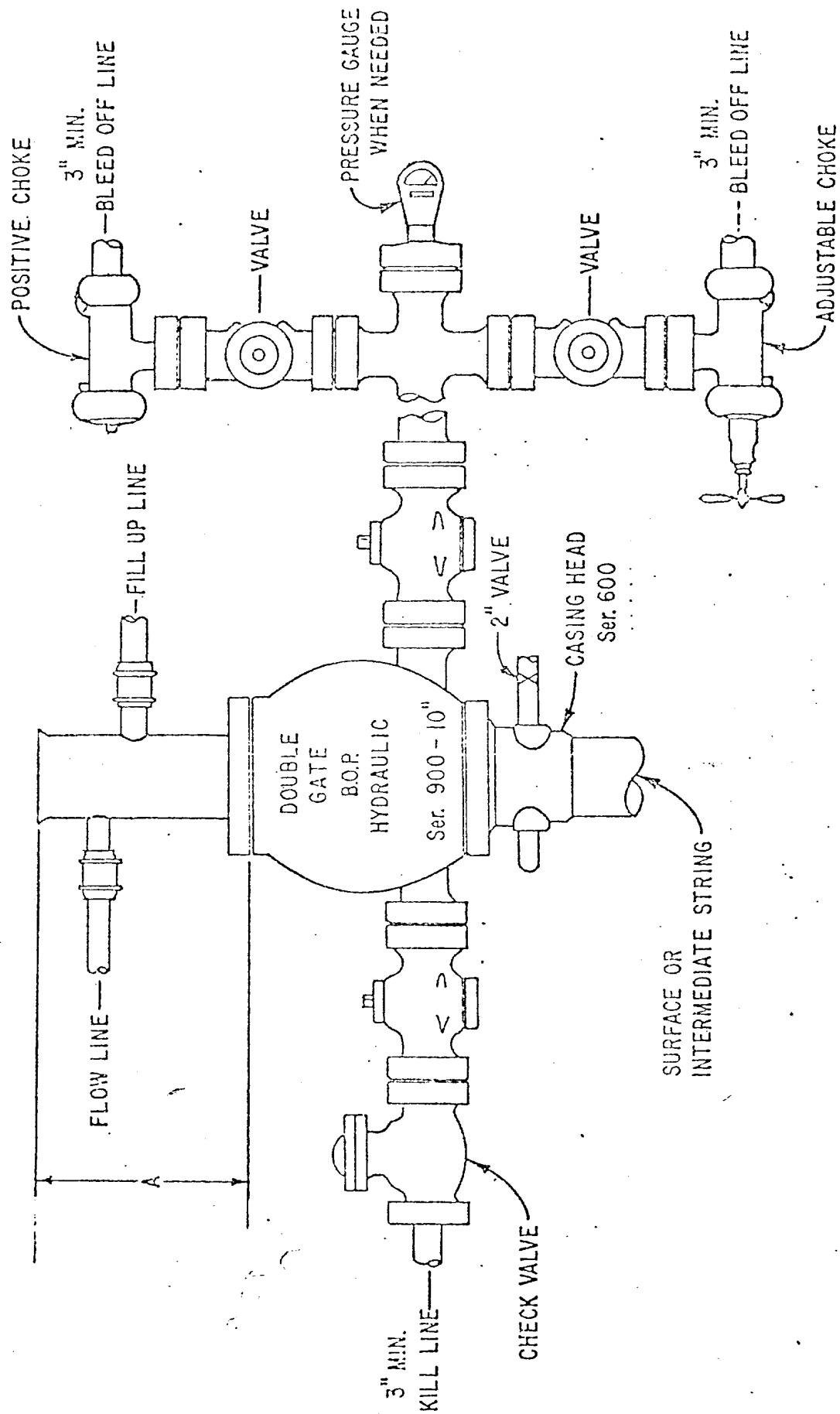
7. AUXILIARY EQUIPMENT: Kelly cock
Sub on floor with full opening valve for use in drill pipe when Kelly is not in the string.

8. TESTING, LOGGING AND CORING: At this time no drill stem tests or cores are planned. However, hole conditions and information obtained while drilling may alter these plans.

9. ABNORMAL PRESSURES, TEMPERATURES, POTENTIAL HAZARDS: There are no abnormal pressures, temperatures or potential hazards in the area. The maximum anticipated pressure is 3600 psi. Weight material will be maintained on location at all times.

10. STARTING DATE - COMPLETION: Dirtwork and road work for this location will require 2 or 3 days. Moving in and rigging up 2 to 3 days. Drilling and completion will require approximately 30 days, for a total of 36 days. In the event of bad weather or other delays this time could be considerably extended.

NTL-6 indicates a minimum of 30 days are required to obtain District Engineer's approval, in which case operations on this well could not be commenced until approximately January 20, 1980. Depending upon rig availability, equipment, weather, etc., this starting date could be extended.



SURFACE USE AND OPERATIONS PLAN

KRAUSE WN FEDERAL #5E

NW¼ Section 28-T28N-R11W

N.M.P.M., San Juan County, New Mexico

1. EXISTING ROADS: A portion of topographic map is attached showing the existing roads within a one (1) mile radius of the location (colored green). Main access will be from Broomfield, New Mexico approximately 5½ miles north. None of the existing roads will require any improvement. However, due to road conditions, weather, etc., these roads will be maintained to whatever extent is required.
2. PLANNED ACCESS ROAD: The planned access road will leave the existing road approximately 500 feet south this location. The road will be approximately 18' wide (sufficient to handle drill equipment). The grade will not exceed 8%. There will be no cattle-guards, culverts, fence cuts, etc.
3. LOCATION OF EXISTING WELLS: Existing wells within one (1) mile radius of this location are shown on the attached map.
4. EXISTING AND/OR PROPOSED FACILITIES: ARCO Oil & Gas Company, Division of Atlantic Richfield Company has 2 existing wells within the one (1) mile radius of this location, they are:

Krause WN Federal #5 SW¼ Section 28-T28N-R11W

Krause WN Federal #6 NE¼ Section 29-T28N-R11W

The above wells each have 1-300 bbl storage tank and production unit which is located approximately 150' from the well head and is connected to the well with a buried gas line.

There are numerous other Krause WN Federal wells proposed for this area, but due to the drilling rig availability it is not possible at this time to anticipate which wells will be drilled prior to the drilling of this well. The production facilities for this well will be similar to the above wells.

5. WATER SUPPLY: It is anticipated that water will be obtained from the San Juan River approximately five (5) miles north of this location. The water will be trucked over New Mexico Highway 44, existing roads and the planned access road in item number 2 above.
6. CONSTRUCTION MATERIALS: None anticipated.
7. WASTE DISPOSAL: Cuttings and drilling fluids will be disposed of in the reserve pit. A trash or burn pit will be used to dispose of trash, garbage, etc. If the reserve pit is sufficiently dry when the well is completed, both the reserve and trash pit will be filled. If the reserve pit is not sufficiently dry when the well is completed it will be fenced for the protection of livestock and wildlife to be filled at such time when it is sufficiently dry.

Produced fluids will be disposed of in the reserve pit. Any oil accumulation on the reserve pit during drilling and completion operations will be skimmed off and held in a temporary storage tank for later disposition. Trash and debris cleanup will be commenced as soon as the completion rig moves out.
8. ANCILLARY FACILITIES: None are proposed.
9. WELL SITE LAYOUT: Per the attached sketches. The reserve pit will be approximately 100' by 100' and will be unlined.
10. RESTORATION OF SURFACE: Other than the area needed for operation and production facilities the site will be contoured as near as possible to its original state. Reseeding or any other restoration will be as specified by the Bureau of Indian Affairs and the United States Geological Survey. Any stockpiled topsoil will be distributed over the disturbed area for final grading and reseeded.
11. OTHER INFORMATION: Vegetation in this area consists of very sparse rabbit brush, sage brush, mormon tea, and a few scrub cedar trees. Drainage is to the west into Horn Canyon, thence to Kutz Canyon and into the San Juan River.

This location will require a 10' cut on the south & east sides and a 10' fill on north west corner.

The V door of the rig will be to the north with the pits on west side.

11. (Con't.) The nearest dwelling is 4 miles north and 1 mile east along Highway 44.

To the best of our knowledge there are no domestic water wells in the area.

To our knowledge there are no archaeological, cultured, or historical sites in the area which will be involved. However, an archaeological survey will be made and the report submitted as soon as it is received.

With the short period of operation and the restoration of the surface, any disturbance to vegetation and wildlife will be temporary and minimal. It is not anticipated that there will be any substantial impact on the environment.

12. LESSEE'S OR OPERATOR'S REPRESENTATIVE:

W. A. Walther, Jr.
(303) 575-7031
575-7153

C. E. Latchem
(303) 575-7127
575-7152

B. J. Sartain
(303) 575-7035
770-7849

ARCO Oil and Gas Company
Division of Atlantic Richfield Company
Suite 501
1860 Lincoln Street
Denver, Colorado 80295

LOCAL REPRESENTATIVE:

J. E. Taylor
ARCO Oil and Gas Company
Division of Atlantic Richfield Company
P. O. Box 2197
Farmington, New Mexico 87401
(505) 325-7527
325-7968

- 13 CERTIFICATION: 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 ARCO Oil and Gas Company, Division of Atlantic Richfield Company and its contractors and sub contractors in conformity with this plan and the terms and conditions under which it is approved.

12-14-79
DATE

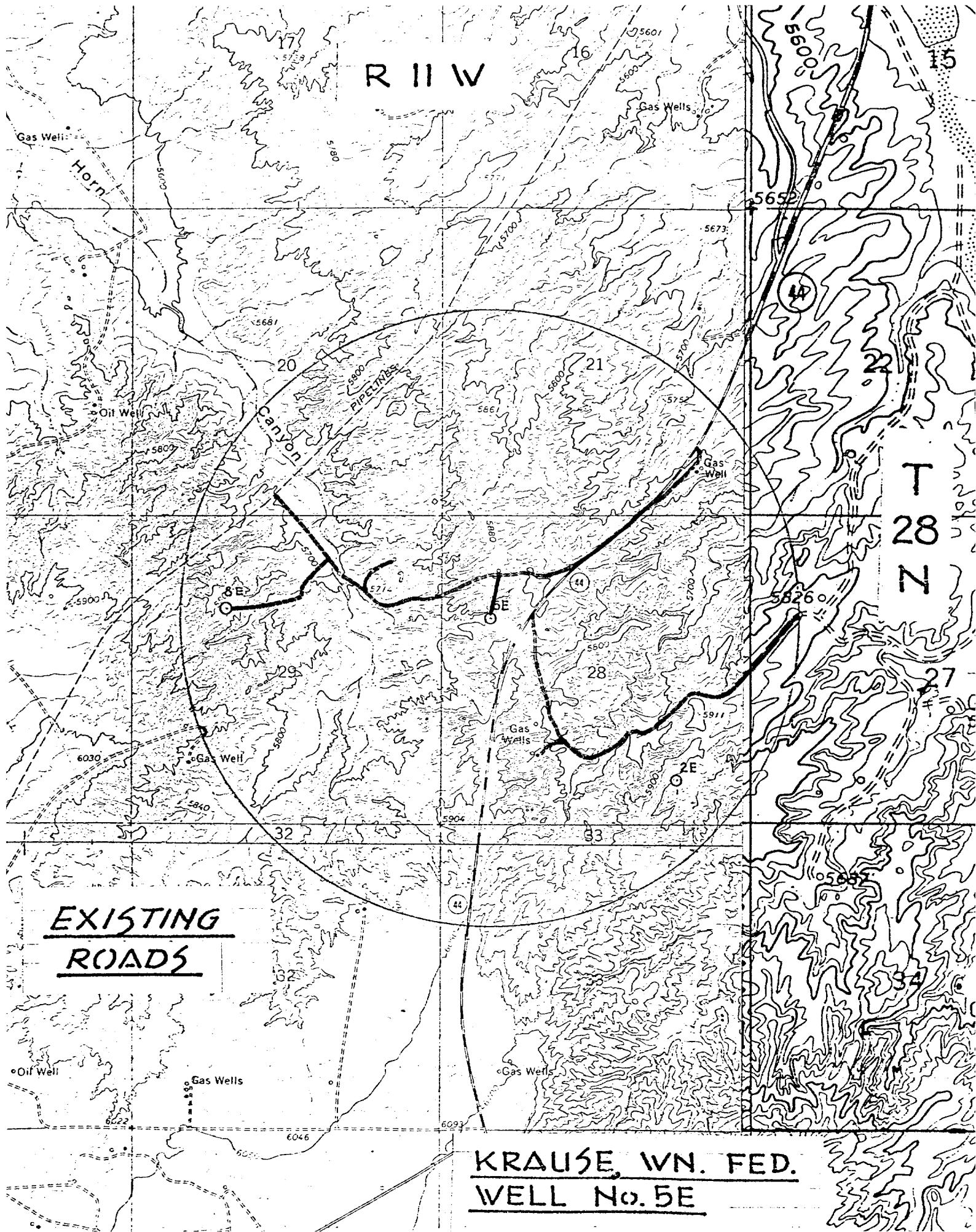
W. A. Walther, Jr.
W. A. Walther, Jr.
Operations Manager

R I I W

T
28
N

EXISTING
ROADS

KRAUSE, WN. FED.
WELL No. 5E



R II W 16

C.J. Little
USA Gentle
Fr 2
1375 (Fr)
G.E. Willett

UNIT

261
Fr
266
Ma
D

1-B
D

4
D

Ohio Oil
1675 (PC)
PC
Ohio Govt

Lucerne-Fed.

Phillips

Pioneer Prod.
"B"

Pioneer Prod.
"C"

Kutz Canyon

Ohio

Pioneer Prod.

Ohio

168
D

1
D

1
D

T.L. Rhodes

20

Amoco

21

Pioneer Prod.
"D"

Ohio

22

REG Drlg

182
D

KRAUSE WN. FED.
Below bs. Pict. Cliff Fin.
ARCo. (Opr.) 49%

Pan Am
1-8
D

1
D

27
Fa
1664
943

Rhodes

Lucerne

Phillips

ARCo.
NM-S-5011

ARCo.
NM-S-5011

REG Drlg

S-NM-5010
5.25% ORR to base
50% WI below

2005 1-C
D

KRAUSE REG WN.
to bs. Pict. Cliffs Fm.
REG (Opr.)
ARCo. 21.5%

2-C
D

ides

3-C
D

SE ORR WN.
bs. Pict. Cliffs Fm.
G Drlg. (Opr.)
RCo. 5.5% OR

1809 (PC)

ARCo.
NM-S-5011

Krause WN Fed.

ARCo.
NM-S-5011

REG Drlg

REG Drlg

ARCo. 8

Schlosser WN-Fe

S-NM-5010
5.25% ORR to base PC
50% WI below
ARCo

EXISTING
WELLS

KRAUSE WN. FED.
WELL No. 5E

Ga-B

Krause WN-Fed.

EPNG

Aztec

Schlosser WN-Fe

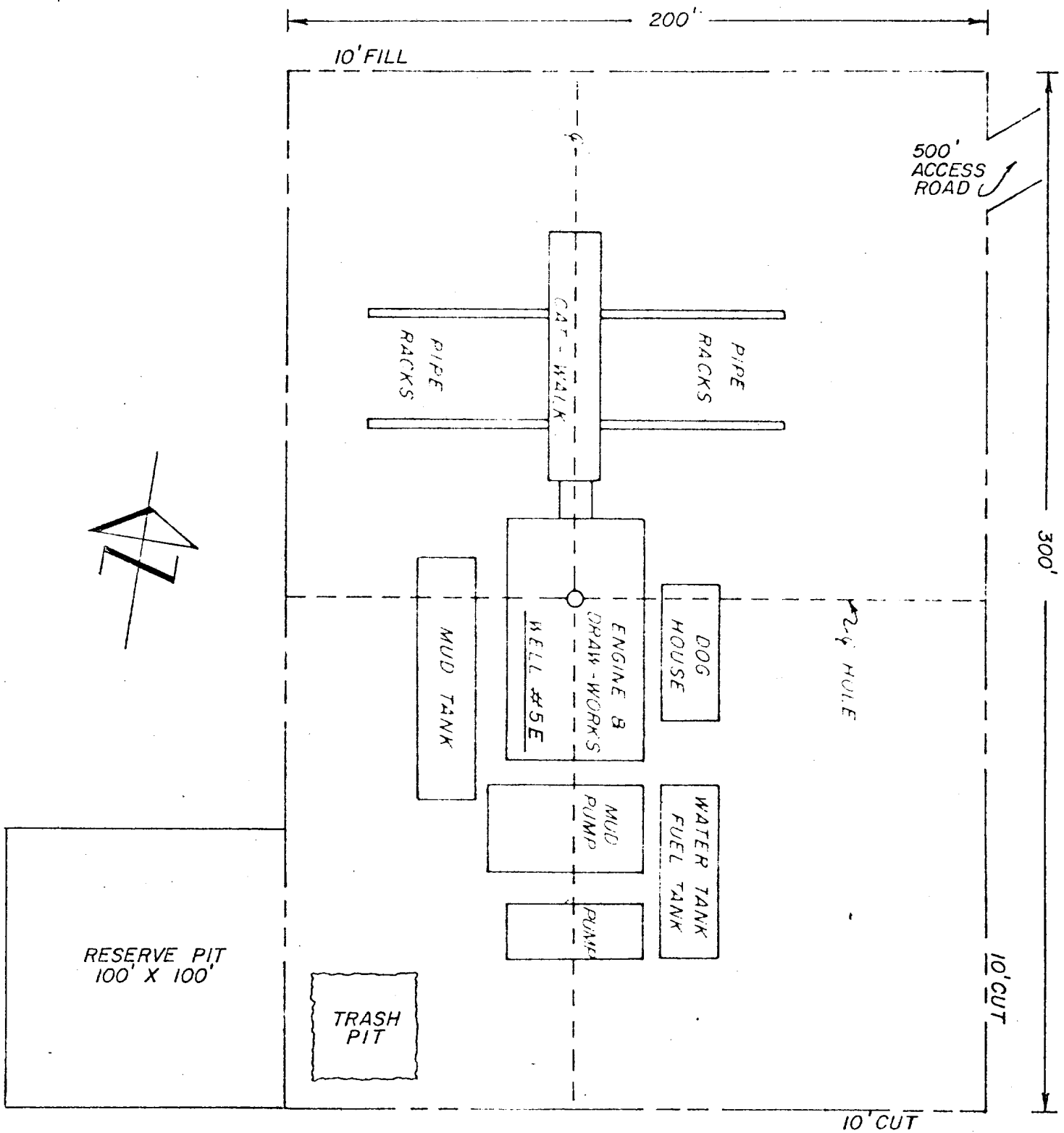
S-NM-5010
5.25% ORR to base PC
50% WI below
ARCo

Beta Dev
Holloway-Fed.

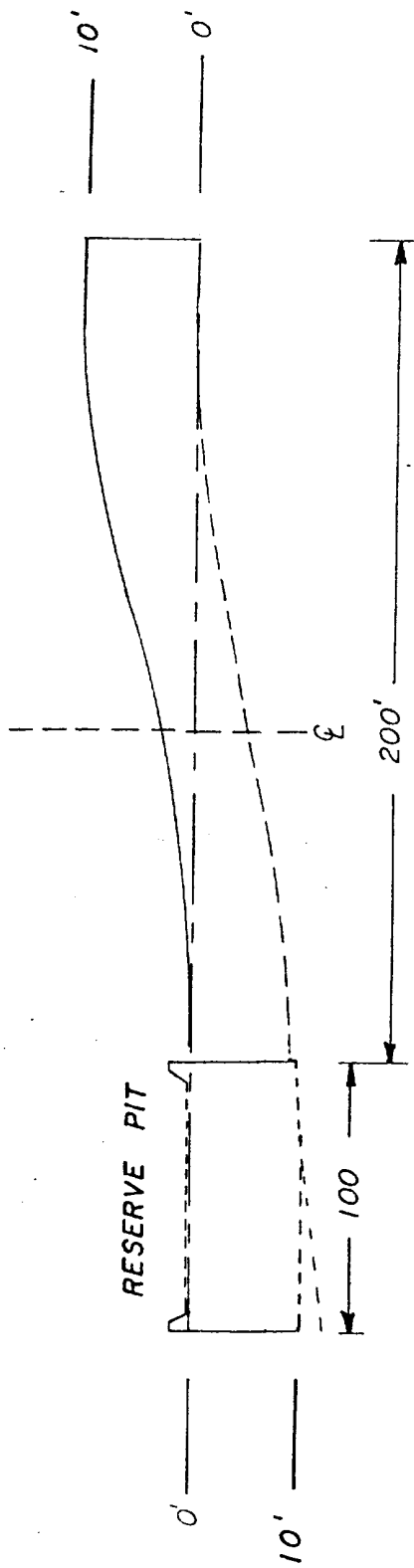
1-D
D

4-C
(Ga)

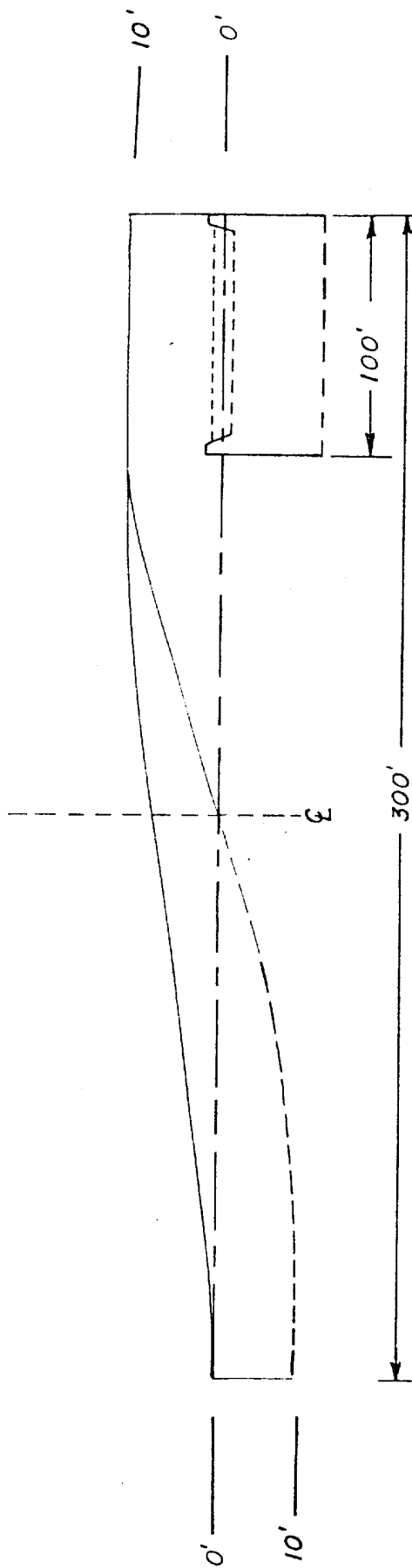
3-B
Ga, D.



KRAUSE WN FEDERAL No. 5 E
 1785' FNL, 880' FWL, Sec. 28-28N-11W



SOUTHEAST TO NORTHWEST



NORTHWEST TO SOUTHEAST

KRAUSE WN FEDERAL
WELL No 5 E