30-015-23159

SWD 867
Appv 1-3-03

8-20-80
Dual Laterals
6600 - 12623
Comp. Neutron Formation Density
0 - 12.624'

IT IS THEREFORE ORDERED: Case 6849 3-26-80 R.S.L. order R-6196-A 4-15-80

(1) That an unorthodox gas well location for the Morrow formation is hereby approved for a well to be located at a point 750 feet from the North line and 660 feet from the West line of Section 13, Township 19 South, Range 31 East, NMPM, Lusk-Morrow Gas Pool, Eddy County, New Mexico.

(2) That the N/2 of said Section 13 shall be dedicated to the above-described well.

(3) That Division Order No. R-6196 entered November 21, 1979, is hereby superseded.

Form 9-331 C
(May 1963)

N.M.O.C.D. COPY

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1425.

30-015-23159

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

RECEIVED
FEB 5 1980
O. C. D.
ARTESIA, OFFICE

RECEIVED
JAN 28 1980
U.S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL: OIL WELL [ ] GAS WELL [X] OTHER — SINGLE ZONE [ ] MULTIPLE ZONE [ ]

2. NAME OF OPERATOR: PETROLEUM DEVELOPMENT CORPORATION

3. ADDRESS OF OPERATOR: 9720 B Candelaria, NE, Albuquerque, NM 87112

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 660' FWL, 750 FNL
At proposed prod. zone: Same

5. LEASE DESIGNATION AND SERIAL NO.: NM 23003

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: --

7. UNIT AGREEMENT NAME: 31048

8. FARM OR LEASE NAME: Llano-McKay Federal

9. WELL NO.: 2

10. FIELD AND POOL, OR WILDCAT: Undes. Morrow Lusk

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 13, T19S, R31E, NMPM

12. COUNTY OR PARISH: Eddy | 13. STATE: NM

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 13 miles South of Maljamar, NM

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any): 660'

16. NO. OF ACRES IN LEASE: 320, including 40 acres, State #LG3180

17. NO. OF ACRES ASSIGNED TO THIS WELL: 320

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.: 90'

19. PROPOSED DEPTH: 12800

20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 3562 GL

22. APPROX. DATE WORK WILL START*: Feb. 8, 1980

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17½"	13-3/8 or 12¼"	48#	400'	450 sx
11"	8-5/8"	24#	4020'	1450 sx. (2-stage)
7-7/8"	4-1/2"	11.6#	12800'	700 sx.

Set 13-3/8" csg. @ approximately 400'; circulate cement to surface. WOC 8 hrs. Test BOP & surface csg. to 500# for 30" before drilling out. Drill 11" hole to approximately 4020'; set & cement 8-5/8: intermediate csg. WOC 12 hrs. Test 8-5/8" csg. & BOP to 2000#.

Drill 7-7/8" hole to 12,800', testing all significant shows of oil or gas. Set 4-1/2" csg. @ approximately 12,800'. See attached mud program. Complete by jet perforating indicated pay intervals and acidizing or fracturing, as need is indicated.

A 1500-series BOP and Hydrill with remote controls will be used. A rotating drilling head, PVT and flow sensors will be used for drilling Wolfcamp and below. See attached preventer layout, Exhibit "D". See attached supplemental multi-point drilling plan; mud program Exhibit "E".

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 Lloyd G. Wayne — TITLE Vice President — DATE 1-22-80
Lloyd G. Wayne

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE 2-1-80

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions On Reverse Side

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	Lease	Well No.
Petroleum Development Corp.	Llano Mckay Fed.	2

Unit Letter	Section	Township	Range	County
D	13	19 South	31 East	Eddy

Actual Footage Location of Well:
750 feet from the North line and 660 feet from the West line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
3562.3	Morrow	Undesignated	320 Acres

RECEIVED
FEB 5 1980
O. C. D.
ARTESIA, OFFICE

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

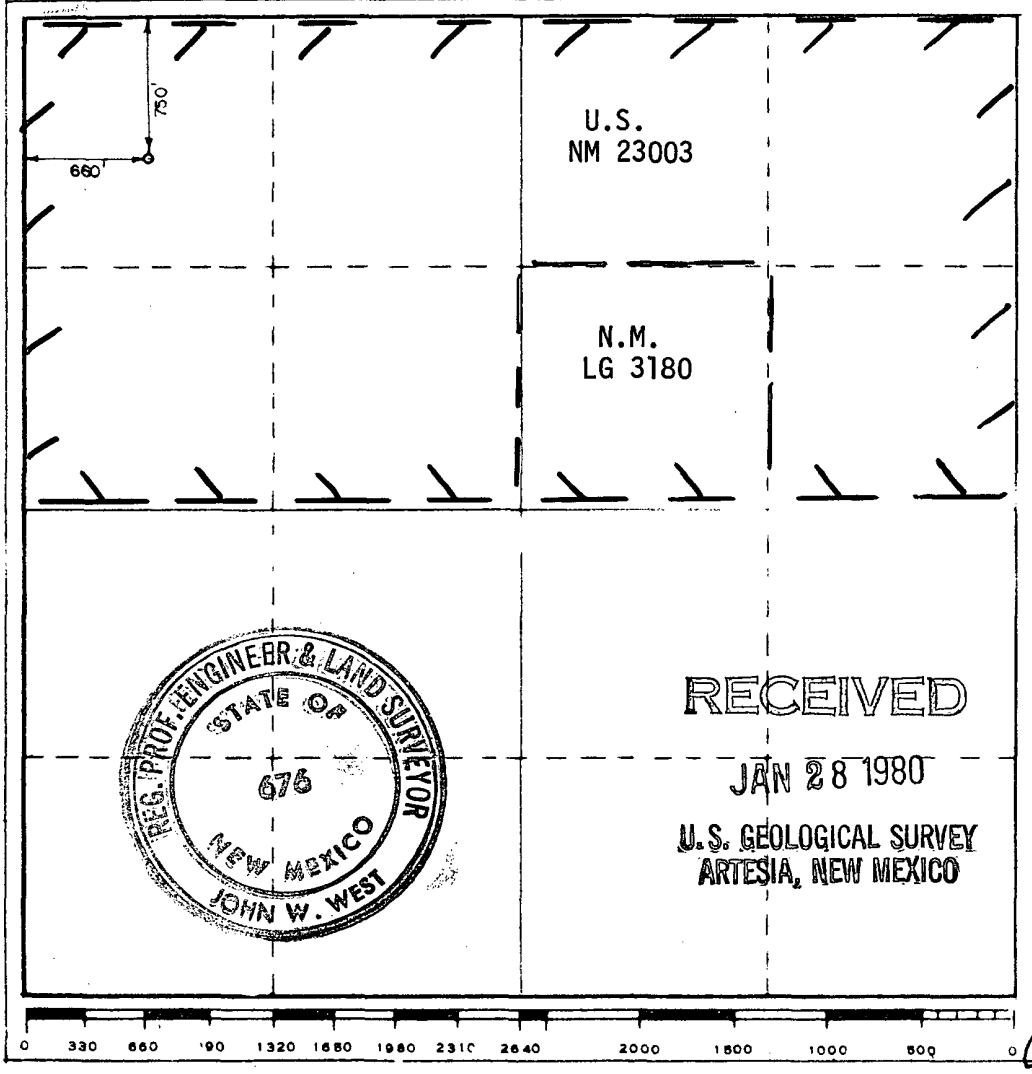
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

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? Same ownership.

☐ 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: Lloyd G. Wayne

Position: Vice President

Company: Petroleum Development Corp.

Date: 1/22/80

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: 1-19-1980

Registered Professional Engineer and/or Land Surveyor

Certificate No. JOHN W. WEST 676
PATRICK A. ROMERO 6663
Ronald J. Eidson 3239

N.M.O.C.D. COPY

RECEIVED

FEB 5 1980

O. C. D.
ARTESIA, OFFICE

United States Department of the Interior

GEOLOGICAL SURVEY
P. O. Drawer U
Artesia, New Mexico 88210

February 1, 1980

Petroleum Development Corp.
9720 B Candelaria NE
Albuquerque, New Mexico 87112

PETROLEUM DEVELOPMENT CORPORATION
Llano-McKay Fed No. 2
750 FNL 660 FWL Sec. 13 T.19S R.31E
Eddy County Lease No. NM 23003
Above Data Required on Well Sign

Gentlemen:

Your APPLICATION FOR PERMIT TO DRILL the above-described well to a depth of 12,800 feet to test the Morrow is hereby approved subject to approval of the unorthodox location by the New Mexico Oil Conservation Division and compliance with the OIL AND GAS OPERATING REGULATIONS (30 CFR 221) and the following conditions:

1. Drilling operations authorized are subject to compliance with the attached General Requirements for Oil and Gas Operations on Federal Leases, dated July 1, 1978.

2. Prior to commencing construction of road, pad, or other associated developments, operator will provide the dirt contractor with a copy of the Surface Use Plan and these Conditions of Approval including the attached General Requirements.

3. Submit a Daily Report of Operations from spud date until the well is completed and the Well Completion Report (form 9-330) is filed. The report should not be less than 8" x 5" in size and each page should identify the well.

4. All permanent above-ground structures and equipment shall be painted in accordance with the attached Painting Guidelines. The color used should simulate Sandstone Brown (Federal Standard No. 595A, color 20318 or 30318).

5. Before drilling below the 8-5/8" casing, the blowout preventer assembly will consist of a minimum of one annular type and two ram type preventers.

6. A kelly cock will be installed and maintained in operable condition.

7. After setting the 8-5/8" casing string and before drilling into the Wolfcamp formation, the blowout preventers and related control equipment shall be pressure tested to rated working pressures by an independent service company. Any equipment failing to test satisfactorily shall be repaired or replaced. This office should be notified in sufficient time for a representative to witness the tests and shall be furnished a copy of the pressure test report.

8. Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be installed and operating before drilling into the Wolfcamp formation and used until production casing is run and cemented. Monitoring equipment shall consist of the following:

   (1) A recording pit level indicator to determine pit volume gains and losses.

   (2) A mud volume measuring device for accurately determining mud volume necessary to fill the hole on trips.

   (3) A flow sensor on the flow-line to warn of any abnormal mud returns from the well.

9. Notify the Survey in sufficient time to witness the cementing of the 8-5/8" casing.

10. Cement behind the 8-5/8" casing must be circulated.

11. Special stipulations:

   (a) The authorized caliche pit to be used in the construction of the well pad is located in the NW/4 NW/4, Section 24, T.19S., R.31E.

   (b) Construct reserve pit outside the confines of the arroyo and in a manner so as to prevent any and all fluids, drilling mud, etc., from leaking into the arroyo situated to the north of the drilling location.

12. Please have anyone contacting the Survey in regard to this well to identify the well with all of the information required above for the well sign.

Sincerely yours,

(Orig. Sgd.) GEORGE H. STEWART

George H. Stewart
Acting District Engineer

PETROLEUM DEVELOPMENT CORPORATION

9720-B CANDELARIA, NE
ALBUQUERQUE, NEW MEXICO 87112
TELEPHONE (505) 293-4044

MULTI-POINT DRILLING PLAN

PETROLEUM DEVELOPMENT CORPORATION
LLANO-McKAY FEDERAL #2
750' FNL & 660' FWL, Sec. 13,
T19S, R31E, Eddy County, NM
Leases: NM23003 (Fed) 280 acres
LG3180 (State) 40 acres

This supplemental plan is submitted with the Application to Drill the above-described well in compliance with NTL-6 of the United State Department of the Interior.

1. The surface is composed of a fine-grained sand, quaternary in age, and caliche.

2. Estimated top of primary geologic markers are:

Rustler	680	(+2878)
Salt	840	(+2718)
Tansill	2270	(+1288)
Yates	2510	(+1048)
Seven Rivers	2890	(+ 668)
Queen	3230	(+ 328)
Delaware	5360	(-1802)
Bone Spring	6960	(-3402
Wolfcamp	10350	(-6792)
Strawn	11200	(-7642)
Atoka	11600	(-8042)
Morrow	11808	(-8250)

GL Elev.: 3562
Estimated KB Elev.: 3580

3. The estimated depths at which anticipated water, oil or gas bearing formations are to be encountered are:

700'	Salt Water	Rustler Dolomite
12300'	Gas	Morrow Sand

4. Proposed casing program: See Form 9-331C.

5. Pressure control equipment: See schematic, Exhibit "D". Before drilling the new-hole section, the BOP and related control equipment shall be pressure-tested to rated working pressures by an independent service company. The district office shall be notified in time to witness the tests.

5. (continued)
Pipe rams and the annular-type preventer shall be actuated at least once each 24 hours and the blind rams each time the drill pipe is out of the hole. Accumulators shall maintain a pressure capacity reserve at all times to provide for repeated operation of hydraulic preventers. Blowout prevention drills shall be conducted as necessary to insure that each drilling crew is properly trained to carry out emergency duties.

6. Mud program: See Exhibit "E".

7. Auxiliary equipment to be used:

(1) Kelly cock.
(2) Bit float.
(3) Pit volume totalizer system before reaching Wolfcamp.
(4) Flow line flow sensor before reaching Wolfcamp.
(5) Mud gas separator before reaching Wolfcamp.
(6) Rotating head before reaching Wolfcamp.
(7) Full-opening drill string safety valve on floor at all times before reaching Wolfcamp (valve in "open" position).

8. Testing, coring and logging program:

(1) All significant shows of oil or gas will be drill-stem tested. Testing procedure will involve use of dual packers, jars and safety joint. Duration of test, shut-in times, etc. will be determined by company engineer in charge.
(2) No coring is anticipated.
(3) The following logs will be run:
a. CNL - density log with gamma ray.
b. Dual laterolog.

9. No abnormal pressures are expected. The Morrow formation can be controlled with a 10.2#/gal. mud. No abnormal temperatures or free hydrogen sulfide gases are known to exist in the area.

10. Anticipated spud date is February 8, 1980. Drilling operations will require approximately 50 days; completion operations will require an additional two to three weeks.

PETROLEUM DEVELOPMENT CORPORATION

9720-B CANDELARIA, NE
ALBUQUERQUE, NEW MEXICO 87112
TELEPHONE (505) 293-4044

MULTI-POINT SURFACE USE AND OPERATIONS PLAN

PETROLEUM DEVELOPMENT CORPORATION
LLANO-McKAY FEDERAL #2
750' FNL & 660' FWL, Sec. 13,
T19S, R31E, Eddy County, NM
Leases: NM23003 (Fed) 280 acres
LG3180 (State) 40 acres

This plan is submitted with the Application for Permit to Drill the above described well. The purpose of the plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of necessary surface disturbance involved, and the procedures to be followed in rehabilitating the surface after completion of the operation so that a complete appraisal can be made of the environmental effects associated with the operation.

1. EXISTING ROADS:

   A. Exhibit "A" is a portion of a highway map showing the location of the proposed well, as staked. An unpaved county road runs northwesterly, one mile south of the location of this well, and connects with county NS road No. 176 in the E/2, 19-19-32. An existing lease road junctures with the unpaved county road in SW/4, 14-19-31, goes north approximately 0.4 mile, thence northeast approximately 0.6 mile to the location.

   B. Exhibit "B" is a plat showing all existing roads within a one-mile radius of the wellsite and the existing access.

   C. The existing lease road is currently in use and serviceable. Periodic grading will maintain the caliche topping. See Exhibits "A" and "B".

2. PLANNED ACCESS ROADS:

   A. Length and width: The existing access road, from the existing county road will be 12' wide and one mile long. See Exhibit "C".

   B. Surfacing material: six inches of caliche; watered, compacted and graded.

   C. Maximum grade: three percent.

   D. Turnouts: two equally-spaced passing turnouts will be used.

   E. Drainage design: new road will have a drop of six inches from center line on each side.

2. PLANNED ACCESS ROADS: (continued)

F. Culverts: none necessary.

G. Cuts and fills: none required; only general leveling of sand rolls.

H. Gates, cattleguards: none needed.

3. LOCATION OF EXISTING WELLS:

A. Existing wells within a one-mile radius are shown on Exhibit "B".

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:

A. There are no existing facilities on the lease. Production facilities for gas and condensate will consist of two or three storage tanks, a low pressure separator and a high pressure separator. The battery with flow line will be completely contained on the original drilling pad. The flow line will not be buried.

B. If the well is productive, the tank battery and flow lines will be located on the well pad and no additional surface disturbance will occur. The battery will be similar to that described in "A" above.

5. LOCATION AND TYPE OF WATER SUPPLY:

A. Water will be purchased and trucked to the wellsite over the existing and proposed roads shown on Exhibits "A" and "B".

6. SOURCE OF CONSTRUCTION MATERIALS:

A. Any caliche required for extending the existing pad will be obtained from the caliche pit located in the NE/4, Section 24, T19S, R31E.

7. METHODS OF HANDLING WASTE DISPOSAL:

A. Drill cuttings will be disposed of in the drilling pits.

B. Drilling fluids will be allowed to evaporate in the drilling pits until pits are dry.

C. Water produced during tests will be disposed of in the drilling pits. Oil produced during tests will be stored in test tanks until sold.

D. Current laws and regulations pertaining to the disposal of human waste will be complied with.

7. METHODS OF HANDLING WASTE DISPOSAL: (continued)

E. Trash, waste paper, garbage, and junk will be buried in a separate trash pit and covered with a minimum of 24 inches of dirt. All waste material will be contained to prevent scattering by the wind. Location of trash pit is shown on Exhibit "D".

F. All trash and debris will be buried or removed from the wellsite within 30 days after finishing drilling and/or completion operations.

8. ANCILLARY FACILITIES:

A. None required.

9. WELLSITE LAYOUT:

A. Exhibit "D" shows the relative location and dimensions of the well pad, mud pits, reserve pit, trash pit, and location of major rig components.

B. A cut of about 1½' will be required to extend the east end of the pad. The material removed will be used as fill for a similar extension on the west end of the old pad.

C. The reserve pit will be plastic lined.

D. The pad and pit area has not been staked and flagged, but will be extended as per Exhibit "C".

10. PLANS FOR RESTORATION OF THE SURFACE:

A. After completion of drilling and/or completion operations, all equipment and other material not needed for operations will be removed. Pits will be filled and location cleaned of all trash and junk to leave the wellsite in an aesthetically pleasing condition as possible.

B. Any unguarded pits containing fluids will be fenced until they are filled.

C. After abandonment of the well, any special rehabilitation and/or revegetation requirements of the surface management agency will be complied with and accomplished as expeditiously as possible. All pits will be filled and levelled within 90 days after abandonment.

11. OTHER INFORMATION:

A. Topography: Land surface is undulating to gently rolling. From an elevation of 3540 feet at the wellsite, the land surface slopes gently toward the southeast at about 20 feet per mile.

B. Soil: Soil is fine sand and caliche.

C. Flora and Fauna: The vegetative cover is generally sparse and consists of mesquite, yucca, shinnery oak, sandsage and perennial native range grasses. Wildlife in the area is that typical of semi-arid desert land and includes coyotes, rabbits, rodents, reptiles, dove, quail and an occasional antelope.

D. Ponds and Streams: There are no rivers, streams, lakes or ponds in the area.

E. Residences and Other Structures: The nearest occupied dwelling is at the Phillips plant 2 miles southeast of the wellsite. The nearest water well is at the Phillips plant also.

F. Archeological, Historical and Cultural Sites: None observed in the area.

G. Land Use: Grazing and hunting in season.

H. Surface Ownership: Wellsite and all roads are on Federal surface.

12. OPERATOR'S REPRESENTATIVES:

The field representatives responsible for assuring compliance with the approved surface use and operations plan are as follows:

Charles W. Sanders
3204 Candlelight Drive, NE
Albuquerque, New Mexico 87111
Office Phone: (505) 293-4044
Home Phone: (505) 294-7538

J. C. Johnson
9720 B Candelaria, NE
Albuquerque, New Mexico 87112
Office phone: (505) 293-4044
Home phone: (505) 299-6029

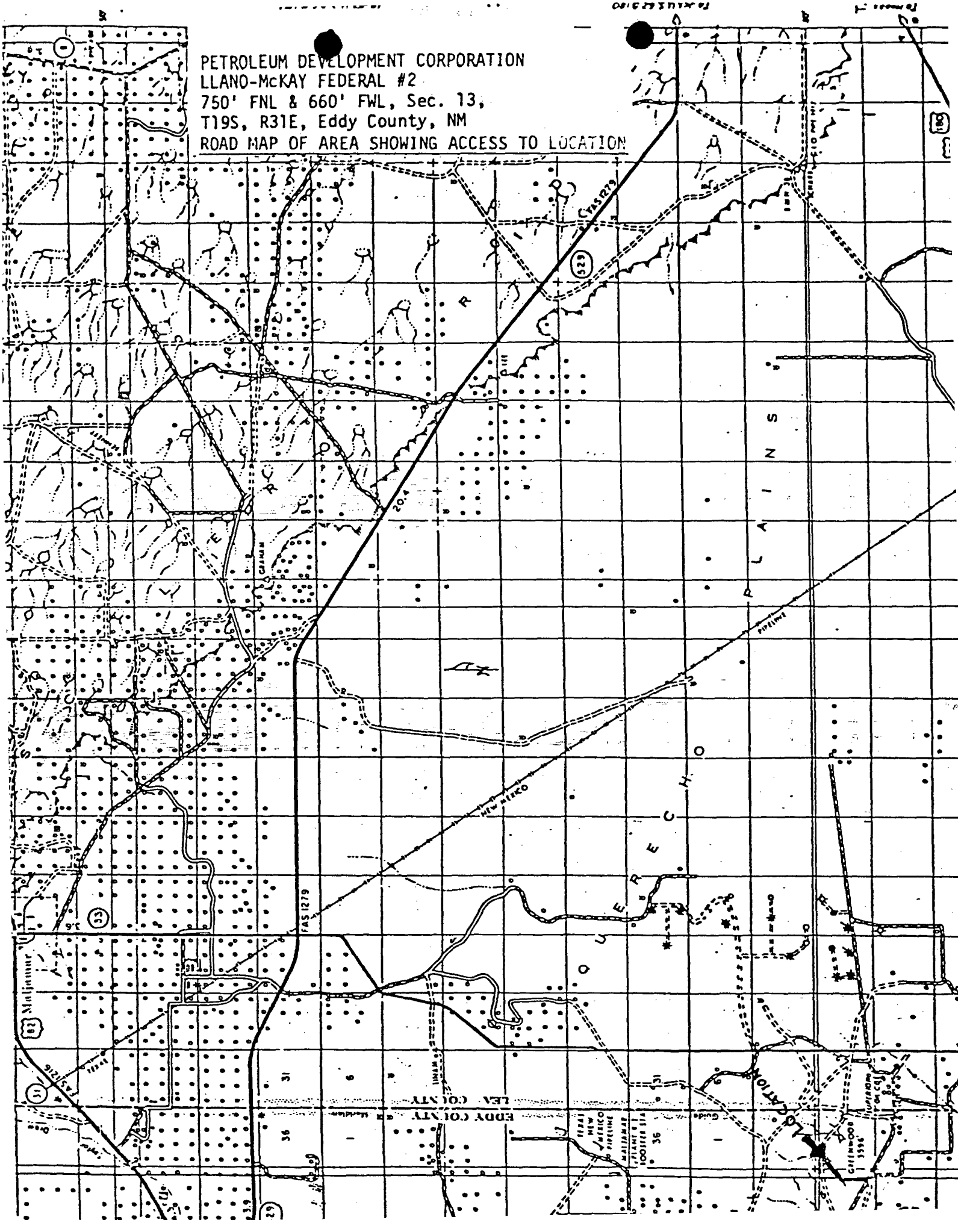
13. CERTIFICATION:

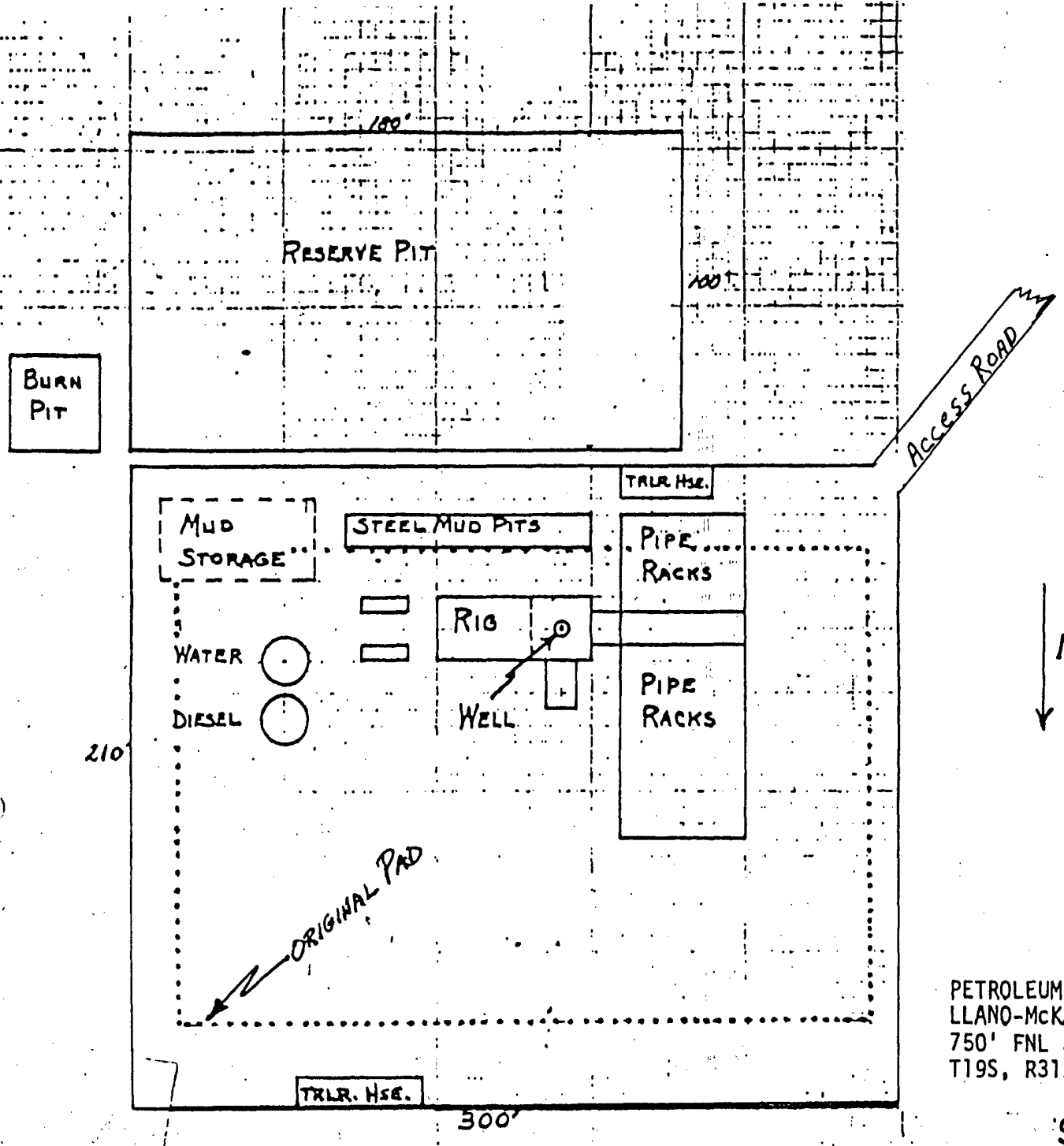
I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by Petroleum Development Corporation and its contractors and sub-contractors in conformity with this plan and the terms and conditions under which it is approved.

Lloyd G. Wayne
Lloyd G. Wayne
Vice President

LGW/pb

PETROLEUM DEVELOPMENT CORPORATION
LLANO-McKAY FEDERAL #2
750' FNL & 660' FWL, Sec. 13,
T19S, R31E, Eddy County, NM
ROAD MAP OF AREA SHOWING ACCESS TO LOCATION





PETROLEUM DEVELOPMENT CORPORATION
LLANO-McKAY FEDERAL #2
750' FNL & 660' FWL, Sec. 13,
T19S, R31E, Eddy County, NM

SCALE: 1" = 50'

EXHIBIT "C"

PETROLEUM DEVELOPMENT CORPORATION
LLANO-McKAY FEDERAL #2
750' FNL & 660' FWL, Sec. 13,
T19S, R31E, Eddy County, NM

B.O.P. & Choke Manifold Schematic
Series 1500
To meet Specs. of API Bul. D-13

NOT TO SCALE

EXHIBIT "D"

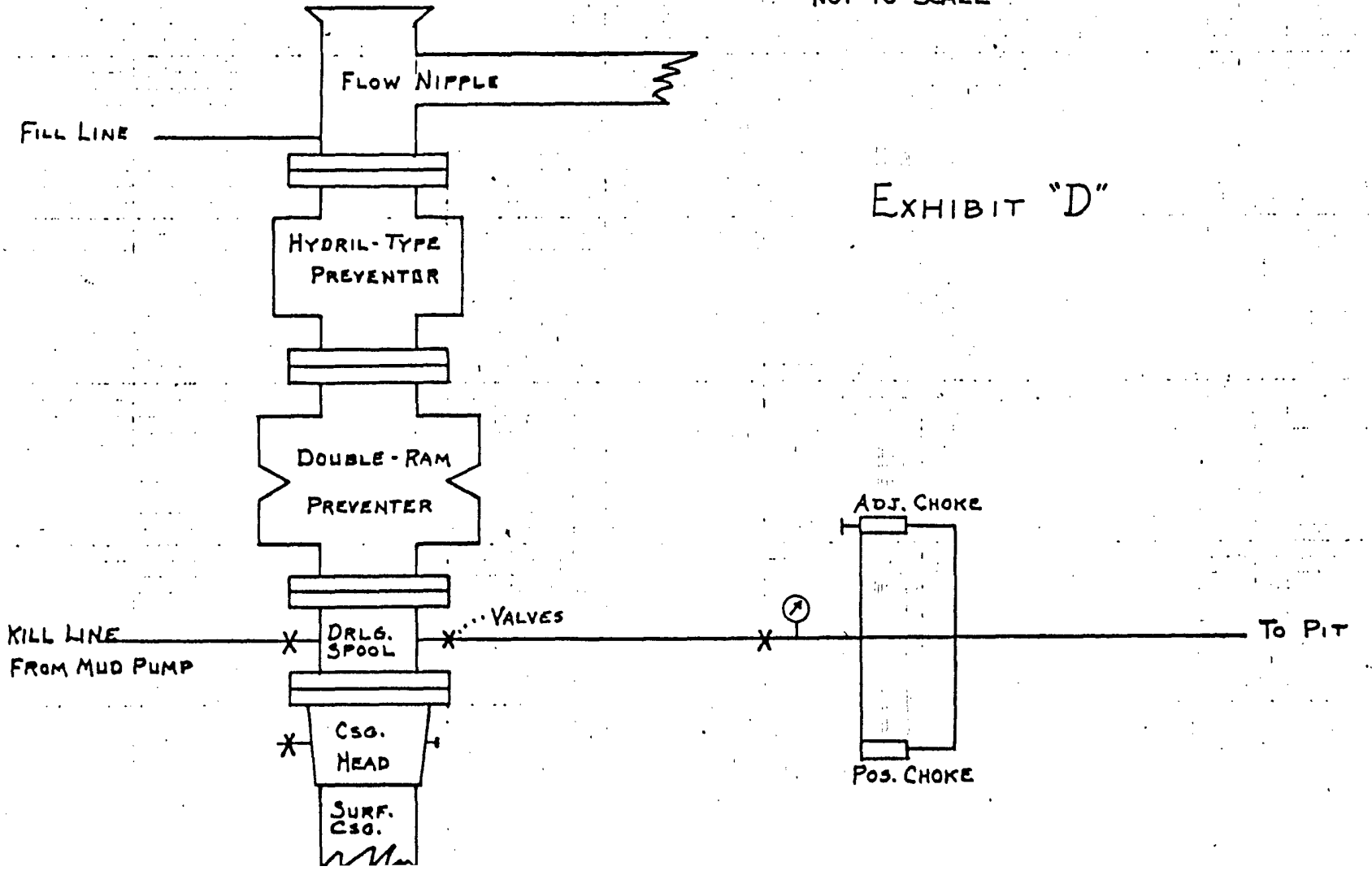
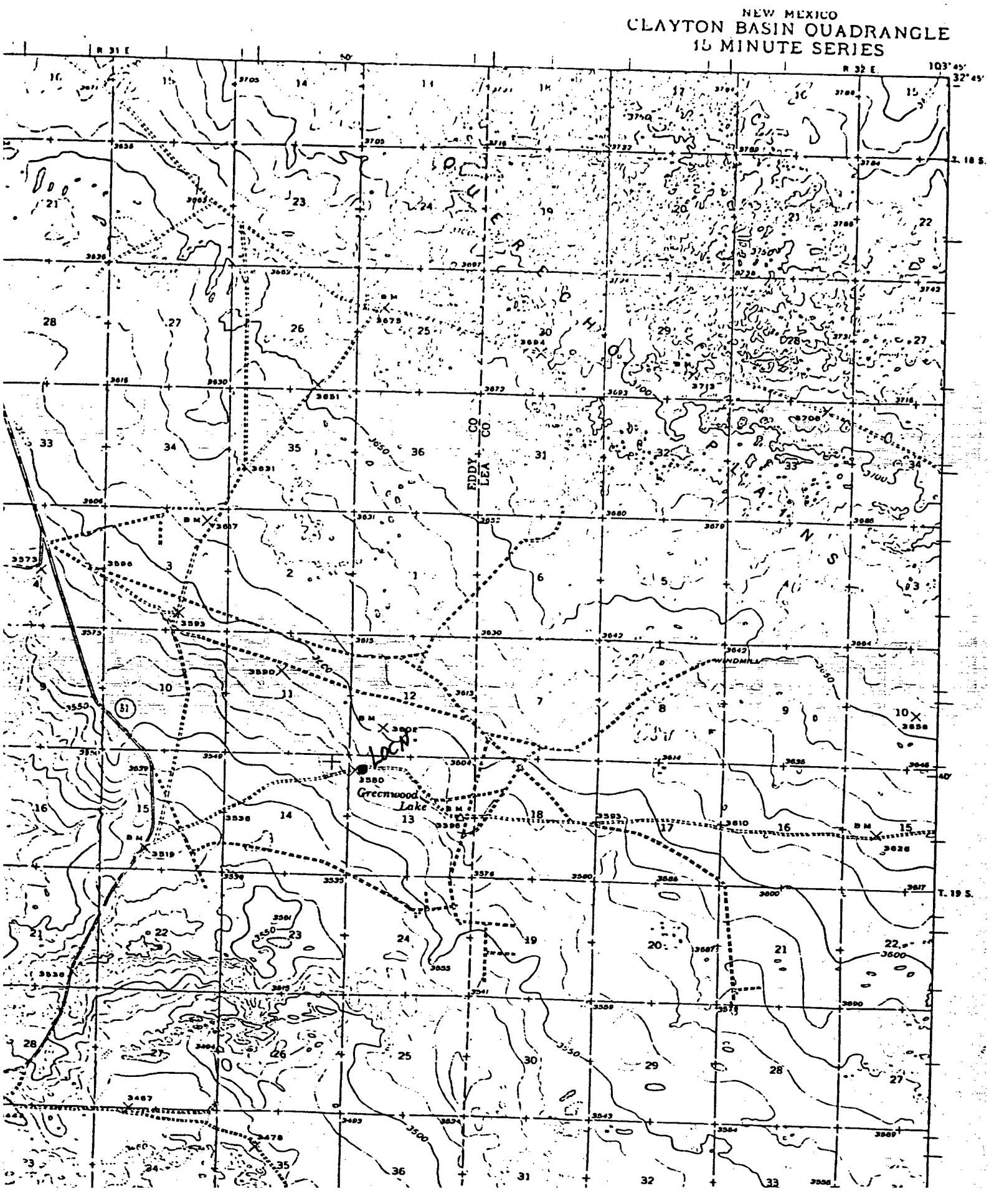


EXHIBIT "E"

PETROLEUM DEVELOPMENT CORPORATION
LLANO-McKAY FEDERAL #2
750' FNL & 660' FWL, Sec. 13,
T19S, R31E, Eddy County, NM

MUD PROGRAM

0-375	Gel and lime spud mud. No problems anticipated
400-4,020	Brine water. Treat for lost circulation in Seven Rivers by bringing viscosity to 34 sec. with gel and visquick; add hulls and fiber. If complete returns are lost, drill with fresh water with no circulation. Before pulling drill pipe prior to running casing, if lost circulation has occurred, pump in 300 barrels of viscous mud (70-80 sec.) to flush out any cuttings that may be below the loss zone.
4,200-10,000	Drill with fresh water and detergent using lime for pH control (or sodium bichromate for corrosion protection). If a commercially productive zone is indicated, water loss will be reduced to below 20 cc.
10,000-TD	Drill with 9.4 - 9.6# cut brine, increasing to 10.2# brine before drilling Morrow Sands, viscosity 31 sec. Water loss control: below 20 cc., if potential pay zones have been encountered previously. Prior to penetrating the Morrow pay zones, water loss will be reduced to 6-8 cc.


NEW MEXICO
CLAYTON BASIN QUADRANGLE
15 MINUTE SERIES
R 31 E
R 32 E
103° 45'
32° 45'
T. 18 S.
T. 19 S.
EDDY CO
LEA CO
Greenwood Lake
Loco
WINDMILL

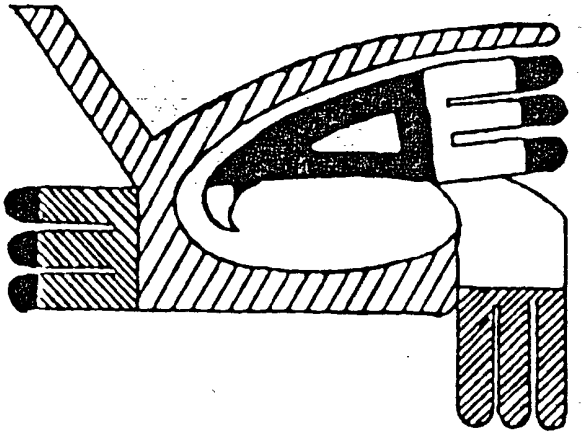
AN ARCHAEOLOGICAL RECONNAISSANCE FOR

PETROLEUM DEVELOPMENT CORPORATION

Llano-McKay Federal #2

~~Coastal State Sweeney Federal No. 1~~

80-150 b



by
Rodrick B. MacLennan

Edited and Submitted by

Dr. Peter S. Miller
Director
AGENCY FOR CONSERVATION ARCHAEOLOGY

Llano Estacado Center for Advanced
Professional Studies and Research

Eastern New Mexico University
Portales, New Mexico 88130

(505) 562-3332

November 6, 1979

INTRODUCTION

An archaeological reconnaissance was recently completed by the Agency for Conservation Archaeology, Eastern New Mexico University for Petroleum Development Corporation in Eddy County, New Mexico. The reconnoitered area will be impacted by the construction of a well pad. The project was administered by Mr. Charles Sanders, Petroleum Development Corporation and Dr. Peter S. Miller, Director, for ACA. This report was prepared by the Roswell office of ACA, Roc MacLennan, manager.

The field work was conducted on November 5, 1979 by Rod MacLennan. This survey was conducted under Federal Antiquity Permit Number 79-NM-049. A search of the National Register has been made and properties within this area are not on the National Register. Field and weather conditions were good during the course of the survey.

SURVEY TECHNIQUE

Visual inspection of the well pad was completed by walking a series of parallel transects. Each transect was covered in a tightly spaced zigzag pattern. The distance between transects was 20 feet. This method maximized the opportunity of observing any cultural resources within or near the proposed area of impact.

Coastal State Sweeney Federal No. 1

The proposed well pad is located 14 miles south southeast of Loco Hills, New Mexico, near the Querecho Plains. The pad measures 400 X 400 feet and is situated as follows:

NW¼NW¼, Section 13, T19S, R31E, NMPM, Eddy County, NM (BLM)

Map Reference: USGS Clayton Basin Quadrangle 15 Minute series, 1942 (Figure 1).

TERRAIN

The proposed well pad is located near the Querecho Plains and is 1000 feet north west of Greenwood Lake. It is situated on a northeasterly sloping plain. The elevation is 3580 feet. The soils encountered in the area are predominantly sandy clay. Lithic inclusions within this soil consist of large amounts of fragmented caliche. Taxonomically this soil can be classified as a member of the Haplargids-Torripsamments association.

FLORISTICS

ACA encountered a sparse floral assemblage in this vicinity.

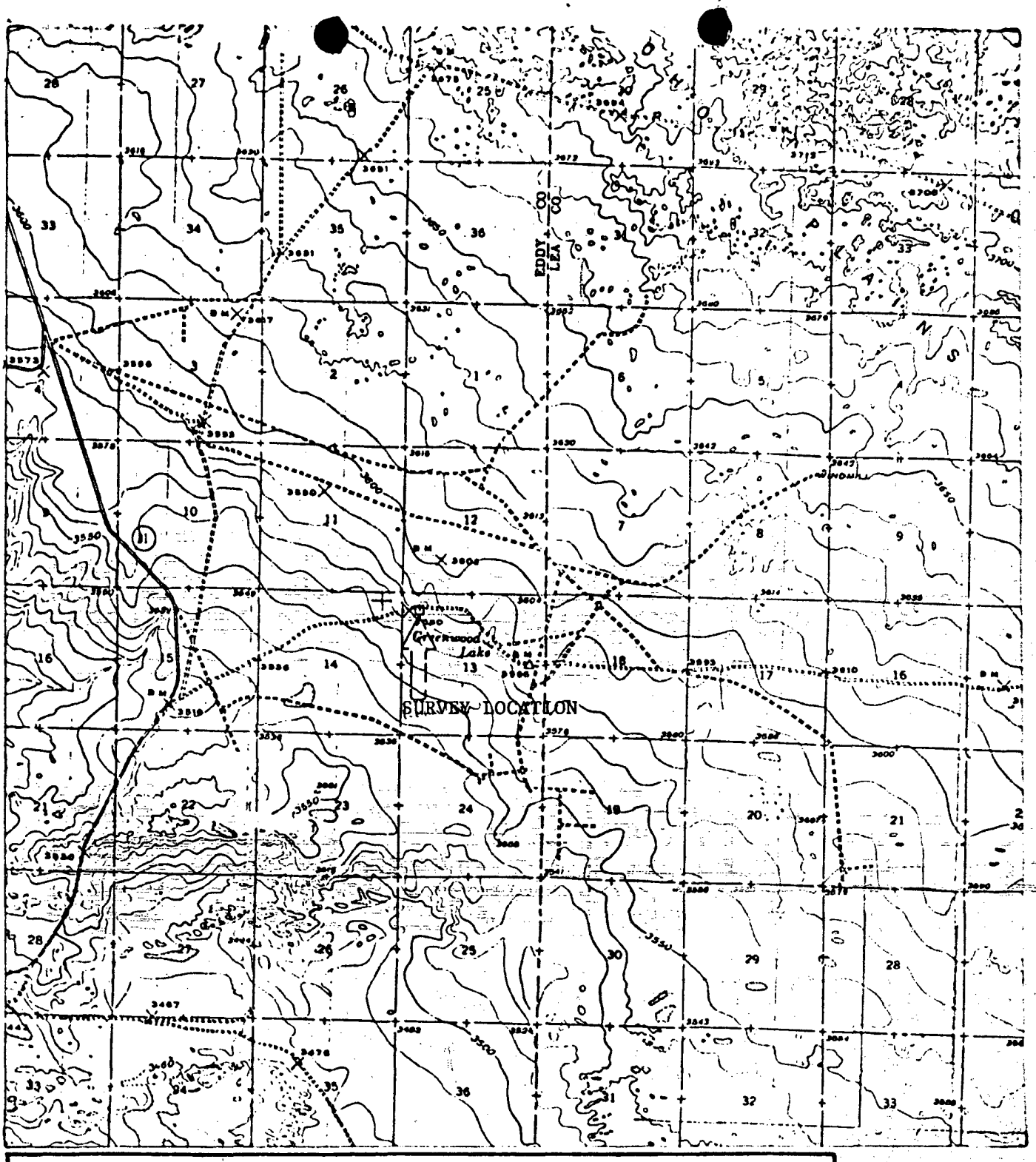
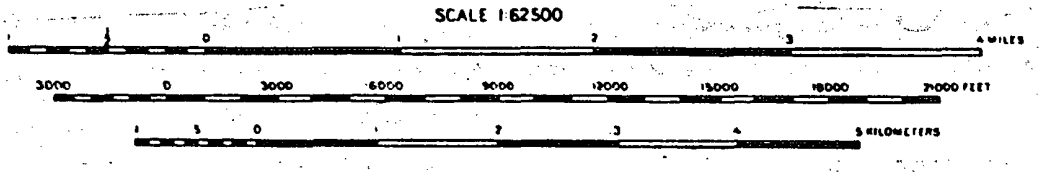


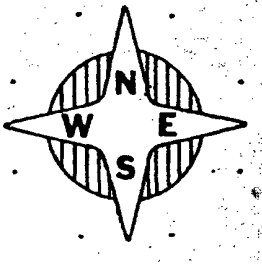
Figure 1: Location of PEDCO Coastal State Sweeney Federal No. 1.
Section 13, T19S, R31E, NMMP, Eddy County

Map Reference: USGS Clayton Basin Quadrangle 15 Minute series, 1942.

15 MINUTE
SERIES

SCALE 1:62500





The density of the vegetation in the area is approximately 10 percent. The floral community consists mainly of shrubs. Among the species present are mesquite (Prosopis juliflora), black grama (Bouteloua gracilis), sand dropseed (Sporobulus cryptandrus), western wheatgrass (Agropyron smithii), and broom snakeweed (Gutierrezia sarothrae).

CULTURAL RESOURCES

ACA did not encounter any archaeological sites or isolated manifestations, either within or near the proposed facilities. A review of the National Register did not find any properties listed for this location.

RECOMMENDATIONS

ACA recommends clearance for the well pad and suggests that construction be allowed to proceed as currently planned.