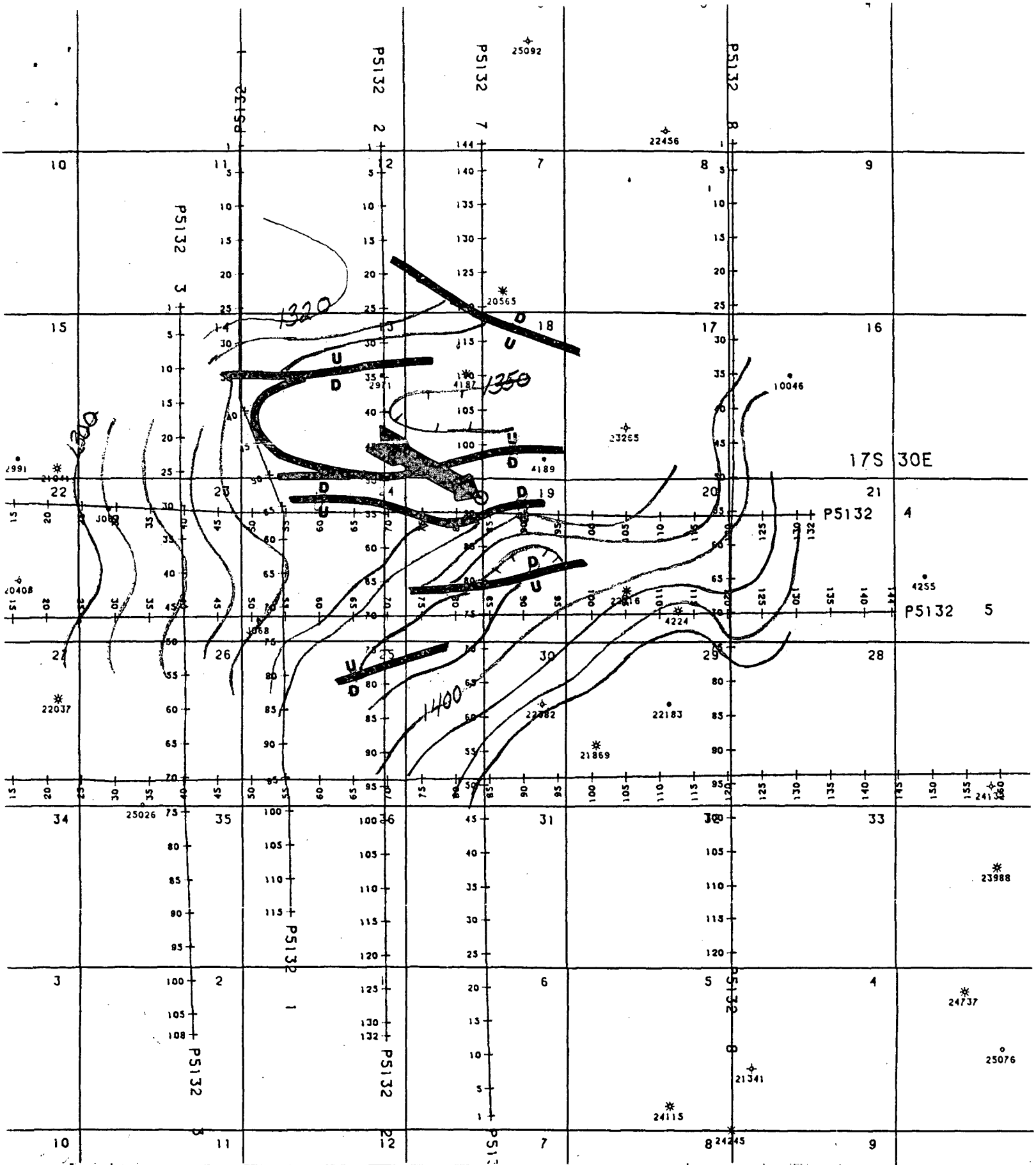


FOR BIDS	PHILLIPS PETROLEUM COMPANY		FILE CODE
FOR APPR		AFE NO.	SCALE 4000'
FOR CONST C.I. 10msec	Grayburg Deep Unit #10		
DRAWN	**LOCO HILLS MORROW PROSPECT**	DWG NO.	
CHECKED	**EDDY COUNTY, NEW MEXICO**		
APP'D	**Mississippian Time Structure**	SH NO.	
	Geology by R.G. Strauss 7/87		

NOTEGRAM—TELEGRAM

IF TELEGRAM

PRIORITY			COMMUNICATIONS CODE
3	2	1	

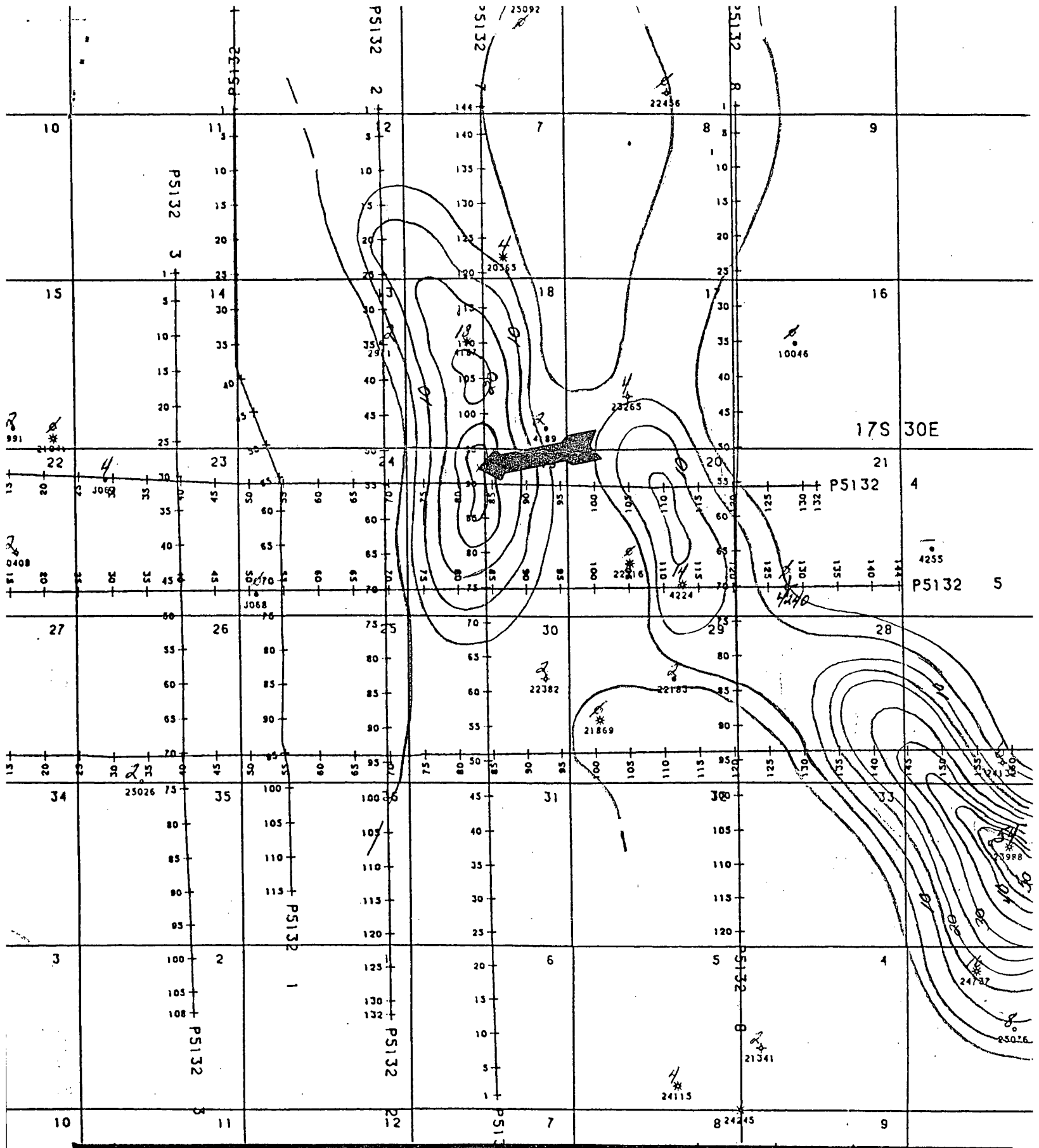
IS THIS MEMO REALLY NECESSARY?

Date 8/12/87

To David Catanach Group or Staff _____ Address _____

From L M Sanders Group or Staff _____ Address _____

Per our conversation - attached are maps for Graybura Deep Well No. 10.



FOR BIDS	PHILLIPS PETROLEUM COMPANY		FILE CODE
FOR APPR		AFE NO.	SCALE 4000'
FOR CONST C.I. 5'	Grayburg Deep Unit #10 **LOCO HILLS MORROW PROSPECT** **EDDY COUNTY, NEW MEXICO** ISOPACH-LOWER MORROW Geology by R.G. Strauss	DWG NO.	
DRAWN			
CHECKED		SH NO.	
APP'D			

Release Date:
Aug 17, 1987
Additional info
rec'd

By DRC

NSL-2387
RULE 104 F(II)

PHILLIPS PETROLEUM COMPANY
ODESSA, TEXAS 79762
4001 PENBROOK
EXPLORATION AND PRODUCTION GROUP

July 29, 1987

Request for approval of
Unorthodox location
Grayburg Deep Unit Well No. 10
Eddy County, New Mexico

New Mexico Department of Energy
Oil and Gas Division
P. O. Box 2088
Santa Fe, New Mexico 87501

Attn: William J. Lemay
Director

660 FNL & 2480 FWL Section 19. T-17-South R-30 East.

Undesignated Anderson Pennsylvanian Pool
160 Acres dedicated
NW/4 Section 19

Gentlemen:

Administrative approval provided by Statewide Rule 104 F (II) is requested to permit drilling the unorthodox location of subject well. The Anderson (Pennsylvanian) Field was established in 1956, and in accordance with Statewide Rule 104 C II (a), this well will have a 160 acre proration unit. There are no offset operators to this proration unit other than Phillips Petroleum Company.

Please find attached a project plat identifying all wells therein, a statement explaining the necessity for this location, and a copy of application to drill on federal lands.

Your early consideration is appreciated. Contact me at (915) 367-1488 if you have any questions.

Yours very truly,

Larry M. Sanders

Larry M. Sanders, Supervisor
Regulation and Proration

LMS/JLD/sdb
REG/PRO6/gdu

Attachment

cc: Bureau of Land Management
Carlsbad Area Resource Office
P. O. Box 1778
Carlsbad, New Mexico 88220

New Mexico Dept. of Energy & Minerals
Oil Conservation Division
Drawer DD
Artesia, New Mexico 88210

Form 3160–3
(November 1983)
(formerly 9–331C)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004–0136
Expires August 31, 1985

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.: LC-028784-C

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

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

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

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Grayburg Deep Unit

2. NAME OF OPERATOR: Phillips Petroleum Company

9. WELL NO.: 10

3. ADDRESS OF OPERATOR: Room 401, 4001 Penbrook St., Odessa, Texas 79762

10. FIELD AND POOL, OR WILDCAT: Anderson (Pennsylvanian)

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 660' FNL & 2480' FWL (Unit C)
At proposed prod. zone: 660' FNL & 2480' FWL (Unit C)

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 19, T-17-S, R-30-E

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 2 mi. Northwest from Loco Hills, NM

12. COUNTY OR PARISH: Eddy

13. STATE: NM

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any): 2800' FEL

16. NO. OF ACRES IN LEASE: 5484.17±

17. NO. OF ACRES ASSIGNED TO THIS WELL: 160

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.: 3960' S from #1

19. PROPOSED DEPTH: 11,200

20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): GL 3634.0 (Unprepared)

22. APPROX. DATE WORK WILL START*: Upon approval

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17-1/2"	13-3/8"	54.5#	400'	500 sk "C" circ. to surface
12-1/4"	8-5/8"	24# & 32#	3500'	1800 sk "C" circ. to surface
7-7/8"	5-1/2"	15.5# & 17#	11200'	1850 sacks Est. TOC @ 3000'

BOP Equipment: Figure 7-9 or 7-10 (Diagramatic sketches and operational detail attached)

Mud: Proposed detail mud program attached

This location is subject to OCD approval of unorthodox location.

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 W. J. Mueller TITLE Eng. Supervisor, Reservoir DATE 7/29/87

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the

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.
Phillips Petroleum Co.	Grayburg Deep Unit	10

Unit Letter	Section	Township	Range	County
C	19	17 South	30 East	Eddy

Actual Footage Location of Well: 660 feet from the North line and 2480 feet from the West line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
3634.0	Pennsylvanian	Anderson (Pennsylvanian)	160 Acres

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

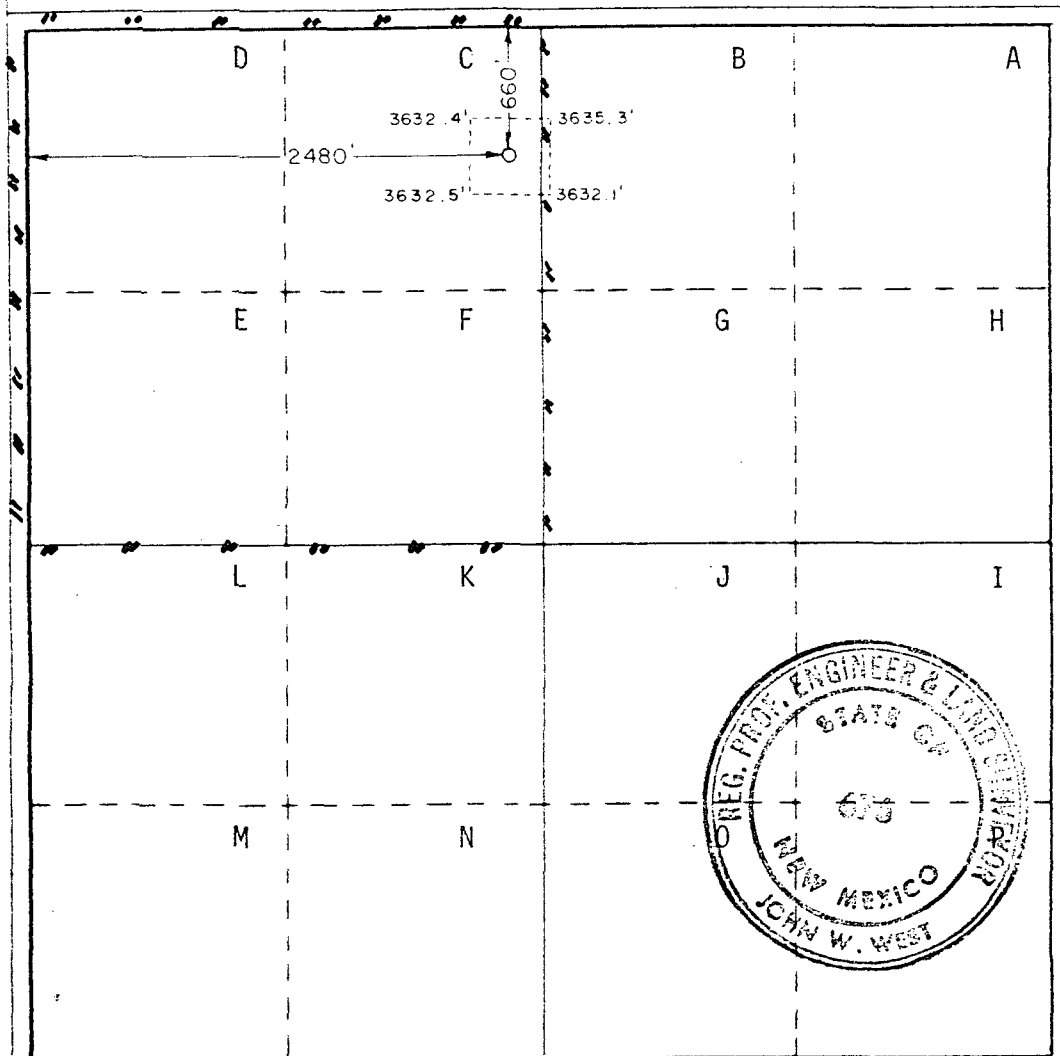
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

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: W. J. Mueller

Position: Eng. Supervisor, Reservoir

Company: Phillips Petroleum Co.

Date: 7/29/87

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: July 13, 1987

Registered Professional Engineer and/or Land Surveyor

Certificate No. JOHN W. WEST, 676
RONALD J. EIDSON, 3239

91746

PHILLIPS PETROLEUM COMPANY

DRILLING PROGNOSIS

1. Location of Proposed Well: 660' FNL and 2480' FWL, Sec. 19, T-17-S, R-30-E, Eddy County, NM

2. Unprepared Ground Elevation: 3634.0.

3. The geologic name of the surface formation is Typic Torripsamment.

4. Type of drilling tools will be Rotary.

5. Proposed drilling depth is 11200.

6. The estimated tops of important geologic markers are as follows:

Rustler	200'	Abo	6375'
Salt	500'	Wolfcamp	7615'
Tansill	1000'	Cisco	8740'
Yates	1130'	Canyon	9350'
Queen	2040'	Strawn	10215'
San Andres	2725'	Atoka	10390'
Paddock	4250'	Morrow	10640'
		Misc. Unconformity	11130'

7. The estimated depths at which anticipated water, oil, gas, or other mineral bearing formations are expected to be encountered are as follows:

Water:	Fresh water - None
	Salt water - 1989'
	Grayburg - 2350'
	San Andres - 2725'
	Abo - 6375'

8. The proposed casing program is as follows:

Surface String 13-3/8" 54.5# K @ 400'
Intermediate Casing 8-5/8" 24-32# K @ 3500'
Production String 5-1/2" 15.5 K - 17# N @ 11200'

9. Cement Program:
Surface String = Circulate to surface with 500 sx Class C + 2% $CaCL_2$. (Slurry weight 14.8 ppg. Slurry yield 1.32 cu ft/sk w/6.3 gal/sk.) WOC 18 hrs. Test casing to 1000 psi for 30 min.

Intermediate String = Circulate to surface using fluid caliper plus 20% excess lead w/1600 sx Class C w/4% Bentonite and 5% salt. (Slurry weight 13.6 ppg, yield 1.7 ft^3/sk, w/8.9 gal/sk, 3.7#/sk salt.) Tail w/200 sx Class C neat (slurry weight 14.8 ppg. Slurry yield 1.32 ft^3/sk w/6.3 gal/sk.) WOC 18 hrs. Test casing to 1000 psi for 30 min.

REG5/Typic

Production String = Tie back to intermediate w/caliper vol. + 30% excess. Rotate casing @ 15-20 RPM from first established circulation until plug bumps. Lead w/1500 sx Pozmix A (Class H) cmt. w/4% Bentonite + .3% HR-5. Slurry weight 13.5 ppg, slurry yield 1.44 cu ft/sk w/7.0 gal/sk.) Tail w/350 sx Class "H" Neat. (Slurry weight 15.6 ppg, slurry yield 1.18 cu ft/sk w/5.2 gal/sk. WOC 18 hrs. Run temperature survey for top of cmt.

10. The minimum specifications for pressure control equipment which are to be used, a schematic diagram thereof showing sizes, pressure ratings (or) API series) and the testing procedure and testing frequency are attached.

11. The proposed mud program is attached (see Drilling Specialties mud letter).

12. The testing, logging, and coring programs are as follows:

D.S.T.'s or cores Possibly 2 DST

Logs (1) DLL-Micro SFL-GR-TD to 3500'. (2) CNL-LDT-GR-Caliper - TD to 3500', continue GR-CNL-Caliper to surface. (3) LSS Sonic-GR w/integrated travel time. TD to 3500'.

Special tests: None

13. Anticipate no abnormal pressures or temperatures to be encountered or any other potential hazards such as Hydrogen Sulfide Gas. Low risk H_2S equipment will be used.

14. The anticipated starting date is immediately upon approval with duration of operations for approximately 30 days thereafter.

15. Water Supply: Purchased from contract trucking company.

16. Caliche for road and pad construction to be obtained from Federal Pit Sec. 19, T-17-S, R-30-E.

July 30, 1987

Proposed Mud Program -- Grayburg Deep Unit #10, Anderson (Penn) Field, 11,200' T.D. Section 19, T-17-S, R-30-E, Eddy County, New Mexico.

Surface - 375' of 13-3/8" Casing
Spud with fresh water, bentonite, and lime mixed to a high viscosity. Use paper for seepage. (Possible lost circulation at 100' to 200'.) Maintain sufficient viscosity to clean the hole for drilling, and running casing.

Intermediate - 3500' of 8-5/8" Casing
Drill out from under surface casing with 10 lb. brine water. Circulate through the reserve pit. Use minimum volume necessary to circulate the hole. (Possible water flow at 2100'±.) Use paper for seepage. Mix one or two sacks of Magma Fiber in suction pit, or 1/2-1 sack Magma Fiber at a time through pump suction, as necessary for additional hole cleaning. The saturated brine may be adequate to run casing. However, if a water flow is not encountered, and mud is desired to run casing, return to steel pits. Mud up with salt gel and starch (Viscosity - 34 to 36 sec./1000cc & W.L. - 15 to 20cc). If water flow is encountered, sweep hole good at casing depth, and spot high viscosity mud in hole below water flow before coming out of hole to run casing.

Below Intermediate to 8700'
Jet and clean suction pit. Drill out from under intermediate casing with fresh water. (Utilize brine water from the hole.) Circulate thru the brine free portion of the reserve pit. Maintain 35,000 to 45,000ppm chlorides with brine water. Use Magma Fiber & L.C.M., as needed, for seepage and/or lost circulation.

From 8700' to 10,000'
At 8700' return to clean steel pits. Add Drispac*, and reduce the Fluid Loss to 20cc. (Some drill solids will be required for Drispac to build the filter cake.) Add, and maintain, 3%+ KCl, or equivalent with Potash brine (3% KCl will provide about 14,500 ppm chloride). Maintain minimum weight possible, having 35,000 ppm chlorides, as severe seepage losses are likely. Mix Magma Fiber and L.C.M. as needed. Run Magma Fiber sweeps if additional hole cleaning is required.

From 10,000' to 11,200' T.D.
At 10,000' reduce Fluid Loss to 10cc, or less. Maintain the following mud properties to T.D.: Viscosity - 32 to 36 sec./1000cc; Fluid Loss - 10cc, or less; Weight - minimum weight practical; KCl - 3%+; Chlorides - 35,000 ppm minimum. If hole conditions dictate, prior to reaching T.D., adjust mud properties as necessary to insure running open hole logs and casing.

The mud engineer shall include on each test report: Daily cost and materials used for the previous 24-hour period. Twice weekly mail a copy of the test reports to:

D. G. Slemmons
4001 Penbrook
Odessa, Texas 79762

Send two copies of the Well Recap (Final Cost & Engineering Summaries) to:
D. G. Slemmons

* - Trademark

Mud Additives Recommended on Initial Load
(To be placed on pallets & covered)

Bentonite - 40 sacks
Paper - 40 sacks
Lime - 5 sacks

Mud will be ordered by Phillips' Drilling Supervisor.

DR2/gd10

BLOWOUT PREVENTER REQUIREMENTS

Well Name Grayburg Deep Unit Well No. 10

I. Blowout preventer equipment, installation, testing and responsibilities will be in accordance with Phillips Petroleum Company's Blowout Preventer Standards.

II. Figure Nos. 7-9 or 7-10 (Drawing Attached): Casing String 13-3/8", 8-5/8" 5-1/2"
BOP Size 13-3/8" ; Working Pressure 3000 psi

III. Equipment to be furnished by Contractor:

A. Ram Type BOPs:
1. No. Required two
2. Acceptable Manufacturers & Types
   a. Cameron Iron Works: QRC; F; SS; U
   b. Shaffer Tool Works: B; E; LWS; LWP
   c. Hydril

B. Annular Type BOP's:
1. No. Required -
2. Acceptable Manufacturers & Types
   a. Hydril - GK
   b. Shaffer - Spherical
   c. Cameron - D

C. Preventer Operating Equipment
1. Hydraulic Pump - air, steam or electrically operated of sufficient volume and pressure capacity to close the largest ram type preventer in less than 30 seconds. Electrically operated pump must be equipped with explosion proof motor and controls.
2. Manifold with a control valve for each preventer.
3. A Hydril or equivalent regulator for each annular type preventer.
4. Accumulator of sufficient volume and pressure capacity to close all preventers in the assembly without recharging. If the pump in C.1. is incapable of recharging the accumulator in excess of 1500 psi, a separate pump capable of this is to be furnished.
5. Remote control panel with a station for each preventer control valve.
6. Steel piping to connect hydraulic closing units to preventers.
7. Choke manifold with seamless steel piping and flanged or clamp hub connections. Choke manifold assembly and piping sizes as specified, on the attached drawing. All working lines, except hydraulic closing lines, shall have flanged or clamp hub connections to preventers, spools and casing heads.
8. Full opening drill string safety valve (I.D. equal or larger than I.D. of tool joint in use). Working pressure to equal or exceed specified BOP working pressure. O.D. and configuration such that valve can be run in the hole with adequate clearance.
9. Full opening upper Kelly cock. Working pressure to equal or exceed specified BOP working pressure.

III. C. (continued)

10. Hydraulic pump of sufficient pressure rating to test preventer assembly to rated working pressure with necessary hose and fittings to connect the pump to drill pipe box or safety valve pin.
11. Drilling spool for use with single ram type preventers or with dual ram type preventers which do not have outlets between the rams.
12. Two valves on each side of drilling spool or dual preventers, one side for choke manifold connection and the other for kill line connection.
13. Hand wheels and extensions for manual operation of the ram type preventers. U-joints, extension guides, working platform(s) as necessary.
14. A 1" - 5000 psi WP plug valve on the closing side of the annular type preventer using an XXE 1" X 4" nipple.
15. Flowlines from choke manifold to pits.
16. Pressure gauge with pressure range at least equivalent to BOP WP.

IV. Equipment to be furnished by Phillips:

A. Test plug to seat in casing head.

B. Remote controlled chokes, if installed.

C. Casinghead with valves on outlets.

D. Inside blowout preventer, if required.

E. Mud-gas separator, if required, and necessary piping.

V. Location of Equipment and Controls:

A. Remote control panel on the rig floor adjacent to driller's position and stairway exit from the floor.

B. Accumulator-Hydraulic Control Valve Unit to be placed minimum of 50 feet from well bore in easily accessible location.

C. Choke manifold located 5 feet or more from the BOPs with minimum number of turns in the run.

D. Manual closing facilities installed so handwheels are outside the substructures in unobstructed location. U-joints, extension guides and working platforms installed as necessary for proper and safe operation.

E. Choke manifold connection, where possible, is to be made between the two bottom ram type preventers through use of a drilling spool or by connecting between rams of dual type units with outlets so installed.
   1. On dual type preventers where outlets are not installed between rams, connection is to be made to a drilling spool installed between the ram type and annular type preventers.

V. (Continued)

F. Position and Type Rams will be as shown on the attached drawing.

G. Fill up line to be tied into the bell nipple above annular preventers.

H. Safety Valve, open with connections and/or subs available to fit any tool joint in use, shall be on the rig floor at all times.

VI. Testing

A. Initial Installation Test
Immediately after installation, each component part of the blowout preventer assembly including choke lines, valves and closing facilities will be tested individually by steps as outlined in the Blowout Preventer Testing Procedure section of Phillips' Blowout Preventer Standards. The test pressure will be at the working pressure specified in Item II. All components must be satisfactorily tested before drilling out.

B. Ram Change or Repair Test
1. After each ram change or when any component part of the preventer assembly, including lines and valves, is disturbed, the disturbed portion is to be tested to working pressure specified in Item II.
2. Installation of casing rams is not required for running casing.

C. Weekly Pressure Test
The first trip out of the hole after 12:01 AM, Tuesday, weekly test will be performed as outlined in the Blowout Preventer Testing Procedure which includes testing the entire assembly with water to 1/2 the specified working pressure for 10 minutes. The Kelly cock and safety valve are to be tested to the specified working pressure. The weekly test is not required where the test falls within three days after the initial installation test.

D. Operational Test
Each preventer unit is to be closed and opened on each trip or at least once each 48 hours (trip is not required just to actuate blind rams or pipe rams that do not fit top section of tapered string).

VII. Responsibilities

A. Contractor is to install and test the blowout preventer assembly as specified.

B. The driller is to check and record the accumulator pressure on the daily drilling report at the beginning of each tour.

C. Expense of rig time and pressure testing services for initial and weekly tests will be borne by:
1. Contractor while on footage contract.
2. Owner while on daywork contract.

SURFACE USE PLAN

Phillips Petroleum Company, Grayburg Deep Unit Well No. 10, NE/4, NW/4, Section 19, T-17-S, R-30-E, Eddy County, New Mexico. (Lease No. LC-028784-C

This plan is to accompany "Application for Permit to Drill" the subject well which is located approximately two miles NW from Loco Hills New Mexico. The following is a discussion of pertinent information concerning the possible effect which the proposed drilling well may have on the environment of the well and road sites and surrounding acreage. A copy will be posted on the derrick floor so that all contractors and sub-contractors will be aware of all items of this plan.

1. Existing Roads

   A. Runs 200' east of planned location in N & S direction.

2. Planned Access Roads

   A. 200' east of existing road to SW corner of location - 20' wide.

   B. Turnouts: None.
   C. Drainage Design: New road will have center line to side line slope.
   D. Culverts, Cuts and Fills: None
   E. Surfacing Material: Caliche well pad and roads.
   F. Gates, Cattleguards, Fences:
   G. Proposed Road: The proposed road is centerline staked.

3. Locations of Existing Wells: No. 1 is located 1980' FN & 1984' FW Lines, Section 18, T-17-S, R-30-E.

4. Locations of Tank Batteries, Production Facilities, Production Gathering, and Service Lines: The present tank battery is located Section 18, T-17-S, R-30-E.
   Flow line from Well No. 10 to run alongside proposed access roadway.

5. Water Supply Source: Transported by contract trucking company.

6. Source of Construction Materials

   A. Caliche for surfacing the new road and well pads will be obtained from SW/4 Sec. 19, T-17-S, R-30-E (Federal Pit)

7. Methods for Handling Waste Disposal

   Will be put in separate waste pits and covered with minimum of 2' backfill. (See sketch.) If well is productive, maintenance waste will be placed in

special trash cans and hauled away periodically. All produced water will be collected in tanks until hauled to an approved disposal system, or separate disposal applications will be submitted for appropriate approval.

8. Ancillary Facilities: None

9. Well Site Layout: Attached sketch shows the relative location and dimensions of the well pad, mud pit, reserve pit, and trash pit. Location will be 300 x 300.

10. Plans for Restoration of Surface:

Pit will be backfilled and levelled as soon as practical to original condition. If well is productive, caliche pad will remain as well service pad. If dry hole, pads and access roads will be ripped per regulations. Commencement of rehabilitation operations will immediately follow removal of drilling and completion equipment from location and rehabilitation of the surface is planned to be completed within 60 days from commencement.

11. Other Information:

A. Terrain: See Archaeological Report
B. Soil: See Archaeological Report
C. Vegetation: See Archaeological Report
D. Surface Use: Possible grazing
E. Ponds and Streams: None
F. Water Wells: None
G. Residences and Buildings: 1 mile south of location
H. Arroyos, Canyons, etc.: None
I. Well Sign: Sign identifying and locating the well will be maintained at drill site with the spudding of the well.
J. Archaeological Resources: See Archaeological Report

12. Operator's Representative: Field personnel who can be contacted concerning compliance of the "Surface Use Plan" is as follows:

Production and Drilling
W. B. Berry
4001 Penbrook Street
Odessa, Texas 79762
Phone: 915-367-1488

or

D. J. Fisher
1625 West Marland
Hobbs, New Mexico 88240
Phone: 505-393-5121

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 Phillips Petroleum Company and its contractors and sub-contractors in conformity with this plan and the terms and conditions under which it is approved.

W. B. Berry
Permian Basin Region
Phillips Petroleum Company

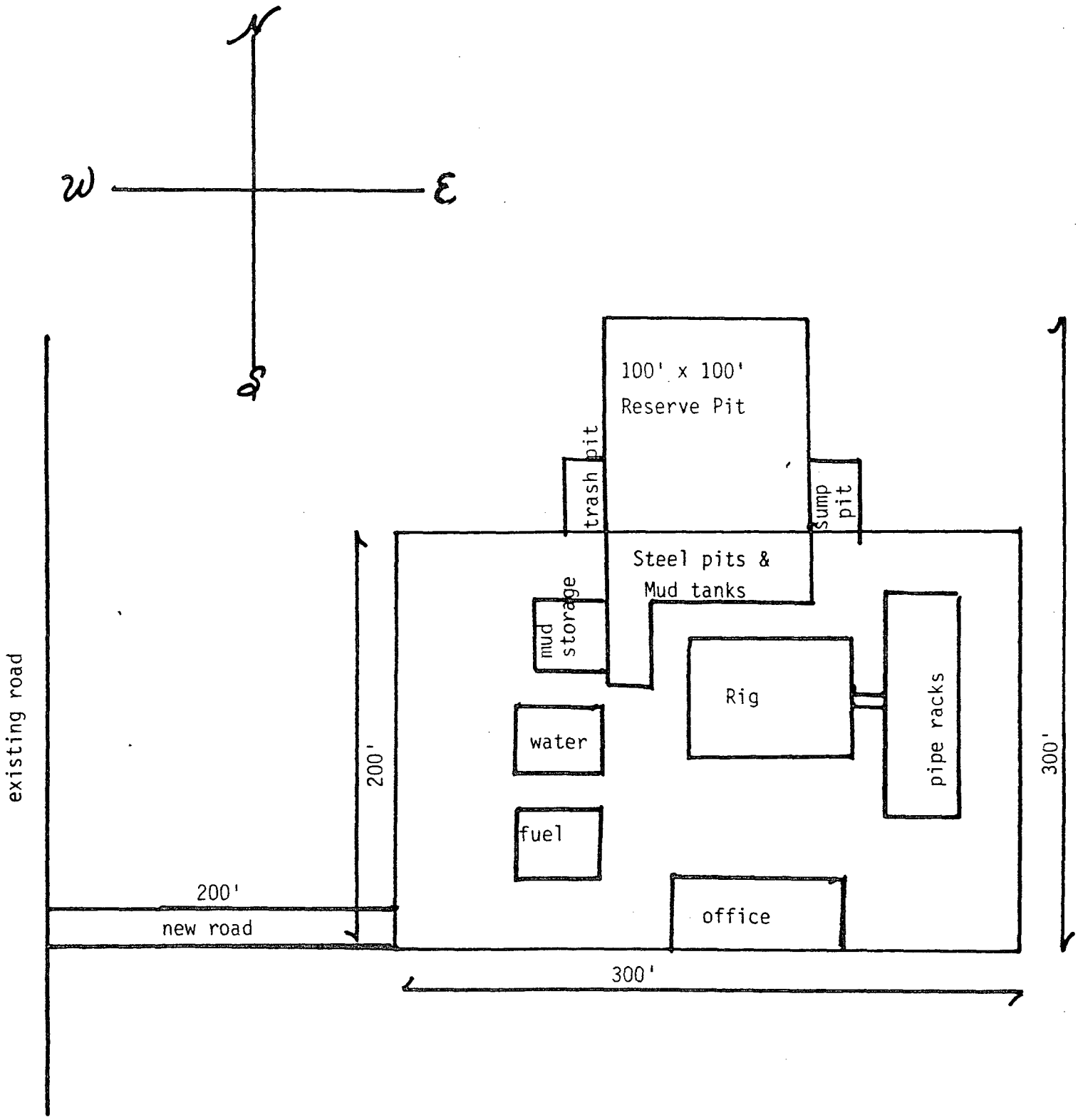
7/29/87
Date

REG5/Surface2

PHILLIPS PETROLEUM COMPANY

GRAYBURG DEEP UNIT WELL NO. 10

Eddy County, New Mexico



NMAS
New Mexico Archaeological Services, Inc.

P. O. Box 1341
Carlsbad, New Mexico 88220
(505) 887-7646

Reconnaissance
Excavation
Analysis
Explanation
Curation

16 July 1987

PHILLIPS PETROLEUM CO.

JUL 20 1987

RECEIVED

Mr. Wes Stinson
Staff Drilling Superintendent
PHILLIPS PETROLEUM COMPANY
1625 West Marland
Hobbs, New Mexico 88240

Dear Mr. Stinson:

Enclosed please find NMAS' Archaeological Clearance Report for PHILLIPS PETROLEUM COMPANY's proposed Grayburg Deep Unit Well No. 10 and its associated access road in Eddy County, New Mexico. No cultural resources were recorded during this survey; therefore, NMAS is suggesting clearance for this project.

If you have any questions pertaining to this report, please call my office. Thank you for asking NMAS to do this survey.

Yours sincerely,

J. Loring Haskell

Dr. J. Loring Haskell
Principal Investigator

Enclosure

cc: Mr. David Kayser, BLM, Carlsbad

as

Archaeological Clearance Report

for

PHILLIPS PETROLEUM COMPANY

Grayburg Deep Unit Well No. 10
Section 19, T17S, R30E, NMPM, Eddy County, NM

Prepared

By

Dr. J. Loring Haskell

Submitted

By

Dr. J. Loring Haskell
Prinipcal Investigator
New Mexico Archaeological Services, Inc.
Carlsbad, New Mexico

16 July 1987

Permit No. 14-2920-87-G

Report Number: NMAS-1987-2-JY

ABSTRACT

New Mexico Archaeological Services, Inc., representing PHILLIPS PETROLEUM COMPANY, Odessa, undertook a Class III survey of Bureau of Land Management lands scheduled to be impacted by the construction of a drill location and its associated access road. Field work was conducted under partly cloudy and calm conditions during mid-afternoon. The proposed location will measure 400 X 400 feet (actual area surveyed 4.44 acres). The access road will measure 100 X 250 feet (actual area surveyed 0.57 acre). Total acreage 5.01 acres. They will be situated in Section 19, T17S, R30E, NMPM, Eddy County, New Mexico. No cultural resources were recorded during this survey; therefore, NMAS is suggesting clearance for PHILLIPS PETROLEUM COMPANY's proposed work.

Introduction

On 15 July 1987, New Mexico Archaeological Services, Inc., (NMAS), Carlsbad, (Permit Number 14-2920-87-G), undertook for PHILLIPS PETROLEUM COMPANY, Hobbs, an archaeological survey of federal lands administered by the Bureau of Land Management in Eddy County, New Mexico. The reconnoitered area will be impacted by the construction of a drill location and its associated access road. This project was advanced by Mr. Wes Stinson, Staff Drilling Superintendent, PHILLIPS PETROLEUM COMPANY and administered by Dr. J. Loring Haskell, Principal Investigator, NMAS, Inc. This survey was undertaken by Dr. Haskell.

Survey Technique

For this investigation, PHILLIPS PETROLEUM COMPANY's proposed location was reconnoitered for evidence of man's past activities by walking it in a series of 8.0 m wide, close interval (15° or less), zigzag transects. In addition, an added zone extending 6 m on each side of the staked 400 X 400 foot location, and lying outside the bounds of the proposed work area, was reconnoitered by a similar means. The access road was walked in two, 15 m wide transects. At its juncture with the existing lease road, the surveyed area was broadened to embrace an area measuring 100 X 150 feet. Lathe is considered to be the center of the proposed road. Field work was conducted under partly cloudy and calm conditions during mid-afternoon. Ground visibility ranges between 75 and 85%. Field time one hour.

Grayburg Deep Unit Well No. 10

Location

The proposed location will measure 400 X 400 feet (actual area surveyed 4.44 acres) on federal land and will be situated 660 feet from the north line and 2480 feet from the west line.

Section 19, T17S, R30E, NMPM, Eddy County, NM

Thus it will be situated in the:

NE¼NW¼, Section 19, T17S, R30E, NMPM, Eddy County, NM

The associated access road will measure approximately 100 X 250 feet (actual area surveyed 0.57 acre) and is situated in the:

NE¼NW¼, Section 19, T17S, R30E, NMPM, Eddy County, NM

Map Reference: USGS RED LAKE SE QUADRANGLE, 7.5 Minute Series, 1955.

An existing flow line crosses the west-central portion of the location.

Environmental Setting

PHILLIPS PETROLEUM COMPANY's proposed location will be situated within a subsidence basin whose surface is distinguished by a continuous system of coppice dunes and an interconnecting web of interdunal areas. Microrelief ranges between 0.50 and 1.0 m in height. Elevation is approximately 1108 m. The location is distinguished by multiple aspect. Nearest permanent water is, of course, the Pecos River lying some 17 miles to the west. Seasonal sources occur in the form of runoff collecting in areal dolines. Seeps and springs occur within the Bear Grass catchment lying three miles to the west. Areal soil individuals are composed of loose noncalcareous, sandy clay loams

and loamy sands. Taxonomically, pedons fall within the Typic Torripsamment subgroup/Kermit-Berino Series. Lithic inclusions are limited to caliche and occasional cherty gravels. Inclusions increase in frequency toward the southeast where they constitute a light- and broken-scree. Croute calcaire underlies surficial deposits at variable depths. Areal soils are supportive of a mesquite- dominated scrub land. Being a subsidence basin, the effects of ephemeral sheetwash, along with aeolian processes, are combining to degrade the coeval surface. The surficial stratum thickens toward the east to east-southeast, i.e., in the direction of the basal portion of the subsidence structure.

Cultural Resources

Prefield 14 July 1987, Arita K. Slate, no archaeological sites.

No cultural properties were recorded during the course of this survey. The primary reason cited for their absence is the overall dearth of siliceous lithic material of a size needed for effective, chipped stone manufacture. Additionally, shelter is less than adequate as is the local availability of water. Land usage should have centered on hunting- and hunting-related tasks throughout prehistory. Expected cultural properties, should they occur, should be of the isolated variety and hence should occur on a random, non-patterned basis. Artifacts, of this type include projectile points, scrapers, gravers, débitage, etc.

Recommendations

NMAS recommends clearance for PHILLIPS PETROLEUM COMPANY's proposed Grayburg Deep Unit Well No. 10 and its access road and suggests that work-related activities proceed in accordance with

company plans (Fig. 1). Clearance, of course, is granted by the Bureau of Land Management. If cultural resources are encountered during construction, the BLM and NMAS should be notified immediately. Duned settings are notorious for covering and uncovering cultural properties.

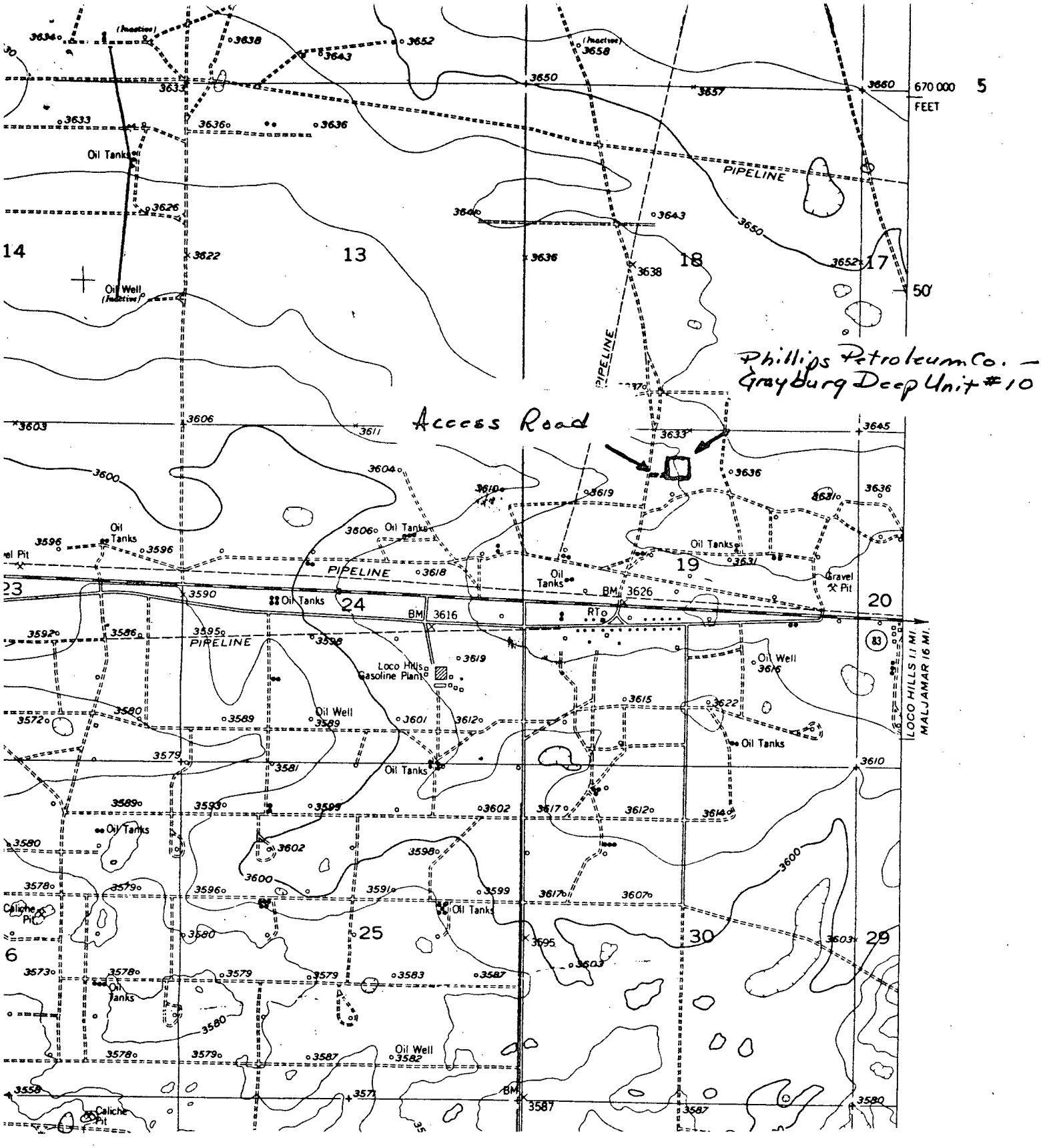
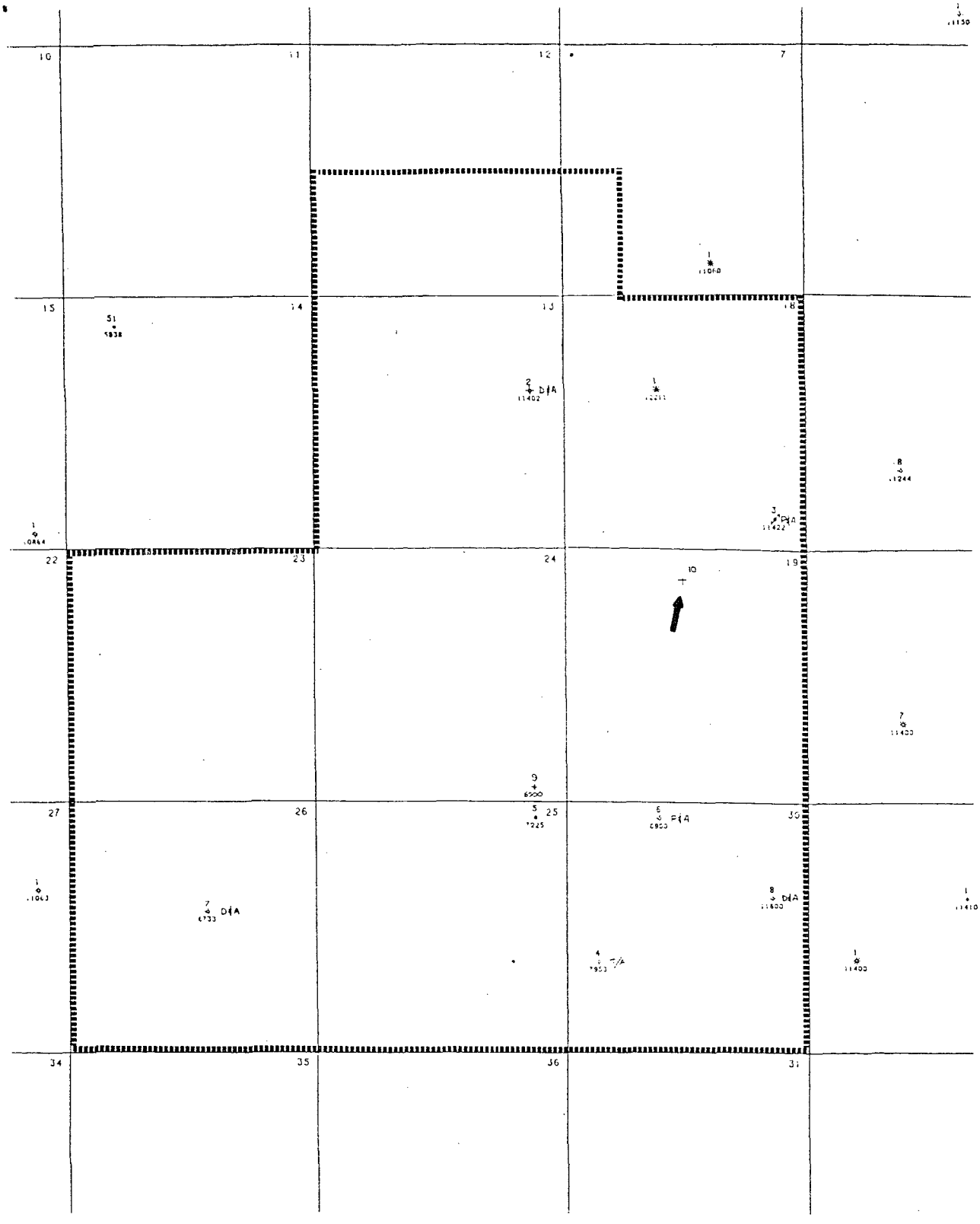


Fig. 1. USGS RED LAKE SE QUADRANGLE, 7.5 Minute Series, 1;24,000, 1955, showing PHILLIPS PETROLEUM COMPANY's proposed Grayburg Deep Unit Well No. 10, 660 FNL, 2480 FWL, and access road, Section 19, T17S, R30E, NMPM, Eddy County, New Mexico.

July 13, 1987

Grayburg Deep Unit # 10,
Geological Conditions For An
Unorthodox Location, Section 19,
T-17-S, R-30-E, Eddy County,
New Mexico

The Grayburg Deep #10 has been proposed at 660' FNL & 2480' FWL of the above section due to the following geological conditions. Phillips has two seismic lines in the section that define an aerially restricted Mississippian structural low at the proposed location. These pre-Pennsylvanian lows tend to be favorable depositional locals for the middle and lower Morrow sands. Therefore it is important for Morrow sand development that the well be located at the above location.



PHILLIPS PETROLEUM

GRAYBURG DEEP UNIT
T-17-S, R-29-E & R-30-E
EDDY COUNTY, NEW MEXICO

BASE MAP
DATE: 2/20/87

0 2.000 4.000
SCALE (FEET)