

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

| | | | |
|---|--|---|--|
| 1a. TYPE OF WORK DRILL <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/> | | 5. LEASE DESIGNATION AND SERIAL NO. NMNM-62665 | |
| b. TYPE OF WELL OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/> | | 6. IF INDIAN, ALLOTTEE OR TRIBE NAME N/A | |
| 2. NAME OF OPERATOR Chevron U.S.A. Inc. | | 7. UNIT AGREEMENT NAME ARROWHEAD GRAYBURG UNIT | |
| 3. ADDRESS AND TELEPHONE NO. P.O. Box 1150, Midland, TX 79702 | | 8. FARM OR LEASE NAME, WELL NO. 344 | |
| 4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. *) At surface 1334' FNL & 1210' FWL UNIT E At proposed prod. zone | | 9. API WELL NO. 30-025-34665 | |
| 14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE* | | 10. FIELD AND POOL, OR WILDCAT ARROWHEAD; GRAYBURG | |
| 15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) 1300' | | 11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA SEC. 1, T22S, R36E | |
| 16. NO. OF ACRES IN LEASE | | 12. COUNTY OR PARISH LEA | |
| 17. NO. OF ACRES ASSIGNED TO THIS WELL 40 | | 13. STATE NM | |
| 18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. | | 19. PROPOSED DEPTH 3890' | |
| 20. ROTARY OR CABLE TOOLS ROTARY | | 21. ELEVATIONS (Show whether DF, RT, GR, etc.) 3532' | |
| 22. APPROX. DATE WORK WILL START* 7/20/99 | | | |

| 23. PROPOSED CASING AND CEMENTING PROGRAM | | | | |
|---|-----------------------|-----------------|---------------|--------------------|
| SIZE OF HOLE | GRADE, SIZE OF CASING | WEIGHT PER FOOT | SETTING DEPTH | QUANTITY OF CEMENT |
| 11" | 8-5/8" | 24# | 500' | CIRCULATED |
| 7-7/8" | 5-1/2" | 15.5# | 3890' | CIRCULATED |

MUD PROGRAM: 0' - 500' FRESH WATER 8.4 PPG
500' - 3890' BRINE WATER 10.0 PPG

BOPE EQUIPMENT: SEE ATTACHED

*****PLEASE EXPEDITE*****

OPER. OGRID NO. **4323**
PROPERTY NO. **2571**
POOL CODE **3040**
EFF. DATE **7-28-99**
API NO. **30-025-34665**

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, 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 J. K. Ripley TITLE REGULATORY OA DATE 7/14/99
(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

Application approval does not warrant or certify that 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:

Acting

/S/LARRY D. BRAY

Assistant Field Office Manager,
Lands and Minerals

JUL 26 1999

APPROVED BY _____ TITLE _____ DATE _____

*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 United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

CT
MTP

DISTRICT I
P.O. Box 1980, Hobbs, NM 88241-1980

DISTRICT II
P.O. Drawer DD, Artesia, NM 88211-0719

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
P.O. Box 2088, Santa Fe, NM 87504-2088

State of New Mexico

Energy, Minerals and Natural Resources Department

Form C-102
Revised February 10, 1994
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

| | | |
|------------------------------------|--|----------------------------------|
| API Number 30-02 S-34665 | Pool Code 03040 | Pool Name ARROWHEAD; GRAYBURG |
| Property Code 2571 | Property Name AGU | Well Number 344 |
| OGRID No. 4323 | Operator Name CHEVRON U.S.A. PRODUCTION COMPANY | Elevation 3532 |

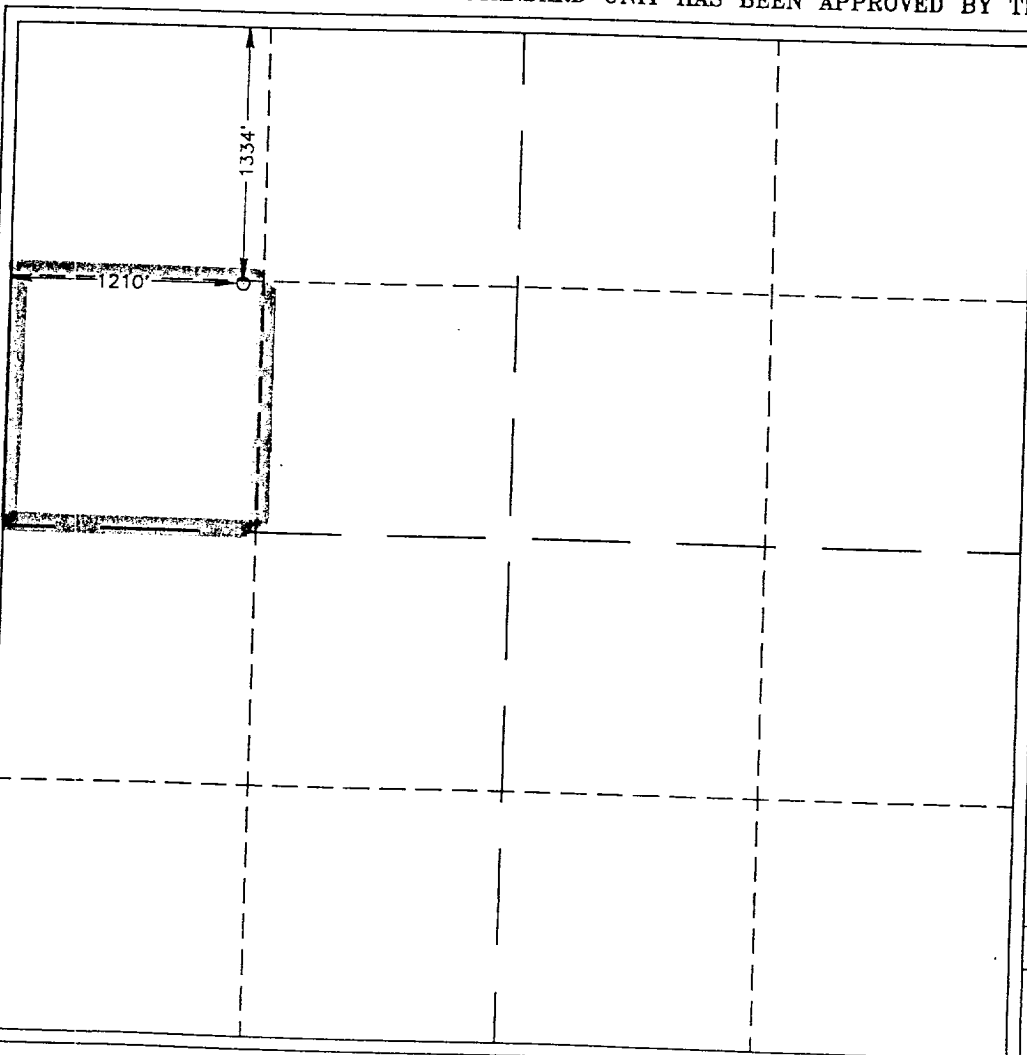
Surface Location

| | | | | | | | | | |
|--------------------|--------------|------------------|---------------|---------|-----------------------|---------------------------|-----------------------|------------------------|---------------|
| UL or lot No. E | Section 1 | Township 22 S | Range 36 E | Lot Idn | Feet from the 1334 | North/South line NORTH | Feet from the 1210 | East/West line WEST | County LEA |
|--------------------|--------------|------------------|---------------|---------|-----------------------|---------------------------|-----------------------|------------------------|---------------|

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 |
| Dedicated Acres 40 | Joint or Infill | Consolidation Code | Order No. | | | | | | |

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



OPERATOR CERTIFICATION

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

J. K. Ripley
Signature

J. K. RIPLEY

Printed Name

REGULATORY O.A.

Title

7/15/99

Date

SURVEYOR CERTIFICATION

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.

JULY

7, 1999

Date Surveyed

Signature

Professional Surveyor

NEW MEXICO

3239

7-12-99

89-1-2574

Certificate No.

RONALD S. EIDSON

12841

McDONALD

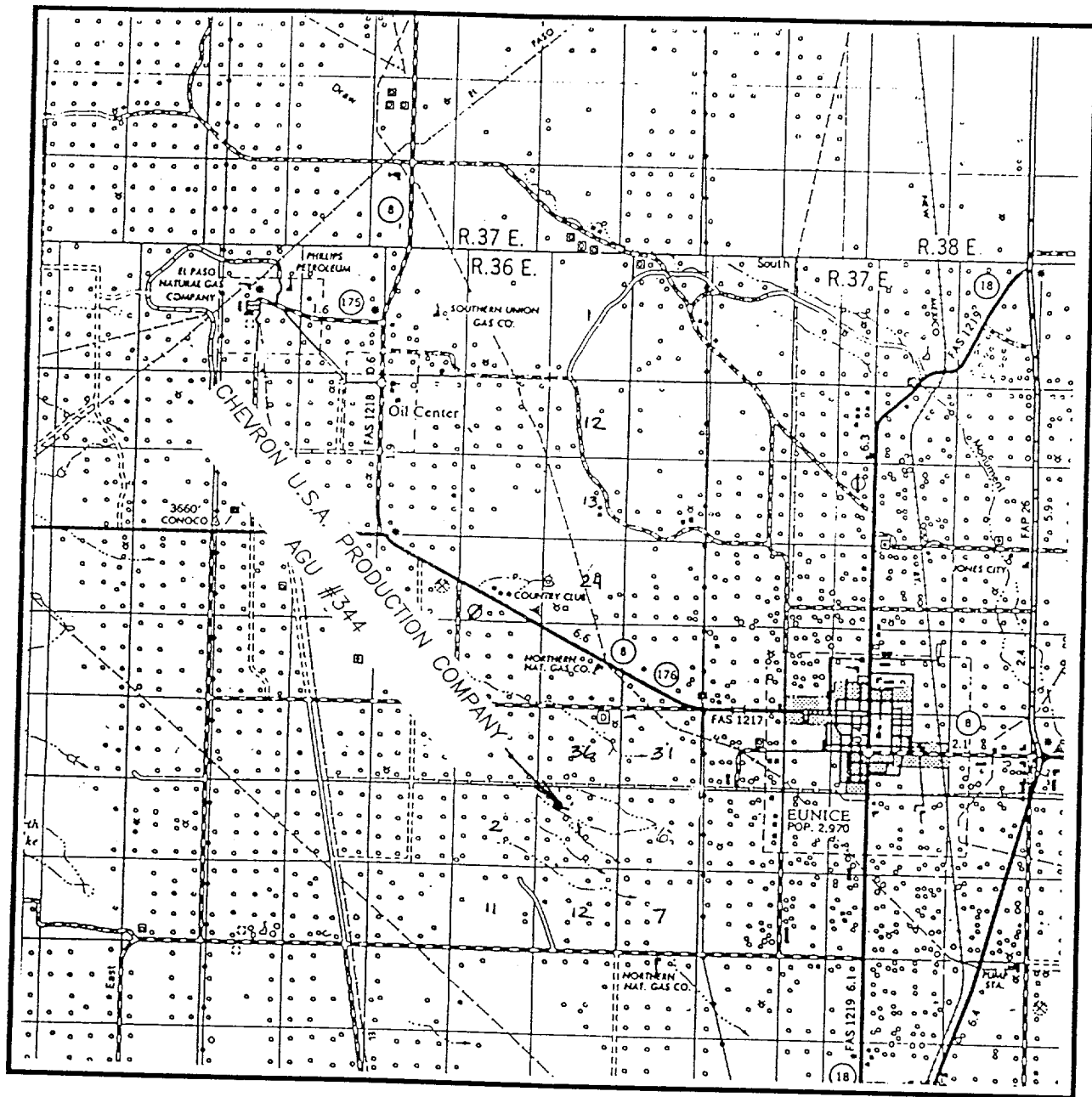
JLP

3239

12841

12185

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 1 TWP. 22-S RGE. 36-E

SURVEY N.M.P.M.

COUNTY LEA

DESCRIPTION 1334' FNL & 1210' FWL

ELEVATION 3532'

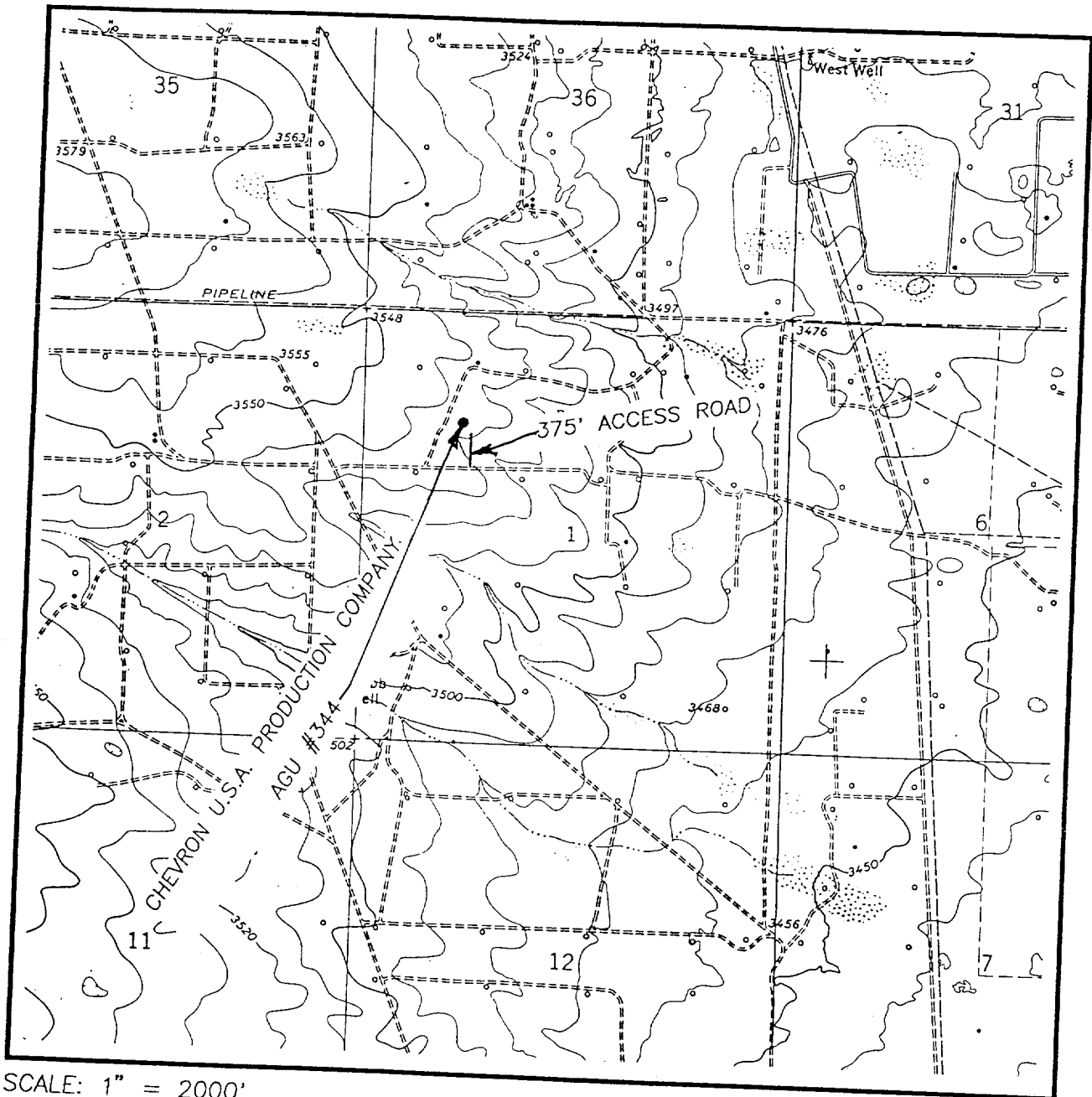
OPERATOR CHEVRON U.S.A. PRODUCTION COMPANY

LEASE AGU #344

JOHN WEST SURVEYING
HOBBS, NEW MEXICO

(505) 393-3117

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL - 10'

SEC. 1 TWP. 22-S RGE. 36-E

SURVEY N.M.P.M.

COUNTY LEA

DESCRIPTION 1334' FNL & 1210' FWL

ELEVATION 3532'

OPERATOR CHEVRON U.S.A. PRODUCTION COMPANY

LEASE AGU #344

U.S.G.S. TOPOGRAPHIC MAP

EUNICE, N.M.

JOHN WEST SURVEYING
HOBBS, NEW MEXICO

(505) 393-3117

DRILLING PROGRAM

Attached to Form 3160-3
Chevron U.S.A. Inc.
Arrowhead Grayburg Unit #344
1334' FNL & 1300' FWL
Section 1, T22S, R36E
Lea County, New Mexico

1. Geological Name of Surface Formation:

Aeolian

2. Estimated Tops Of Important Geological Markers:

| | |
|----------|-------|
| Rustler | 1181' |
| T/Salt | 1278' |
| B/Salt | 2513' |
| Queen | 3370' |
| Grayburg | 3665' |

3. Protection of Zones:

The fresh water sands will be protected by setting 8 5/8" casing at 500' and circulating cement to surface. The oil and gas zones will be protected with 5 1/2" casing to total depth and circulating cement to surface.

4. Casing Program:

| <u>Hole Size</u> | <u>Interval</u> | <u>Csg OD</u> | <u>Weight, Grade, Type</u> |
|------------------|-----------------|---------------|----------------------------|
| 11" | 0- 500' | 8 5/8" | 24#, K-55, ST&C |
| 7 7/8" | 0-3890' | 5 1/2" | 15.5#, K-55, LT&C |

Cement Program:

8 5/8" Surface Casing:
(11" hole)

Cemented to surface using Class "C"
+ 4% Gel + 3% salt, followed by Class
"C" + 2% CaCl₂.

5 1/2" Production Casing
(7 7/8" hole)

Cemented to surface using Class "C" +
4% Gel + Additives, followed by Class "C"
+ additives.

The above cement slurries will be designed using caliper logs to circulate cement to surface.

5. Minimum Specifications for Pressure Control:

The blowout preventor equipment (BOP) shown in attachment will consist of a (2M system) double ram type (2000 psi WP) preventor. The unit will be hydraulically operated and equipped with blind and pipe type rams. BOP's will be installed on the 8 5/8" surface casing and will be utilized continuously until total depth is reached and production casing is in place and cemented. All BOP's and associated equipment will be tested to 1000 psi before drilling out 8 5/8" casing shoe.

Pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These function tests will be documented on the daily drillers log. A 2" kill line and 2" choke line will be incorporated in the drilling spool below the ram-type BOP. Other BOP equipment will include a kelly cock, floor safety valve, choke lines and choke manifold having 2000 psi WP rating.

6. Types and Characteristics of Proposed Mud System:

The well will be drilled to a total depth using fresh water and brine water mud systems.

| <u>DEPTH</u> | <u>TYPE</u> | <u>WEIGHT</u> | <u>VISCOSITY</u> | <u>WATER LOSS</u> |
|--------------|-------------|---------------|------------------|-------------------|
| 0'-500' | Fresh Water | 8.4 | 34-36 | No control |
| 500'-TD | Brine Water | 10.0 | 28 | No Control |

7. A. A kelly cock will be in the drill string at all times.
- B. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.
- C. No H₂S will be encountered in this well.

8. Logging, Testing and Coring Program:

- A. No DST's are planned.
- B. The open hole logging program will be:
Comp. Neutron / Spectral Lithodensity/ GR/ CAL/ DLL/ MSFL/ BHC
SONIC

C. Cores will be taken 3665'-TD.

9. Abnormal Pressures, Temperature and Potential Hazards:

No abnormal pressures or temperatures are foreseen. No hydrogen sulfide gas has been reported or is known to exist at these depths in this area. No major loss circulation intervals have been encountered in adjacent wells.

10. Anticipated Starting Date and Duration of Operations:

Road and location preparation will not be undertaken until approval has been received from the BLM. The anticipated spud date is approximately June 24, 1999. The drilling operations should require approximately 12 days. If the well is deemed productive, completion operations will require, at minimum, an additional 30 days of testing to ascertain whether permanent production facilities will be constructed.

SURFACE USE AND OPERATING PLAN

Attachment to Form 3160-3
Chevron U.S.A. Inc.
Arrowhead Grayburg Unit #344
1334' FNL & 1300' FWL
Section 1, T22S, R36E
Lea County, New Mexico

1. Existing Roads:

- A. The well site and elevation plat for the proposed Arrowhead Grayburg Unit #344 is attached. The well site was staked by Ronald J. Eidson on April 28, 1999.
- B. Directions to location: Take Hwy 8-176 west out of Eunice, NM for 1.8 miles. Exit west onto Dump Ground Road. Go 1.4 miles and turn south on lease road. Go 1.3 miles and turn west on lease road. Go .1 mile and turn north on lease road. Proceed .1 mile to well location.

2. Proposed access Road:

- A. The maximum width of the road will be fifteen (15) feet.
- B. It will be crowned and made of 6 inches of rolled and compacted caliche. Water will be deflected, as necessary, to avoid accumulation and prevent surface erosion.
- C. Surface material will be native caliche. The material will be obtained from a BLM approved pit nearest in proximity to the location or from existing caliche under the location.
- D. No cattle guards, grates or fence cuts will be necessary.
- E. No turnouts are planned.

3. Location of Existing and/or Proposed facilities:

If the well is productive, it will be tied in to an existing battery. A sundry notice will be sent to the BLM upon results of the completion.

If the well is productive, rehabilitation plans are as follows:

1. The reserve pit will be back-filled after the contents of the pit are dry (within 120 days after completion, weather permitting).
 2. Caliche from unused portions of the drill pad will be removed. The original topsoil from the well site will be returned to the location. The drill site will then be contoured to the original natural state.
4. Location and Type of Water Supply:
- The Arrowhead Grayburg Unit #344 will be drilled using a combination of Brine and Fresh water mud systems (outlined in the Drilling Program). The water will be obtained from commercial water stations in the area and hauled to the location by transport truck. Additionally, produced salt water from the lease gathering tanks may be used. No water well will be drilled on the location.
5. Source of Construction Materials:
- All caliche utilized for the drilling pad and proposed access road will be obtained from an existing BLM approved pit or from prevailing deposits found under the location. All roads will be constructed of 6" rolled and compacted caliche.
6. Methods of Handling Water Disposal:
- A. Drill cuttings will be disposed into the reserve pit.
 - B. Drilling Fluids will be contained in steel mud tanks. The reserve pit will contain excess drilling fluids or fluid from the well during drilling, cementing, and completion operations. The reserve pit will be earthen pit roughly 125' x 125' x 6', or smaller, in size.
 - C. The reserve pit will be fenced on three sides throughout drilling operations and will be totally isolated upon removal of the rotary rig. The pit will be lined using 6 mil plastic to minimize loss of drilling fluids and saturation of the ground with brine water used to drill from 1200' - 3890'.
 - D. Water produced from the well during completion operations will be disposed into steel tanks or the reserve pit, if volumes prove excess. After placing the well on production through the production facilities, all water will be collected in tanks. Produced oil will be separated into steel stock tanks until sold.
 - E. A portable chemical toilet will be available on location for human waste during drilling operations.
 - F. Garbage, trash and waste paper produced during drilling operations will be collected in a container trailer and disposed at an approved landfill. All waste material will be contained to prevent scattering by the wind. All water, fluids, salt or other chemicals will be disposed in the reserve pit. No toxic waste or hazardous chemicals will be generated by this operation.

- G. All waste material will be removed within 30 days after the well is either completed or abandoned. The reserve pit will be completely fenced until it has dried. At the point the reserve pit is found sufficiently dry, it will be backfilled and reclaimed as outlined by the BLM specifications. Only the portion of the drilling pad used by production equipment (pumping unit and tank battery) will remain in use. If the well is deemed non-commercial, only a dry hole marker will remain.

7. Ancillary Facilities:

No campsite or other facilities will be constructed as a result of this well.

8. Well Site Layout:

- A. The drill pad is shown on Attachment. Approximate dimensions of the pad, the pits and the general location of the rig equipment are displayed. Top soil will be stored adjacent to the pad until reclamation efforts are undertaken. Only modest cuts will be necessary to build the pad which will be covered with 6" of compacted caliche.
- B. No permanent living facilities are planned, but temporary trailers for the tool pusher, drilling foreman and mud logger may be on location throughout drilling operations.
- C. The reserve pit will be lined using plastic sheeting of 6 mil thickness.

9. Plans for Restoration of Surface:

- A. If after concluding the drilling and/or completion operations, the well is found non-commercial, the caliche will be removed from the pad and transported to the original caliche pit or used for other drilling locations. The road will be reclaimed as directed by the BLM. The reserve pit area will be broken out and leveled after drying to a condition where these efforts are feasible. The original top soil will again be returned to the pad and contoured, as close as possible, to the original topography.
- B. The pit lining will be buried or hauled away in order to return the location and road to the pristine nature. All pits will be filled and location leveled, weather permitting, within 120 days after abandonment.
- C. The location and road will be rehabilitated as recommended by the BLM.
- D. The reserve pit will be fenced on three sides throughout drilling operations. After the rotary rig is removed, the reserve pit will be fenced on the fourth side to preclude endangering wildlife. The fencing will be in place until the pit is reclaimed.

- E. If the well is deemed commercially productive, the reserve pit will be restored as described on 10 (A) within 120 days subsequent to the completion date. Caliche from the area of the pad site not required for operations will be reclaimed. The original top soil will be returned to the area of the drill pad not necessary to operate the well. These unused areas of the drill pad will be contoured, as close as possible, to match the original topography.

10. Surface Ownership:

The Well site is owned by the Bureau of Land Management.

Road routes have been approved and the surface location will be restored as directed by the BLM.

11. Refer to archaeological report performed by Agency for Conservation Archaeology-Eastern New Mexico University (No. F91-115) for a description of the topography, flora, fauna, soil characteristics, dwellings, historical and cultural sites.

12. Lessee's or Operator's Representative:

Richard Gemmill

Chevron U.S.A. Inc.
P.O. Box 1150
Midland, Texas 79702

Phone: (915)687-7896

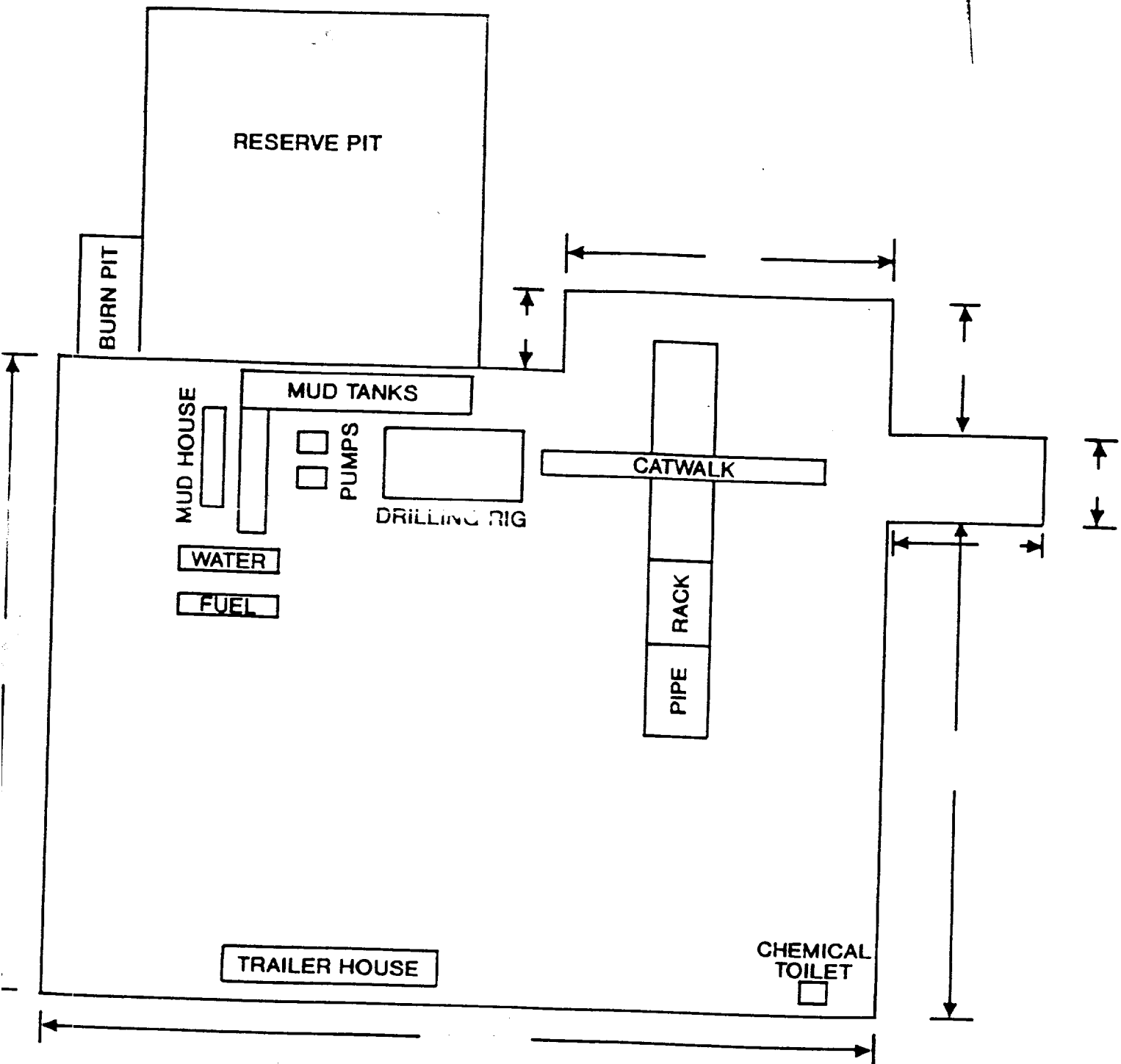
Certification:

I hereby certify that I, or a Chevron representative, have inspected the proposed drill site and access road; 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 Chevron U.S.A. Inc. and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

Date: 6/16/99

Signed: J. K. Ripley
J. K. Ripley

Attachments



CHEVRON USA INC.
EXHIBIT "C"

Well Name & Number: ARROWHEAD GRAYBURG UNIT #344

Location: 1334' N & 1300' W

Section: 1 **Unit:** E

Township: 22S **Range:** 36E

LEA

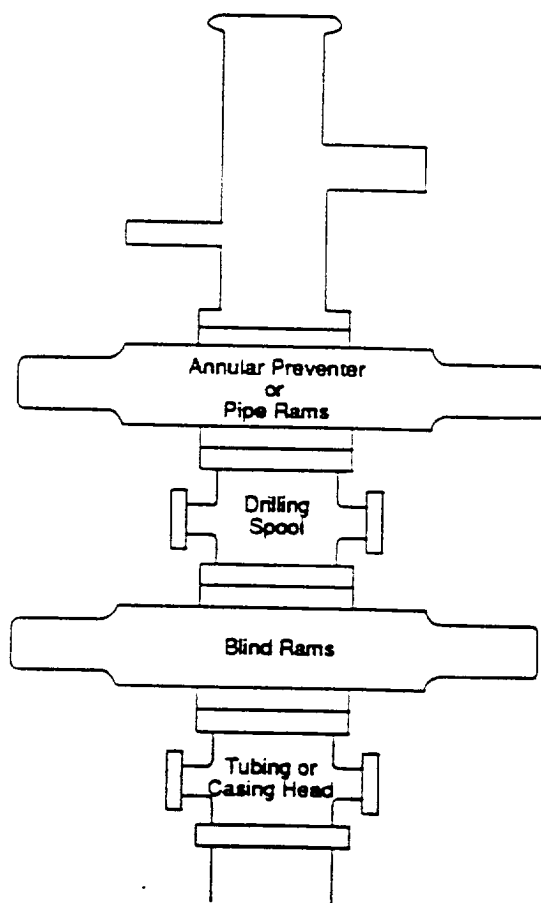
County, New Mexico

PREPARED BY:

CHEVRON DRILLING REFERENCE SERIES
VOLUME ELEVEN
WELL CONTROL AND BLOWOUT PREVENTION

D. CLASS II-B BLOWOUT PREVENTER STACK:

Figure 11J.3
Class II-B Blowout Preventer Stack



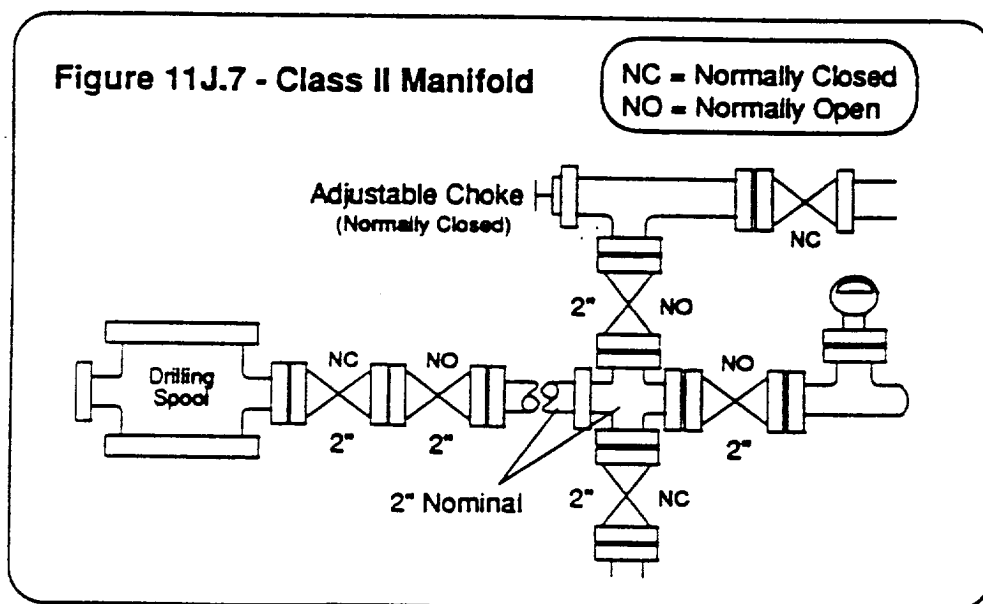
The Class II-B preventer stack is designed for drilling or workover operations. It is composed of a single hydraulically operated annular preventer on top, then a drilling spool, and a single blind ram preventer on bottom. In an alternate configuration, a single pipe ram preventer may be substituted for the annular preventer. The choke and kill lines are installed onto the drilling spool and must have a minimum internal diameter of 2". An emergency kill line may be installed on the wellhead. As the maximum anticipated surface pressure of this stack is less than 2000 psi, screwed connections may be used. All components must be of steel construction. The Class II-B blowout preventer stack is shown to the left in Figure 11J.3.

CHEVRON DRILLING REFERENCE SERIES
VOLUME ELEVEN
WELL CONTROL AND BLOWOUT PREVENTION

C. CLASS II CHOKE MANIFOLD

The Class II choke manifold is suitable for all Class II workovers and drilling operations. The Class II choke manifold is shown below in Figure 11J.7. Specific design features of the Class II choke manifold include:

1. The manifold is attached to the tubing/casing head when a Class II-A preventer stack is used. This hook-up is only recommended for Class II workover operations.
2. The manifold is attached to a drilling spool or top ram preventer side outlets when a Class II-B preventer stack is in use.
3. The minimum internal diameter is 2" (nominal) for outlets, flanges, valves and lines.
4. Includes two steel gate valves in the choke line at the wellhead/drilling spool outlet. The inside choke line valve may be remotely controlled (HCR).
5. Includes one manually adjustable choke which is installed on the side of the manifold cross. Steel isolation gate valves are installed between the choke and the cross, and downstream of the choke.
6. Includes one bleed line installed on the side of the manifold cross which is isolated by a steel gate valve.
7. Includes a pressure gauge suitable for drilling service which can display the casing pressure within view of the choke operator.
8. Screwed connections may be used in lieu of flanges or clamps.



H2S DRILLING OPERATIONS PLAN

I HYDROGEN SULFIDE TRAINING

All contractors and subcontractors employed by Chevron U.S.A. Inc. will receive or have received training from a qualified instructor within the last twelve months in the following areas prior to commencing drilling operations on this well.

1. The hazards and characteristics of hydrogen sulfide (H2S)
2. Safety precautions
3. Operations of safety equipment and life support systems

In addition, Chevron supervisory personnel will be trained or prepared in the following areas:

1. The effect of H2S on metal components in the system. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-down procedures when drilling or working a well, blowout prevention and well control procedures, if the nature of work performed involves these items.
3. The contents and requirements of the contingency plan when such plan is required.

All personnel will be required to carry documentation of the above training on their person.

II. H2S EQUIPMENT AND SYSTEMS

1. Safety Equipment

The following safety equipment will be on location.

- A. Wind direction indicators as seen in attached diagram.
- B. Automatic H2S detection alarm equipment (both audio and visual).
- C. Clearly visible warning signs as seen on the attached diagram. Signs will use the words "POISON GAS" and "CAUTION" with a strong color contrast.
- D. Protective breathing equipment will be located in the dog house and at the briefing areas as seen in the attached diagram.

2. Well Control Systems

A. Blowout Prevention Equipment

Equipment includes but is not limited to:

- a. pipe rams to accommodate all pipe sizes
- b. blind rams
- c. choke manifold
- d. closing unit

Auxiliary equipment added as appropriate includes:

- | | |
|-------------------------------------|-----------|
| a. annular preventor | <u>NA</u> |
| b. rotating head | <u>NA</u> |
| c. mud-gas separator | <u>NA</u> |
| d. flare line and means of ignition | <u>NA</u> |
| e. remote operated choke | <u>NA</u> |

B. Communication

The rig contractor will be required to have a two-way communication capability. Chevron U.S.A. Inc. will have either land-line or mobile telephone capabilities.

C. Mud Program

The mud program has been designed to minimize the volume of H₂S circulated to surface. Proper mud weight, safe drilling practices, and the use of H₂S scavengers when appropriate will minimize hazards when penetrating H₂S bearing formations.

D. No Drill Stem Tests are planned.

III. WELL SITE DIAGRAM

A complete well site diagram including the following information is attached.

- 1. Rig orientation
- 2. Briefing areas
- 3. Ingress and egress
- 4. Pits and flare lines
- 5. Caution and danger signs
- 6. Wind indicators and prevailing wind direction

6012

ELF
ABOVE DATE DOCS
INDICATE WHEN
CONFIDENTIAL LOGS
WILL BE RELEASED