

HEYCO

PETROLEUM PRODUCERS



HARVEY E. YATES COMPANY

P.O. BOX 1933

ONE SUNWEST CENTRE

505 / 623-6601

FAX 505 / 622-4221

ROSWELL, NEW MEXICO 88202-1933

September 19, 1990

William J. LeMay
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87501

Re: Request to Convert Young Deep 3 Federal #1
to a Water Injection Well

Dear Mr. LeMay,

Please find enclosed three copies for application for administrative approval to convert the aforementioned well to a water injection well. This request is an expansion of the previous Order #R-7023 subsequent to case #7595 of May 26, 1982. A copy of said Division Order is enclosed for your evaluation.

Copies are being sent to the Oil Conservation Division District I office in Hobbs. The Bureau of Land Management of Carlsbad, as surface owner; Amoco Production Company and Enron Oil and Gas, as offsetting operators; have also been sent a copy.

If there are any questions regarding this application for administrative approval, please contact my office.

Sincerely yours,

A handwritten signature in cursive script that reads "Tim W. Gum".

Tim W. Gum
Engineer

TWG/vjt
enclosures

ocd.tg

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☐ Secondary Recovery ☒ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ yes ☐ no
- II. Operator: Harvey E. Yates Company
Address: P.O. Box 1933, Roswell, New Mexico 88202
Contact party: Tim Gum Phone: (505) 623-6601
- III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? ☒ yes ☐ no
If yes, give the Division order number authorizing the project R-7023
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- * VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- *VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- * X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)
- * XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification
- I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- Name: Tim Gum Title Engineer
Signature: Tim Gum Date: 9/19/90
- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal. Refer to case #7595 before Daniel S. Nutter on May 26, 1982.

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 7595
Order No. R-7023

APPLICATION OF HARVEY E. YATES
COMPANY FOR A WATERFLOOD PROJECT,
LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on May 26, 1982, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 15th day of July, 1982, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Harvey E. Yates Company, seeks authority to institute a pilot waterflood project in the North Young-Bone Spring Pool by the injection of water into the perforated interval from 8444 feet to 8488 feet in its Young Deep Unit Well No. 2, located in Unit C of Section 10, Township 18 South, Range 32 East, NMPM, Lea County, New Mexico. Applicant would also inject into certain as yet undetermined selective intervals between the depths of 8500 feet and 8597 feet.

(3) That the wells in the proposed project are not in an advanced state of depletion and may not properly be classified as "stripper" wells.

(4) That although the proposed project does not fit the definition of a waterflood project contained in Rule 701 F.1 of the Division Rules and Regulations, it does fit the definition of a pressure maintenance project contained in Rule 701 E.1 of the Division Rules and Regulations.

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Case No.
Order No. R-7023

(5) That the proposed project should be classified as a pressure maintenance project and, in accordance with Rule 701 E., project rules, including the allowable formula, promulgated therefor.

(6) That the proposed pressure maintenance project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste, and will not impair correlative rights.

(7) That the initial project area should comprise the following described lands within applicant's proposed Young Deep (Bone Spring) Unit Area, Lea County, New Mexico:

TOWNSHIP 18 SOUTH, RANGE 32 EAST, NMPM

Section 3: S/2 SW/4 and W/2 SE/4

Section 4: SE/4 SE/4

Section 9: NE/4 NE/4

Section 10: N/2 NW/4 and NW/4 NE/4

(8) That the project area should be expanded upon completion of additional injection wells or producing wells in the Bone Spring formation in the proposed Young Deep (Bone Spring) Unit Area which may be shown to be affected by the injection program.

(9) That the project allowable should be equal to top unit allowable for the North Young-Bone Spring Pool times the number of developed (production or injection) proration units within the project area.

(10) That the transfer of allowable between wells within the project area should be permitted.

(11) That the operator should take all steps necessary to ensure that the injected water enters only the proposed

(13) That the subject application should be approved and the project should be governed by the provisions of Rules 702 through 708 of the Division Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Harvey E. Yates Company, is hereby authorized to institute a pressure maintenance project in the North Young-Bone Spring Pool by the injection of water into selected perforated intervals between the depths of 8444 feet and 8597 feet in its Young Deep Unit Well No. 2, located in Unit C of Section 10, Township 18 South, Range 32 East, NMPM, Lea County, New Mexico.

(2) That injection into said well shall be through internally coated tubing, set in a packer which shall be located as near as practicable to the uppermost perforation; that the casing-tubing annulus of said injection well shall be loaded with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak detection device.

(3) That the operator shall immediately notify the supervisor of the Division's Hobbs district office of the failure of the tubing or packer in any injection well, the leakage of water or oil from or around any producing well, or the leakage of water or oil from or around any plugged and abandoned well within the project area and shall take such timely steps as may be necessary or required to correct such failure or leakage.

(4) That the injection well herein authorized and/or the injection pressurization system shall be so equipped as to limit injection pressure at the wellhead to no more than 1690 psi, provided however, the Division Director may authorize a higher surface injection pressure upon satisfactory showing that such pressure will not result in fracturing of the confining strata.

(5) That the subject pressure maintenance project is hereby designated the North Young-Bone Spring Pressure Maintenance Project and shall be governed by Special Rules and by the provisions of Rules 701 through 708 of the Division Rules and Regulations.

(6) That Special Rules and Regulations governing the operation of the North Young Bone Spring Pressure Maintenance Project are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE
NORTH YOUNG BONE SPRING PRESSURE MAINTENANCE PROJECT

Rule 1. That the initial project area shall comprise the following described lands in Lea County, New Mexico:

TOWNSHIP 18 SOUTH, RANGE 32 EAST, NMPM
Section 3: S/2 SW/4 and W/2 SE/4
Section 4: SE/4 SE/4
Section 9: NE/4 NE/4
Section 10: N/2 NW/4 and NW/4 NE/4

Rule 2. That the project area may be expanded administratively within the applicant's proposed Young Deep (Bone Spring) Unit Area by the Division Director upon completion of additional injection wells or production wells, provided it can be shown that such production wells are affected by the injection of water into the Bone Spring formation.

Rule 3. The allowable for the project area shall be any amount up to and including a volume equal to the top unit allowable for the North Young-Bone Spring Pool times the number of proration units in the project area.

Rule 4. The allowable assigned to the project area may be produced from any well or wells within the project area in any proportion.

Rule 5. The Division Director is hereby authorized to approve such additional producing wells and injection wells at orthodox and unorthodox locations within the boundaries of the proposed Young Deep (Bone Spring) Unit Area as may be necessary to complete an efficient production and injection pattern, provided said producing wells are drilled no closer than 330 feet to the outer boundary of said unit nor closer than 10 feet to any quarter-quarter section or subdivision inner boundary. To obtain such approval, the project operator shall file proper application with the Division, which application, if it seeks authorization to convert additional wells to injection or to drill additional production or injection wells shall include the following:

(a) A plat identifying the lands committed to the unit agreement and those lands not committed to said agreement, and showing the location of the proposed well, all wells within the unit area, and offset operators.

(b) A schematic drawing of any proposed injection well which fully describes the casing, tubing, packer, monitoring equipment, perforated interval, and depth.

(c) A letter stating that all offset operators to the proposed well have been furnished a complete copy of the application and the date of notification.

(d) Such other applicable requirements as may be contained in Rule 701 of the Division Rules and Regulations.

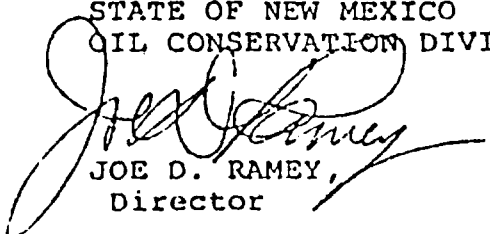
The Division Director may approve the proposed well if, within 20 days after receiving the application, no objection to the proposal is received. The Director may grant immediate approval, provided waivers of objection are received from all offset operators.

(7) That the pressure maintenance project herein authorized shall be governed by the provisions of Rules 702 through 708 of the Division Rules and Regulations.

(8) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


JOE D. RAMEY,
Director

S E A L

Ray
Well #16

APPLICATION OF HARVEY E. YATES
COMPANY TO EXPAND ITS PRESSURE
MAINTENANCE PROJECT IN THE NORTH
YOUNG BONE SPRINGS POOL IN LEA
COUNTY, NEW MEXICO.

ORDER No. PMX 123

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION

Under the provisions of Order No. R-7023, Harvey E. Yates Company has made application to the Division on May 5, 1983, for permission to expand its Young Deep Unit Pressure Maintenance Project in the North Young-Bone Springs Pool in Lea County, New Mexico.

NOW, on this 25th day of May, 1983, the Division Director finds:

1. That application has been filed in due form.
2. That satisfactory information has been provided that all offset operators have been duly notified of the application.
3. That no objection has been received within the waiting period as prescribed by Rule No. 701B.
4. That the proposed injection well is eligible for conversion to water injection under the terms of Rule 701.
5. That the proposed expansion of the above referenced pressure maintenance project will not cause waste nor impair correlative rights.
6. That the application should be approved.

IT IS THEREFORE ORDERED:

That the applicant, Harvey E. Yates Company, be and the same is hereby authorized to inject water into North Young-Bone Springs formations through plastic-lined tubing set in a packer at approximately 8350 feet in the following described well for purposes of pressure maintenance to wit:

Young Deep Unit No. 1
Unit D, Section 10, Township 18 South,
Range 32 East, NMPM.

IT IS FURTHER ORDERED:

That the operator shall take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

That the casing-tubing annulus in said well shall be loaded with an inert fluid and equipped with a pressure gauge at the surface or left open to the atmosphere to facilitate detection of leakage in the casing, tubing, or packer.

That the injection well shall be equipped with a pressure limiting device which will limit the wellhead pressure to a maximum of 1684 pounds per square inch; provided however that the Division Director may administratively authorize a pressure limitation in excess of the above upon the operator's establishing that such higher pressure will not result in fracturing of the confining strata. Establishment of a higher pressure limitation shall be done through means of a step-rate test run in accordance with and acceptable to the Division's standards.

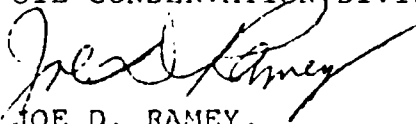
That the operator shall notify the supervisor of the Division's Hobbs District Office before injection is commenced through said well.

That the operator shall immediately notify the Supervisor of the Division's Hobbs District Office of the failure of the tubing, casing, or packer in said well or the leakage of water from or around said well and shall take such steps as may be timely or necessary to correct such failure or leakage.

That the subject well shall be governed by all provisions of Division Order No. R-7023 and Rules 702, 703, 704, 705, and 706 not inconsistent herewith.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


JOE D. RAMEY,
Division Director

S E A L

SECTION III (A)

Well Data

HARVEY E. YATES COMPANY
Well History Summary Sheet

Operator Harvey E. Yates Company Well Name & # Young Deep "3" Federal #1 Lease # NM-036852
District Hobbs Made By Machelle Byrum Date 8/9/84
Location 1980' FEL & 660' FSL, Sec. 3, T-18S, R-32E, Lea County, New Mexico
Spud Date 4/19/81 Compl. Date 6/22/81 TD 9500' PBTD 8535'
Type Well: Oil X Gas Other Field North Young
IP 335 BO/287 MCF/36 BW per day Zone Bone Springs
Perfs.: 8469' to 8502' (50 holes); 8434' to 8446' (26 holes) Total Holes 76
Stimulation See below
Cumul. Oil 184787 BO MCF 171259 Water 25189 BW
Recent Test Lift Equipment
Misc. Elevation: 3874.9' GL (15' KB)

WELL HISTORY

12/14/83: RU Hughes & spot 100 gal acid.
Acid w/5000 gal 20% SRA, Rate 4
BPM @ 4000#, Form Brk @ 2500#.
TSIP 1000#, 5" OH.

Surface: 13 3/8"
54.5 # Gr.
@ 662' Cmt. w/
750 Sx. TOC surface
Hole Size 17 1/2"
Max Mud Wt. #/G
Intermediate:
8 5/8" : 24, 28, 32 #
Gr @ 4650'
Cmt w/ 1400 Sx.
TOC @ surface Hole
Size 11 Max Mud
Wt. #/G

2 3/8" plastic coated tbg
& 5 1/2" nickle plated
log-set pkr @ 8334'
26 holes from
8434'-8446' Added 12/14/83
50 holes from
8469'-8502'

PBTD @ 8535' w/cmt
& CIBP @ 8570'

Perfs 8577-94'

PBTD @ 9045' w/cmt & CIBP
@ 9080'
Perfs 9110-14'

Production: 5 1/2 #
15.5, 17 # Gr.
@ 9500' Cmt. w/
700 Sx. TOC @
5962' by CBL Hole Size
7 7/8" Max Mud Wt.
 #/G

Tubing 2 3/8" # Gr. @ 8363'
Tubing # Gr. @
Packer @ 8363'

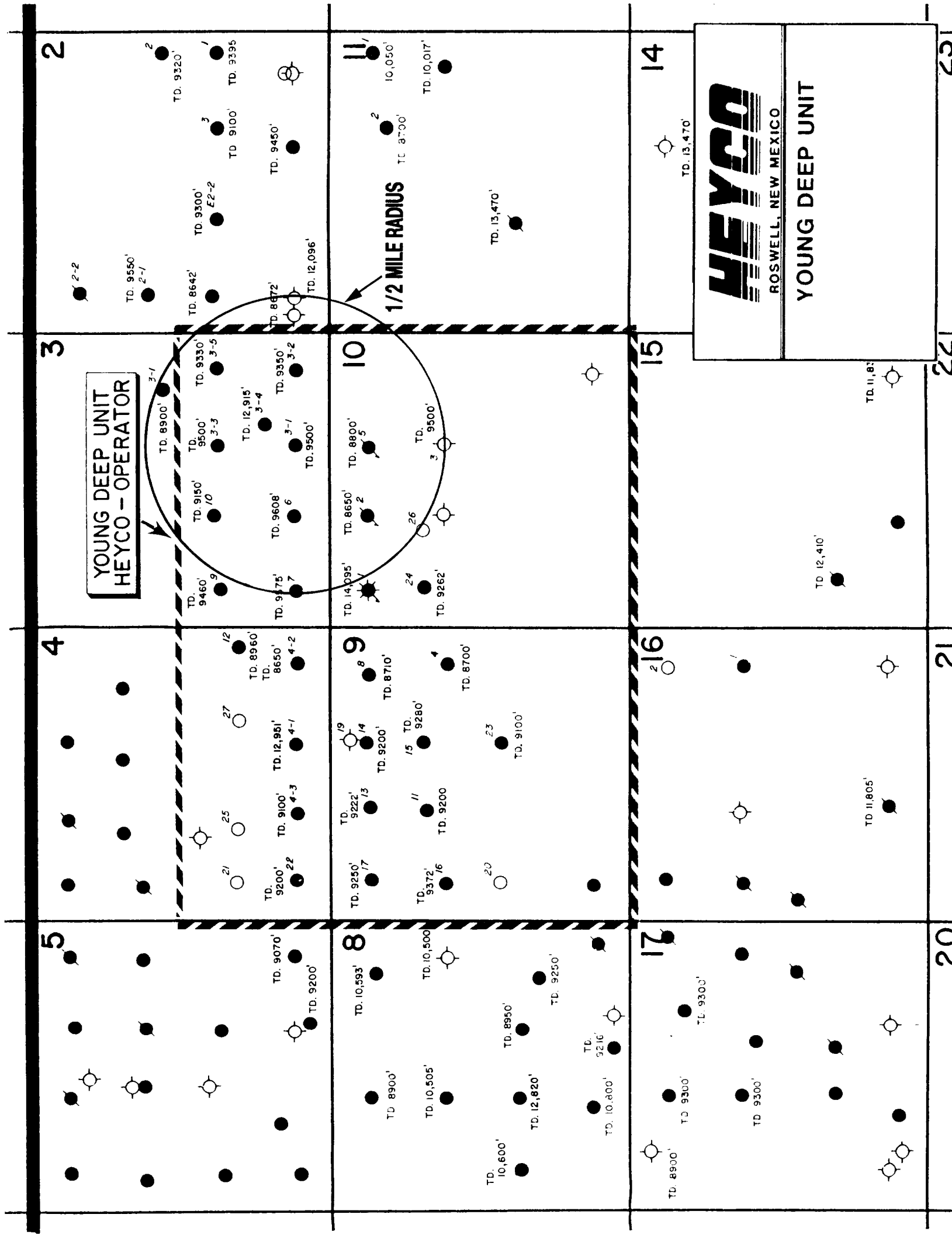
SECTION III (B)

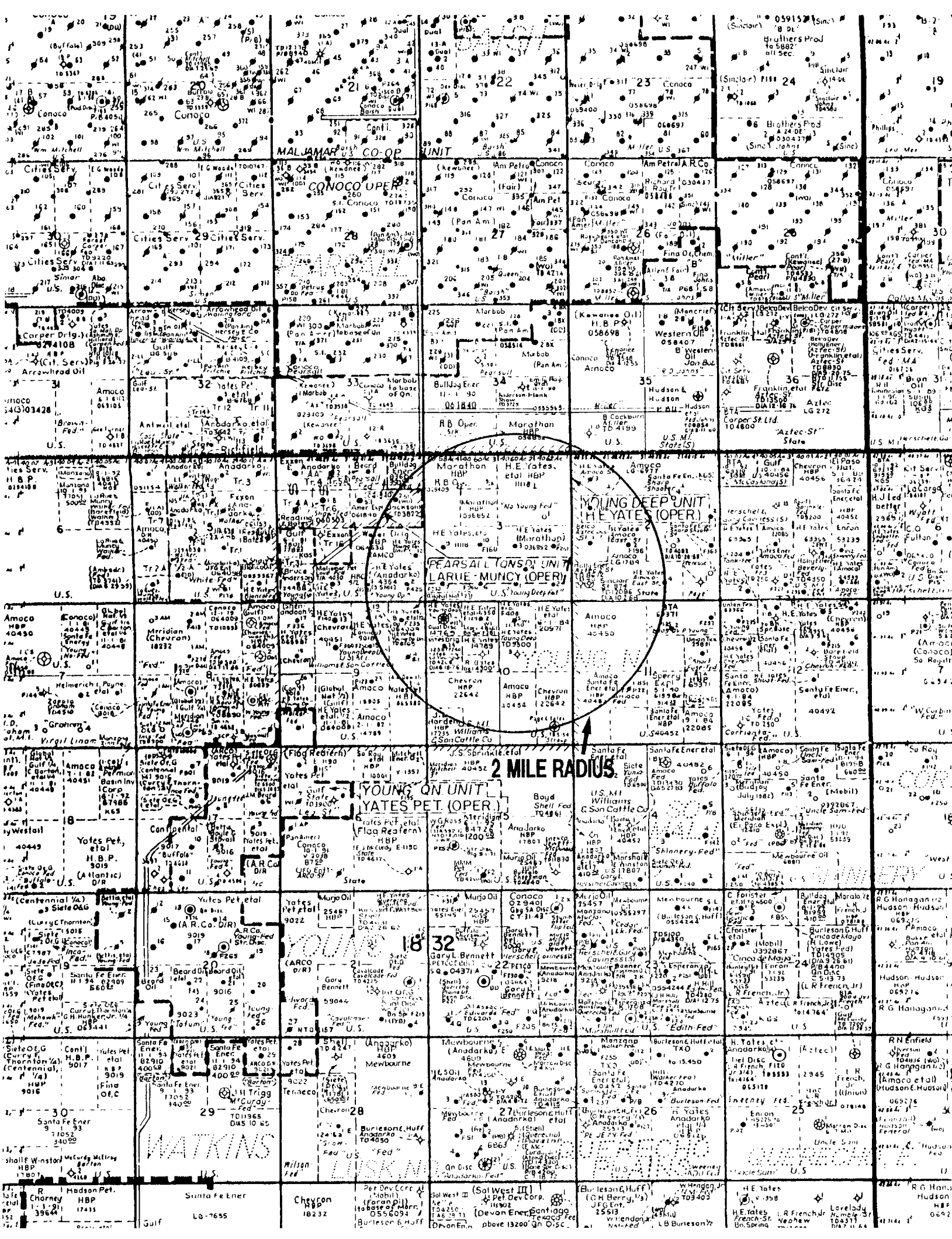
Well Data

1. Bone Springs, North Young Bone Springs
2. Injection interval: 8434' to 8502', cased hole perforations.
3. Well was originally drilled as a producing oil well.
4. Perfs 9110-14', CIBP @ 9080' w/35' cmt. Perfs 8577-94', CIBP @ 8570' w/35' cmt.
5. No producing zones above. Next lower producing horizon is the Morrow formation (sand) which was productive in the Young Deep 4 Federal #1 at a depth of 12,767' to 12,784'. This well has been plugged back and recompleted in the Bone Springs.

SECTION V

Maps





SECTION VI

Well Data

Well Name	Young Deep Unit	Young Deep Unit	Young Deep Unit
Well Number	#7	#2	#3
Legal Location	660' FSL & 660' FWL Sec. 3, T18S, R32E Lea County, New Mexico	660' FNL & 1980' FWL Sec. 10, T18S, R32E Lea County, New Mexico	1980' FNL & 1980' FEL Sec. 10, T18S, R32E Lea County, New Mexico
Field Pool	North Young Bone Springs	North Young Bone Springs	North Young Bone Springs
Spud Date	8/27/81	11/5/80	1/25/81
Completion or Rec Date	10/16/81	12/11/80	P&A
Type Completion	Oil	WTW	
TD	9576'	8650'	9505'
PBTD		8589'	
Completion Interval	8354' to 8482' (oa)	8444' to 8528' (oa)	
Casing Design	13 3/8" to 648' w/550 sks 8 5/8" to 3610' w/1600 sks 4 1/2" to 9576' w/530 sks	13 3/8" to 660' w/650 sks 8 5/8" to 4640' w/1400 sks 4 1/2" to 8650' w/300 sks	13 3/8" to 658' w/750 sks 8 5/8" to 4657' w/1400 sks 4 1/2" to 9505' w/450 sks
Tubing	2 3/8" tbg @ 8217	2 3/8" tbg @ 8216'	
Top of Cement	7300' by CBL	7381' by CBL	

Well Name	Young Deep Unit	Young Deep Unit	Young Deep 3 Federal
Well Number	#10	#26	#5
Legal Location	2080' FSL & 1980' FWL Sec. 3, T18S, R32E Lea County, New Mexico	1650' FNL & 1650' FWL Sec. 10, T18S, R32E Lea County, New Mexico	1980' FSL & 660' FEL Sec. 3, T18S, R32E Lea County, New Mexico
Field Pool	North Young Bone Springs	North Young Bone Springs	North Young Bone Springs
Spud Date	11/22/83	7/25/90	5/1/84
Completion or Rec Date	2/3/84	Completing	6/30/84
Type Completion	Oil	Oil	Oil
TD	9150'	9390'	9330'
PBTD	9002'	9350'	9244'
Completion Interval	8737' to 8801' (oa)	8486' & 9236'	8298' to 8344' (oa)
Casing Design	13 3/8" to 650' w/550 sks 8 5/8" to 3780' w/2150 sks 5 1/2" to 9150' w/725 sks	13 3/8" to 345' w/375 sks 8 5/8" to 2798' w/1600 sks 5 1/2" to 9390' w/1450 sks	13 3/8" to 665' w/560 sks 8 5/8" to 2735' w/1000 sks 5 1/2" top 9303' w/1675 sks
Tubing	2 3/8" tbg @ 8834'		
Top of Cement	5860' by CBL		4500' by CBL

Well Name	Young Deep 3 Federal	Young Deep 3 Federal	Young Deep 3 Federal
Well Number	#1	#2	#3
Legal Location	1980' FEL & 660' FSL Sec. 3, T18S, R32E Lea County, New Mexico	660' FSL & 660' FEL Sec. 3, T18S, R32E Lea County, New Mexico	1980' FSL & 1980' FEL Sec. 3, T18S, R32E Lea County, New Mexico
Field Pool	North Young Bone Springs	North Young Bone Springs	North Young Bone Springs
Spud Date	4/19/81	9/5/84	11/6/81
Completion or Rec Date	6/22/81	11/19/84	1/13/82
Type Completion	Oil	Oil	Oil
TD	9500'	9360'	9500'
PBTD	8535'	9040'	8680'
Completion Interval	8434' to 8502' (oa)	Sand Jet @ 8458'	8432' to 8481' (oa)
Casing Design	13 3/8" to 662' w/750 sks 8 5/8" to 4650' w/1400 sks 5 1/2" to 9500' w/700 sks	13 3/8" @ 650' w/500 sks 8 5/8" @ 2653' w/900 sks 5 1/2" @ 9360' w/1375 sks	13 3/8" to 658' w/500 sks 8 5/8" to 3598' w/1500 s 5 1/2" to 8598' w/190 sks
Tubing	2 3/8" @ 8363'	2 3/8" @ 8474'	2 3/8" @ 8512'
Top of Cement	5962' by CBL	2706' by CBL	7420' by CBL

Well Name	Young Deep 3 Federal		
Well Number	#4		
Legal Location	1200' FSL & 1650' FEL Sec. 3, T18S, R32E Lea County, New Mexico	1980' FEL & 660' FNL Sec. 10, T18S, R32E Lea County, New Mexico	1980' FWL & 660' FSL Sec. 3, T18S, R32E Lea County, New Mexico
Field Pool	North Young Bone Springs		
Spud Date	12/2/83	6/4/81	7/11/81
Completion or Rec Date	4/18/84	7/24/81	9/22/81
Type Completion	Oil		
TD	12,915'	8800'	9608'
PBTD	10,965'	8759'	9415'
Completion Interval	8432' to 8884' (oa)	8478' to 8493'	8386' to 8486' (oa)
Casing Design	13 3/8" @ 664' w/700 sks 8 5/8" @ 3788' w/2000 sks 5 1/2" @ 12,915' w/1050 sks	13 3/8" @ 645' w/550 sks 8 5/8" @ 4650' w/2100 sks 4 1/2" @ 8800' w/700 sks	13 3/8" @ 659' w/750 sks 8 5/8" @ 4663' w/2640 sks 4 1/2" @ 9608' w/675 sks
Tubing	2 3/8" @ 8344'	2 3/8" @ 8435'	2 3/8" @ 8291'
Top of Cement	6000'	5622' by CBL	6638' by CBL

Well Name	1 Axtec "2" State	1 State-974	North Young 3 Federal #1
Well Number			
Legal Location	660' FSL & 330' FWL Sec. 2, T19S, R32E Lea County, New Mexico	660' FSL & 660' FWL Sec. 2, T18S, R32E Lea County, New Mexico	2310' FNL & 990' FEL Sec. 3, T18S, R32E Lea County, New Mexico
Field Pool			North Young Bone Spring
Spud Date	10/30/83	7/26/68	5/8/90
Completion or Rec Date	3/30/84	10/2/68	7/14/90
Type Completion	D&A	D&A	Oil
TD	8652'	12,096'	8905'
PBTD			
Completion Interval	8414' to 8434' (oa)		8225' to 8711' (oa)
Casing Design	13 3/8" to 667' w/759 sks 8 5/8" to 4481' w/2300 sks 4 1/2" to 8652 w/700 sks	13 3/8" to 707' w/625 sks 9 5/8" to 4430' w/2020 sks	13 3/8" to 417' w/425 sks 8 5/8" to 2800' w/1400 sks 5 1/2" to 8905' w/1450
Tubing			
Top of Cement			2590' by CBL

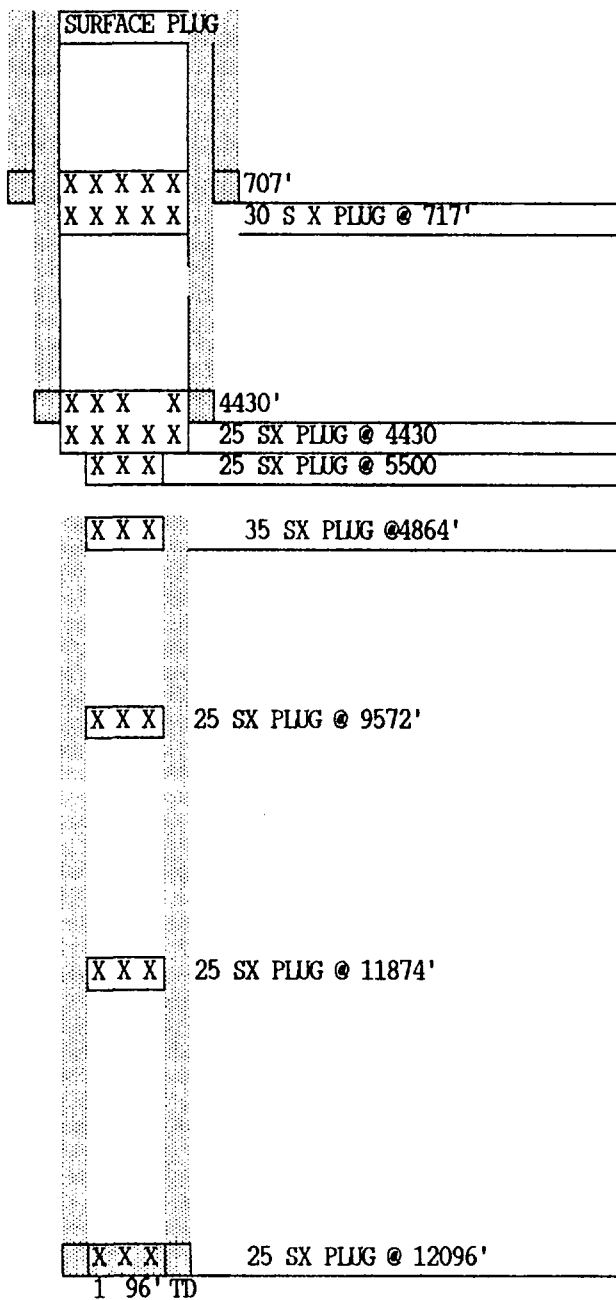
10-Sep-90

WELLBORE SCHEMATIC & PROCEDURE SHEET

BY Tim Gum

OPERATOR: SINCLAIR OIL CORP
WELL NAME: STATE 74
LEASE #:
LOCATION: 660' FSL&660' FWL
SEC 2-18S-32E LEA NM
FIELD:
ELEVATION:

SPUD DATE: 10/2/68
COMP DATE:
TD: 12096'
PBTD: ?



SURFACE	
WT & GRD	13 3/8"
DEPTH	707'
SXS CMT	625
TOC	
BIT SIZE	17 1/2"

INTERMEDIATE	
WT & GRD	9 5/8
DEPTH	4430'
SXS CMT	2020
TOC	
BIT SIZE	12 1/4"

TUBING:
SIZE: 2 3/8" J-55
DEPTH: SN @ 0'
PKR/ANCHOR: PKR @ 0'

PRODUCTION:	
WT & GRD	
DEPTH	12096'
SXS CMT	
TOC	
BIT SIZE	7 7/8"
DV TOOL @	
MARKER JOINT	

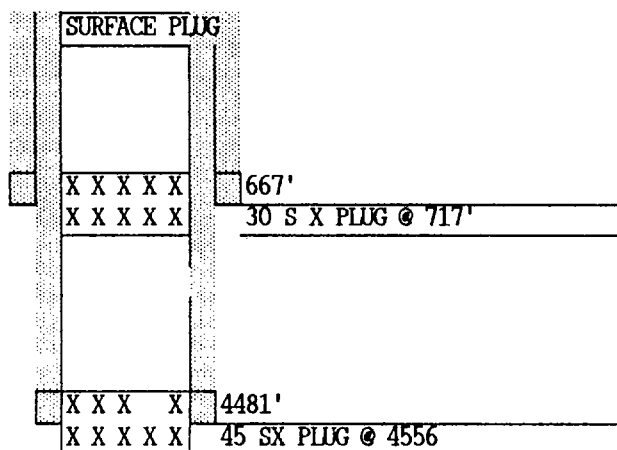
10-Sep-90

WELLBORE SCHEMATIC & PROCEDURE SHEET

BY Tim Gum

OPERATOR: HOLLY ENERGY
WELL NAME: 1 AZTEC 2 STATE
LEASE #:
LOCATION: 660' FSL&330' FWL
SEC 2-18S-32E LEA NM
FIELD:
ELEVATION:

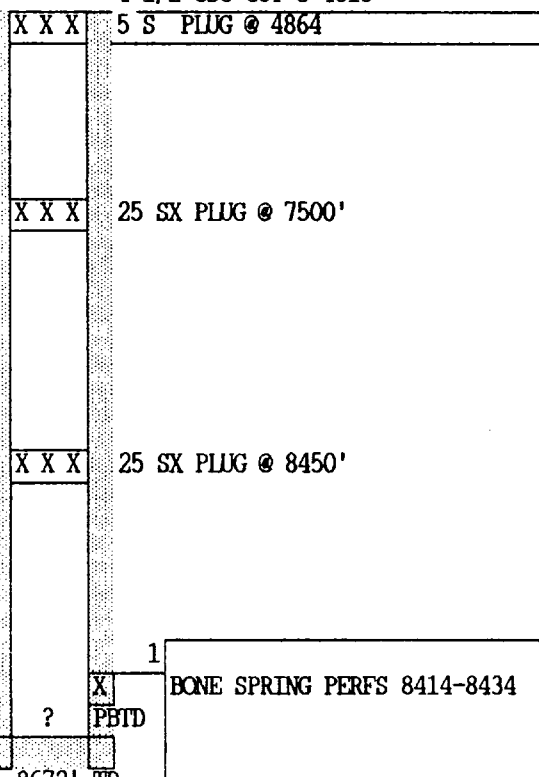
SPUD DATE: 10/31/83
COMP DATE:
TD: 8,652
PBTD: ?



SURFACE	
WT & GRD	13 3/8"
DEPTH	667'
SXS CMT	759
TOC	
BIT SIZE	17 1/2"

INTERMEDIATE	
WT & GRD	8 5/8"
DEPTH	4481'
SXS CMT	2300
TOC	
BIT SIZE	12 1/4"

4 1/2 CSG CUT @ 4815
X X X 5 S PLUG @ 4864



TUBING:
SIZE: 2 3/8" J-55
DEPTH: SN @ 0'
PKR/ANCHOR: PKR @ 0'

PRODUCTION:	
WT & GRD	4 1/2
DEPTH	8672'
SXS CMT	700
TOC	
BIT SIZE	7 7/8"
DV TOOL @	
MARKER JOINT	

SECTION VII
Injection Data

(Reference is made to the "Proposed Plan of Operation")

1. See attached "Proposed Plan of Operation."
2. Closed System - Gas Blanket
3. See attached "Proposed Plan of Operation."
4. See attached Ogallala water analysis from Double Eagle Water Company and North Bone Spring Formation.
5. N.A.

Proposed Plan of Operation
Young Deep Unit
North Young Bone Springs Pool
Lea County, New Mexico
September 12, 1990

Harvey E. Yates Company plans to initiate a pilot water injection program for secondary recovery in the following manner:

- 1) Inject Ogallala water, as make up water, supplied by the Double Eagle Water Company operated by the City of Carlsbad, New Mexico. Water will be injected into the proposed injector well, the Young Deep 3 Federal #1, located 1980' FEL & 660' FSL of Section 3, Township 18 South, Range 32 East, Lea County, New Mexico.
- 2) The injection rate is estimated to average 2200 barrels water per day. It is estimated that an average injection pressure of 1600 psi will be required in the later stages of the waterflood program, but will initially only require approximately 1200 psi. It is expected that the injection rate will decrease as the reservoir responds to the waterflood. Produced water will be re-injected into the North Young Bone Springs Pool as flood response occurs and water production increases.
- 3) For injection schematics, please refer to the Applicant's Exhibits under Section III of form C-108.
- 4) The development of additional injector wells will depend on the production response to the injection of water during the pilot project.

To preserve and protect the correlative rights of all parties concerned, it is requested that the above Plan of Operation be accepted for approval.

HALLIBURTON DIVISION LABORATORY

HALLIBURTON SERVICES

MIDLAND DIVISION

HOBBS, NEW MEXICO 88240

LABORATORY WATER ANALYSIS

No. W82-419

Harvey E. Yates

Date 4-26-82

Box 1933

Roswell, New Mexico

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company.

Submitted by

Date Rec. 4-23-82

Well No. AS Marked

Depth

Formation

County

Field

Source

Young Deep Unit #2

Double Eagle Water
(From W82-341)

Resistivity

ND

14.0 @ 74°F.

Specific Gravity

ND

1.001

pH

ND

7.3

Calcium (Ca)

11,500

220

*MPL

Magnesium (Mg)

Nil

12

Chlorides (Cl)

147,000

400

Sulfates (SO₄)

ND

150

Bicarbonates (HCO₃)

ND

195

Soluble Iron (Fe)

ND

Nil

API Gr. of Oil

35.0 @ 60°F.

--

Remarks: Sample from Young Deep Unit #2 had insufficient water available for a complete analysis.

*Milligrams per liter

Respectfully submitted,

Analyst: Brewer

HALLIBURTON COMPANY

By

W. L. Brewer

CHEMIST

NOTICE

SECTION VIII

Geological Comments

Refer to the Geological Section of the Ralph H. Viney & Associates, Inc. Report submitted in case 7595 before Daniel Nutter May 26, 1982.

SECTION VIII, cont.

(Fresh Water Aquifers and Area Water Wells)

On April 22, 1982, Mr Edward Kinney, a consultant geologist living in Artesia, New Mexico was contacted by Ray F. Nokes of Harvey E. Yates Company, in regards to fresh water aquifers in the Young Deep Unit Area. Mr. Kinney has completed publications on fresh water aquifers in the southeast part of New Mexico. In our conversation, Mr. Kinney said that the only fresh water aquifers in the area of Township 18 South, Range 32 East would be the Ogallala occurring at an approximate depth of 350' to 400' and the Santa Rosa at a depth of approximately 1100' to 1200' below surface. He said that the San Andres aquifer, which is present to the west, is spotty in location and that, if present, would be very salty in nature. Surface and intermediate casing were set through both possible aquifers and cemented back to surface and therefore, all fresh water aquifers (Ogallala and Santa Rosa), if present, are protected from contamination. See Section VI for casing and cementing report.

Mr. Delbert Nelson, with the New Mexico State Engineer's Office in Roswell, New Mexico, was contacted on the same day as Mr. Kinney. He checked local records to determine if any fresh water wells were present in the immediate area of the Young Deep Unit. One well, located in the SE/SE/NW of Section 4, T18S, R32E, Lea County, New Mexico, was drilled in the area in 1977 by Abbott Brothers of Hobbs, New Mexico. The 133' domestic well was drilled for Mr. B.E. Frizzell of Hobbs, New Mexico. The well was located and evidence indicates that the well has long since been abandoned and covered up. No water samples was obtained for analysis.

This zone is behind two strings of cemented casing and is protected from contamination from the proposed injector well.

SECTION IX

None

SECTION X

Logs have been submitted previously to the N.M.O.C.D. For further information refer to the Ralph H. Viney & Associates, Inc. submitted in case 7595 before Daniel Nutter on May 26, 1982.

SECTION XI

(Fresh Water Analysis)

Not applicable.

SECTION XII

Not applicable.

SECTION XIII

The surface owner of Section 3, T18S, R32E is the Bureau of Land Management. The offset operators are Enron and Amoco Production Company. By copy of this application the offsetting operators have been notified of the proposed waterflood. Harvey E. Yates Company is the operator of the remaining acreage to the North, West and South of the proposed Water Injection Well.

HALLIBURTON DIVISION LABORATORY

HALLIBURTON SERVICES

MIDLAND DIVISION

HOBBS, NEW MEXICO 88240

LABORATORY WATER ANALYSIS

Section XTNo. W82-419

Harvey E. Yates

Date 4-26-82Box 1933

Roswell, New Mexico

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Submitted by

Date Rec. 4-23-82Well No. As Marked

Depth

Formation

County

Field

Source

Young Deep Unit #2

Double Eagle Water
(From W82-341)

Resistivity

ND

14.0 @ 74°F.

Specific Gravity

ND

1.001

pH

ND

7.3

Calcium (Ca)

11,500

220

*MPL

Magnesium (Mg)

Nil

12

Chlorides (Cl)

147,000

400

Sulfates (SO₄)

ND

150

Bicarbonates (HCO₃)

ND

195

Soluble Iron (Fe)

ND

Nil

API Gr. of Oil

35.0 @ 60°F.

--

Remarks: Sample from Young Deep Unit #2 had insufficient water available for a complete analysis.

*Milligrams per liter

Respectfully submitted,

Analyst: Brewer

HALLIBURTON COMPANY

cc:

By

W. L. Brewer

CHEMIST

NOTICE

AFFIDAVIT OF PUBLICATION

State of New Mexico,
County of Lea.

I, Don Teer

of the Hobbs Daily News-Sun, a daily newspaper published at Hobbs, New Mexico, do solemnly swear that the clipping attached hereto was published once a week in the regular and entire issue of said paper, and not a supplement thereof for a period

of _____

One weeks.
Beginning with the issue dated

September 11, 1990
and ending with the issue dated

September 11, 1990

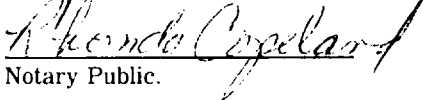


Business Manager.

Sworn and subscribed to before

me this 18th day of

September, 1990


Notary Public.

My Commission expires _____

July 24, 1991

(Seal)

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937, and payment of fees for said publication has been made.

28 **LEGAL NOTICE**
September 11, 1990

Harvey E. Yates Company proposes to expand the pressure maintenance project of the Young Deep Unit by injecting into the Young Deep 3 Federal #1, Federal Lease #NM-036852, located 660' FSL & 1980' FEL of Section 3, T18S, R32E, NMPM, Lea County, New Mexico.

Produced and Ogallala water will be injected at a rate of approximately 2200 barrels per day at not higher than 1690 psig into the North Young Bone Spring pool at a depth of 8434-8502'.

Interested parties must file objections or request for a hearing with the New Mexico Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.



STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

HOBBS DISTRICT OFFICE

9-27-90

GARREY CARRUTHERS
GOVERNOR

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88241-1980
(505) 393-6161

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

RE: Proposed:

MC _____
DHC _____
NSL _____
NSP _____
SWD _____
WFX _____
PMX ☒ _____

Gentlemen:

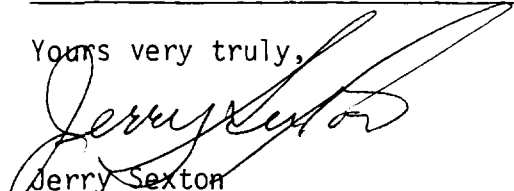
I have examined the application for the:

Harvey E. Yates Co. Young Deep Unit 3 Federal #1-O 3-18-32
Operator Lease & Well No. Unit S-T-R

and my recommendations are as follows:

OK

Yours very truly,


Jerry Sexton
Supervisor, District 1

/ed