

RELEASE 3-12-93

HEYCO

HARVEY E. YATES COMPANY

PETROLEUM PRODUCERS

OIL CONSERVATION DIVISION
RECEIVED
P.O. BOX 1933
93 FEB 23 AM 9 09

ONE SUNWEST CENTRE

505/623-6601

FAX 505/622-4221

ROSWELL, NEW MEXICO 88202-1933

February 23, 1993

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

Re: Request to Convert EKay 27 State #1
to a Water Disposal Well

Dear Mr. LeMay,

Please find enclosed three (3) copies for application for administrative approval to convert the aforementioned well to a water disposal well. HEYCO proposes to dispose of Bone Spring formation water from it's operated leases.

Copies are being sent to the Oil Conservation Division District 1 Office in Hobbs, New Mexico, as surface owners, and the attached mailing list.

If there are any questions regarding this application for administrative approval, please contact my office at 505/623-6601.

Sincerely,



Tim Gum
Engineer

enclosures

TG/vt
ODCEKay.TG

ADR 2 TOTAL / PPA

**MAILING LIST
EKAY 27 STATE NO.1
DISPOSAL APPLICATION**

**ANADARKO PETROLEUM CORPORATION
P.O. BOX 1330
HOUSTON TEXAS,77251**

**OIL CONSERVATION DIVISION
P.O. BOX 1980
HOBBS,NM 88240**

**PHILLIPS PETROLEUM CORPORATION
4001 PENBROOK
ODESSA,TEXAS 76792.**

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

**UNOCAL
P.O. BOX 3100
MIDLAND ,TEX**

**MERIDIAN OIL
P.O. BOX 51810
MIDLAND,TEXAS 79710**

**BASS ENTERPRISES
FIRST CITY BANK TOWER
201 MAIN
FORTH WORTH,TEXAS 76102**

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, N.M. 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 _____.
- 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 E. Gum Date: 2/23/93

- * 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.

SECTION III (A)

WELL DATA

WELLBORE SCHEMATIC & PROCEDURE SHEET

BY Tim Gun

OPERATOR: HARVEY E. YATES COMPANY
 WELL NAME: EKAY 27 STATE # 1
 LEASE #: V-2252 APT# 30-025-31526
 LOCATION: N, 660' ESEWL
 SEC. 27, T-18S R-34E, 1EA CO., NM.
 FIELD: UNDES. BONE SPRING
 ELEVATION: 4012.5' GL (15.5KB)

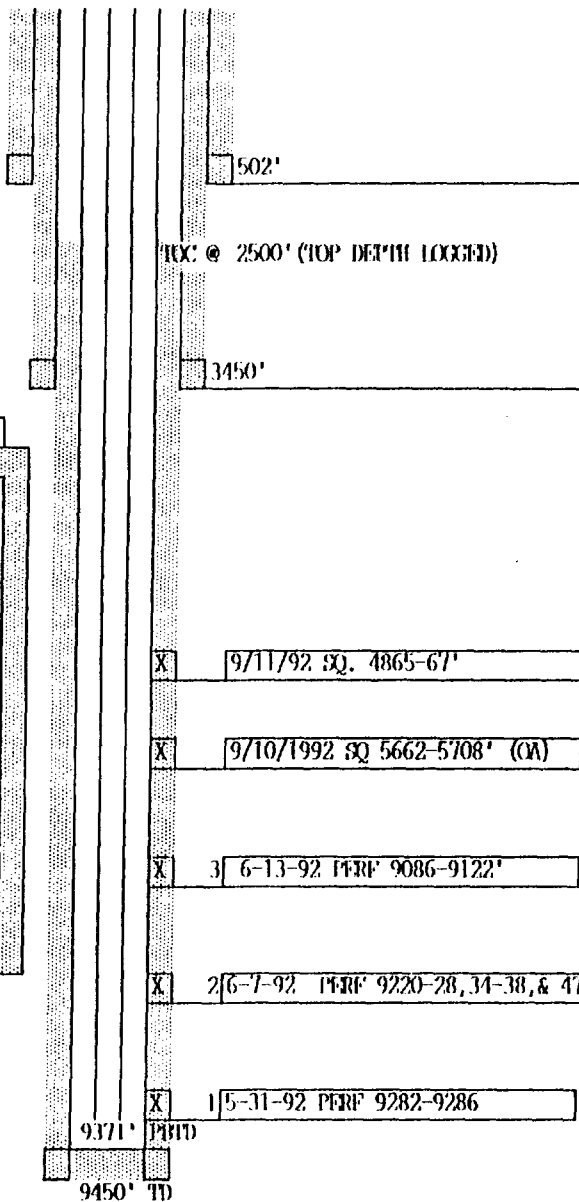
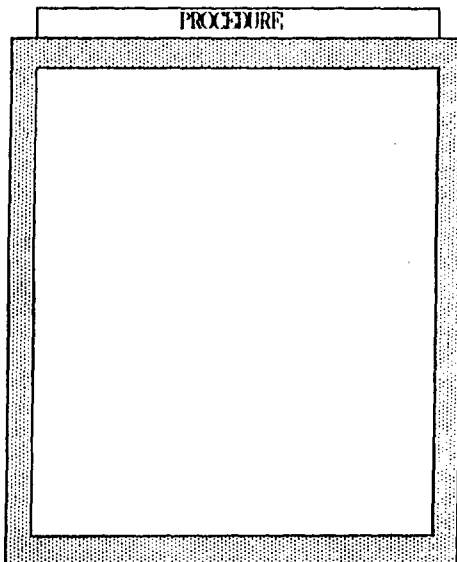
STUD DATE: 2/29/92
 COMP DATE: N.A.
 TD: 9450'
 PBID: 9371'

CURRENT

SURFACE
 WT & GRD 13 3/8 52.4# J-55
 SXS CMT 475
 TOC CIRC 175 SXS
 BIT SIZE 17 1/2"

INTERMEDIATE
 WT & GRD 8 5/8" 24 & 32# J-55
 DEPTH 3450'
 SXS CMT 1400
 TOC CIRC 163 SXS
 BIT SIZE 12 1/4"

PRODUCTION:
 WT & GRD 5 1/2" 17# J-55
 DEPTH 9450'
 SXS CMT 1624
 TOC 2500' (TOP DEPTH LOGGED)
 BIT SIZE 7 7/8"
 DV TOOL @ NA
 MARKER JOINT SET @ 5903-5926'



TUBING:
 SIZE: 2 3/8" 4.7 J-55
 DEPTH: 9297'
 PKR/ANCHOR:

WELDBORE SCHEMATIC & PROCEDURE SHEET

BY Tim Gunn

OPERATOR: HARVEY E. YATES COMPANY
 WELL NAME: EKAY 27 STATE # 1
 LEASE #: V-2252 APT# 30-025-31526
 LOCATION: N, 660' E 36W1
 SEC. 27, T-18S R-34E, 1EA (D.), NM.
 FIELD: UNDES. DONE SPRING
 ELEVATION: 4012.5' GL. (15.5KB)

STUD DATE: 2/29/92
 COMP DATE: N.A.
 TD: 9450'
 PHD: 9371'

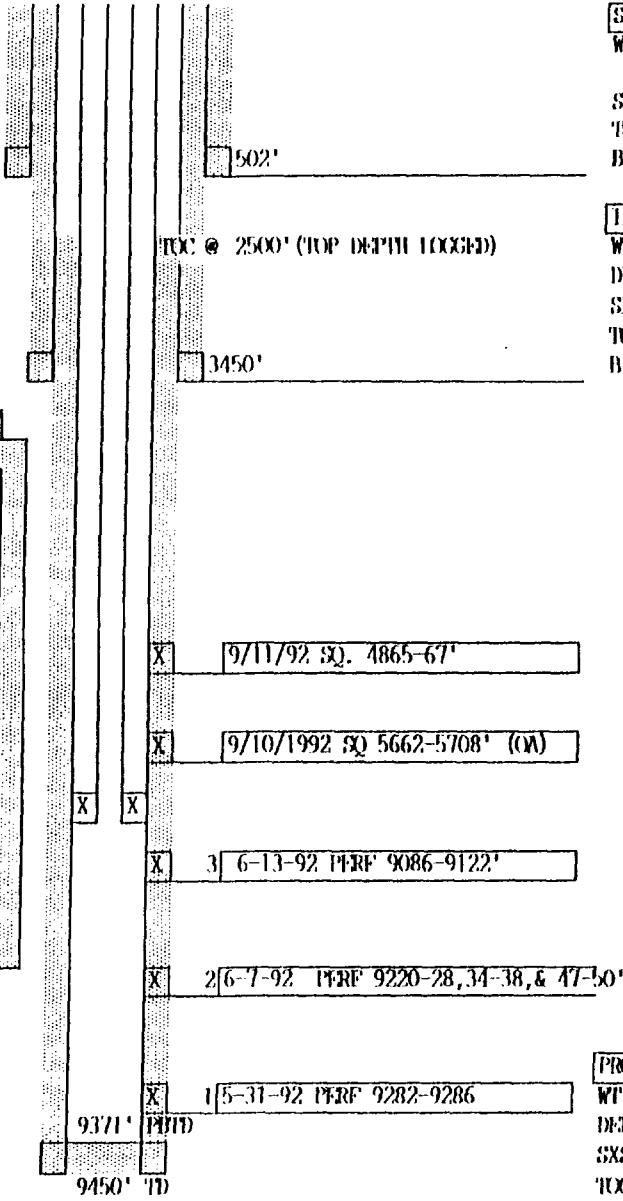
PROCESSED

SURFACE
 WT & GRD 13 3/8 52.4# J-55
 SXS CMF 475
 TOC CIRC 175 SXS
 BIT SIZE 17 1/2"

INTERMEDIATE
 WT & GRD 8 5/8" 24 & 32# J-55
 DEPTH 3450'
 SXS CMF 1400
 TOC CIRC 163 SXS
 BIT SIZE 12 1/4"

PROCEDURE

1. FULL TUG .
2. RUN PLASTIC TUG & TOC-SET PKR @986'
3. LOAD BACK SIDE W/PKR FLUID.
4. START TUG AT LOW RATE.



TUBING:
 SIZE: 2 3/8" 4.7 J-55
 DEPTH: 8986'
 PKR/ANCHOR: 8986'

PERFORATION:
 WT & GRD 5 1/2" 17# J-55
 DEPTH 9450'
 SXS CMF 1624
 TOC 2500' (TOP DEPTH LOCKED)
 BIT SIZE 7 7/8"
 DV TOC @ NA
 MARKER JOINT SET @ 5903-5926'

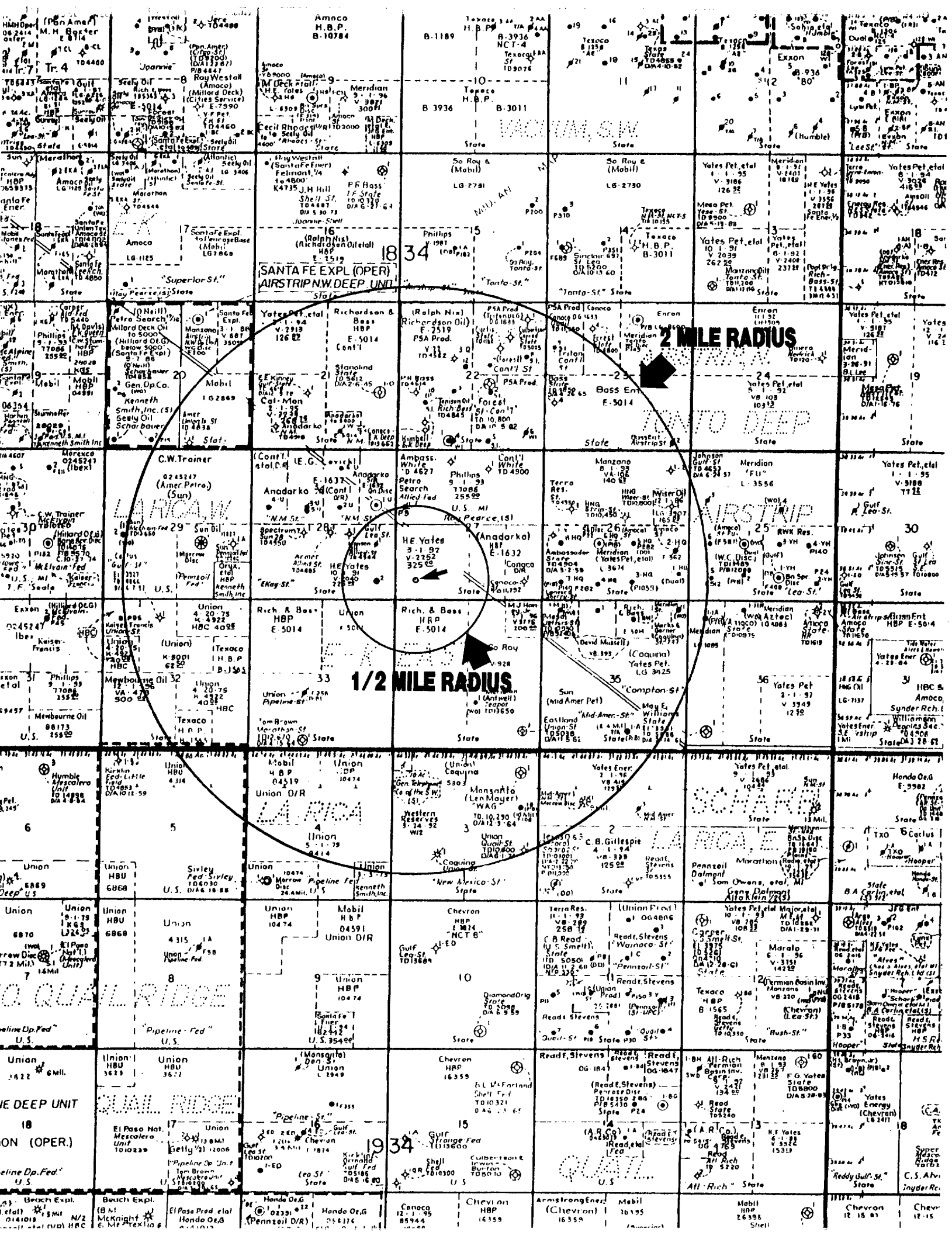
SECTION III (B)

WELL DATA

1. Bone Spring, Undesignated Pool
2. Injection Interval: 9086-9286'
3. Perfs: 9086-9286 (oa); Original PBD: 9371'
4. No producing zones above or below injection interval

SECTION V

MAPS



**SANTA FE EXPL (OPER)
AIRSTRIP N.W. DEEP UNIT**

2 MILE RADIUS

1/2 MILE RADIUS

LANCANA

AIRSTRIP

**C.W. Trainer
(Amer. Petro.)**

MILAN

MILAN

QUAIL RIDGE

QUAIL RIDGE

QUAIL RIDGE

DEEP UNIT

QUAIL RIDGE

QUAIL RIDGE

QUAIL RIDGE

SECTION VI

WELL DATA

COMPANY NAME	HEYCO	HEYCO
WELL NAME	Ekay 17 St. #1	Ekay 28 St #2
LEGAL LOCATION	Unit M 660' FSL & FWL Sec. 27-18S-34E Lea Co., N.M.	Unit P 660' FSL & FEL Sec. 28-18S-34E Lea Co., N.M.
FIELD POOL	Und. Bone Spring	Dios-Mano-Bone Spring
SPUD DATE	2/29/92	2/25/92
COMPLETION DATE	Not completed	4/29/92
TYPE COMPLETION	N/A	Producer
TD	9450'	11,502'
PBTD	9371'	9251'
COMPLETION INTERVAL	Bone Spring 9086-9286'	Bone Spring 9197-9205'
CASING DESIGN	13 3/8" @ 502' 475 sks cmt; circ 8 5/8" @ 3450' 1400 sks cmt; circ 5 1/2" @ 9450' 1624 sks cmt	13 3/8" @ 479' 475 sks cmt; circ 8 5/8" @ 3478' 1625 sks cmt; circ 5 1/2" @ 11,502'
TUBING	2 3/8" @ 9371'	2 3/8" @ 9084'
TOP OF CEMENT	2500' (CBL)	2070' (CBL)

SECTION VII
INJECTION DATA

1. Estimated maximum daily rate of 500 BW
2. Closed system - Gas Blanket
3. Maximum 1857 psig at maximum rate
4. See attached water analysis
5. HEYCO proposes to dispose of produced Bone Spring formation water from operated leases.

BJ SERVICES
WATER ANALYSIS

Date: 7/16/92 Report #: 41
 Company: HEYCO Sample #: PM SAMPLE
 Well Name: E. KAY 28 STATE #2 Formation: BONESPRINGS
 County: LEA Depth:
 State: NEW MEXICO H₂O Type: PRODUCED
 Station: HOBBS Requested By: LEONARD BROWNING

pH: 6.79 Sulfide: NIL
 Temperature (°F): 88.88 Reducing Agents: NIL
 Specific Gravity: 1.130 S.G. @ 60°F: 1.136

CATIONS	mg/l	me/l	ppm
Sodium (calc)	68760	2990	60850
Calcium	2000	100	1770
Magnesium	1440	120	1440
Iron (Fe++)	12.00	0.43	10.62
Iron (Fe+++)	0.00	0.00	0.00
ANIONS			
Chloride	111000	3127	98230
Sulfate	2300	48	2035
Bicarbonate	2147	35	1900
Phosphate			0.0
Total Dissolved Solids	187659		166070
Total Hardness as CaCO ₃	11000		9735
Calcium Carbonate Scale: PROBABLE			
Calcium Sulfate Scale: REMOTE			
Equivilent NaCl Concentration: 164840			
Rw = 0.051 @ 88.88deg.			
Analyzed by: CRAIG BAILEY			

BJ SERVICES

WATER ANALYSIS

Date: 9/14/92
 Company: HEYCO
 Well Name: ~~KEY 27 STATE #1~~
 County: LEA
 State: NEW MEXICO
 Station: HOBBS

Report #: 109
 Sample #: 1
 Formation:
 Depth: WINDMILL
 H₂O Type: ~~(WATER WELLED)~~
 Requested By: TIM GUM

pH: 7.08
 Temperature (°F): 72.1
 Specific Gravity: 1.005

Sulfide: NIL
 Reducing Agents: NIL
 S.G. @ 60°F: 1.007

CATIONS	mg/l	me/l	DOB
Sodium (calc)	437	19	435
Calcium	308	15	306
Magnesium	14	1	14
Iron (Fe++)	0.60	0.02	0.60
Iron (Fe+++)		0.00	0.00
ANIONS			
Chloride	670	19	667
Sulfate	600	13	597
Bicarbonate	185	3	184
Phosphate			0.0
Total Dissolved Solids	2215		2204
Total Hardness as CaCO ₃	830		826

Calcium Carbonate Scale: REMOTE

Calcium Sulfate Scale: REMOTE

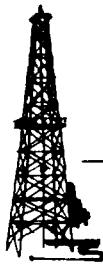
Equivilent NaCl Concentration: 1769

Analyzed by: DB

SECTION VIII
GEOLOGICAL COMMENTS

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

Application to Convert Ekay "27" St. #1
to Water Disposal Well

I have done a thorough and complete check of beneficially useable water in the prescribed 1/2 mile and 2 mile radii of the proposed injection well, and see no physical or mechanical risk of contaminating useable fresh water resources. The aquifers within the radii of search are Tertiary Ogallala and Quaternary Alluvium. The depths of the water wells range from 68' to 138' in depth with annual water levels of 59' to 114' from surface. Labeled on the plat are the type of water wells, Aquifer code, and water level for the current year.

HEYCO proposes to inject into the Bone Spring formation from 9086' to 9286'. The casing design has cement circulated for surface and intermediate casing, with the 5 1/2" long string tied back into intermediate with top of cement @ 2500'. Three strings of casing and two cement sheaths will prevent any communication of wellbore fluids with ground water.

Sincerely,

A handwritten signature in cursive script, appearing to read "Larry Brooks".

Larry Brooks
CPG #4028

SECTION VIII Cont'

(AREA FRESH WATER WELLS)

There are no active domestic fresh water wells within the review area as determined from the New Mexico State Engineer's office in Roswell, New Mexico. However, there is an active windmill in Section 27 at location of (33311).

SECTION IX

NONE

Section X

Logs have been submitted previously to the N.M.O.C.D.

SECTION XI AND XII

Not applicable

SECTION XIII

Please note the attached Affidavit of Publication. A copy of the application has been furnished to each name on the attached mailing list by certified mail.

AFFIDAVIT OF PUBLICATION

State of New Mexico,
County of Lea.

Harvey

Kathi Bearden

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

Feb. 2, 1993
and ending with the issue dated

Feb. 2, 1993

Kathi Bearden
General Manager

Sworn and subscribed to before

me this 10th day of

February, 1993

Gregory D. Gentry
Notary Public.

My Commission expires _____

July 6, 1994

(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.

LEGAL NOTICE
February 2, 1993

Harvey E. Yates proposes to convert the EKay 27 State #1 to a Water Disposal well. The legal location is Unit M, 660' FSL & 660' FWL, Sec. 27, T18S, R34E, N.M.P.M., Lea County, New Mexico.

Produced water will be injected at a rate of approximately 500 barrels per day, at a surface pressure not to exceed 1857 PSIG into the Undesignated Bone Spring Pool at a depth of 9086-9286'.

Interested parties must file objections or request a hearing with the New Mexico Oil Conservation Division, P.O.

Box 2088, Santa Fe, New Mexico 87501, within fifteen (15) days.

Contact Tim Gum if needed at 505/623-6601 or at P.O. Box 1933, Roswell, New Mexico 88202.

**MAILING LIST
EKAY 27 STATE NO.1
DISPOSAL APPLICATION**

**ANADARKO PETROLEUM CORPORATION
P.O. BOX 1330
HOUSTON TEXAS,77251**

**PHILLIPS PETROLEUM CORPORATION
4001 PENBROOK
ODESSA,TEXAS 76792.**

**UNOCAL
P.O. BOX 3100
MIDLAND ,TEX**

**BASS ENTERPRISES
FIRST CITY BANK TOWER
201 MAIN
FORTH WORTH,TEXAS 76102**

**OIL CONSERVATION DIVISION
P.O. BOX 1980
HOBBS,NM 88240**

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

**MERIDIAN OIL
P.O. BOX 51810
MIDLAND,TEXAS 79710**



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

RECEIVED
JAN 2 AM 9 11

BRUCE KING
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. E Kay 27 State #1-M 27-18-34
 Operator Lease & Well No. Unit S-T-R

and my recommendations are as follows:

OK

Yours very truly,

Jerry Sexton
Supervisor, District 1

/ed