

APPLICATION FOR AUTHORIZATION TO INJECT

PURPOSE: _____ Secondary Recovery _____ Pressure Maintenance _____ Disposal _____ Storage
Application qualifies for administrative approval? Yes _____ No

OPERATOR: YATES PETROLEUM CORPORATION

ADDRESS: 105 South Fourth Street, Artesia, NM 88210

CONTACT PARTY: Sam Brandon PHONE: (505) 748-4281

I. 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.

7. Is this an expansion of an existing project? _____ Yes No
If yes, give the Division order number authorizing the project: _____

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.

I. 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.

II. 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.).

III. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic 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 sources known to be immediately underlying the injection interval.

I. Describe the proposed stimulation program, if any.

2. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).

III. 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.

I. 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 sources of drinking water.

II. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

V. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Sam Brandon TITLE: Operations Engineer

SIGNATURE: Sam Brandon DATE: 9/03/2002

If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted.
Please show the date and circumstances of the earlier submittal: _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

MARTIN YATES. III
1912 - 1985
FRANK W. YATES
1936 - 1986



105 SOUTH FOURTH STREET
ARTESIA, NEW MEXICO 88210-2118
TELEPHONE (505) 748-1471

S. P. YATES
CHAIRMAN OF THE BOARD
JOHN A. YATES
PRESIDENT
PEYTON YATES
EXECUTIVE VICE PRESIDENT
RANDY G. PATTERSON
SECRETARY
DENNIS G. KINSEY
TREASURER

September 3, 2002

Marathon Oil Co.
P.O. Box 552
Midland, Texas 79702
Attn: Operations

Dear Sir or Madam:

Enclosed please find a copy of Form C-108 (Application for Authority to Inject) for the proposed Archimedes SWD #1 located in Section 18-T21S-R24E, Eddy County, New Mexico.

Should you have any questions, please feel free to contact me at (505) 748-4281.

Sincerely,



Sam Brandon
Operations Engineer

Enclosure

Original Notice to Marathon with original application.

U.S. Postal Service CERTIFIED MAIL RECEIPT (Domestic Mail Only; No Insurance Coverage Provided)	
OFFICIAL USE	
Postage	\$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$
Sent To	
MARATHON OIL Co.	
Street, Apt. No., or PO Box No.	
P.O. Box 552	
City, State, ZIP+4	
MIDLAND, TX 79702	

7000 1530 0000 0000 1625 4628

ARTESIA NM 2002
SEP 4
Postmark Here
USPS

Cherry Marace
Direct Mail

PS Form 3800, May 2000 See Reverse for Instructions

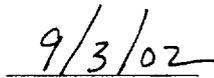
Attachment F

C-108 Application for Authorization to Inject
Yates Petroleum Corporation
Archimedes SWD No. 1
Section 18, T-21S-R24E
Eddy County, New Mexico

Available engineering and geologic data have been examined and no evidence of open faults of hydrologic connection between the disposal zone and any underground sources of drinking water has been found.



John Humphrey
Geologist
Yates Petroleum Corporation



Date

C-108 Application for Authorization to Inject
Yates Petroleum Corporation
Archimedes ARE State Com #1
18-21S-24E
Eddy County, New Mexico

I. The purpose of completing this well is for disposal of produced Canyon water into the Canyon.

II. Operator: Yates Petroleum Corporation
105 South Forth Street
Artesia, NM 88210
Sam Brandon (505) 748-4281

III. Well Data: See Attachment A

IV. This is not an expansion of an existing project.

V. See attached map, Attachment B.

VI. There are no wells within the area of review penetrating the proposed injection zone.

VII. 1. Proposed average daily injection volume approximately 20,000 BWPD.
Maximum daily injection volume approximately 25,000 BWPD.

2. This will be a closed system.

3. Proposed average injection pressure: 1000 psi.
Proposed maximum injection pressure: 2000 psi.

4. Sources of injected water would be produced water from the Canyon.
(Attachment C)

5. See Attachment C.

VIII. The injection interval is Canyon from 8032' - 8150'.

Fresh water zones overlie the proposed injection formation at depths to approximately 1100 feet.

IX. The proposed disposal interval may be acidized and acid fraced with 15-20% HCL acid.

X. Logs were filed at your office when the well was drilled. Any new logs run after completing will also be submitted to your office.

Handwritten notes:
2336 away
Not Yet Completed
1300 FSL/330FWL/17/21S/24E
Indian Hills UNIT # 015
30-015-29870
Farben
CFFack

- XI. There are no windmills that exist within a one mile radius of the subject location. One well produces “fresh” water from a well approximately 1.25 miles from the proposed SWD well. A chemical analysis of the water from this well is attached. (Attachment D)
- XII. See Attachment F.
- XIII. Proof of notice.
 - A. Surface owner is the State of New Mexico. Lessee is Ms. Patricia Schafer Lyman.
 - B. Copy of legal advertisement attached. (Attachment G)
- XIV. Certification is signed.

Well Name: Archimedes SWD #1 Field: Indian Basin

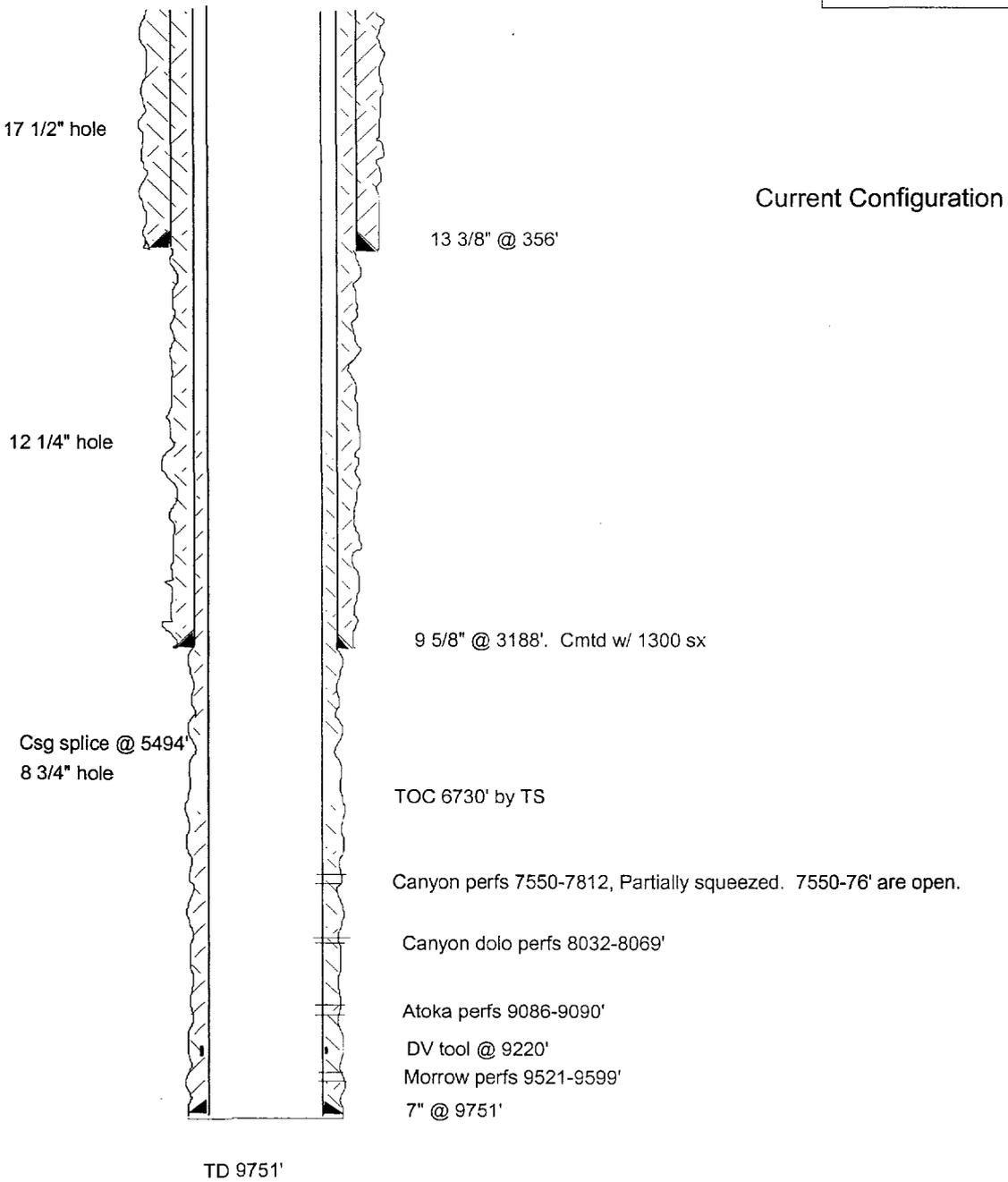
Location: 1650' FSL & 1980' FEL Sec. 18-21S-24E Eddy Co, NM

GL: 3811' Zero: AGL: KB: 3838'

Spud Date: Completion Date:

Comments:

Casing Program	
Size/Wt/Grade/Conn	Depth Set
13 3/8" 48#	356'
9 5/8" 36 & 40#	3188'
7" 23 & 26#	9751'



Current Configuration

SKETCH NOT TO SCALE

DATE: _____

Well Name: Archimedes SWD #1 Field: Indian Basin

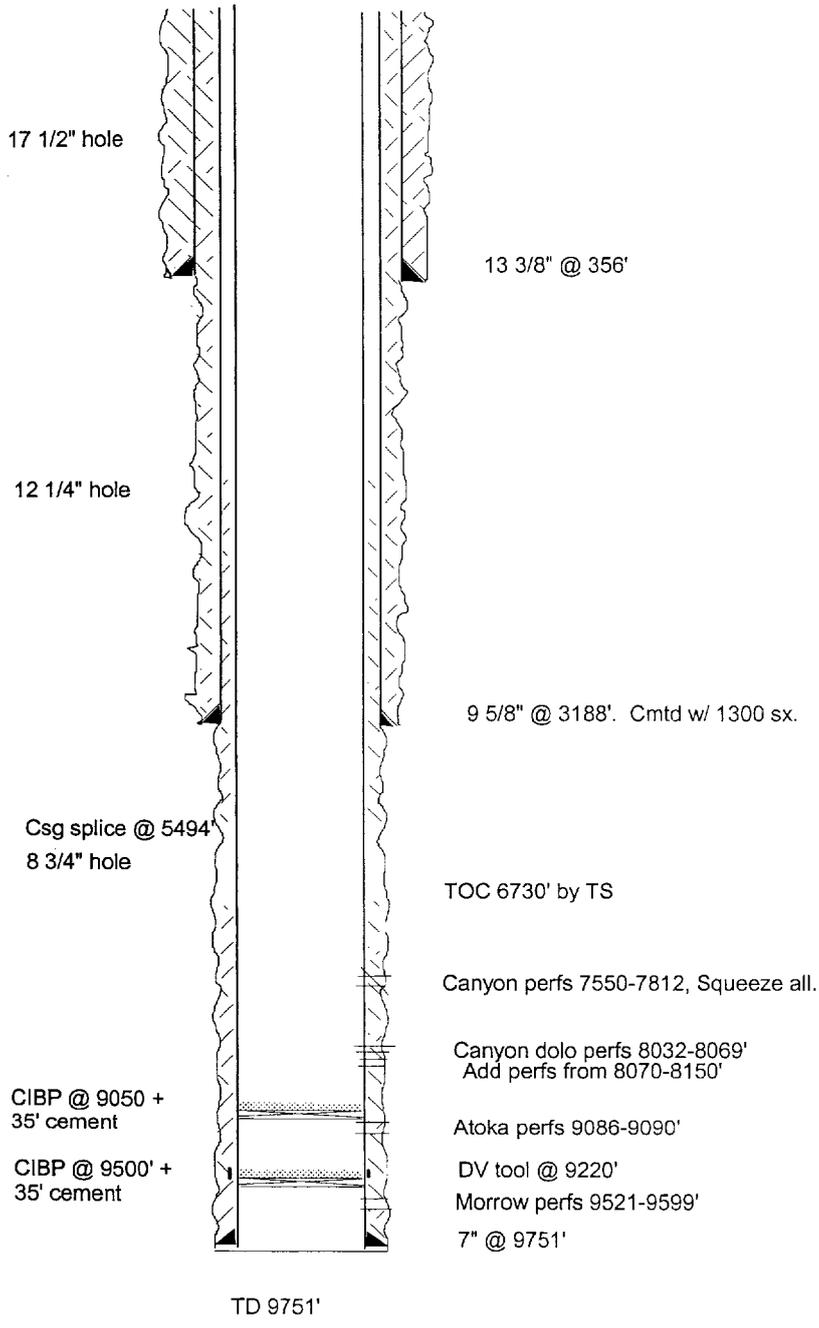
Location: 1650' FSL & 1980' FEL Sec. 18-21S-24E Eddy Co, NM

GL: 3811' Zero: AGL: KB: 3838'

Spud Date: Completion Date:

Comments:

Casing Program	
Size/Wt/Grade/Conn	Depth Set
13 3/8" 48#	356'
9 5/8" 36 & 40#	3188'
7" 23 & 26#	9751'



Proposed Configuration

SKETCH NOT TO SCALE

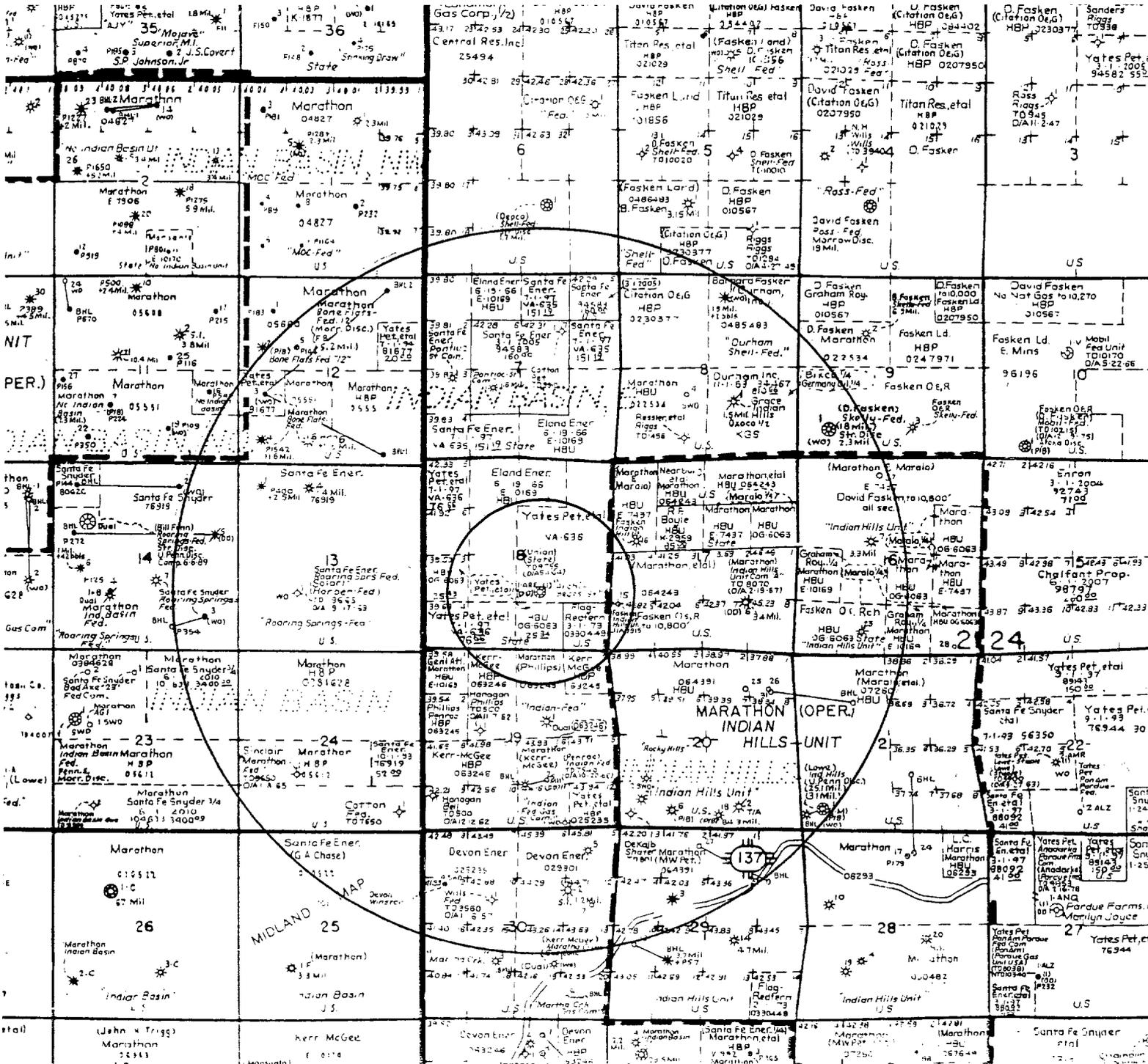
DATE: _____

Yates Petroleum Corporation
Archimedes SWD #1
18-21S-24E

Attachment A
Page 1

III. Well Data

- A. 1. Lease Name/Location
Archimedes SWD #1
18-21S-24E
1650' FSL & 1980' FEL
2. Casing Strings:
a. Proposed well condition:
13 3/8" 48#, H40 ST&C at 356'
9 5/8" 36 & 40# at 3188'
7"23# J-55, 26# & 23# N-80 at 9751'
4 1/2" Plastic coated tubing (proposed) set at 8000' ±
3. Propose to use Guiberson or Baker plastic-coated or nickel-plated packer set at 8000' ±.
- B. 1. Injection Formation: Canyon
2. Injection interval into cased hole perforations 8032' - 8150'.
3. Well was originally drilled as a Morrow well with perforations at 9521'-9599'. Additional zones were perforated at 9086'-9090', 8032'-8069' and 7550'-7812'. All open perforations above 8000' will be cement squeezed and pressure tested to ensure complete shut-off. Perforations below 8150' will be abandoned with CIBP and cement.
4. Next higher (shallower) oil or gas zone within 2 miles – Canyon
Next lower (deeper) oil or gas zone within 2 miles – Morrow.



YATES PETROLEUM CORPORATION
 ARCHIMEDES SWD #1
 PROPOSED SALT WATER DISPOSAL WELL
 SEC 18-T21S-R24E
 1650' FSL & 1980' FEL
 EDDY COUNTY, NEW MEXICO

ATTACHMENT B



Water Analysis Report from Petrolite Corporation

YATES PETROLEUM

HILLVIEW AHE
 WELL #5

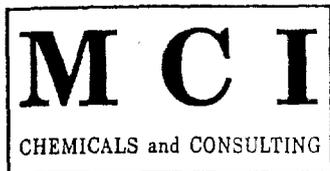
ARTESIA, NEW MEXICO

Summary		Analysis: 15311					
Anion/Cation Ratio	1.00	Anions			Cations		
TDS (mg/L or g/m ³)	7,914		mg/L	meq/L		mg/L	meq/L
Density (g/cm ³ or tonne/m ³)	1.006	Chloride	2,300	64.9	Sodium	2,084	90.7
Chemical Treatment		Bicarbonate	817	13.4	Magnesium	110	9.05
Sample Condition		Carbonate	0.00	0.00	Calcium	457	22.8
Sampling Date	7/1/96	Sulfate	2,136	44.5	Strontium	10.0	0.23
Sampled by		Phosphate	N/A	N/A	Barium	0.05	0.00
Submitted by	ANDY MILLER	Borate	N/A	N/A	Iron	0.05	0.00
Analysis Date	7/10/96	Silicate	N/A	N/A	Potassium	N/A	N/A
Sample analysis number	15311	Hydrogen Sulfide			Aluminum	N/A	N/A
		pH at time of sampling		6.90	Chromium	N/A	N/A
		pH at time of analysis			Copper	N/A	N/A
		pH used in Calculations		6.90	Lead	N/A	N/A
					Manganese	N/A	N/A
					Nickel	N/A	N/A

Predictions of Saturation Index and Amount of Scale in lb/1000bbl												
Pressure (psi)		Temp.	Calcite CaCO ₃		Gypsum CaSO ₄ .2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄	
CO ₂	Total	°F	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
1.18	0.00	80	0.45	50.3	-0.23		-0.30		-0.20		0.65	0.02
1.54	0.00	100	0.57	64.4	-0.24		-0.24		-0.20		0.49	0.02
1.94	0.00	120	0.70	79.4	-0.24		-0.16		-0.13		0.37	0.02
2.35	0.00	140	0.84	95.0	-0.23		-0.06		-0.15		0.27	0.01

Note 1: When assessing the severity of the scale problem, both the saturation index (Si) and amount of scale must be considered.
 Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.
 Note 3: CO₂ Pressure is absolute pressure. Total Pressure is gauge pressure.

Water to be disposed



FRESH WATER WELL

MILLER CHEMICALS, INC.

Post Office Box 298
 Artesia, N.M. 88211-0298
 (505) 746-1919 Artesia Office
 (505) 393-2893 Hobbs Office
 (505) 746-1918 Fax

APPROX. 1.25 MILES FROM ARCADES #1 PROPOSED SWD

WATER ANALYSIS REPORT

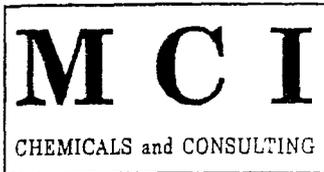
Company : YATES PETROLEUM Date : 8/20/01
 Address : ARTESIA, NM Date Sampled : 8/20/01
 Lease : MARATHON "MW" Analysis No. : 00177
 Well : #81
 Sample Pt. : WELLHEAD

ANALYSIS		mg/L		* meq/L
1. pH	7.0			
2. H2S	0			
3. Specific Gravity	1.000			
4. Total Dissolved Solids		14629.2		
5. Suspended Solids		NR		
6. Dissolved Oxygen		NR		
7. Dissolved CO2		NR		
8. Oil In Water		NR		
9. Phenolphthalein Alkalinity (CaCO3)				
10. Methyl Orange Alkalinity (CaCO3)				
11. Bicarbonate	HCO3	354.0	HCO3	5.8
12. Chloride	Cl	8520.0	Cl	240.3
13. Sulfate	SO4	350.0	SO4	7.3
14. Calcium	Ca	800.0	Ca	39.9
15. Magnesium	Mg	340.6	Mg	28.0
16. Sodium (calculated)	Na	4264.4	Na	185.5
17. Iron	Fe	0.3		
18. Barium	Ba	NR		
19. Strontium	Sr	NR		
20. Total Hardness (CaCO3)		3400.0		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter	Compound	Equiv wt X meq/L	=	mg/L
40 *Ca <----- *HCO3 6	Ca(HCO3)2	81.0	5.8	470
----- /-----> -----	CaSO4	68.1	7.3	496
28 *Mg -----> *SO4 7	CaCl2	55.5	26.8	1489
----- <-----/ -----	Mg(HCO3)2	73.2		
185 *Na -----> *Cl 240	MgSO4	60.2		
+-----+	MgCl2	47.6	28.0	1334
Saturation Values Dist. Water 20 C	NaHCO3	84.0		
CaCO3 13 mg/L	Na2SO4	71.0		
CaSO4 * 2H2O 2090 mg/L	NaCl	58.4	185.5	10840
BaSO4 2.4 mg/L				

REMARKS: 0 % KCL PRESENT



MILLER CHEMICALS, INC.

Post Office Box 298
 Artesia, N.M. 88211-0298
 (505) 746-1919 Artesia Office
 (505) 393-2893 Hobbs Office
 (505) 746-1918 Fax

WATER ANALYSIS REPORT

Company : YATES PETROLEUM Date : 2/21/01
 Address : ARTESIA, NM Date Sampled : 2/21/01
 Lease : ZINGARO "ANG" Analysis No. : 00226
 Well : #1
 Sample Pt. : WELLHEAD

ANALYSIS		mg/L		meq/L
1. pH		7.1		
2. H2S		90		
3. Specific Gravity		1.010		
4. Total Dissolved Solids		17622.9		
5. Suspended Solids		NR		
6. Dissolved Oxygen		NR		
7. Dissolved CO2		NR		
8. Oil In Water		NR		
9. Phenolphthalein Alkalinity (CaCO3)				
10. Methyl Orange Alkalinity (CaCO3)				
11. Bicarbonate	HCO3	659.0	HCO3	10.8
12. Chloride	Cl	8946.0	Cl	252.4
13. Sulfate	SO4	1750.0	SO4	36.4
14. Calcium	Ca	680.0	Ca	33.9
15. Magnesium	Mg	583.4	Mg	48.0
16. Sodium (calculated)	Na	5004.3	Na	217.7
17. Iron	Fe	0.3		
18. Barium	Ba	NR		
19. Strontium	Sr	NR		
20. Total Hardness (CaCO3)		4100.0		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter	Compound	Equiv wt X meq/L	= mg/L
34 *Ca <----- *HCO3	Ca(HCO3)2	81.0	10.8 875
/----->	CaSO4	68.1	23.1 1574
48 *Mg -----> *SO4	CaCl2	55.5	
<-----/	Mg(HCO3)2	73.2	
218 *Na -----> *Cl	MgSO4	60.2	13.3 801
	MgCl2	47.6	34.7 1651
Saturation Values Dist. Water 20 C	NaHCO3	84.0	
CaCO3 13 mg/L	Na2SO4	71.0	
CaSO4 * 2H2O 2090 mg/L	NaCl	58.4	217.7 12721
BaSO4 2.4 mg/L			

REMARKS:

ATTACHMENT "E"

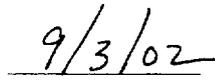
Attachment F

C-108 Application for Authorization to Inject
Yates Petroleum Corporation
Archimedes SWD No. 1
Section 18, T-21S-R24E
Eddy County, New Mexico

Available engineering and geologic data have been examined and no evidence of open faults of hydrologic connection between the disposal zone and any underground sources of drinking water has been found.



John Humphrey
Geologist
Yates Petroleum Corporation



Date

MARTIN YATES, III
1912 - 1985
FRANK W. YATES
1936 - 1986



105 SOUTH FOURTH STREET
ARTESIA, NEW MEXICO 88210-2118
TELEPHONE (505) 748-1471

S. P. YATES
CHAIRMAN OF THE BOARD
JOHN A. YATES
PRESIDENT
PEYTON YATES
EXECUTIVE VICE PRESIDENT
RANDY G. PATTERSON
SECRETARY
DENNIS G. KINSEY
TREASURER

September 3, 2002

Artesia Daily Press
P.O. Box 190
Artesia, New Mexico 88211-0190

Gentlemen:

Yates Petroleum Corporation desires to place a public notice in your newspaper for one day. The notice is enclosed.

Please place this notice in your paper on Friday, September 6, 2002, (or as soon as possible thereafter) and forward a copy of it along with your billing as soon as possible to:

Yates Petroleum Corporation
105 South Forth Street
Artesia, NM 88210
Attn: Sam Brandon

If you have any questions, please contact me at 748-4281. Thank you for your cooperation in this matter.

Sincerely,

A handwritten signature in cursive script that reads 'Sam Brandon'.

Sam Brandon
Operations Engineer

Enclosure

Legal Notice

Yates Petroleum Corporation, 105 South Fourth Street, Artesia, NM 88210, has filed form C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division seeking administrative approval for an injection well. The proposed well, the "Archimedes SWD #1" located 1650' FSL & 1980' FEL of Section 18, Township 21 South, Range 24 East of Eddy County, New Mexico, will be used for salt water disposal. Disposal waters from the Canyon will be re-injected into the Canyon at a depth of approximately 8032'-8150' with a maximum pressure of 2000 psi and a maximum rate of 25,000 BWPD.

All interested parties opposing the aforementioned must file objections or requests for a hearing with the Oil Conservation Division, 2040 S. Pacheco Street, Santa Fe, NM 87505-5472, within 15 days. Additional information can be obtained by contacting Sam Brandon at (505) 748-4281.

Affidavit of Publication

NO. 17848

STATE OF NEW MEXICO

County of Eddy:

Gary D. Scott being duly

sworn, says: That he is the Publisher of The
Artesia Daily Press, a daily newspaper of general
circulation, published in English at Artesia, said county
and county and state, and that the here to attached

Legal Notice

was published in a regular and entire issue of the said
Artesia Daily Press, a daily newspaper duly qualified
for that purpose within the meaning of Chapter 167 of
the 1937 Session Laws of the state of New Mexico for
1 consecutive weeks/days on the same
day as follows:

First Publication September 4 2002

Second Publication _____

Third Publication _____

Fourth Publication _____

Subscribed and sworn to before me this

4th day of September 2002

Robert A. Beans
Notary Public, Eddy County, New Mexico

My Commission expires September 23, 2003

Copy of Publication:

LEGAL NOTICE

Yates Petroleum Corporation, 105 South Fourth Street, Artesia, NM 88210, has filed form C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division seeking administrative approval for an injection well. The proposed well, the "Archimedes SWD #1" located 1650' FSL & 1980' FEL of Section 18, Township 21 South, Range 24 East of Eddy County, New Mexico, will be used for salt water disposal. Disposal waters from the Canyon will be re-injected into the Canyon at a depth of approximately 8032'-8150' with a maximum pressure of 2000 psi and a maximum rate of 25,000 BWPD. All interested parties opposing the aforementioned must file objections or requests for a hearing with the Oil Conservation Division, 2040 S. Pacheco Street, Santa Fe, NM 87505-5472, within 15 days. Additional information can be obtained by contacting Sam Brandon at (505) 748-4281. Published in the Artesia Daily Press, Artesia, N.M. September 4, 2002. Legal 17848

ATTACHMENT G

ARCHIMEDES ARE STATE COM #001 18/21S/24E/66y

18/21S 3830

18/21E 180 E 180

NS

18/21S 3830

API WELL NAME Short Operator
30-015-28870 INDIAN HILLS UNIT #015 FASKEN OIL & RANCH LTD

NS FTG 1300S

NS FTG 330W

NS FTG 330W

UL2 Sec 5

Tap Rge 1 21S 24E

LAND WELL
TYPE TYPE TYPE
0 F 0 F G

Orig Form.(or Notes) Last Status
MORROW NONE NO COMPL M 0

UL-1 P. Code Latest Pool OGRID Days 2002 Gas 2002
151416 0 0