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Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

James W. Pringle	Jamesty	Min Coperations Engineer	10/15/03
Print or Type Name	Signature	Title	Date

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### Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, New Mexico 87505

FORM C-108 Revised 4-1-98

### 30-005-62884

I. ·	PURPOSE: Secondary Recovery Pressure Maintenance X Disposal Storage
	Application qualifies for administrative approval? X Yes No
II.	OPERATOR:
	ADDRESS: 105 South 4 <sup>th</sup> Street, Artesia, New Mexico 88210
	CONTACT PARTY: James W. Pringle PHONE: (505) 748-4281
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?YesNo 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:
	<ol> <li>Proposed average and maximum daily rate and volume of fluids to be injected;</li> <li>Whether the system is open or closed;</li> <li>Proposed average and maximum injection pressure;</li> <li>Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than re-injected produced water; and,</li> <li>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.).</li> </ol>
*VIII.	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.
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 sources 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:       James W. Pringle       TITLE:       Operations Engineer         SIGNATURE:       James W. Pringle       DATE:       October 10, 2003
*	If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted.

- 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 the 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, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, 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.

C-108 Application for Authorization to Inject Yates Petroleum Corporation Vertigo AXU State Com #1 Unit G Sec. 16, T6S, R27E Chaves County, New Mexico

I. The purpose of completing this well is to make a disposal well for produced Cisco/Miss water into the Silurian Sand formation.

Yates Petroleum Corporation plans to convert this well to a water disposal well into the Silurian.

- II. Operator: Yates Petroleum Corporation 105 South Fourth Street Artesia, NM 88210 James W. Pringle (505) 748-4182
- 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 4 wells within the area of review penetrate the proposed injection zone. (See Attachment C)
- VII. 1. Proposed average daily injection volume approximately 700 BWPD. Maximum daily injection volume approximately 1500 BWPD.
  - 2. This will be a closed system.
  - 3. Proposed average injection pressure –1000 psi. Proposed maximum injection pressure –1500 psi.
  - 4. Sources of injected water would be produced water from the Cisco & Mississippian. (Attachment D)
- VIII. 1. The proposed injection interval is the Silurian 6326-6386'.

Underground water sources of drinking water are in the Alluvial fill from surface to 300'.

Application for Authorization to Inject Vertigo AXU Com #1 -2-

- 2. Possible Fresh water zones overlie the proposed injection formations at depths to approximately 850'. There are no fresh water zones underlying the formation.
- IX. The proposed disposal interval may be acidized 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.
- XI. There is one windmill within a one-mile radius of the subject location. (Attachment E)
- XII. Yates Petroleum Corporation has examined geologic and engineering data and has found that there is no evidence of faulting in the proposed interval. (Attachment G)
- XIII. Proof of notice.
  - A. Certified letters sent to the surface owner and offset operators attached (Attachment F)
  - B. Copy of legal advertisement attached. (Attachment H)
- XIV. Certification is signed.

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



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

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

October 10, 2003

New Mexico Energy & Minerals Department Oil Conservation Division P.O. Box 2088 Santa Fe, NM 87504

Dear Mr. Catanach;

Enclosed please find a copy of form C-108 (Application for Authority to Inject) on Yates Petroleum Corporation Vertigo AXU State Com No. 1 located in Unit G, Section 16-T6S-R27E of Chaves County New Mexico.

Should you have any questions, please feel free to contact me at (505) 748-4182.

Sincerely,

amos W, Pringle

James W. Pringle Operations Engineer

JWP/cm

Enclosure

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



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

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

October 10, 2003

Pete Martinez State of New Mexico Commissioner of Public Lands P. O. Box 1148 Santa Fe, NM 87504-1148

Dear Mr. Martinez,

Enclosed please find a copy of form C-108 (Application for Authority to Inject) on Yates Petroleum Corporation Vertigo AXU State Com No. 1 located in Unit G, Section 16-T6S-R27E of Chaves County New Mexico.

Should you have any questions, please feel free to contact me at (505) 748-4182.

Sincerely,

ame W. Pringle

James W. Pringle Operations Engineer

JWP/cm

Enclosure

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



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

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

October 10, 2003

Tim Gum New Mexico Energy & Minerals Department OIL CONSERVATION DIVISION 1301 W. Grand Artesia, New Mexico 88210

Dear Mr. Williams,

Enclosed please find a copy of form C-108 (Application for Authority to Inject) on Yates Petroleum Corporation Vertigo AXU State Com No. 1 located in Unit G, Section 16-T6S-R27E of Chaves County New Mexico.

Should you have any questions, please feel free to contact me at (505) 748-4182.

Sincerely,

mes WiPringle

James W. Pringle Operations Engineer

JWP/cm

Enclosure

## Yates Petroleum Corporation Vertigo AXU State Com #1 G-16-T6S-R27E Chaves County, New Mexico

## **Attachment A**

### Well Data

- A. 1. Lease Name/Location Vertigo AXU State Com #1 G-16-T6S-R27E 2310' FNL & 1980' FEL
  - 2. Casing Strings:
    - a. Present well condition 8 5/8" 24#, J-55, ST&C @ 530' (circ)
    - b. Present Status: Non-commercial – P&A 2/24/92 by McClellan Oil Corp.
  - Proposed well condition: Casing same as above.
     5 1⁄2" 15.50#, J-55 ST&C @ 6535' 2 7/8" plastic-coated tubing w/nickel plated Guiberson Uni VI packer @ 6300' +/-.
- B. 1. Injection Formation: Silurian
  - 2. Injection Interval into cased hole perforation 6326-6386'.
  - 3. Well was originally drilled as an exploratory Silurian well. Well will be a Silurian water disposal well when work is complete.
  - 4. Next higher (shallower) oil or gas zone within 2 miles-Cisco, Miss. Next lower (deeper) oil or gas zone within 2 miles-None.

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## Vertigo AXU Com #1 Form C-108

### Tabulation of wells within area of review

Well Name	Operator Name	Туре	Spud	Total Depth	Producing Zone	Perforations	Completion Information
BIPLANE UNIT 1 Sec. 16 6S-27E 660 FNL/660 FEL	YATES PETROLEUM CORP	O&G	5/11/03	6585	MISSISSIPPIAN-CISCO	5876-5896/6228-6320	11 3/4" 1270 w/1050 sx cmt -5 1/2" @ 6585 w/600 sx cmt
STATE 16 1 Sec. 16 6S-27E, 1980 FSL/660 FEL	READ & STEVENS INC	D&A	11/3/72	6549		6204-6424	12 3/4" @ 31' w/1 sx cmt- 8 5/8" @ 1402' w/450 sx cmt- 5 1/2" @ 6549' w/325 sx cmt
New Mexico State L 1 Sec. 16 6S-27E 1980 FSL/1980 FWL	READ & STEVENS INC	P&A	8/19/71	6336	PENN VIRGILIAN SAND	5890-5902	8 5/8'' @ 1415 w/750 sx cmt- 4 1/2'' @ 6335 w/ 360 sx cmt
Sec. 15 6S-27E 1980 FNL/660 FWL	MCCLELLAN JACK L	P&A	6/21/71	6480	SILURO-DEVONIAN	5845-5981/6460-6468	8 5/8" @ 1422' w/300 sx cmt-4 1/2" @ 6480 w/300 sx cmt



## 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 Address Lease Well Sample	YATES PETROLEU ARTESIA, NM BIPLANE UNIT #1 Pt. : WELLHEAD	Μ	Date Date Sampled Analysis No.	: 10/13/0 : 10/12/0 : 00668	)3 )3
	ANALYSIS		mg/L		* meq/L
1		6 9			
2	H29	0			
3.	Specific Gravity	1.150			
4.	Total Dissolved Solids		160665.5		
5.	Suspended Solids		NR		
6.	Dissolved Oxygen		NR		
7.	Dissolved CO2		NR		
8.	Oil In Water		NR		
9.	Phenolphthalein Alkali	nity (CaCO3)			
10.	Methyl Orange Alkalini	ty (CaCO3)			
11.	Bicarbonate	HCO3	134.0	нсоз	2.2
12.	Chloride	Cl	100110.0	Cl	2824.0
13.	Sulfate	SO4	75.0	SO4	1.6
14.	Calcium	Ca	12600.0	Ca	628.7
15.	Magnesium	Mg	3165.9	Mg	260.5
16.	Sodium (calculated)	Na	44566.9	Na	1938.5
17.	Iron	F.e	13.8		
18.	Barlum	Ba	NR		
19.	Strontium Metal Mardnegg (CaCO2)	Sr	NK		
20.	IUCAI NATUNESS (CACUS)		44300.0		

### PROBABLE MINERAL COMPOSITION

\_\_\_\_\_

*milli equivalents per Liter	Compound	Equiv wt	X meq/L	= mg/L
++ ++				
629  *Ca < *HCO3   2	Ca(HCO3)2	81.0	2.2	178
/>	CaSO4	68.1	1.6	106
260  *Mg> *SO4   2	CaCl2	55.5	625.0	34680
<	Mg(HCO3)2	73.2		
1939  *Na> *Cl   2824	MgSO4	60.2		
++	MgC12	47.6	260.5	12399
Saturation Values Dist. Water 20 C	NaHCO3	84.0		
CaCO3 13 mg/L	Na2SO4	71.0		
CaSO4 * 2H2O 2090 mg/L	NaCl	58.4	1938.5	113288
BaSO4 2.4 mg/L				

REMARKS: 0 % KCL PRESENT

## Attachment D

<del>..</del> . .

### SCALE TENDENCY REPORT

\_\_\_\_\_

Company	:	YATES PETROLEUM	Date	:	10/13/03
Address	:	ARTESIA, NM	Date Sampled	:	10/12/03
Lease	:	BIPLANE UNIT	Analysis No.	:	00668
Well	:	#1	Analyst	:	A. MILLER
Sample P	't. :	WELLHEAD			

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### STABILITY INDEX CALCULATIONS (Stiff-Davis Method) CaCO3 Scaling Tendency

S.I.	=	0.9	at	70	deg.	F	or	21	deg.	С
s.I.	=	1.0	at	90	deg.	F	or	32	deg.	С
s.I.	=	1.0	at	110	deg.	F	or	43	deg.	С
s.I.	=	1.1	at	130	deg.	F	or	54	deg.	С
S.I.	=	1.1	at	150	deg.	F	or	66	deg.	С

CALCIUM SULFATE SCALING TENDENCY CALCULATIONS (Skillman-McDonald-Stiff Method) Calcium Sulfate

S	=	1296	at	70	deg.	F	or	21	deg	С
S	-	1395	at	90	deg.	F	or	32	deg	С
S	=	1464	at	110	deg.	F	or	43	deg	С
S	=	1495	at	130	deg.	F	or	54	deg	С
S	=	1499	at	150	deg.	F	or	66	deg	С

Respectfully submitted, A. MILLER



## 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 Address Lease Well Sample	: E□YATES PETROLEUM : ARTESIA, NM : RANCH HOUSE NEAR : BIPLANE #1 & ST. 16- Pt. : UNKNOWN	Date : 9/30/0 Date Sampled : UNKNOW Analysis No. : 00664	3 N
	ANALYSIS	mg/L	* meq/L
1.	pH 6.9		
2.	H2S 0		
3.	Specific Gravity 1.010		
4.	Total Dissolved Solids	6189.0	
5.	Suspended Solids	NR	
6.	Dissolved Oxygen	NR	
7.	Dissolved CO2	NR	
8.	Oil In Water	NR	
9.	Phenolphthalein Alkalinity (CaCO)	3)	
10.	Methyl Orange Alkalinity (CaCO3)		
11.	Bicarbonate HCC	D3 171.0 HCO3	2.8
12.	Chloride Cl	2130.0 Cl	60.1
13.	Sulfate SO4	4 2000.0 SO4	41.6
14.	Calcium Ca	720.0 Ca	35.9
15.	Magnesium Mg	462.0 Mg	38.0
16.	Sodium (calculated) Na	703.6 Na	30.6
17.	Iron Fe	2.5	
18.	Barium Ba	NR	
19.	Strontium Sr	NR	
20.	Total Hardness (CaCO3)	3700.0	

# PROBABLE MINERAL COMPOSITION

*milli equivalents per Lite	er	Compound	Equiv wt	X meq/L	= mg/L
++	++				
36  *Ca < *HCO3	3	Ca(HCO3)2	81.0	2.8	227
>		CaSO4	68.1	33.1	2255
38  *Mg> *SO4	421	CaC12	55.5		
/		Mg(HCO3)2	73.2		
31  *Na> *Cl	601	MgSO4	60.2	8.5	513
++	++	MgC12	47.6	29.5	1403
Saturation Values Dist. Wat	ter 20 C	NaHCO3	84.0		
CaCO3 13 r	ng/L	Na2SO4	71.0		
CaSO4 * 2H2O 2090 n	ng/L	NaCl	58.4	30.6	1788
BaSO4 2.4 I	ng/L				

REMARKS: 0 % KCL PRESENT

``.

Attachment E

# SCALE TENDENCY REPORT

Company	: EEYATES PETROLEUM	Date	:	9/30/03
Address	: ARTESIA, NM	Date Sampled	:	UNKNOWN
Lease	: RANCH HOUSE NEAR	Analysis No.	:	00664
Well	: BIPLANE #1 & ST. 16-	Analyst	:	A. MILLER
Sample Pt.	: UNKNOWN			

### STABILITY INDEX CALCULATIONS (Stiff-Davis Method) CaCO3 Scaling Tendency

S.I.	==	0.0	at	70	deg.	F	or	21	deg.	С
S.I.	=	0.1	at	90	deg.	F	or	32	deg.	С
S.I.	=	0.1	at	110	deg.	F	or	43	deg.	С
S.I.	=	0.1	at	130	deg.	F	or	54	deg.	С
S.I.	=	0.2	at	150	deg.	$\mathbf{F}$	or	66	deg.	С

### CALCIUM SULFATE SCALING TENDENCY CALCULATIONS (Skillman-McDonald-Stiff Method) Calcium Sulfate

S	=	2374	at	70	deg.	F or	21	deg	С
S	=	2426	at	90	deg.	F or	32	deg	С
S	=	2447	at	110	deg.	F or	43	deg	С
S	=	2434	at	130	deg.	F or	54	deg	С
S	=	2408	at	150	deg.	F or	66	deg	С

1

Respectfully submitted, A. MILLER

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## **Attachment G**

C-108 Application for Authorization to Inject Yates Petroleum Corporation Vertigo AVX State Com #1 Unit G, Section 16 T6S-R27E Chaves County, New Mexico

Available engineering and geological 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.

4. Tim. Miller

Tim Miller Geologist Yates Petroleum Corporation

<u>9-30-03</u> Date

### AFFIDAVIT OF PUBLICATION

### COUNTY OF CHAVES STATE OF NEW MEXICO

I, Fran Saunders, Legals Clerk

Of the Roswell Daily Record, a daily newspaper published at Roswell, New Mexico, do solemnly swear that the clipping hereto attached was published in the regular and entire issue of said paper and not in a supplement thereof for a period of:

### one time

beginning with the issue dated

October 5th 2003

and ending with the issue dated

October 5th 2003

Fron Saunders

Clerk

Sworn and subscribed to before me

This 7th Day of October 2003

Marylon S. ipte Notary Public

My Commission expires July 25, 2006

(SEAL)



#### Publish October 5, 2002

#### Legal Notice

Yates Petroleum Corporation, 105 South Fourth Street, Artesia, NM 88210, has filed from 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 Vertigo AXU State Com #1, located in Unit G, Section 16, Township 6 South, Range 27 East, of Chaves County, New Mexico, will be used for saltwater disposal. Disposal waters from the Cisco & Mississippian and will be reinjected into the Silurian at a depth of 6326-6386' with a maximum pressure of 1500 psi and a maximum rate of 1500 BWPD.

All interested parties opposing the aforementioned must file objections or requests for a hearing with the Oli Conservation Division, 1220 South Saint Francis Drive, Santa Fe, New Mexico 87505-5472, within 15 days. Additional information can be obtained by contacting James W. Pringle at (505)748-4182.

Attachment H



