STATE OF NEW MEXICO ENERGY MINERALS AND NATURAL RESOURCES DEPARTMENT

*XI.

OIL CONSERVATION DIVISION 2040 SOUTH PACHECO SANTA FE, NEW MEXICO 87505

FORM C-108 AUG 2 5 1999 Revised 4-1-98

APPLICATION FOR AUTHORIZATION TO UNJECT

I	PURPOSE: X Secondary Recovery Pressure Maintenance Storage Application Qualifies for administrative approval? Yes X No
II.	OPERATOR: Falcon Creek Resources, Inc.
	ADDRESS: 621 17 th Street, Suite 1800, Denver, Colorado 80293-0621
	CONTACT PARTY: Joe Cox, Senior Engineer, 303-675-0007
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 X 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:
	 Proposed average and maximum daily rate and volume of fluids to be injected; Whether the system is open or closed; Proposed average and maximum injection pressure; Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and If injection is for disposal purposes into a zone not productive of oil or gas or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured of inferred from existing literature, studies, nearby well, etc.).
*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 water 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).

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: Joe H. Cox, Jr.	TITLE: Senior Engineer
	SIGNATURE: Just Con	DATE: August 19, 1999
ŧ	If the information required under Section 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:	Completion Reports

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

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 of 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,
- A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 2040 South Pacheco, 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 of offset operators must file any objections or request for hearing of administrative applications within 15 days from the date the application was mailed to them.

West Teas (Yates-Seven Rivers) Field, Lea County, NM Appplication for Authorization to Inject Injection Well Data, Section III, Form C-108 Falcon Creek Resources, Inc.

III. A.

							S	urface Casin	g,				Prod	uction Casir	gı		Injec	tion Str	ing and Pa	cker
Lease Name No. Ut. Sec. Twp. Rge.	No	Ut.	Sec. Tw	D. Rga	e. Footage	ОО	Depth Cemen	t Hole (in.)	Cmt. Top	Method	go	Depth	Cmt. (sx)	Hole (in.)	Cmt. Top	Method	Size	Depth	Packer*	Depth
Anasazi "4"	3	-	4 20S	33E	,650	8.625"	1,368' 710 sx	12.25"	Surface	Calc.	5.50"	3,550'	780 sx	7.875"	579	1	2.875"	3,130	AD-1	3,130
Scharbauer "4"	3	۵.	4 20S	33E	33E 660' FSL 660' FEL	8.625"	1,354' 700 sx		Surface	Calc.	4.50"	3,373'	815 sx				2.375"	3,000'	AD-1	3,000
Federal "9"	٣	ပ	9 20S	33E	9 20S 33E 330' FNL 2,310' FWL 8.625"	8.625"	_	12.25"	Surface			3,320'	580 sx				2.375"	3,050'	AD-1	3,050'
Barber Federal	7	Э	9 20S 33	33E	33E 1,980' FNL 660' FWL 8.625"	8.625"	1,256'	12.25"	Surface	Report	4.50"	3,400	750 sx	7.875"	Surface	Report	2.375"	3,030	AD-I	3,030
Federal "9"	9	I	9 20S		33E 1,650' FNL 990' FEL	8.625"	1,320' 540 sx	12.25"	Surface		5.50"	3,358					2.875"	2,950	AD-1	2,950
State "BF"	4	4	16 20S		33E 330' FNL 330' FEL	9.625"	1,115' 440 sx	12.25"	Surface		5.50"	3,465'	635 sx				2.875"	3,050	AD-1	3,050
																,		1	1	

*Note: Packers are to be Baker model "AD-1" or equivalent

III. B.

16 20S 33E 1,650 FEL 1,980 FEL Yates 1,230-3,292 Perf Prod. None	<u>[</u>	٦	, 100 T	0.00		Money	Injection	110/3-00	Original	Other	I all all and Market
4 20S 33E 1,650 FEL Yates 3,230-3,292' Perf Prod. None 4 20S 33E 660 FSL 660' FEL Yates 3,104-3,88' Perf Injection* Yates 3,263-3,279' Perf Prod. None Yates 3,248-3,312* Perf Injection* Yates 3,147-3,12* Perf Injection* Yates 3,147-3,12* Perf Injection* Yates 3,147-3,12* Perf Injection* Yates 3,147-3,12* Perf Injection* Yates 3,147-3,13* Perf Injection* Yates 3,189-3,374* Perf Injection* Yates 3,189-3,374* Perf Injection* Seven Rivers Perf Injection* Yates 3,160-3,74* Perf Injection* Yates 3,160-3,294* Perf Prod. None Yates 3,160-3,294* Perf Prod. Yates 3,160-3,374* Perf Injection* Yates 3,160-3,294* Perf Injection* Yates 3,160-3,294* Perf Injection* Yates 3,160-3,394* Perf Injection*	۱ 9	101	sec. I w	. Kgc	Pootage	Name	ınterval	Per/OH	l'urpose	Intervals	Isolation Method
Yates 3,296-3,426** Perf Injection* 4 20S 33E 660° FSL 660° FEL Yates 3,104-3,88° Perf Prod. None Yates 3,263-3,279° Perf Prod. None Yates 3,1248-3,312* Perf Prod. None Yates 3,161-3,252° Perf Injection* Yates 3,188-3,219° Perf Injection* 9 20S 33E 1,980° FNL 660° FWL Yates 3,138-3,219° Perf Injection* 9 20S 33E 1,650° FNL 990° FEL Yates 3,106-3,34* Perf Injection* 9 20S 33E 1,650° FNL 990° FEL Yates 3,160-3,294* Perf Injection* 16 20S 33E 330° FNL 330° FEL Yates 3,160-3,294* Perf Prod. 3,285-3,300° 16 20S 33E 330° FNL 330° FEL Yates 3,160-3,294* Perf Prod. 3,374-3,394* Yates 3,350-3,394* Perf Prod.	\sim	_	4 20S	33E	1,650' FSL 1,980' FEI	L Yates	3,230-3,292'	Perf	Prod.	None	N/A
4 20S 33E 660' FSL 660' FEL Yates 3,104-3,88' Perf Prod. Yates 3,263-3,279' Perf Prod. Yates 3,248-3,312"* Perf Injection* Yates 3,147-3,124"* Perf Injection* Yates 3,147-3,154"* Perf Injection* Yates 3,147-3,154"* Perf Injection* Yates 3,189-3,219' Perf Prod. None Yates 3,138-3,219' Perf Injection* Yates 3,138-3,219' Perf Prod. None Yates 3,138-3,219' Perf Prod. Yates 3,189-3,374"* Perf Injection* Yates 3,194-3,260"* Perf Prod. Yates 3,194-3,260"* Perf Prod. Yates 3,160-3,294' Perf Prod. Yates 3,160-3,294' Perf Prod. Yates 3,160-3,294' Perf Prod. Yates 3,160-3,294' Perf Injection* Yates 3,160-3,294"* Perf Injection*						Yates	3,296-3,426*	Perf	Injection*		
Yates 3,263-3,279 Perf Prod. Yates 3,248-3,312* Perf Injection* C 9 20S 33E 330 FNL 2,310 FWL Yates 3,161-3,252* Perf Prod. None Yates 3,147-3,154* Perf Injection* None Yates 3,299-3,409** Perf Injection* H 9 20S 33E 1,650 FNL 990 FEL Yates 3,299-3,374* Perf Prod. None Yates 3,194-3,260* Perf Prod. 3,285-3,300* Perf Prod. 3,285-3,300* A 16 20S 33E 330 FNL 330 FEL Yates 3,160-3,294* Perf Prod. 3,285-3,300* A 16 20S 33E 330 FNL 330 FEL Yates 3,160-3,294* Perf Prod. 3,74-3,394* Seven Rivers A 16 20S 33E 3,74-3,394* Perf Prod. 3,374-3,394*		3 P			660' FSL 660' FEL	Yates	3,104-3,88	Perf	Prod.	Nonc	N/A
Vates 3,248-3,312* Perf Injection* C 9 20S 33E 330 FNL 2,310 FWL Yates 3,161-3,252* Perf Prod. None Yates 3,147-3,154* Perf Injection* None Yates 3,299-3,409** Perf Prod. None Yates 3,138-3,219* Perf Prod. None Yates 3,299-3,374* Perf Prod. None Yates 3,194-3,260* Perf Prod. 3,285-3,300* A 16 20S 33E 330*FNL 330*FEL Yates 3,160-3,294* Perf Prod. Prod. Yates 3,160-3,294* Perf Prod. 3,285-3,300* Perf Prod. 3,374-3,394*						Yates	3,263-3,279	Perf	Prod.		
C 9 20S 33E 330 FNL 2,310 FWL Yates 3,161-3,252' Perf Prod. None Yates 3,147-3,154** Perf Injection* Yates 3,299-3,409** Perf Injection* E 9 20S 33E 1,980 FNL 660 FWL Yates 3,138-3,219' Perf Prod. None H 9 20S 33E 1,650 FNL 990 FEL Yates 3,060-3,176' Perf Prod. Yates 3,194-3,260** Perf Prod. Seven Rivers Perf Injection* Seven Rivers Perf Prod. Yates 3,160-3,294' Perf Prod. Yates 3,160-3,294' Perf Prod. Yates 3,160-3,294' Perf Prod. Yates 3,160-3,294' Perf Prod. Yates 3,150-3,186** Perf Injection* Yates 3,150-3,194** Perf Injection*						Yates	3,248-3,312*	Perf	Injection*		
Yates 3,147-3,154* Perf Injection* Yates 3,299-3,409** Perf Injection* FUL 660 FWL Yates 3,138-3,219* Perf Prod. None H 9 20S 33E 1,650* FNL 990* FEL Yates 3,060-3,176* Perf Prod. 3,285-3,300* A 16 20S 33E 330* FNL 330* FEL Yates 3,160-3,294* Perf Prod. 3,285-3,300* A 16 20S 33E 330* FNL 330* FEL Yates 3,160-3,294* Perf Prod. 3,374-3,394* Seven Rivers Perf Injection* Yates 3,50-3,394* Perf Prod. 3,374-3,394*		3 C	9 20S	33E	330' FNL 2,310' FWL	Yates	3,161-3,252	Perf	Prod.	None	N/A
F 9 20S 33E 1,980 FNL 660 FWL Yates 3,138-3,219 Perf Prod. None H 9 20S 33E 1,650 FNL 990 FEL Yates 3,299-3,374* Perf Prod. None Yates 3,194-3,260* Perf Prod. 3,285-3,300* A 16 20S 33E 330' FNL 330' FEL Yates 3,160-3,294' Perf Prod. Yates 3,150-3,156* Perf Injection* Yates 3,150-3,156* Perf Injection* Yates 3,50-3,394* Perf Injection* Yates 3,50-3,394* Perf Prod. 3,374-3,394'						Yates	3,147-3,154*	Perf	Injection*		
9 20S 33E 1,980' FNL 660' FWL Yates 3,138-3,219' Perf Prod. None Yates 3,299-3,374" Perf Injection* 9 20S 33E 1,650' FNL 990' FEL Yates 3,060-3,176' Perf Prod. Yates 3,194-3,260" Perf Prod. Seven Rivers Perf Injection* 3,285-3,300' 16 20S 33E 330' FNL 330' FEL Yates 3,160-3,294' Perf Prod. Yates 3,150-3,156" Perf Injection* Yates 3,150-3,156" Perf Injection* Seven Rivers Perf Injection* Seven Rivers Perf Injection*						Yates	3,299-3,409**	Perf	Injection*		
Yates 3,299-3,374* Perf Injection* 9 20S 33E 1,650' FNL 990' FEL Yates 3,060-3,176' Perf Prod. Yates 3,194-3,260* Perf Injection* 3,285-3,300' 16 20S 33E 330' FNL 330' FEL Yates 3,160-3,294' Perf Prod. Yates 3,150-3,156* Perf Injection* Yates 3,374-3,394' Seven Rivers Perf Prod. 3,374-3,394'			l	33E	1,980' FNL 660' FWL	Yates	3,138-3,219	Perf	Prod.	None	N/A
9 20S 33E 1,650' FNL 990' FEL Yates 3,060-3,176' Perf Prod. Yates 3,194-3,260* Perf Injection* Seven Rivers Perf Prod. 3,285-3,300' 16 20S 33E 330' FNL 330' FEL Yates 3,160-3,294' Perf Prod. Yates 3,150-3,156* Perf Injection* Yates 3,350-3,394* Perf Injection* Seven Rivers Perf Seven Rivers Perf Red. 3,374-3,394'						Yates		Perf	Injection*		
Yates 3,194-3,260** Perf Injection* Seven Rivers Perf Prod. 3,285-3,300° Yates 3,160-3,294* Perf Prod. Yates 3,150-3,156* Perf Injection* Yates 3,350-3,394* Perf Injection* Seven Rivers Perf Prod. 3,374-3,394*	l .	Н 9	9 20S	33E	1,650' FNL 990' FEL	Yates	3,060-3,176	Perf	Prod.		
Seven Rivers Perf Prod. 3,285-3,300' Yates 3,160-3,294' Perf Prod. Yates 3,150-3,156* Perf Injection* Yates 3,350-3,394* Perf Injection* Seven Rivers Perf Prod. 3,374-3,394'						Yates	3,194-3,260*	Perf	Injection*		
Yates 3,160-3,294* Perf Prod. Yates 3,150-3,156* Perf Injection* Yates 3,350-3,394* Perf Injection* Seven Rivers Perf Prod. 3,374-3,394*						Seven B	livers	Perf	Prod.	3,285-3,300'	Proposed CIBP at 3,275' topped with approx 5 sx cement
Yates 3,160-3,294' Perf Prod. Yates 3,150-3,156'* Perf Injection* Yates 3,350-3,394'* Perf Injection* Seven Rivers Perf Prod. 3,374-3,394'											to isolate Seven Rivers interval from injection
3,150-3,156* Perf Injection* 3,350-3,394* Perf Injection* Rivers Perf Prod. 3,374-3,394'	1	4 A	16 20S	33E	330' FNL 330' FEL	Yates	3,160-3,294'	Perf	Prod.		
3,350-3,394* Perf Injection* Rivers Perf Prod. 3,374-3,394'						Yates	3,150-3,156*		Injection*		
vers Perf Prod. 3,374-3,394'						Yates	3,350-3,394'*	Perf	Injection*		
						Seven F	tivers	Perf	Prod.	3,374-3,394'	CIBP set at 3,365' to isolate Seven Rivers

*Note: Additional perforations planned for injection
**Note: Federal "9" #3 is planned to be deepened into additional Yates interval, cased and perforated for injection

III. B. (5) Other Producing Intervals in Area

No zones shallower than the Yates have been productive in the field area. Historically productive decper zones include Bone Springs and Morrow intervals at approximately 9,300' and 13,300' respectively. The only currently productive deeper interval is the Morrow in the Anasazi "9" Federal #1 in the SW/4 SE/4 of section 9, T20S R33E (13,289-13,428').

Lea County, New Mexico 12-1/4" Hole 1,368' - 8-5/8" Casing, calculations. cmt to surface w/710 sx 2-7/8" EUE J-55 Tubing Proposed Baker AD-1 pkr Set @ approx. 3,130' Est 7-7/8" Hole 3,550' - 5-1/2" Casing, cmt w/780 sx Class

Proposed Injector Anasazi "4" State #3 Bass Enterprises Prod. Co.

West Teas Field "J" Section 4, T20S, R33E

GL: 3,556'; KB 3,573'

Initial Completion

Spud well 11-08-94 Perf Yates from 3230'-3292' IPP: 41 BOPD; 27 BWPD, 15 MCFD

Cement circulated was estimated by

Yates 1 Perfs: 3,230' - 3,292'

Proposed Yates 1 Perfs: 3,296' - 3,300' 3,307' - 3,311'

3,316' - 3,319'

Proposed Yates 3 Perfs 3,388'-3,400' 3,406'-3,426'

Cmt to surface, circ approx 301 cu ft

1,354' - 8-5/8" Casing, cmt to surface w/700 sx 2-3/8" EUE J-55 Tubing Proposed Baker AD-1 Pkr @ approx. 3,000' Yates Perfs: 3,104' - 3,188' Proposed Yates 3 Perfs 3,248'-3,312' Est Hole Size: 7-7/8" 3,373' - 4-1/2" Casing, cmt w/815 sx Class

Cmt to surface, circ 189 cu ft to surface

Proposed Injector Scharbauer "4" #3

Scharbauer "4" #3 Mitchell Energy West Teas Field "P" Section 4, T20S, R33E Lea County, New Mexico

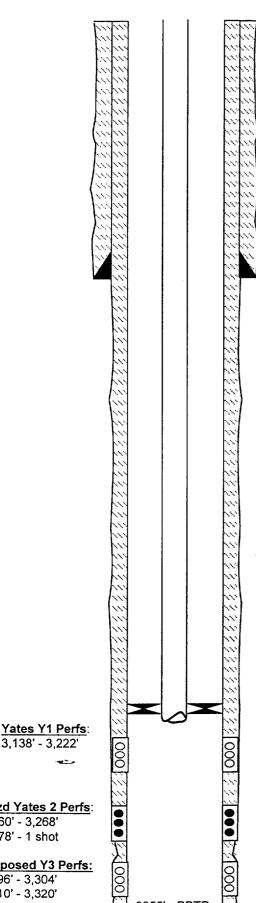
GL: 3,560'; KB 3,570'

Initial Completion

Spud well 9-7-95
Perf Yates from 3263'-3279'
Acidize w/ 2000 gal 7.5% NeFe
Swabbed .18 BO, 24 BW
Set CIBP @ 3230'
Perf Yates from 3104'-3188'
Acidize w/ 3000 gal 7.5% NeFe
Frac w/ 37016 gal 150,580 # sd
IPP: 98 BOPD; 10 MCFD

All Cement Information is Estimated by Calculations

Falcon Creek Resources, Inc. **Proposed Injector** Federal 9 #3 Falcon Creek Resources West Teas Field "C" Section 9, T20S, R33E Lea County, New Mexico GL: 3,557'; KB: 3,559' **Initial Completion** Spud well 5-28-93 Perf Yates Zone 1 @ 3161'-3252' (22 Holes) Acidize w/2000 gals 20% HCI Frac w/ 40,000 gal gel & 12-1/4" Hole 87,000# 20/40 sd 1,300' - 8-5/8", 24#, J-55 Casing, cmt to surface w/ 540 sx "C" IPP: 86 BOPD, 35 MCFD, 22 BWPD Cement Information is from State Reports - 2-3/8" EUE J-55 Tubing Proposed Baker AD-1 Pkr @ approx. 3,050' **Proposed Y1 Perfs** 3,147' - 3,154' Yates Zone 1 Perfs: 3,161' - 3,252' 3,320' - 5-1/2", 17#, J-55 Casing, cmt w/580 sx Class "C" Circulate 17 sx to surface **Proposed Y3 Perfs** Deepen Hole Through Yates, approx. 3,299-3,409' Cement Tubing In Place and Perforate



Proposed Injector

Barber Federal #2 Falcon Creek Resources West Teas Field "E" Section 9, T20S, R33E Lea County, New Mexico GL: 3,555'; KB; 3,565'

Initial Completion

Spud well 8-24-87 Perf Y2 3,260, 64, 66, 68 & 3,278' 2 SPF Acidize w/ 750 gals 15% NeFe, swab load and 0.3 Bbl/HR 8-10% oil Set cement retainer @ 3,250' Sqz 3,260-3,278' w/ 50 sx Perf Y1 3,138, 41, 44, 52, 55, 59, 63, 66, 88, 93, 3202, 08, 16, 22' 1 SPF (14 holes) Acidize w/ 1,000 gal 15% NeFe Frac w/ 33,988 gal 50% CO₂ foam. 40,000# 20/40, 28,000# 10/20 IPP 35 BOPD 40 BWPD

All cement information was from State Sundry Notices

Tubing, 2 3/8", 3,030'

1,256' - 8-5/8" Casing,

cmt to surface w/750 sx

Proposed Baker AD-1 Pkr @ approx. 3,030'

Sqzd Yates 2 Perfs:

3,138' - 3,222'

3,260' - 3,268' 3,278' - 1 shot

Proposed Y3 Perfs:

3,296' - 3,304' 3,310' - 3,320' 3,336' - 3,352' 3,360' - 3,364'

7-7/8" Hole

3,400' - 4-1/2" Casing, cmt w/1100 sx Class Cement to Surface & circ 67 sx

Proposed Injector
Federal 9 #6
Falcon Creek Resources, Inc.
West Teas Field
1,650' FNL 990' FEL
"H" Section 9, T20S, R33E
Lea County, New Mexico
GL: 3,551'; KB: 3,562'

12-1/4" Hole 1,320' - 8-5/8", 23#, J-55 Casing, cmt to surface w/540 sx "C"

Initial Completion

3,310' (add 7 Rivers)

Spud well 5-16-94
Perf Seven Rivers @ 3285'-3288' 4 JSPF
Acidize w/1000 gals 15% NeFe
Perf Seven Rivers from 3288'-3300' 1 JSPF
Acidize w/1000 gals 15% NeFe
Set CIBP @ 3270'
Perf Yates Y1 & Y2 3060'-3176' 2 JSPF
Acidize w/2500 gals 15% NeFe
Frac w/ 42,000 gal xlink gel &
133,000# of 12/20 sd.
IPP: 97 BO, 14 BW, 1 MCF
10/96
CIBP recovered and bailed out hole to

Cement Information is from State Reports

<u>Yates Y1 & Y2 Perfs</u>: 3,060' - 3,176'

Proposed Y3 Perfs 3,194-3,260'

2 JSPF

<u>Seven Rivers Perfs</u>: 3,285' - 3,288' 4 JSPF 3,288' - 3,300' 1 JSPF

Proposed Baker AD-1 Packer, 2,950'

2-3/8" Tubing (2,960')

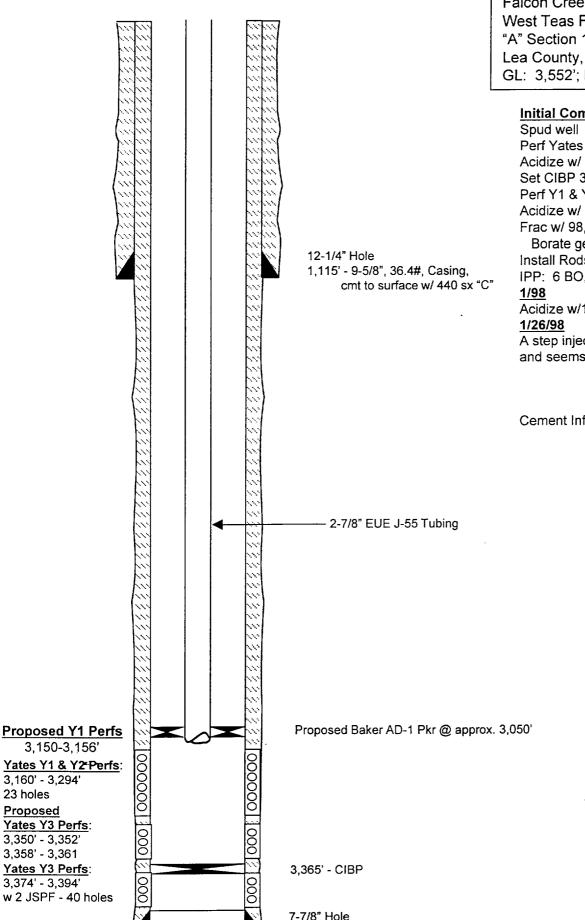
Proposed CIBP 3,275'

7-7/8" Hole 3,358' - 5-1/2", 15.5#, K-55 Casing, cmt w/785 sx Class "C" Circulate 10 sx to surface per drlg. rpt. & Sundry

3,150-3,156'

3,160' - 3,294' 23 holes **Proposed** Yates Y3 Perfs: 3,350' - 3,352' 3,358' - 3,361 Yates Y3 Perfs:

3,374' - 3,394'



Proposed Injector

State BF #4 Falcon Creek Resources West Teas Field "A" Section 16, T20S, R33E Lea County, New Mexico

GL: 3,552'; KB: 3,557'

Initial Completion

Spud well 11-17-95 Perf Yates Y3 3374'-3,394' Acidize w/ 1500 gals 15% NeFe Set CIBP 3365' Perf Y1 & Y2 @ 3160'-3294' Acidize w/ 1500 gals 15% NeFe Frac w/ 98,000# 12/20 sd & 786 bbls Borate gel. Install Rods and Pump

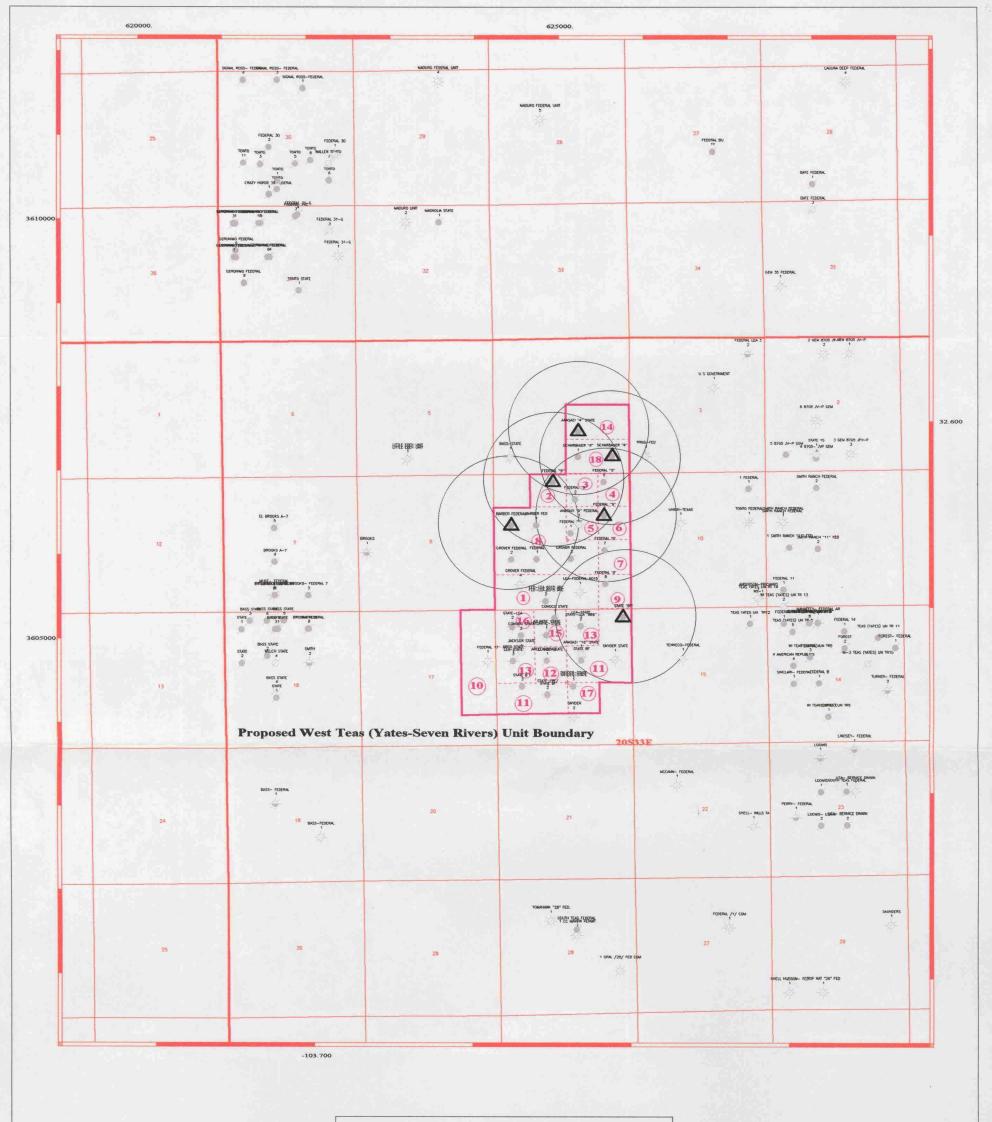
IPP: 6 BO, 6 MCF, 50 BW (11% oil)

Acidize w/1000 gals 15% NeFe acid

A step injection rate test was conducted and seems to be permitted for SWD well.

Cement Information is from State Reports

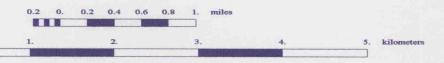
7-7/8" Hole 3,465' - 5-1/2", 17# Casing, cmt w/635 sx Class "C" Circulate 50 sx to surface

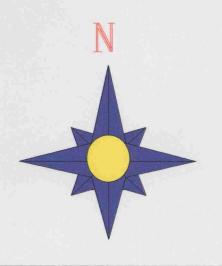


West Teas Field, Lea Co. NM Wells Proposed for Injection and Wells Within Two Miles

Section V	Injection App.	Form C-108
Joe C	Scale 1:45000.	8/20/99

Scale 1:45000.





Section VI Form C-108

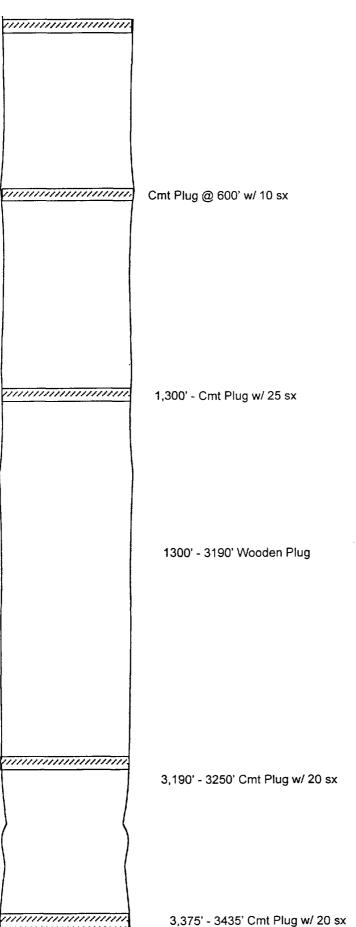
Falcon Creek Resources, Inc.

Tabulation of Data on Wells In Review Area Application for Authorization to Inject

VI.

						Sı	Surface Casing	asing	Proc	Production Casing	asing	
Operator	Lease/Well	Status	Location	Spud Date	Drilled TD PBTD	Size	Depth	Cement	Size	Depth	Cement	Producing Perforations
McGrath & Smith	Trigg Federal #1	D&A	M, 3,T20S-R33E	1/29/57	3435'		All c	All casing has been pulled from well	en pulled 1	from wel		
Bass Enterprises Prod. Co.	Anasazi 4 State #3	Prod.	Prod. J, 4-T20S-R33E	11/8/94	3550'	8/5-8	1368'	710 sx "C"	5-1/2"	3550'	780 sx "C"	3230'-3292'
		Oil			•							(Yates)
L.S. & R. Petroleum Co.	Bass-State #1	D&A	M, 4-T20S-R33E	5/30/63	3410'	12-1/2"	219'	125 sx "C"	8-5/	8" & 10"	8-5/8" & 10" Pulled at Abandonment	indonment
Mitchell Energy	Scharbauer "4" #1	Prod.	Prod. O, 4-T20S-R33E	Apr-93	13,720'	13-3/8"	2,950'	2,207 sx	.8/2-8	5,382'	885 sx	3,156-3,273'
		Oil										(Yates)
Mitchell Energy	Scharbauer 4 #3	Prod.	P, 4-T20S,R33E	6/1/6	3230'	8-5/8	1354'	700 sx "C"	4-1/2"	3373'	815 sx "C"	3104'-3188'
		Oil										(Yates)
Falcon Creek Resources, Inc.	Federal "9" #5	Prod.	A, 9-T20S-R33E	4/2/94	3384'	8/5-8	1320'	680 sx "C"	5-1/2"	3384'	685 sx "C"	3076'-3158'
		Oil										(Yates)
Falcon Creek Resources, Inc.	Federal "9" #2	Prod.	B, 9-T20S-R33E	10/1/92	3311'	8-5/8	1300'	640 sx "C"	5-1/2"	3311'	475 sx "C"	3062'-3308'
		Oil										(Yates)
Falcon Creek Resources, Inc.	Federal "9" #3	Prod.	C, 9-T20S-R33E	5/28/93	3320'	8-5/8	1300'	540 sx "C"	5-1/2"	3320'	580 sx "C"	3161'-3252'
		Oil										(Yates)
Falcon Creek Resources, Inc.	Barber Federal #2	Prod.	E, 9-T20S-R33E	8/24/87	3400'	8-5/8"	1256'	009 sx "C"	4-1/2"	3400'	750 sx "C"	3138'-3278'
		Oil										(Yates)
Falcon Creek Resources, Inc.	Barber Federal #1	Prod.	F, 9-T20S-R33E	4/29/87	3404'	8-5/8"	1261	650 sx "C"	4-1/2"	3400'	950 sx "C"	3092'-3147'
		Oil										
Falcon Creek Resources, Inc.	Federal "9" #1	Prod.	G, 9-T20S-R33E	11/10/90	3445'	8-5/8	1243'	450 sx "C"	5-1/2"	3445'	775 sx "C"	3042'-3257'
		Oil							į			(Yates)
Mitchell Energy	Anasazi 9 Fed #1	Prod.	Prod. G, 9-T20S-R33E	5/12/92	13779'	13-3/8"		2947' 2350 sx "C"	8-5/8"	5272'	1250 sx "C"	13289'-13428'
		Gas							5-1/2"	13779'	3779' 1950 sx "C"	(Morrow)
Falcon Creek Resources, Inc.	Federal "9" #6	Prod.	H, 9-T20S-R33E	5/16/94	3,378'	8-5/8"	1,320'	540 sx "C"	5-1/2"	3,358	785 sx "C"	3,060-3,300'
	-	Oii			3,310′							(Yates-Seven R.)

						S_1	Surface Casing	asing	Proc	Production Casing	asing	
Operator	(Lease/Well	Status	Location	Spud Date	Drilled TD PBTD	Size	Depth	Cement	Size	Depth	Cement	Producing Perforations
Falcon Creek Resources, Inc.	Federal "9" #7	Prod. Oil	I, 9-T20S-R33E	8/28/95	3358'	8-5/8"	1310'	800 sx "C"	5-1/2"	3358'	635 sx "C"	3270'-3227' (Seven Rivers)
Falcon Creck Resources, Inc.	Grover Federal #3	Prod.	J, 9-T20S-R33E	2/26/88	3,425'	8-5/8"	1,218'	750 sx	4-1/2"	3,420'	xs 059	3,022-3,100'
Falcon Creek Resources, Inc.	Grover Federal #1	Prod.	Prod. K, 9-T20S-R33E Oil	2/16/87	3400'	.8/5-8	1265'	750 sx "C"	4-1/2"	3398'	90 sx "C"	3154'-3180'
Falcon Creek Resources, Inc.	Grover Federal #2	Prod.	L, 9- T20S-R33E	11/12/87	3400'	8-5/8"	1256'	750 sx "C"	4-1/2"	3400	1100 sx "C"	3217'-3239' (Yates)
Grover- McKinney Oil Co.	Grover Federal #4	D&A	D&A M, 9- T20S-R33E	3/2/88	3400'	8-5/8"	1252'	700 sx "C"		Well	Well has been plugged	peg
Atlantic Richfield Co.	Lea 6015 Fed #1	D&A	0, 9- T20S-R33E	4/3/60	3300′	.8/5-6	1357'	450 sx "C"	7"	3022'	450 sx "C"	3054' 3264'
							•		1	2000	y of	3034 -3204 (Yates)
Falcon Creek Resources, Inc.	Federal 9 #8	Prod.	P, 9-T20S-R33E	7/12/96	3462'	.8/5-8	1313'	800 sx "C"	5-1/2"	3462'	610 sx "C"	3116'-3144' (Yates)
Falcon Creek Resources, Inc.	State BF #4	SI	A, 16,T20S-R33E	56/21/11	3470'	12-1/4"	1115'	440 sx "C"	5-1/2"	3465'	635 sx "C"	3160'-3294'
Sinclair Oil & Gas	Lea 886 State #2	P&A	B, 16-T20S,R33E	2/26/60	3360'	.8/5-6	1308'	914 sx "C"		Well h	Well has been plugged	ged
Falcon Creek Resources, Inc.	Conoco St. #1	Prod.	Prod. C, 16-T20S-R33E Oil	7/23/96	3311'	8/5-8	1313'	800 sx "C"	5-1/2"	3,311'	3,311' 610 sx "C"	3205'-3215' (Seven Rivers)
Falcon Creek Resources, Inc.	Anasazi "16" State Com. #1	SWD	G, 16-T20S-R33E	5/28/93	13858'	20"	497'	600 sx "C" 1850 sx "C"	8-5/8"	5299'	5299' 700 sx "C" 13858' 1200 sx "C"	5554'-5684'
Falcon Creek Resources, Inc.	State BF #1	P&A Oil	G, 16-T20S-R33E		3275'	9-5/8"	1245'	800 sx "C"	5-1/2"	3275'	50 sx "C"	2989'-3212'
Olsen Energy	Snyder State 1 (Olsen)	D&A	11, 16-T20S-R33E	2/22/89	3429'	.8-2/8	1259'	640 sx "C"		Well h	Well has been plugged	ged
Knox, Gordon & Assoc.	Tenneco Federal #1	D&A	D&A F, 20-T20S-R33E	12/31/63	3,418'	6-2/8"?	1,350'	7" 8	2 4-1/2" C	asing Pu	7" & 4-1/2" Casing Pulled at Abandonment	onment



Trigg Federal #1 McGrath & Smith West Teas Field 660' FSL 660' FWL "M" Section 3, T20S, R33E Lea County, New Mexico GL: 3,553'; KB: 3,568'

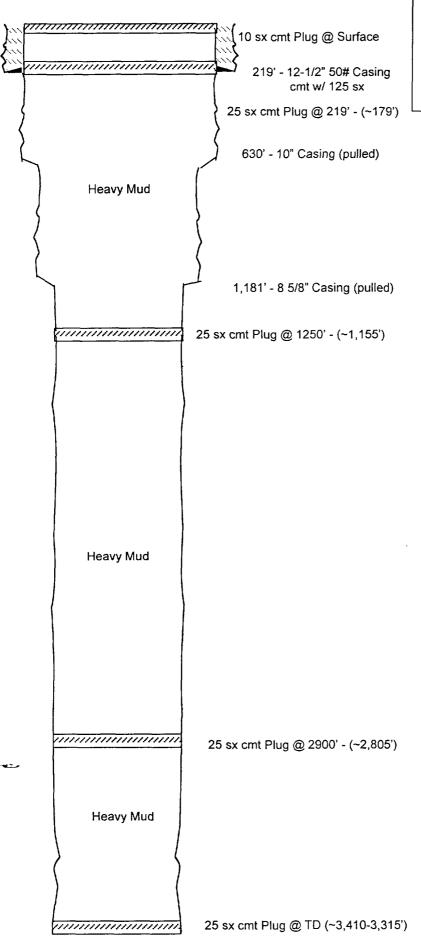
Initial Completion

Spud well 1-29-57 Swabbed 640 BW P&A 2/57

Pulled all casing out of hole

P&A information is from State Reports

TD: 3435'



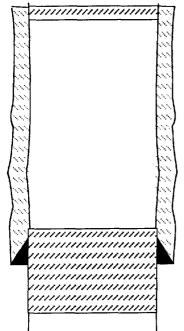
Bass State #1 L.S. & R. Petroleum Co. West Teas Field 660' FSL 660' FWL "M" Section 4, T20S, R33E Lea County, New Mexico DF: 3,556'

Initial Completion

Spud well 5-30-63 Hole Full of Water @ TD P&A 7/10/63 8-5/8" & 10" Casing pulled Heavy mud between plugs.

All plugging information was from State Reports

TD: 3410'



Cmt Plug @ surface w/ 15 sx

Federal #4
Grover - McKinney Oil Co.
West Teas Field
990' FSL 990' FWL
"M" Section 9, T20S, R33E
Lea County, New Mexico
GL: 3,531'; KB: 3,541'

12-1/4" Hole 1,252' - 8-5/8" Casing, cmt to surface w/700 sx

1100' - 1445' Cmt Plug w/ 175 sx

Initial Completion

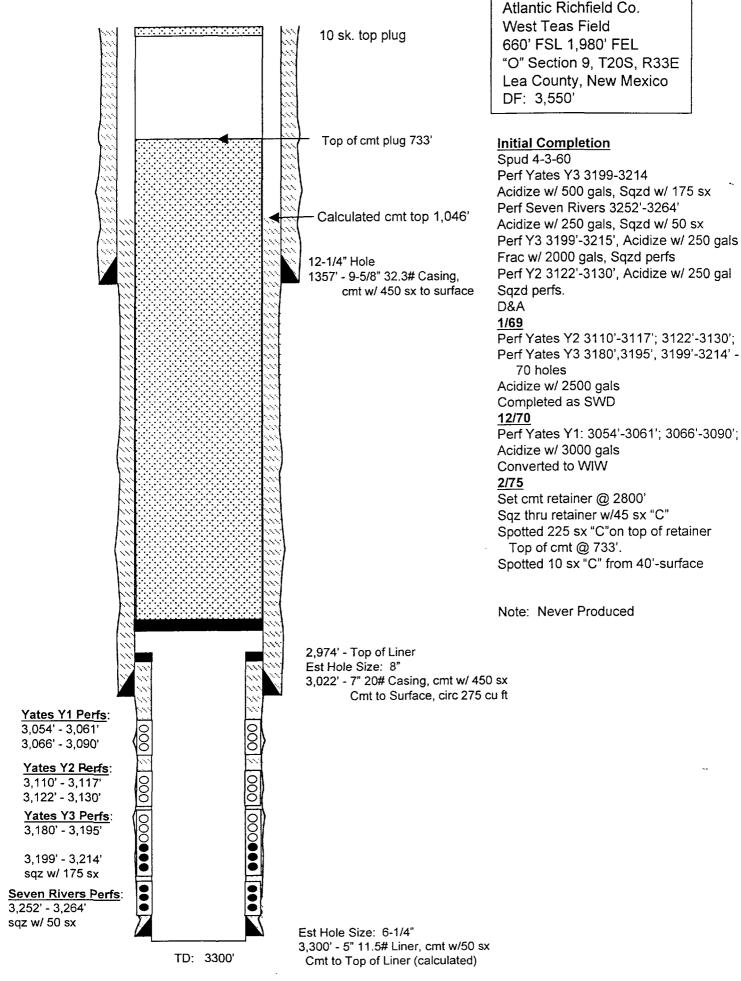
Spud well 3-2-88 DST 3023'-3195' R/60' DF, PFFP 114-114, ISIP=343, FP 114-114, FSIP 251, HP 1646-1646. P&A

Plugging information is from State Reports

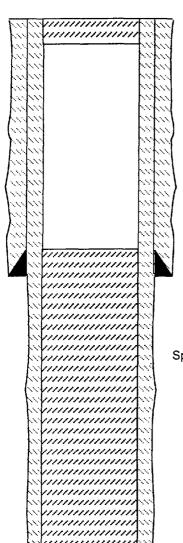
2,650' - 2950' Cmt Plug w/90 sx

3300' - 3400' Cmt Plug w/ 30 sx

TD: 3400'



Lea 6015 ARC Federal #1



10 sk top plug

40 - 0'

GL: 3,544'

Lea 886 State #2 Sinclair Oil & Gas West Teas Field

660' FNL 1,980 FEL

"B" Section 16, T20S, R33E Lea County, New Mexico

1,308' - 9-5/8" Casing, cmt to surface w/914 sx **Initial Completion** Spud well 2-26-60

DST 3305'-3360' - wet PB to 3274' OH Yates from 2950'-3274'

IPP: 139 BOPD

P&A 2/4/75

All casing cement information was estimated by calculations. Plugging data from Sundry.

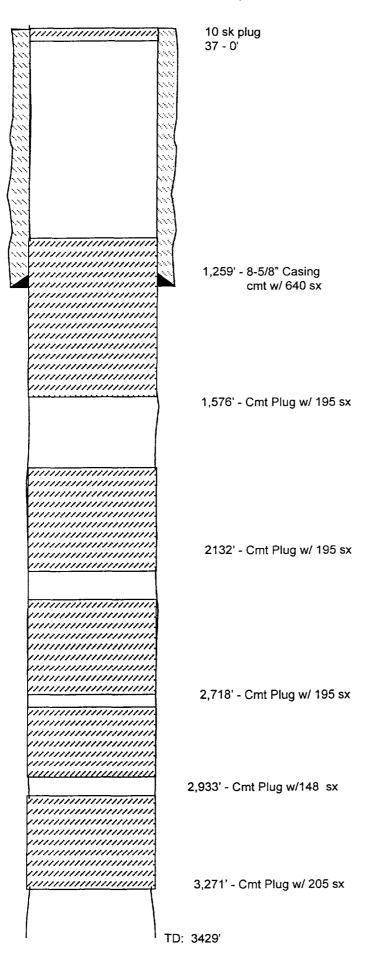
Spot 225 sx. 2,850-1,200'

OH Yates: 2,950' - 3,274' Squeeze under retainer w/ 50 sx

Est Hole Size: 8" 2,950' - 7" Casing, cmt w/450 sx Calculated vol.

Open Hole Completion Y1, Y2, Y3, & 7Rivers

TD: 3360'

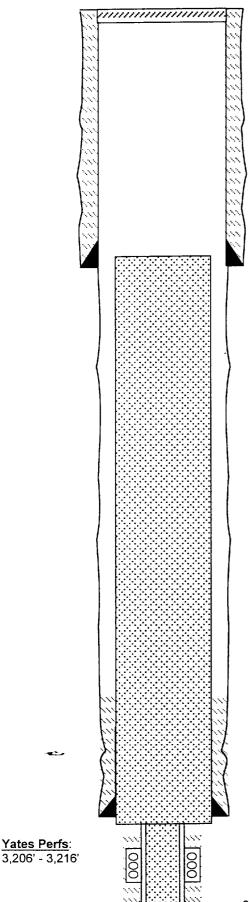


Snyder State #1
Olsen Energy
West Teas Field
1,980' FNL 660' FEL
"H" Section 16, T20S, R33E
Lea County, New Mexico
GR: 3,550'

Initial Completion

Spud well 2-22-89
DST #1, 3060'-3200', Rec 1' mud
Opn 15 min, IFP 85, FFL 64,
Fnl Opn 30 min IFP 85, FFP 64, ISIP
233, FSIP 339, IHP 1650, FHP 1650
Open w/ weak blow dean in 6 min.
DST #2 3198-3299', Rec 100' mud,
Opn 30 min, IFP 42 FFP 127
Fnl Opn 1 hr, IFP 106, FFP 127
ISIP 1333, FSIP 1333, HP 1713-1692
Plugs set at 2933' w/ 148 sx,
3271' w/ 205', 2718' w/ 195 sx,
2132 w/ 195 sx, surface w/ 10 sx
P&A 3/2/89

Plugging information is from State Forms



Cmt Plug @ surface

ilit Flug @ Sullace

Initial Completion

Tenneco Federal #1 Knox, Gordon & Assoc.

1,980' FNL 1,980' FWL

"F" Section 15, T20S, R33E Lea County, New Mexico

West Teas Field

GL: 3,532'

Spud well 12-31-63 Perf Yates from 3206'-321' Acidize w/ 500 gals Swabbed 95% water, 5% oil P&A

Surface Csg @ 1,350' Cmt to surface

1,200' - 3,050' Cmt Plug

All cementing information is from State Reports

7" Casing Pulled from Surface to 2685'

4-1/2" Casing Pulled from Surface to 2950' 3,038' - 7" Casing, cmt w/30 sx

3,418' - 3,050' Cmt Plug

3,418' - 4-1/2" Casing, cmt w/30 sx

Falcon Creek Resources, Inc. West Teas (Yates-Seven Rivers) Field Application for Authorization to Inject NMOCD Form C-108

VII. **Proposed Injection Operations**

1) Injection Rate (per well): Average

500 BWPD

Maximum

750 BWPD

2) **Injection System:** Closed

3) Injection Pressure (wellhead): Average

600 psig

Maximum

1,200 psig

Note: Following a step-rate test conducted on State "BF" #4 (NE/4 NE/4 16-T20S-R33E) on 1/26/98, the NMOCD approved a surface injection pressure of

1,282 psig into the Yates sand.

4) Injection Fluid: Water from Yates and Seven Rivers production within

proposed West Teas (Yates - Seven Rivers) Unit

(analyses attached)

VIII. Geologic Data

A. Injection Zone

1) Name:

Yates Formation

2) **Description:**

> Injection will be into the Yates Sand sub-units productive within the field. The sand units are developed within the field at depths ranging from 3,000' to 3,450'. These intervals are fine-grained to very fine-grained sandstones divided by siltstones and dense dolomitic layers. The total net thickness of the sands varies from 40 to 100 feet with lateral

discontinuities present in the individual layers. Average

porosity in the "pay" sands is 15.7%, average permeability is

approximately 1 md.

B. Fresh Water Sources

The State Engineer's Office reports fresh water production potential from Quaternary alluvium at about 56' in the SW/4 of section 4 and the NE/4 of section 20, T20S R33E. One permitted water well was reported in SW/4 SE/4 SW/4 section 5 T20S R33E with sands noted in the interval 520-675' (Dewey Lake fm.?) A copy of the Well Record from the State Engineer's Office for that well is attached. No other sources are noted overlying the oil producing interval. The Seven Rivers Formation directly underlies the Yates, it is a hydrocarbon producing interval on the West Teas Field structure and is proposed to be included in the West Teas unitized interval. No injection is proposed for the Seven Rivers Formation.

IX. Proposed Stimulation Program

The Yates intervals proposed for injection in the six wells comprising Stage I of the proposed waterflood have generally been fracture stimulated for production. Additional Yates perforations, to be added at conversion to water injection, will be acidized with 100 gallons/foot 15% HCl and fracture stimulated when the new perforations are adequately isolated from the pre-existing perforated zones. Typical fracture stimulation treatments contain about 80,000 pounds of sand in a cross-linked, water-based gel.

X. Logging and Test Data

No additional drilling is proposed in Stage I waterflood development aside from the deepening of the Federal "9" #3 well to include additional Yates section. Any additional logs or tests will be submitted to the NMOCD at the time they are obtained.

XI. Fresh Water Analysis

A review of the area within one mile of proposed injection wells and a conversation with the local rancher indicates that there are no active fresh water wells in the area.

XII. Disposal Well Statement

This section does not apply to the application since no disposal wells are being proposed.

XIII. Proof of Notice

A copy of this application has been furnished to all surface owners and leasehold operators within the "area of review".

Permian Treating Chemicals

WATER ANALYSIS REPORT

SAMPLE

Oil Co. : Stevens, & Tull Lease : State 'BF'

Well No.: Disp.

Salesman:

Sample Loc. Date Analyzed: 09-September-1997

Date Sampled:

ANALYSIS

1.	На			7.250
2.	Specific Gravity	60/60	F.	1.010
3.	Specific Gravity CaCO ₃ Saturation	Index	@ 8Ø	F. +0.856
	-			F +1 756

Dissolved Gasses

Dissolved Gasses	MG/L EQ. WT.
. Hydrogen Sulfide	Present

Carbon Dioxide Dissolved Oxygen Not Determined Not Determined

<u>Cations</u>

7.	Calcium	(Ca++)		1,090	/ 20.1 =	54.23
8.	Magnesium	(Mg++)	·	265	/ 12.2 =	21.72
9.	Scčium	(Mg++) (Na+)	(Calculated)	4,181	/ 23.∅ =	181.78
1.2	Sanium	(Ba++)	· Not D	etermined		

Anions

14.	Carbonate Bicarbonate	(OH ⁻) (CO ₃ =) (HCO ₃ -) (SO ₄ =) (CI-)	0 908 2,200 6,998	/ 17.0 = / 30.0 = / 61.1 = / 48.8 = / 35.5 =	Ø.00 Ø.00 14.96 45.08 197.13
4.0	T- 1 1 5 1	1.0.111.	45 040		

Total Dissclved Solids 15,642
Total Iron (Fe) 2
Total Hardness As CaCO3 3,811
Resistivity @ 75 F. (Calculated) 0.352 /cm.

LOGARITHMIC	WATER	PATTERN
*m∈	eq/L.	

LOGARITHMIC WATER PATTERN *meq/L.	PROBABLE MINERAL COMPOSITION COMPOUND EQ. WT. X *meq/L = mg/L
Na 391-1-10-1-1-10-1-10-1-10-1-10-1-10-1-10	Ca(HCO ₃) ₂ 81.24 14.86 1.204

/ 18.2 =

	1	Thursday		1	1	-1	: -11919), -1 11: 	''''	30 (
Ca	 	- - - -	 }}\\++) - - - - - - - - - - - - 	- 	1	} } 	₩ НСОЗ	CaSC4
Mg	 			111111111111111111111111111111111111111	-!- 	- AHH	 	## SC4	CaCl ₂
Fe					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		 		Mg(HCO3
100	100 1	I Ø Ø Ø	100	10	1	10 10	0 1000	ששששו	Maso.

5.50	0.00	Ø
3.17	0.00	Ø
0.19	5.71	344
7.52	16.21	762
	3.17 Ø.19	3.17

68.07

*MEQ/L

0.08

39.37

2,680

0

2230	***			
2213			••••	<u>i. </u>
2126		- i	7.	1
2179				
2162				
2143				`
2128				
2111				
2994	· ;	•		1 1

NaHCC3 84.30 0.00 0.00 71.03 NaSO₄ 58.46 191.10 10.598 NaCl

*Milli Equivalents per Liter

This water is mildly corrosive due to the pH observed on analysis. The corresivity is increased by the content of mineral salts, and the presence of H2S in solution.

Permian Treating Chemicals

WATER ANALYSIS REPORT

SAMPLE

Cil Cc. : Stevens & Tull Lease : Federal 9

We! | No.: # 7

Salesman:

Sample Lcc. Date Analyzed: 09-September-1997

EQ. WT.

*MEQ/L

10.07

125.14

815

7,316

Date Sampled:

Not Determined

ANALYSIS

1.	На				6.880
2.	Specific Gravity	60/60	F.		1.008
3.	Specific Gravity CaCO ₃ Saturation	Index	@	8Ø	F. +0.417
	-				F. +1.277

Dissolved Gasses

MG/L Hydrogen Sulfide Present Not Determined

Carbon Dioxide Dissolved Oxygen

Cations

$-\alpha$	٠.	٠,	J		•
				_	

7.	Calcium	(Ca++)	•	1,090 265	/ 20.1 =	54.23
8.	Magnesium	(Mg++)	· •	´265	/ 12.2 =	21.72
9.	Sodium	(Na+)	(Calculated)	2,894	/ 23.0 =	125.83
10	Bar ium	(Ra++)	Not De	termined		

<u>Anions</u>

11. 12. 13. 14. 15.	Bicarbonate (HC	(-) ()3=) (C3-) (4=)	0 615 2,450 4,999	/ 17.0 = / 30.0 = / 61.1 = / 48.8 = / 35.5 =	0.00 0.00 10.37 50.22 140.82
16	Total Dissolver	1 Solids	12 313		

Total Iron (Fe)

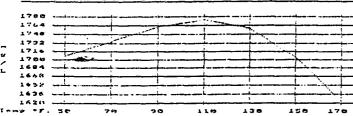
18.

Total Hardness As CaCO3 Resistivity @ 75 F. (Calculated) 3,811 Ø.387 /cm.

LOGARITHMIC		PATTERN
*me	ea/L.	

			••	
Na	######################################	- 		CI
Ca	 	- Muss 		HC03
Mg	 			S04
Fe 100	1000 1000	100 10	1 10 100 1000 1	CO3 ØØØØ

Calcium	Sulfate	Solubil	ity	<u>Profile</u>
---------	---------	---------	-----	----------------



PROBABLE MINERAL COMPOSITION EQ. WT. X * meq/L = mg/L.

/ 18.2 =

81.04

58.45

Ca(HCO3)2

NaCl

CaSO₄ 68.07 44.18 3,006 55.50 CaC! 2 0.02 Ø Mg(HCO3)2 73.17 2.00 Ø MgSC4 50.19 8.04 364 MgCL 2 47.62 15.68 747 NaHCO₃ 84.00 0.02 2 71.03 0.02 NaSO₄

*Milli Equivalents per Liter

This water is slightly corrosive due to the pH observed on analysis. The corrosivity is increased by the content of mineral salts, and the presence of H2S in solution.

FIELD ... JR. LOG

STATE ENGINEER OFFICE

WELL RECORD

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the nearest district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1A and Section 5 need be completed.

record, o Section 1	-	011 111 4110			_		American Pe	et. Corp.	
	ГТ		\neg	(A) Uwns	er of weit.	Box	68		
1 !	1.	J						State	н. м.
			7	Well was	drilled un	der Perm	it NoC	P-317and	d is located in the
			-	5ii 44	Dis 1/4	``	of Section Shhott Broi	Twp	nse No. WD-46
								Lice	nse No.
	ı			jtreet and ^:+.,	lloppa Munner-		<u></u>	State	
			1,	Jity	-ree comm	anned	Feb. 5	5	19 66
				neillina ۸ مستندر	rae comple	tod	Feb.]	17	19 66
(P	Plat of 640	acres)		-					
Elevation	a at top c	of casing in	n feet	. above se	a level		Total de	epth of well	900.
State wh	ether we	ell is shallo	ow or	artesian.	ENS L.	low	Depth to wa	ater upon comple	etion 325
Section 2	 -				ICIPAL WA		ING STRATA		<u> </u>
No	Depth i	in Feet To		kness in Feet		Des	cription of Wate	er-Bearing Formatio	on
1	520	540	[20			iter Eand	·	
2	6 25	645	[;	20	Br	rown We	ter Eand		
3	660	675	[:	15	D:	rown Ma	ter Sand		
. 4		<u> </u>						· ·	
5								· · ·	
Section 3	;				RECOR	D OF CAS	ING		
Dia	Pounds	1	- 1-		pth	Feet	Type Shoe		orations
in.	ft.	in		Top	Bottom			From	To 575
7"	23		LO	0	575	575	none	515	575
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Section 4	·			RECOR	D OF MUD	DING AN	D CEMENTING		
	in Feet	Diame		Tons	No. Sac	l l		Methods Used	
From	То	Hole in	in.	Clay .	Cem	ent		•	
	 								
									
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		_						License No	
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Plugging Plugging						·····		gs were placed a	
				Basin Sup	ervisor	No.	Depth of P	Plug No. o	f Sacks Used
	FOR US	E OF STAT	0 11.	GİNEER OI		7			
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,20,33.5.34321

1

Depth in Feet		Thickness	Colon	Time of Material Processing
From	To	in Feet	Color	Type of Material Encountered
:				
0	2	2	Brown	Sand
2	20	18	White	Caliche
20	110	90	Brown	Sand
110	520	410	Red	Clay & Shale
520	540	20	Erown	Hater Sand
540	625	85	Red	Ehale & Sand
625	645	20	Brown	water Sand
645	<u>660</u>	7 25	Red	Shale
660	675	15	Brown	Water Sand
675	- 680 -	5	Red	Clay
	•			<u> </u>
		<u> </u>		2 5 5 6
	 •	 		L S Elev 3552 ' Depth to K Trc_1/0 ' Elev of K Trc_3442'
				Depth to KTrc_//O
			· · · · · · · · · · · · · · · · · · ·	CIOY OI N. TITCHER
				Lec. No. 20.33.5.3432
				Hydro Survey Field Check X
				SOURCE OF ALTITUDE GIVEN
				Interpolated from Topo. Sheet X
				Determined by Inst. Leveling
				Other
			<u></u>	
				10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described well.

or By Minul

FALCON CREEK RESOURCES, INC.

621 17th Street, Suite 1800, Denver, Colorado 80293-0621

(303) 675-0007 (303) 675-0008 Facsimile

1 1999

January 27, 1999

Oil Conservation Division 2040 Pacheco St. Santa Fe, New Mexico 87505

RE: Application for Authorization to Inject West Teas Field Section 4, 9 & 15, T20S, R33E Lea County, New Mexico

Gentlemen:

Please find enclosed several wellbore diagrams. After further investigation, we found a few changes to these diagrams, please replace the current diagram in our application to inject.

Please advise if you have any questions, or need additional information. We appreciate your prompt attention with this matter.

Sincerely,

Jaylene Roope

Sr. Operations Technician

Yates Y1 Perfs:

Lea 6015 ARC Federal #1 West Teas Field "O" Section 9, T20S, R33E Lea County, New Mexico DF: 3,550'

Top of cmt plug 733'

12-1/4" Hole 1357' - 9-5/8" Casing, cmt w/ 450 sx to surface

Initial Completion

Spud 4-3-60 Perf Yates 3199-3214 Acidize w/ 500 gals, Sqzd w/ 175 sx Perf 3252'-3264' Acidize w/ 250 gals, Sqzd w/ 50 sx Perf 3199'-3215', Acidize w/ 250 gals Frac w/ 2000 gals, Sqzd perfs Perf 3122'-3130', Acidize w/ 250 gal Sazd perfs.

D&A

1/69

Perf Yates 3110'-3117'; 3122'-3130'; 3180',3195', 3199'-3214' - 70 holes Acidize w/ 2500 gals Completed as SWD

12/70

Perf Yates 3054'-3061'; 3066'-3090'; Acidize w/ 3000 gals Converted to WIW

2/75

Set cmt retainer @ 2800' Sqz thru retainer w/45 sx "C" Spotted 225 sx "C"on top of retainer Top of cmt @ 733'. Spotted 10 sx "C" from 40'-surface

2,974' - Top of Liner Est Hole Size: 8" 3,022' - 7" Casing, cmt w/ 450 sx Cmt to Surface, circ 275 cu ft

3,054' - 3,061' 3,066' - 3,090'

Yates Y2 Perfs: 3,110' - 3,117'

Yates Y3 Perfs:

3,122' - 3,130' 3,180' - 3,195'

3,199' - 3,214'

Yates Y3 Perfs: 3,199' - 3,214' sqz w/ 175 sx 3,252' - 3,264' sqz w/ 50 sx

Est Hole Size: 6-1/4" 3,300' - 5-1/2" Liner, cmt w/50 sx Cmt to Top of Liner

1220' - 8-5/8" Casing, cmt to surface w/ 600 sx Est TOC @ 2705' Est. Hole Size: 8" 2955' - 7" Casing, cmt to w/ 25 sx Yates Y1 Perfs: 2,970' - 3,040' Yates Y2 Perfs: 3,085' - 3,096' w/ 1 JSPF - 63 holes Yates Y3 Perfs: 3,171' - 3,185' Sqz w/ 300 sx 3210' - CIBP Seven Rivers Perfs: 3,219' - 3,223' Est Hole Size: 6-1/2"

Atlantic State #1 West Teas Field "C" Section 16, T20S, R33E Lea County, New Mexico GL: 3,540'; KB: 3,542'

Initial Completion

Spud well 12-21-61 Perf Seven Rivers 3,219'-3,223' IPP: 90 BO, 10 BW (90% oil) 12/67 Set CIBP @ 3210 Perf Yates Y3 @ 3171'-3185' Acidize w/1250 gals acid Frac w/ 20,000 gal & 20,000# sd IP: 58 BO 8/79 Squeeze Yates @ 3171'-3185 w/ 300 sx Perf Yates Y2 3085'-3096' Acidize w/ 1000 gals Frac w/ 9000 gal & 14,000# sand Perf Yates Y1 from 2970'-3040' Acidize w/ 2000 gals Frac w/ 20,000 gal & 28,000# sand No new potential 3.3% oil &1 @ 8/79 10/80 Plugged w/ 175 sx from 3110'-1125' 10 sx from 150'to surface 9.5#/gal mud between plugs

All cement information is estimated by calculations

3,260' - 4-1/2" Casing, cmt w/450 sx Cmt to surface, circ out 136 cu ft.

mminimminimi Cmt Plug at surface 12/81 Cmt plug from 1115'-1430' 1,303' - 9-5/8" Casing, cmt w/ 710 sx to surface 12/82 7/83 65 sx cmt plug from 2823-2858' 2858' - CIBP 2.901' - Top of Liner Est Hole Size: 8" 2,955' - 7" Casing, cmt w/ 450 sx Cmt to surface, and 280 cu ft circ. Yates Y1 & Y2 Perfs: 3,016' - 3,092' 3.112' - PBTD Yates Y3 Perfs: 3,166' - 3,195' Est Hole Size: 6-1/4" 3,260' - 5-1/2" Liner, cmt w/ 35 sx Circ to Top of Liner

State Lea "886" #3 West Teas Field "E" Section 16, T20S, R33E Lea County, New Mexico GL: 3,531'; KB: 3,540'

Initial Completion

Spud well 4-60
Perf Yates Y3 from 3166'-3195'
Acidize w/ 500 gal mud acid
1/75
Spotted 30 sx "H" 2900-3226'
Spotted 250 sx "C" 3226'-677'
Spot 10 sx cmt plug @ 35' to surface
12/81
Drld out cmt plugs and plug back to
3,112'

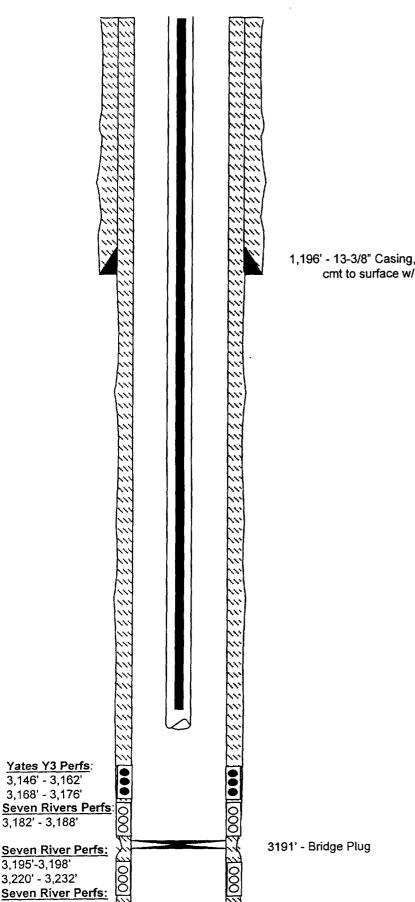
3,112' Perf Yates Y1 & Y2 3016' - 3092' Frac 28.000 gal & 36.000#

Frac 28,000 gal & 36,000# IPP: 20 BOPD

Frac well w/ 6000 gal PSD gel in 2% KCl w/ 18000# 20/40 and 10/20 sand IPP: 15 BOPD, 2 BWPD

Ran CIBP to 2858'
Spotted 65 sx "C" on top of CIBP 35'
Spotted 58 sx "C" from 1115'-1430'
Spotted 10 sx "C" at surface

All Cementing information is estimated by calculations.



3,146' - 3,162' 3,168' - 3,176'

3,182' - 3,188'

3,195'-3,198' 3,220' - 3,232'

3,268' - 3,272

886 State #1 West Teas Field "F" Section 16, T20S, R33E Lea County, New Mexico GL: 3,537'; KB: 3,549'

Initial Completion

Spud well 11-13-59 DST 3049'-3069, Op 30 min rec 490' mud DST 3150-3215' Op 45 min, rec 1440' OCM & 1385 MCD, no pressure Perf Y3 3146'-3162'; 3168'-3176' Perf 7Rivers 3195'-3198'; 3220'-3232' Acidize 3220-3232' w/ 500 gal acid IPP 596 BOPD (All zones) Shackelford Re-entry

12/59

cmt to surface w/1250 sx

Acidize 3146'-3176' w/ 500 gal acid 2/75

Sqz Perfs w/ 35 sx "C" Spotted 130 sx "C" from 1200'-2817' Spotted 10 sx from 40-surface 3/95

Perf Seven Rivers 3268'-3273' Acidize w/ 500 gal 15% NeFe Set BP @ 3191' Perf 7 Rivers 3182'-3188' IPP: 67 BOPD; 120 BWPD (36% oil)

All Cement Information is estimated by Calculations

3191' - Bridge Plug

Est Hole Size: 7-7/8" 3,325' - 5-1/2" Casing, cmt w/850 sx Class Cmt to Surface, Circulate 423 cu ft.

ummmm mmmm ummmmm ummmmm ummmm ummmmm ummmumm ummmm ummmm ummummi ummmmmu mmmmm ummummu ummmmmu ummummu ummumm ummmmm ummummini mmmmmm ummumm ummmm ummmi ummumm ummmm mmmmm ummummu ummmmmm ummmm ummmm ummumm ummmmm ummummi ummmm ummmumi ummumm namanan ummmm ummmmmu mmmmmm ummmmm mmmmmm ummummi ummmmm ummummi ammani a ummmmm ummummini ,,,,,,,,,,,,

12-1/4" Hole 1240' - 9-5/8", 36#, Casing, cmt to surface w/ 600 sx State BF #2 West Teas Field "K" Section 16, T20S, R33E Lea County, New Mexico GL: 3,536'; KB: 3,545'

Initial Completion

Perf Yates Y2, Yates Y3 & Seven Rivers 3,094'-3,220'
Acidized w/ 100 gal XLST acid
Frac w/ 15,000 gal lease crude, 15,000# sd w/ 250# mothballs after 7500 gal w/ 1/20# adomite / gal

Frac w/ 10,000 gal lease crude, 10000# sd thru 3179-3209'.

8/78

Perf Y1 2980' - 3041' - 25 holes Acidize w/ 90 bbls 2% KCI Frac 7 Rivers w/ 20,000 gal gelled crude 18,000# sd & 20000 gal 15% HCI 5/95

Perf Seven Rivers 3223' - 3233' 2 JSPF Acidize w/ 1000 gal 15% HCl 100% water Set CIBP @ 3214' Perf 3210'-3213' 2 JSPF Acidize w/ 1000 gal 15% HCl Set CIBP @ 2998'

(Prod. Y1 only, no prod. after)

8/96

Convert to SWD

10/96

Push CIBP to bottom of hole

<u>5/97</u>

Pump 1000 sx cement plug

Top of Cmt @ 100' set 20 sx plug at surfac Well P&A

2898 - Top of Liner 2951' - 7", 20#, J-55 Casing, cmt to surface w/ 750 sx

Cement Information is from State Reports

<u>Y1 Perfs:</u> 2,980' - 3,041'

Y2, Y3 & 7 Rivers Perfs

3,094' - 3,220' w/ 4 JSPF

Seven Rivers Perfs: 3,210' - 3,213' 3,223' - 3,233 (wet) w/ 1 JSPF

CIBP - Pushed to bottom

3,225' - 5", 15#, J-55 Liner

1,262' - 8-5/8" Casing, cmt w/ 375 sx to surface Spot 10 sx @ surface Cmt Plug @ 1356'-1456' 2,636' - Top of Liner Cement Plug @ 2700' 35 sx Hole Size: 8" 2,886' - 7" Casing, cmt w/ 25 sx - Initial Perf 7" casing and cmt w/ 250 sx to surface mmmmm CIPB @ 3070' w/ 25 sx on top Yates Perfs:

Snyder #1 West Teas Field "J" Section 16, T20S, R33E Lea County, New Mexico GL: 3,542'; DF: 3,546'

Initial Completion

Spud 10-9-64 OH Seven Rivers from 3222'-3230' IP: 42 BO 9/82 Perf 3098-3116' Acidize w/ 2000 gal MOD 202. Frac w/ 30,000gal gelled 2 % KCl, 30000 gal C02 w/ 67,000# 8/12 sd IPP: 100 BLW w/ 20% oil 9/83 CIPB @ 3050 w/ 25 sx cmt Spot 36 sx @ 2700' Spot 35 sx plug @ 1456'-1356'

All Cement Information is from state reports

Hole Size: 6-1/2"

3,222' - 4-1/2" Liner, cmt w/65 sx Cmt to Top of Liner

Squeeze OH w/ 200 sx "C"

mmmmmm.

3,098'-3,116'

Seven Rivers OH:

3,222' - 3,230'

STATE OF NEW MEXICO ENERGY MINERALS AND NATURAL RESOURCES DEPARTMENT

*XI.

OIL CONSERVATION DIVISION 2040 SOUTH PACHECO SANTA FE, NEW MEXICO 87505 FORM C-108 AUG 2 5 1999 Revised 4-1-98

APPLICATION FOR AUTHORIZATION TO THE STATE OF THE STATE O

I	PURPOSE: X Secondary Recovery Pressure Maintenance Disposal Storage					
	Application Qualifies for administrative approval? Yes X No					
	Carl 12332					
II.	OPERATOR: Falcon Creek Resources, Inc.					
	ADDRESS: 621 17 th Street, Suite 1800, Denver, Colorado 80293-0621					
	CONTACT PARTY: Joe Cox, Senior Engineer, 303-675-0007 .x/32					
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 X 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	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 or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured of inferred from existing literature,					
	studies, nearby well, etc.).					
*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 water 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).					

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.

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: Joe H. Cox, Jr. TITLE: Senior Engineer

SIGNATURE: DATE: August 19, 1999

* If the information required under Section VI, VIII, X and XI above has been previously submitted, it need not be resubmitted.

Completion Reports

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

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

Please show the date and circumstances of the earlier submittal:

XII.

underground sources of drinking water.

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 of 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,
- A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 2040 South Pacheco, 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 of offset operators must file any objections or request for hearing of administrative applications within 15 days from the date the application was mailed to them.

Falcon Creek Resources, Inc.
West Teas (Yates-Seven Rivers) Field, Lea County, NM
Appplication for Authorization to Inject
Injection Well Data, Section III, Form C-108

I. A.

,						Su	rface Casing	on.			Proc	luction Casir	g _r		Inject	tion Strir	g and Pa	cker
Lease Name No. Ut. Sec. Twp. Rge.	No. I	Ut. Sec. To	wp. R	ge. Footage	σo	Depth Cement	Hole (in.)	Cmt. Top	Method	OD Dep	th Cmt. (sx	Hole (in.)	Cmt. Top	Method	Size	Depth P	acker*	Septh
Anasazi "4"	3	J 420	33	4 20S 33E 1,650 FSL 1,980 FEL 8.625"	8.625"	1,368' 710 sx	12.25"	Surface	Calc.	5.50" 3,550"	J' 780 sx	7.875	579'	Calc.	2.875" 3	1	AD-1	3,130
Scharbauer "4"	3	P 4 20S	S 33	33E 660' FSL 660' FEL	8.625"	1,354' 700 sx	12.25"		•	4.50" 3,373"	3' 815 sx	7.875"	.02		2.375"	3,000'		3,000
Federal "9"	٣	C 9 20S		33E 330 FNL 2,310' FWL 8.625"	8.625"	1,300' 540 sx	12.25"	Surface	Report	5.50" 3,320)' 580 sx	7.875"	Surface		2.375" 3	3,050'	AD-1	3,050
Barber Federal	7	E 9 20S		33E 1,980' FNL 660' FWL 8.625"	8.625"	1,256' 700 sx	12.25"			4.50" 3,400"	J' 750 sx		Surface		2.375"	3,030'		3,030'
Federal "9"	9	H 9 20S		33E 1,650' FNL 990' FEL 8.625"	8.625"	1,320° 540 sx	12.25"			5.50" 3,358"	8' 785 sx		Surface		2.875" 2	2,950′		2,950'
State "BF"	4	A 16 20S		33E 330' FNL 330' FEL	9.625"	1,115' 440 sx	12.25"				S' 635 sx		Surface	Report	2.875"	3,050		3,050′

*Note: Packers are to be Baker model "AD-1" or equivalent

III. B.

														ent					
	Isolation Method	N/A		N/A			N/A			N/A				Proposed CIBP at 3,275' topped with approx 5 sx cement	to isolate Seven Rivers interval from injection				3,374-3,394' CIBP set at 3,365' to isolate Seven Rivers
Other	Intervals	None		None			None			None				3,285-3,300'					3,374-3,394
Original	Purpose	Prod.	Injection*	Prod.	Prod.	Injection*	Prod.	Injection*	Injection*	Prod.	Injection	Prod.	Injection*	Prod.		Prod.	Injection*	Injection*	Prod.
	Perf/OII	Perf	Perf	Perf	Perf	Perf	Perf	Perf	Perf	Perf	Perf	Perf	Perf	Perf		Perf	Perf	Perf	Perf
Injection	Interval	3,230-3,292'	3,296-3,426*	3,104-3,88	3,263-3,279	3,248-3,312*	3,161-3,252	3,147-3,154*	3,299-3,409'** Perf	3,138-3,219	3,299-3,374*	3,060-3,176	3,194-3,260*	livers		3,160-3,294	3,150-3,156*	3,350-3,394*	livers
	Name	. Yates	Yates	Yates	Yates	Yates	Yates	Yates	Yates	Yates	Yates	Yates	Yates	Seven Rivers		Yates	Yates	Yates	Seven Rivers
	Footage	4 20S 33E 1,650'FSL 1,980'FEL Yates	•	4 20S 33E 660' FSL 660' FEL			3 C 9 20S 33E 330' FNL 2,310' FWL Yates			9 20S 33E 1,980 FNL 660 FWL Yates		9 20S 33E 1,650' FNL 990' FEL Yates				16 20S 33E 330' FNL 330' FEL			
	Rge.	33E		33E			33E			33E		33E				33E			
	No. Ut. Sec. Twp. Rge.	4 20S		4 20S			9 20S			9 20S		9 20S				16 20S			
	Ut.	-		Ы			၁			Э		H 9				4			ŀ
	_	3		3			3			1 2		9				4			
	Lease Name	Anasazi "4"		Scharbauer "4"			Federal "9"			Barber Federal		Federal "9"				State "BF"			

*Note: Additional perforations planned for injection

**Note. Federal "9" #3 is planned to be deepened into additional Yates interval, cased and perforated for injection

III. B. (5) Other Producing Intervals in Area

No zones shallower than the Yates have been productive in the field area. Historically productive deeper zones include Bone Springs and Morrow intervals at approximately 9,300' and 13,300' respectively. The only currently productive deeper interval is the Morrow in the Anasazi "9" Federal #1 in the SW/4 SE/4 of section 9, T20S R33E (13,289-13,428).

12-1/4" Hole 1,368' - 8-5/8" Casing, cmt to surface w/710 sx 2-7/8" EUE J-55 Tubing Proposed Baker AD-1 pkr Set @ approx. 3,130' Est 7-7/8" Hole 3,550' - 5-1/2" Casing, cmt w/780 sx Class

Cmt to surface, circ approx 301 cu ft

Proposed Injector
Anasazi "4" State #3
Bass Enterprises Prod. Co.
West Teas Field
"J" Section 4, T20S, R33E
Lea County, New Mexico
GL: 3,556'; KB 3,573'

Initial Completion

Spud well 11-08-94 Perf Yates from 3230'-3292' IPP: 41 BOPD; 27 BWPD, 15 MCFD

Cement circulated was estimated by calculations.

<u>Yates 1 Perfs</u>: 3,230' - 3,292'

Proposed Yates 1 Perfs:

3,296' - 3,300' 3,307' - 3,311' 3,316' - 3,319'

Proposed Yates 3 Perfs 3,388'-3,400'

3,406'-3,426'

1,354' - 8-5/8" Casing, cmt to surface w/700 sx · 2-3/8" EUE J-55 Tubing Proposed Baker AD-1 Pkr @ approx. 3,000' Yates Perfs: 3,104' - 3,188' Proposed Yates 3 Perfs 3,248'-3,312' Est Hole Size: 7-7/8"

Proposed Injector Scharbauer "4" #3 Mitchell Energy West Teas Field "P" Section 4, T20S, R33E Lea County, New Mexico GL: 3,560'; KB 3,570'

Initial Completion

Spud well 9-7-95
Perf Yates from 3263'-3279'
Acidize w/ 2000 gal 7.5% NeFe
Swabbed .18 BO, 24 BW
Set CIBP @ 3230'
Perf Yates from 3104'-3188'
Acidize w/ 3000 gal 7.5% NeFe
Frac w/ 37016 gal 150,580 # sd
IPP: 98 BOPD; 10 MCFD

All Cement Information is Estimated by Calculations

3,373' - 4-1/2" Casing, cmt w/815 sx Class
Cmt to surface, circ 189 cu ft to surface

Falcon Creek Resources, Inc. **Proposed Injector** Federal 9 #3 Falcon Creek Resources West Teas Field "C" Section 9, T20S, R33E Lea County, New Mexico GL: 3,557'; KB: 3,559' **Initial Completion** Spud well 5-28-93 Perf Yates Zone 1 @ 3161'-3252' (22 Holes) Acidize w/2000 gals 20% HCI Frac w/ 40,000 gal gel & 12-1/4" Hole 87,000# 20/40 sd 1,300' - 8-5/8", 24#, J-55 Casing, cmt to surface w/ 540 sx "C" IPP: 86 BOPD, 35 MCFD, 22 BWPD Cement Information is from State Reports 2-3/8" EUE J-55 Tubing Proposed Baker AD-1 Pkr @ approx. 3,050' **Proposed Y1 Perfs** 3,147' - 3,154' Yates Zone 1 Perfs: 3,161' - 3,252' 7-7/8" Hole 3,320' - 5-1/2", 17#, J-55 Casing, cmt w/580 sx Class "C" Circulate 17 sx to surface **Proposed Y3 Perfs** Deepen Hole Through Yates, approx. 3,299-3,409' Cement Tubing In Place and Perforate

Yates Y1 Perfs:

Proposed Injector Barber Federal #2 Falcon Creek Resources West Teas Field "E" Section 9, T20S, R33E Lea County, New Mexico GL: 3,555'; KB; 3,565'

Initial Completion

Spud well 8-24-87 Perf Y2 3,260, 64, 66, 68 & 3,278' 2 SPF Acidize w/ 750 gals 15% NeFe, swab load and 0.3 Bbl/HR 8-10% oil Set cement retainer @ 3,250' Sqz 3,260-3,278' w/ 50 sx Perf Y1 3,138, 41, 44, 52, 55, 59, 63, 66, 88, 93, 3202, 08, 16, 22' 1 SPF (14 holes) Acidize w/ 1,000 gal 15% NeFe Frac w/ 33,988 gal 50% CO2 foam, 40,000# 20/40, 28,000# 10/20 IPP 35 BOPD 40 BWPD

All cement information was from State Sundry Notices

Tubing, 2 3/8", 3,030'

1,256' - 8-5/8" Casing,

cmt to surface w/750 sx

Proposed Baker AD-1 Pkr @ approx. 3,030'

Sqzd Yates 2 Perfs:

3,138' - 3,222'

3,260' - 3,268' 3,278' - 1 shot

Proposed Y3 Perfs:

3,296' - 3,304' 3,310' - 3,320' 3,336' - 3,352' 3,360' - 3,364'

7-7/8" Hole

3,400' - 4-1/2" Casing, cmt w/1100 sx Class Cement to Surface & circ 67 sx

Falcon Creek Resources, Inc. **Proposed Injector** Federal 9 #6 Falcon Creek Resources, Inc. West Teas Field 1,650' FNL 990' FEL "H" Section 9, T20S, R33E Lea County, New Mexico GL: 3,551'; KB: 3,562' **Initial Completion** Spud well 5-16-94 Perf Seven Rivers @ 3285'-3288' 4 JSPF 12-1/4" Hole Acidize w/1000 gals 15% NeFe 1,320' - 8-5/8", 23#, J-55 Casing, Perf Seven Rivers from 3288'-3300' 1 JSPF cmt to surface w/540 sx "C" Acidize w/1000 gals 15% NeFe Set CIBP @ 3270' Perf Yates Y1 & Y2 3060'-3176' 2 JSPF Acidize w/2500 gals 15% NeFe Frac w/ 42,000 gal xlink gel & 133,000# of 12/20 sd. IPP: 97 BO, 14 BW, 1 MCF CIBP recovered and bailed out hole to 3,310' (add 7 Rivers) Cement Information is from State Reports 2-3/8" Tubing (2,960') Proposed Baker AD-1 Packer, 2,950' Yates Y1 & Y2 Perfs: 3,060' - 3,176' 2 JSPF 000 Proposed Y3 Perfs 3,194-3,260' Proposed CIBP 3,275' Seven Rivers Perfs: 3,285' - 3,288' 4 JSPF

7-7/8" Hole

3,358' - 5-1/2", 15.5#, K-55 Casing, cmt w/785 sx Class "C"
Circulate 10 sx to surface per drlg. rpt. & Sundry

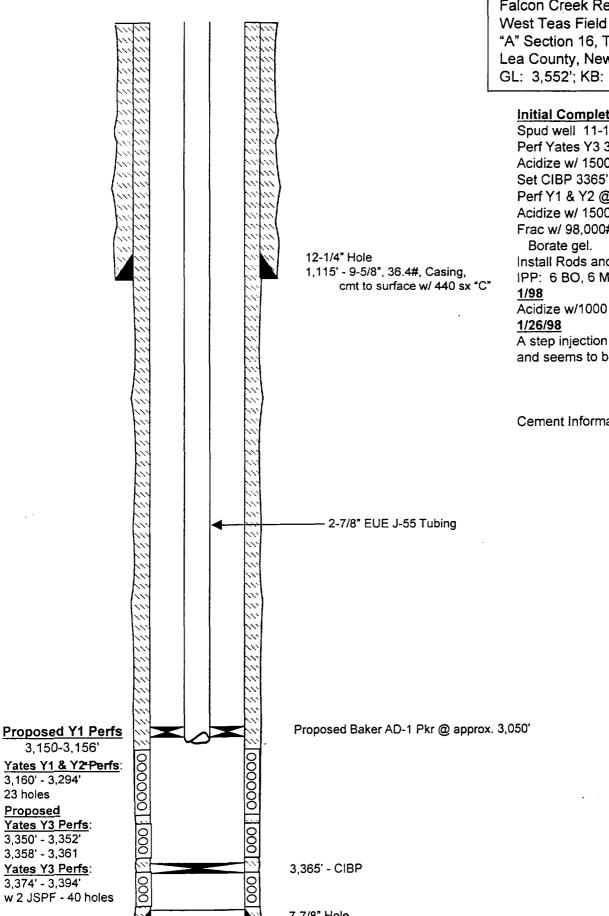
3,288' - 3,300'

1 JSPF

3,150-3,156'

3.160' - 3.294' 23 holes Proposed Yates Y3 Perfs: 3,350' - 3,352' 3,358' - 3,361

Yates Y3 Perfs: 3,374' - 3,394'



Proposed Injector

State BF #4 Falcon Creek Resources

"A" Section 16, T20S, R33E Lea County, New Mexico

GL: 3,552'; KB: 3,557'

Initial Completion

Spud well 11-17-95 Perf Yates Y3 3374'-3,394' Acidize w/ 1500 gals 15% NeFe Set CIBP 3365' Perf Y1 & Y2 @ 3160'-3294' Acidize w/ 1500 gals 15% NeFe Frac w/ 98,000# 12/20 sd & 786 bbls Borate gel.

Install Rods and Pump

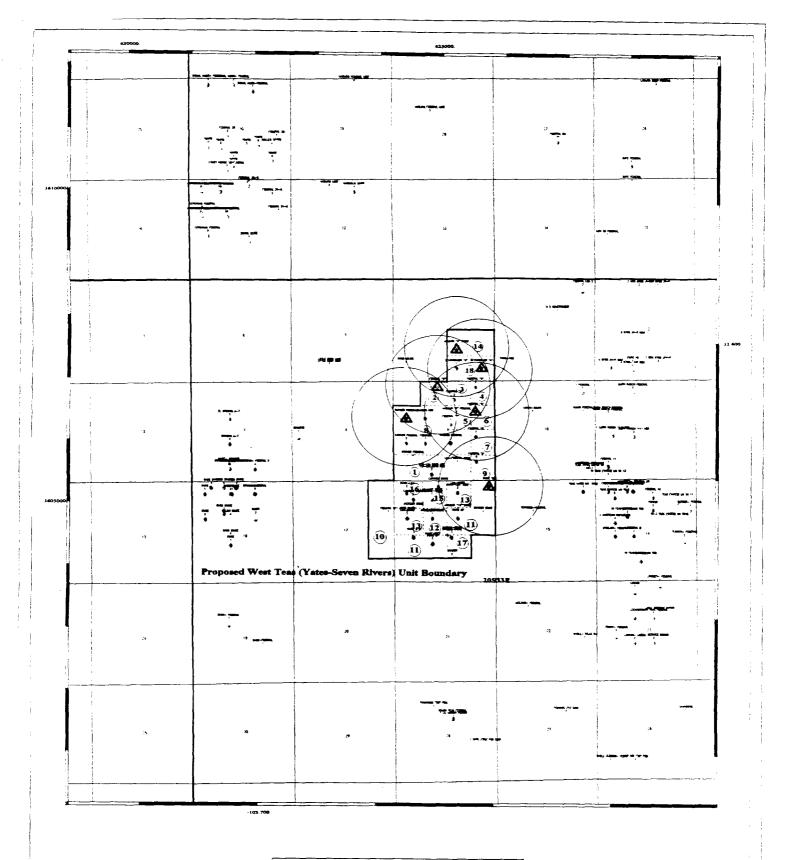
IPP: 6 BO, 6 MCF, 50 BW (11% oil)

Acidize w/1000 gals 15% NeFe acid

A step injection rate test was conducted and seems to be permitted for SWD well.

Cement Information is from State Reports

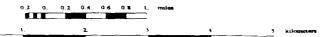
7-7/8" Hole 3,465' - 5-1/2", 17# Casing, cmt w/635 sx Class "C" Circulate 50 sx to surface

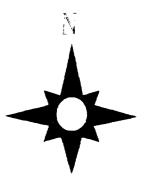


West Teas Field, Lea Co. NM Wells Proposed for Injection and Wells Within Two Miles

Section V	Injection App	Form C-108
Joe C	Scale 45/100	8 5/7 99

Scale 1:45000.





Section VI Form C-108

Falcon Creek Resources, Inc. Tabulation of Data on Wells In Review Area Application for Authorization to Inject

:						S	Surface Casing	asing	Prod	Production Casing	asing	
Operator	Lease/Well	Status	Location	Spud Date	Drilled TD PBTD	Size	Depth	Cement	Size	Depth	Cement	Producing Perforations
McGrath & Smith	Trigg Federal #1	D&A	M, 3,T20S-R33E	1/29/57	3435'		Allc	All casing has been pulled from well	en pulled f	rom well		
Bass Enterprises Prod. Co.	Anasazi 4 State #3	Prod.	J, 4-T20S-R33E	11/8/94	3550'	.8/5-8	1368'	710 sx "C"	5-1/2"	3550'	780 sx "C"	3230'-3292'
		Oil			٠							(Yates)
L.S. & R. Petroleum Co.	Bass-State #1	D&A	M, 4-T20S-R33E	2/30/63	3410'	12-1/2"	219'	125 sx "C"	8-5/8	3" & 10"	8-5/8" & 10" Pulled at Abandonment	andonment
Mitchell Energy	Scharbauer "4" #1	Prod.	O, 4-T20S-R33E	Apr-93	13,720	13-3/8"	2,950'	2,207 sx	8-5/8"	5,382'	885 sx	3,156-3,273'
		Oil										(Yates)
Mitchell Energy	Scharbauer 4 #3	Prod.	P, 4-T20S,R33E	56/L/6	3230'	8/5-8	1354'	700 sx "C"	4-1/2"	3373'	815 sx "C"	3104'-3188'
		Oil										(Yates)
Falcon Creek Resources, Inc.	Federal "9" #5	Prod.	A, 9-T20S-R33E	4/2/94	3384'	8/5-8	1320'	680 sx "C"	5-1/2"	3384'	685 sx "C"	3076'-3158'
		Öİ										(Yates)
Falcon Creek Resources, Inc.	Federal "9" #2	Prod.	B, 9-T20S-R33E	10/7/92	3311'	8/5-8	1300'	640 sx "C"	5-1/2"	3311	475 sx "C"	3062'-3308'
		Ö										(Yates)
Falcon Creek Resources, Inc.	Federal "9" #3	Prod.	C, 9-T20S-R33E	5/28/93	3320'	.8/5-8	1300'	540 sx "C"	5-1/2"	3320'	580 sx "C"	3161'-3252'
		Oil										(Yates)
Falcon Creek Resources, Inc.	Barber Federal #2	Prod.	E, 9-T20S-R33E	8/24/87	3400'	8-5/8"	1256'	009 sx "C"	4-1/2"	3400'	750 sx "C"	3138'-3278'
		Oil										(Yates)
Falcon Creek Resources, Inc.	Barber Federal #1	Prod.	F, 9-T20S-R33E	4/29/87	3404'	8-5/8"	1261	650 sx "C"	4-1/2"	3400'	950 sx "C"	3092'-3147'
		Oil										-
Falcon Creek Resources, Inc.	Federal "9" #1	Prod.	G, 9-T20S-R33E	11/10/90	3445'	8-5/8	1243	450 sx "C"	5-1/2"	3445'	775 sx "C"	3042'-3257'
		Oil										(Yates)
Mitchell Energy	Anasazi 9 Fed #1	Prod.	G, 9-T20S-R33E	5/17/92	13779'	13-3/8"	2947'	2947' 2350 sx "C"	.8/5-8	5272'	1250 sx "C"	13289'-13428'
		Gas							5-1/2"	13779'	13779' 1950 sx "C"	(Morrow)
Falcon Creek Resources, Inc.	Federal "9" #6	Prod.	H, 9-T20S-R33E	5/16/94	3,378'	.8/5-8	1,320'	540 sx "C"	5-1/2"	3,358'	785 sx "C"	3,060-3,300'
	-	ē			3,310')	(Yates-Seven R.)

						3r	Surface Casing	asing	Proc	Production Casing	Casing	
Operator	(' Lease/Well	Status	Location	Spud Date	Drilled TD PBTD	Size	Depth	Cement	Size	Depth	Cement	Producing Perforations
Falcon Creek Resources, Inc.	Federal "9" #7	Prod. Oil	1, 9-T20S-R33E	8/28/95	3358'	.8/5-8	1310'	800 sx "C"	5-1/2"	3358'	635 sx "C"	3270'-3227' (Seven Rivers)
Falcon Creek Resources, Inc.	Grover Federal #3	Prod.	J, 9-T20S-R33E	2/26/88	3,425'	.8/2-8	1,218	750 sx	4-1/2"	3,420'	650 sx	3,022-3,100'
Falcon Creek Resources, Inc.	Grover Federal #1	Prod.	K, 9-T20S-R33E	2/16/87	3400'	8-5/8"	1265'	750 sx "C"	4-1/2"	3398'	90 sx "C"	3154'-3180' (Yates)
Falcon Creek Resources, Inc.	Grover Federal #2	Prod.	L, 9- T20S-R33E	11/12/87	3400′	.8/5-8	1256'	750 sx "C"	4-1/2"	3400'	1100 sx "C"	3217'-3239' (Yates)
Grover- McKinney Oil Co.	Grover Federal #4	D&A	M, 9- T20S-R33E	3/2/88	3400'	8-5/8"	1252'	700 sx "C"		Well I	Well has been plugged	
Atlantic Richfield Co.	Lea 6015 Fed #1	D&A	O, 9- T20S-R33E	4/3/60	3300'	.8/5-6	1357	450 sx "C"	7"	3022		
										3300'	50 sx "C"	3054'-3264' (Yates)
Falcon Creek Resources, Inc.	Federal 9 #8	Prod. Oil	P, 9-T20S-R33E	7/12/96	3462'	.8/2-8	1313'	800 sx "C"	5-1/2"	3462'	610 sx "C"	3116'-3144' (Yates)
Falcon Creek Resources, Inc.	State BF #4	SI Oil	A, 16,T20S-R33E	56/21/11	3470'	12-1/4" 1115'		440 sx "C"	5-1/2"	3465	635 sx "C"	3160'-3294'
Sinclair Oil & Gas	Lea 886 State #2	P&A	B, 16-T20S,R33E	2/26/60	3360'	.8/5-6	1308"	914 sx "C"		Well I	Well has been plugged	beg
Falcon Creek Resources, Inc.	Conoco St. #1	Prod.	C, 16-T20S-R33E	7/23/96	3311'	8/5-8	1313'	800 sx "C"	5-1/2"	3,311'	3,311' 610 sx "C"	3205'-3215'
Falcon Creek Resources, Inc.	Anasazi "16" State Com. #1	SWD	G, 16-T20S-R33E	5/28/93	13858'	20"	497	600 sx "C"	8-5/8"	5299'	5299' 700 sx "C"	5554'-5684'
Falcon Creek Resources, Inc.	State BF #1	P&A	G, 16-T20S-R33E		3275'	18/5-6	1245'	O VS OCO	5-1/2"	3275	50 sx "C"	2989'-3212'
		iö				7".	2970'	800 sx "C"				
Olsen Energy	Snyder State 1 (Olsen)	D&A	H, 16-T20S-R33E	2/22/89	3429'	8-5/8"	1259'	640 sx "C"		Well	Well has been plugged	pag
Knox, Gordon & Assoc.	Tenneco Federal #1	D&A	F, 20-T20S-R33E	12/31/63	3,418'	9-5/8"? 1,350'	1,350'	7". 2	& 4-1/2" C	asing Pu	7" & 4-1/2" Casing Pulled at Abandonment	onment

anamananananananananananananananananana	
minumunus	Cmt Plug @ 600' w/ 10 sx
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1,300' - Cmt Plug w/ 25 sx
	1300' - 3190' Wooden Plug
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	3,190' - 3250' Cmt Plug w/ 20 sx
	3.375' - 3435' Cmt Plug w/ 20 sx

Trigg Federal #1 McGrath & Smith West Teas Field 660' FSL 660' FWL "M" Section 3, T20S, R33E Lea County, New Mexico GL: 3,553'; KB: 3,568'

Initial Completion

Spud well 1-29-57 Swabbed 640 BW P&A 2/57

Pulled all casing out of hole

P&A information is from State Reports

TD: 3435'

10 sx cmt Plug @ Surface minimum minimum 219' - 12-1/2" 50# Casing cmt w/ 125 sx 25 sx cmt Plug @ 219' - (~179') 630' - 10" Casing (pulled) **Heavy Mud** 1,181' - 8 5/8" Casing (pulled) 25 sx cmt Plug @ 1250' - (~1,155') **Heavy Mud** 25 sx cmt Plug @ 2900' - (~2,805') **Heavy Mud** 25 sx cmt Plug @ TD (~3,410-3,315')

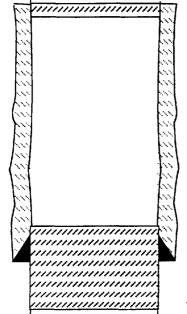
Bass State #1 L.S. & R. Petroleum Co. West Teas Field 660' FSL 660' FWL "M" Section 4, T20S, R33E Lea County, New Mexico DF: 3,556'

Initial Completion

Spud well 5-30-63 Hole Full of Water @ TD P&A 7/10/63 8-5/8" & 10" Casing pulled Heavy mud between plugs.

All plugging information was from State Reports

TD: 3410'



Cmt Plug @ surface w/ 15 sx

Federal #4
Grover - McKinney Oil Co.
West Teas Field
990' FSL 990' FWL
"M" Section 9, T20S, R33E
Lea County, New Mexico
GL: 3,531'; KB: 3,541'

12-1/4" Hole 1,252' - 8-5/8" Casing, cmt to surface w/700 sx

1100' - 1445' Cmt Plug w/ 175 sx

Initial Completion

Spud well 3-2-88 DST 3023'-3195' R/60' DF, PFFP 114-114, ISIP=343, FP 114-114, FSIP 251, HP 1646-1646. P&A

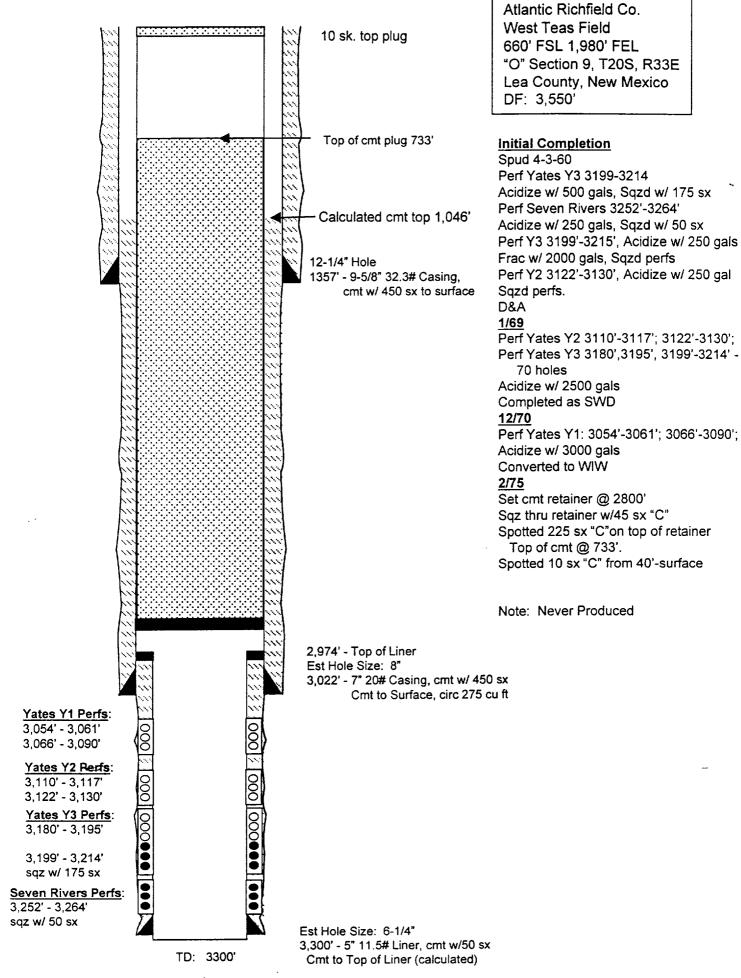
Plugging information is from State Reports

2,650' - 2950' Cmt Plug w/90 sx

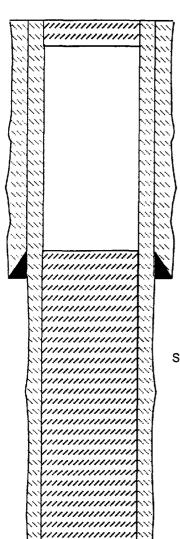
3300' - 3400' Cmt Plug w/ 30 sx

TD: 3400'

.....



Lea 6015 ARC Federal #1



10 sk top plug 40 - 0'

> 1,308' - 9-5/8" Casing, cmt to surface w/914 sx

Spot 225 sx. 2,850-1,200'

Lea 886 State #2 Sinclair Oil & Gas West Teas Field 660' FNL 1,980 FEL "B" Section 16, T20S, R33E Lea County, New Mexico GL: 3,544'

Initial Completion

Spud well 2-26-60 DST 3305'-3360' - wet PB to 3274' OH Yates from 2950'-3274' IPP: 139 BOPD

P&A 2/4/75

All casing cement information was estimated by calculations. Plugging data from Sundry.

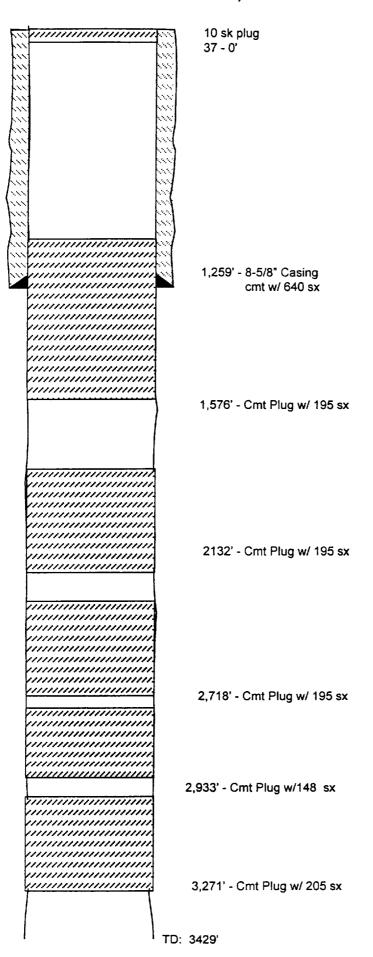
<u>OH Yates</u>: 2,950' - 3,274'

Squeeze under retainer w/ 50 sx

Est Hole Size: 8"
2,950' - 7" Casing, cmt w/450 sx
Calculated vol.

Open Hole Completion Y1, Y2, Y3, & 7Rivers

mminim



Snyder State #1
Olsen Energy
West Teas Field
1,980' FNL 660' FEL
"H" Section 16, T20S, R33E
Lea County, New Mexico
GR: 3,550'

Initial Completion

Spud well 2-22-89
DST #1, 3060'-3200', Rec 1' mud
Opn 15 min, IFP 85, FFL 64,
Fnl Opn 30 min IFP 85, FFP 64, ISIP
233, FSIP 339, IHP 1650, FHP 1650
Open w/ weak blow dean in 6 min.
DST #2 3198-3299', Rec 100' mud,
Opn 30 min, IFP 42 FFP 127
Fnl Opn 1 hr, IFP 106, FFP 127
ISIP 1333, FSIP 1333, HP 1713-1692
Plugs set at 2933' w/ 148 sx,
3271' w/ 205', 2718' w/ 195 sx,
2132 w/ 195 sx, surface w/ 10 sx
P&A 3/2/89

Plugging information is from State Forms

Yates Perfs: 3,206' - 3,216'

Cmt Plug @ surface

Knox, Gordon & Assoc.
West Teas Field
1,980' FNL 1,980' FWL
"F" Section 15, T20S, R33E

Tenneco Federal #1

Lea County, New Mexico GL: 3,532'

Initial Completion

Spud well 12-31-63
Perf Yates from 3206'-321'
Acidize w/ 500 gals
Swabbed 95% water, 5% oil
P&A

Surface Csg @ 1,350' Cmt to surface

1,200' - 3,050' Cmt Plug

All cementing information is from State Reports

7" Casing Pulled from Surface to 2685'

4-1/2" Casing Pulled from Surface to 2950'

3,038' - 7" Casing, cmt w/30 sx

3,418' - 3,050' Cmt Plug

3,418' - 4-1/2" Casing, cmt w/30 sx

Falcon Creek Resources, Inc. West Teas (Yates-Seven Rivers) Field Application for Authorization to Inject NMOCD Form C-108

VII. **Proposed Injection Operations**

1) Injection Rate (per well): Average

500 BWPD

Maximum

750 BWPD

2) Injection System: Closed

3) Injection Pressure (wellhead): Average

600 psig

Maximum

1,200 psig

Note: Following a step-rate test conducted on State "BF" #4 (NE/4 NE/4 16-T20S-R33E) on 1/26/98, the NMOCD approved a surface injection pressure of

1,282 psig into the Yates sand.

4) Injection Fluid: Water from Yates and Seven Rivers production within

proposed West Teas (Yates - Seven Rivers) Unit

(analyses attached)

VIII. Geologic Data

A. Injection Zone

1) Name:

-

Yates Formation

2) Description:

> Injection will be into the Yates Sand sub-units productive within the field. The sand units are developed within the field at depths ranging from 3,000' to 3,450'. These intervals are fine-grained to very fine-grained sandstones divided by siltstones and dense dolomitic layers. The total net thickness

of the sands varies from 40 to 100 feet with lateral

discontinuities present in the individual layers. Average porosity in the "pay" sands is 15.7%, average permeability is

approximately 1 md.

B. Fresh Water Sources

The State Engineer's Office reports fresh water production potential from Quaternary alluvium at about 56' in the SW/4 of section 4 and the NE/4 of section 20, T20S R33E. One permitted water well was reported in SW/4 SE/4 SW/4 section 5 T20S R33E with sands noted in the interval 520-675' (Dewey Lake fm.?) A copy of the Well Record from the State Engineer's Office for that well is attached. No other sources are noted overlying the oil producing interval. The Seven Rivers Formation directly underlies the Yates, it is a hydrocarbon producing interval on the West Teas Field structure and is proposed to be included in the West Teas unitized interval. No injection is proposed for the Seven Rivers Formation.

IX. Proposed Stimulation Program

The Yates intervals proposed for injection in the six wells comprising Stage I of the proposed waterflood have generally been fracture stimulated for production. Additional Yates perforations, to be added at conversion to water injection, will be acidized with 100 gallons/foot 15% HCl and fracture stimulated when the new perforations are adequately isolated from the pre-existing perforated zones. Typical fracture stimulation treatments contain about 80,000 pounds of sand in a cross-linked, water-based gel.

X. Logging and Test Data

No additional drilling is proposed in Stage I waterflood development aside from the deepening of the Federal "9" #3 well to include additional Yates section. Any additional logs or tests will be submitted to the NMOCD at the time they are obtained.

XI. Fresh Water Analysis

A review of the area within one mile of proposed injection wells and a conversation with the local rancher indicates that there are no active fresh water wells in the area.

XII. Disposal Well Statement

This section does not apply to the application since no disposal wells are being proposed.

XIII. Proof of Notice

A copy of this application has been furnished to all surface owners and leasehold operators within the "area of review".

Permian Treating Chemicals

WATER ANALYSIS REPORT

SAMPLE

Oil Co.: Stevens & Tull Lease: State 'BF'

Dissolved Gasses

Well No .: Disp.

Salesman:

Sample Loc.

Date Analyzed: 09-September-1997

WT.

58,46 191,10 19,586

Date Sampled:

ANALYSIS

pH Specific Gravity 60/60 F. 1.010 CaCO₃ Saturation Index @ 80 F. +0.856 @ 140 F. +1.756

4. 5. 6.	Hydrogen Su Carbon Diox Dissolved Ox	ide	Not Not	Present Determined Determined					
<u>C</u>	<u>ations</u>								
7. 8. 9. 10.	Calcium Magnesium Scdium Sarium	(Ca++) (Mg++) (Na+) (Ba++)	(Calculated) Not	1,090 265) 4,181 Determined	//	20.1 12.2 23.2	= = =	54.23 21.72 181.78	
<u>A</u>	nions								
14.	Hydroxyl Carbonate Bicarbonate Sulfate Chloride	(CH ⁻) (CO ₃ ⁼) (HCO ₃ ⁻) (SO ₄ ⁼) (CI ⁻)		0 908 2,200 6,998	////	17.0 30.0 61.1 48.0 35.5	= = = = = = = = = = = = = = = = = = = =	0.00 0.00 14.26 45.08 197.13	
15. 17.	Total Dissol Total Iron	ved Sol	ids	15,642 2	/	18.2	=	0.08	

Total Hardness As CaCO₃ 3,811 Resistivity @ 75 F. (Calculated) Ø.352 /cm.

LOGARITHMIC WATER PATTERN *meq/L.		E MINERAL EQ. WT. X		
Na 355 - MARIE MARIE - MARIE - MARIE - MARIE - MARIE CI	Ca(HCO3)2	81.24	14.86	1.204
Ca THE THE HOS	CaSC4	68.07	39.37	2.680
Mg ##11 ##11 ## SC4	CaClz	55.50	@.@@	Ø
Fe 10000 1000 100 10 1 10 100 1000 10000	Mg (HCO3)2	73.17	୯.ଉଡ	Ø
	MgSC4	60.19	5.71	344
Calcium Sulfate Solubility Profile	MgCL 2	47.52	15.21	762
2123	NaHCC3	84.20	0.00	c
21.03	NaSO4	71.03	0.00	= 0

*Milli Equivalents per Liter This water is mildly corrosive due to the pH observed on analysis. The corresivity is increased by the content of mineral salts, and the presence of H2S in solution.

NaC1

Permian Treating Chemicals

WATER ANALYSIS REPORT

SAMPLE

Ci! Cc.: Stevens & Tull Lease: Federal 9 We!! No.: # 7

Salesman:

Sample Lcc. Date Analyzed: 09-September-1997 Date Sampled:

MG/L

EQ. WT.

PROBABLE MINERAL COMPOSITION

*MEQ/L

ANALYSIS

pH Specific Gravity 60/60 F. 1.008 CaCO₃ Saturation Index @ 80 F. +0.417 @ 140 F. +1.277

Dissolved Gasses

Hydrogen Sulfide Present Carbon Dioxide Dissolved Oxygen Not Determined Not Determined

Cations

7.	Calcium	(Ca++)	•	1,090 265	/ 20.1 =	54.23
8.	Magnesium	(Mg++)	•	²⁶⁵	/ 12.2 =	21.72
9.	Sodium	(Na+)	(Calculated)	2,894	/ 23.0 =	125.83
10.	Barium	(Ba++)	Not Dete	rmined		

Anions

11. 12. 13. 14. 15.	Hydroxyl (OH-) Carbonate (CO3-) Bicarbonate (HCC3-) Sulfate (SO4-) Chloride (Cl-)	0 615 2,450 4,999	1/1/	17. 30. 61. 48. 35.	ØØ1.85		0.00 0.00 10.37 50.23 140.82
15. 17. 18.	Total Dissolved Solids Total Iron (Fe) Total Hardness As CaCO3	12,313 3 3,811	/	18.	2	=	2.14

19. Resistivity @ 75 F. (Calculated) 0.387 /cm.

LOGARITHMIC WATER PATTERN

*meq/L.	COMPOUND	EQ. WT.	X *meq/L	= mg/L.
Na 	Ca(HCO3)2	81.04	10.07	815
Ca WHILL WHILL WHILL HIM THE THE PCO3	CaSO4	68.07	44.18	3,006
Mg	CaC! 2	55.50	0.02	Ø
Fe 1900 1000 100 100 1 10 100 1000 10000	Mg(HCO3)2	73.17	0.00	Ø.
	MgSC4	50.19	6.04	364
Calcium Sulfate Solubility Profile	MgCL 2	47.62	15.68	747
1704	NaHCO3	84.00	0.00	Q
1716	NaSO4	71.03	0.00	_
1600	NaCl	58.48	125.14	7,316

*Milli Equivalents per Liter 110 730 150 170 This water is slightly corrosive due to the pH observed on analysis. The corrosivity is increased by the content of mineral salts, and the presence of H2S in solution.

FIELD ... IR. LOG STATE ENGINEER OFFICE

WELL RECORD

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the nearest district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1A and Section 5 need be completed.

				(A) Own	er of well.	Pan /	merican Pe	t. Corp.	
[Street and	i Number.	Pox	68		
		İ	- 1	City	llohbs			State _	н. и.
			١,	Well was	drilled un	der Perm	it NoC	P-317 an	d is located in the
)	1	1].	SW 1/4	SE 1/4	SW 14	of Section	5 Twp	20 Rge. 33
									ense No. WD-46
. [İ		!	Street and	l Number.	Hox	637	·····	
	<u>-</u> -		-10	City	llobbs			State	i i i i i i i i i i i i i i i i i i i
				Drilling v	vas comm	enced	Feb. 5		19 66
	lat of 640			Drilling w	as comple	eted	Feb. 1	.7	19_66
			- faci	t abarra ca	- lovel		Total de	pth of well	680 '
tate wh	ether we	ell is shall	OM 01 U rec	r artesian.	shal	low	Depth to wa	ter upon compl	etion 325 '
ection 2	•		•				ING STRATA	• , -	
No.	Depth i	n Feet	1	ckness in		Des	eription of Water	r-Bearing Formati	on .
No.	From	To	<u> </u>	Feet					
1	520	540		20			ter Eand	·	
2	625	645		20	В	rown We	ter Eand		
3	660	675		15	13.	rown Ma	ter Sand		•
4								•	
5									
ection 3					RECOR	D OF CAS	ING		
Dia	Pounds	Threa	ıds	De	pth	Feet	Type Shoe	Perf	orations
in.	ft.	in		Тор	Bottom			From	То
7"	23	1	.0	0	575	575	none	515	575
		_		-					
				 					
					1	l .			<u> </u>
		•		RECOR	D OF MUD	DING AN	D CEMENTING		
ection 4									
	in Feet	Diame	ter	Tons	No. Sa	cks of		37-45- 4- 77 3	
		Diame Hole in		Tons Clay				Methods Used	
Depth	in Feet							Methods Used	
Depth	in Feet							Methods Used	
Depth	in Feet							Methods Used	
Depth From	in Feet							Methods Used	
Depth From	in Feet				Cem	ent	200	Methods Used	
Depth From	in Feet To	Hole in	in.	Clay	PLUGG	SING RECO			
Depth From ection 5	In Feet To	Hole in	tor	Clay	PLUGG	SING RECO		License No	
Depth From ection 5 ame of	To Plugging d Numbe	Hole in	tor	Clay	PLUGG	GING RECO		License No	
Pepth From ection 5 ame of treet and ons of C	To Plugging d Numbe	Hole in	tor	Clay .	PLUGG	City	Ty]	License No State pe of roughage_	
Depth From ection 5 ame of treet and ons of Clugging	Plugging d Numbe	Contract	tor	Clay .	PLUGG	City	Ty	License No State pe of roughage	
Depth From ection 5 ame of treet and ons of C lugging	To Plugging d Numbe	Contract	tor	Clay .	PLUGG	City	Ty Date Plu Cement Plug	License No State pe of roughage gged gs were placed a	
Depth From ection 5 ame of treet and ons of C lugging:	Plugging d Numbe	Contract	tor	Clay .	PLUGG	City	Tyn Date Plu Cement Plu Depth of P	License No State pe of roughage gged s were placed a	
Depth From ection 5 ame of treet and ons of C lugging:	Plugging d Numbe	Contracter	tor	Clay . Tons of R Basin Sup	PLUGG	GING RECO	Tyn Date Plu Cement Plu Depth of P	License No	
Depth From ection 5 ame of treet and ons of C lugging:	Plugging d Number that used approved	Contract	tor	Clay	PLUGG	GING RECO	Tyn Date Plu Cement Plu Depth of P	License No	
ection 5 fame of treet and fons of C lugging	Plugging d Number clay used method used approved	Contract I by:	tor	Clay . Fons of R Basin Sup	PLUGG	GING RECO	Tyn Date Plu Cement Plu Depth of P	License No	19s follows:
Pepth From ection 5 fame of treet and ons of C lugging :	Plugging d Number clay used method used approved	Contract	tor	Clay . Fons of R Basin Sup	PLUGG	GING RECO	Tyn Date Plu Cement Plu Depth of P	License No	

1

Depth in Feet		Thickness	Color	Two of Material Presuntates
rom	To	in Feet	Color Type of Material Encountered	Type or material Encountered
0	2	2	Brown	Send
2	20	18	White	. Caliche
20	110	90	Brown	Sand
110	250	410	Red	Clny & Shnle
520	540	20	Erown	Hater Sand
540	625	85	Red	Chale & Sand
625	645	20	Brown	water Sand
645	660	7 25	Red	Shale
660	675	15	Brown	Water Sand
675	680	5	Red	Clay
				
		 		
		 		3,550,1
		 		LS Elev
		 		Flav of K Tre 3442
	<u></u>	 		
				Loc. No. 20.33.5.3432
				Hydro Survey Field Check X
				SOURCE OF ALTITUDE GIVEN
				Interpolated from Topo. Sheet X
				Determined by Inst. Leveling
				Other
		 		

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described well.

Bros. By Marull (Eb

f,

FALCON CREEK RESOURCES, INC.

621 17th Street, Suite 1800, Denver, Colorado 80293-0621

(303) 675-0007 (303) 675-0008 Facsimile

January 27, 1999

Oil Conservation Division 2040 Pacheco St. Santa Fe, New Mexico 87505

RE: Application for Authorization to Inject West Teas Field Section 4, 9 & 15, T20S, R33E Lea County, New Mexico



Please find enclosed several wellbore diagrams. After further investigation, we found a few changes to these diagrams, please replace the current diagram in our application to inject.

Please advise if you have any questions, or need additional information. We appreciate your prompt attention with this matter.

Sincerely.

Jaylene Roope

Sr. Operations Technician

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Yates Y1 Perfs:

Lea 6015 ARC Federal #1 West Teas Field "O" Section 9, T20S, R33E Lea County, New Mexico DF: 3,550'

Top of cmt plug 733'

12-1/4" Hole 1357' - 9-5/8" Casing, cmt w/ 450 sx to surface **Initial Completion**

Spud 4-3-60 Perf Yates 3199-3214 Acidize w/ 500 gals, Sqzd w/ 175 sx Perf 3252'-3264' Acidize w/ 250 gals, Sqzd w/ 50 sx Perf 3199'-3215', Acidize w/ 250 gals Frac w/ 2000 gals, Sqzd perfs Perf 3122'-3130', Acidize w/ 250 gal Sqzd perfs.

D&A 1/69

Perf Yates 3110'-3117'; 3122'-3130'; 3180',3195', 3199'-3214' - 70 holes Acidize w/ 2500 gals Completed as SWD

12/70

Perf Yates 3054'-3061'; 3066'-3090'; Acidize w/ 3000 gals Converted to WIW

2/75

Set cmt retainer @ 2800' Sqz thru retainer w/45 sx "C" Spotted 225 sx "C"on top of retainer Top of cmt @ 733'. Spotted 10 sx "C" from 40'-surface

2,974' - Top of Liner Est Hole Size: 8"

3,022' - 7" Casing, cmt w/ 450 sx Cmt to Surface, circ 275 cu ft

3,054' - 3,061' 3,066' - 3,090'

Yates Y2 Perfs: 3,110' - 3,117'

Yates Y3 Perfs: 3,122' - 3,130'

3,180' - 3,195' 3,199' - 3,214'

Yates Y3 Perfs:

3,199' - 3,214' sqz w/ 175 sx 3,252' - 3,264' sqz w/ 50 sx

Est Hole Size: 6-1/4" 3,300' - 5-1/2" Liner, cmt w/50 sx Cmt to Top of Liner

1220' - 8-5/8" Casing, cmt to surface w/ 600 sx Est TOC @ 2705' Est. Hole Size: 8" 2955' - 7" Casing, cmt to w/ 25 sx Yates Y1 Perfs: 2,970' - 3,040' Yates Y2 Perfs: 3.085' - 3.096' w/ 1 JSPF - 63 holes Yates Y3 Perfs: 3,171' - 3,185' Sqz w/ 300 sx 3210' - CIBP Seven Rivers Perfs: 3,219' - 3,223' Est Hole Size: 6-1/2"

Atlantic State #1 West Teas Field "C" Section 16, T20S, R33E Lea County, New Mexico GL: 3,540'; KB: 3,542'

Initial Completion

Spud well 12-21-61 Perf Seven Rivers 3,219'-3,223' IPP: 90 BO, 10 BW (90% oil) Set CIBP @ 3210 Perf Yates Y3 @ 3171'-3185' Acidize w/1250 gals acid Frac w/ 20,000 gal & 20,000# sd IP: 58 BO 8/79 Squeeze Yates @ 3171'-3185 w/300 sxPerf Yates Y2 3085'-3096' Acidize w/ 1000 gals Frac w/ 9000 gal & 14,000# sand Perf Yates Y1 from 2970'-3040' Acidize w/ 2000 gals Frac w/ 20,000 gal & 28,000# sand No new potential 3.3% oil &1 @ 8/79 10/80 Plugged w/ 175 sx from 3110'-1125' 10 sx from 150'to surface 9.5#/gal mud between plugs

All cement information is estimated by calculations

3,260' - 4-1/2" Casing, cmt w/450 sx Cmt to surface, circ out 136 cu ft.

Cmt Plug at surface 1/75 Cmt plug from 1115'-1430' 1,303' - 9-5/8" Casing, cmt w/ 710 sx to surface 12/82 65 sx cmt plug from 2823-2858' 2858' - CIBP 2,901' - Top of Liner Est Hole Size: 8" 2,955' - 7" Casing, cmt w/ 450 sx Cmt to surface, and 280 cu ft circ. Yates Y1 & Y2 Perfs: 3,016' - 3,092' 3,112' - PBTD Yates Y3 Perfs: 3,166' - 3,195' Est Hole Size: 6-1/4" 3,260' - 5-1/2" Liner, cmt w/ 35 sx Circ to Top of Liner

State Lea "886" #3 West Teas Field "E" Section 16, T20S, R33E Lea County, New Mexico GL: 3,531'; KB: 3,540'

Initial Completion

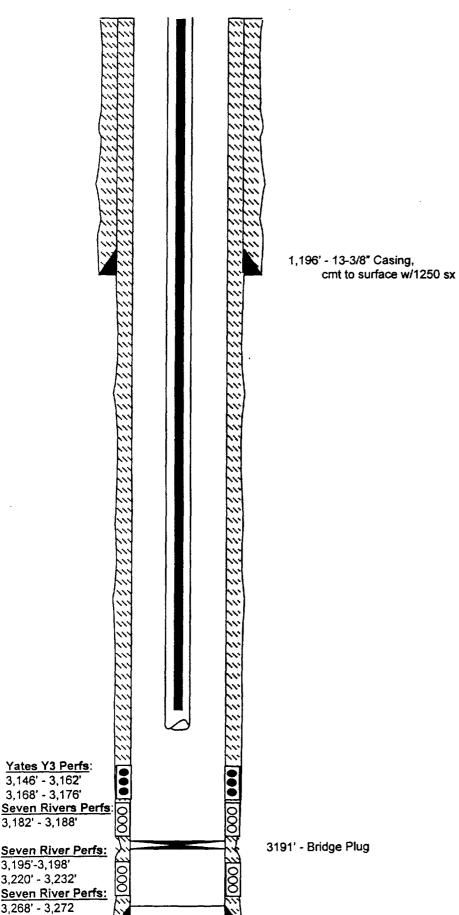
Spud well 4-60 Perf Yates Y3 from 3166'-3195' Acidize w/ 500 gal mud acid Spotted 30 sx "H" 2900-3226' Spotted 250 sx "C" 3226'-677' Spot 10 sx cmt plug @ 35' to surface Drld out cmt plugs and plug back to 3,112'

Perf Yates Y1 & Y2 3016' - 3092' Frac 28,000 gal & 36,000# IPP: 20 BOPD

Frac well w/ 6000 gal PSD gel in 2% KCI w/ 18000# 20/40 and 10/20 sand IPP: 15 BOPD, 2 BWPD

Ran CIBP to 2858' Spotted 65 sx "C" on top of CIBP 35' Spotted 58 sx "C" from 1115'-1430' Spotted 10 sx "C" at surface

All Cementing information is estimated by calculations.



3,146' - 3,162' 3,168' - 3,176'

3,182' - 3,188'

3,195'-3,198' 3,220' - 3,232'

3,268' - 3,272

886 State #1 West Teas Field "F" Section 16, T20S, R33E Lea County, New Mexico GL: 3,537'; KB: 3,549'

Initial Completion

Spud well 11-13-59 DST 3049'-3069, Op 30 min rec 490' mud DST 3150-3215' Op 45 min, rec 1440' OCM & 1385 MCD, no pressure Perf Y3 3146'-3162'; 3168'-3176' Perf 7Rivers 3195'-3198'; 3220'-3232' Acidize 3220-3232' w/ 500 gal acid IPP 596 BOPD (All zones) Shackelford Re-entry

Acidize 3146'-3176' w/ 500 gal acid 2/75

Sqz Perfs w/ 35 sx "C" Spotted 130 sx "C" from 1200'-2817' Spotted 10 sx from 40-surface 3/95

Perf Seven Rivers 3268'-3273' Acidize w/ 500 gal 15% NeFe Set BP @ 3191' Perf 7 Rivers 3182'-3188' IPP: 67 BOPD; 120 BWPD (36% oil)

All Cement Information is estimated by Calculations

Est Hole Size: 7-7/8" 3,325' - 5-1/2" Casing, cmt w/850 sx Class Cmt to Surface, Circulate 423 cu ft.

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State BF #2 West Teas Field "K" Section 16, T20S, R33E Lea County, New Mexico GL: 3,536'; KB: 3,545'

Initial Completion

Perf Yates Y2, Yates Y3 & Seven Rivers 3,094'-3,220'

Acidized w/ 100 gal XLST acid Frac w/ 15,000 gal lease crude, 15,000# sd w/ 250# mothballs after 7500 gal w/ 1/20# adomite / gal

Frac w/ 10,000 gal lease crude, 10000# sd thru 3179-3209'.

8/78

Perf Y1 2980' - 3041' - 25 holes Acidize w/ 90 bbls 2% KCI

Frac 7 Rivers w/ 20,000 gal gelled crude 18,000# sd & 20000 gal 15% HCI

Perf Seven Rivers 3223' - 3233' 2 JSPF Acidize w/ 1000 gal 15% HCI

100% water

Set CIBP @ 3214'

Perf 3210'-3213' 2 JSPF

Acidize w/ 1000 gal 15% HCI

Set CIBP @ 2998'

(Prod. Y1 only, no prod. after)

8/96

Convert to SWD

10/96

Push CIBP to bottom of hole

5/97

Pump 1000 sx cement plug

Top of Cmt @ 100' set 20 sx plug at surfac

Well P&A

2898 - Top of Liner 2951' - 7", 20#, J-55 Casing, cmt to surface w/ 750 sx

12-1/4" Hole

1240' - 9-5/8", 36#, Casing,

cmt to surface w/ 600 sx

Cement Information is from State Reports

Y1 Perfs: 2.980' - 3.041'

Y2, Y3 & 7 Rivers Perfs 3,094' - 3,220' w/ 4 JSPF

Seven Rivers Perfs: 3,210' - 3,213' 3,223' - 3,233 (wet) w/ 1 JSPF

CIBP - Pushed to bottom

3,225' - 5", 15#, J-55 Liner

Spud 10-9-64 9/82 1,262' - 8-5/8" Casing, 9/83 cmt w/ 375 sx to surface Cmt Plug @ 1356'-1456' 2,636' - Top of Liner Cement Plug @ 2700' 35 sx Hole Size: 8" 2,886' - 7" Casing, cmt w/ 25 sx - Initial Perf 7" casing and cmt w/ 250 sx to surface CIPB @ 3070' w/ 25 sx on top

Yates Perfs: 3,098'-3,116'

Seven Rivers OH: 3,222' - 3,230'

Hole Size: 6-1/2"

3,222' - 4-1/2" Liner, cmt w/65 sx Cmt to Top of Liner

Squeeze OH w/ 200 sx "C"

Snyder #1 West Teas Field "J" Section 16, T20S, R33E Lea County, New Mexico GL: 3,542'; DF: 3,546'

Initial Completion

OH Seven Rivers from 3222'-3230' IP: 42 BO Perf 3098-3116'

Acidize w/ 2000 gal MOD 202. Frac w/ 30,000gal gelled 2 % KCl, 30000 gal C02 w/ 67,000# 8/12 sd

IPP: 100 BLW w/ 20% oil

CIPB @ 3050 w/ 25 sx cmt Spot 36 sx @ 2700'

Spot 35 sx plug @ 1456'-1356'

Spot 10 sx @ surface

All Cement Information is from state reports