



STATE OF NEW MEXICO
 ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
 OIL CONSERVATION DIVISION



BRUCE KING
 GOVERNOR

ANITA LOCKWOOD
 CABINET SECRETARY

POST OFFICE BOX 2088
 STATE LAND OFFICE BUILDING
 SANTA FE, NEW MEXICO 87504
 (505) 827-5800

October 5, 1994

WFX-614
 PDEV0020600614

Cross Timbers Operating Company
 P.O. Box 52070
 Midland, Texas 79710

Attn: Mr. Ray F. Martin

RE: *Injection Pressure Increase Southeast Maljamar Grayburg San Andres Unit Waterflood Project Lea County, New Mexico*

Dear Mr. Martin:

Reference is made to your request dated September 29, 1994 to increase the surface injection pressure on the above referenced well. This request is based on a step rate test conducted on September 8, 1994. The results of the test have been reviewed by my staff and we feel an increase in injection pressure on this well is justified at this time.

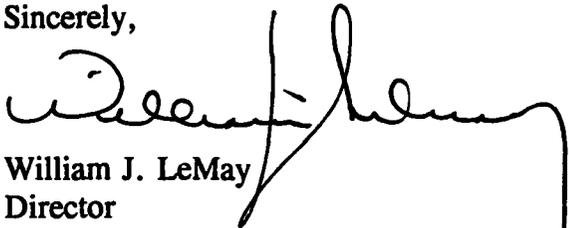
You are therefore authorized to increase the surface injection pressure on the following well:

Well and Location	Maximum Injection Surface Pressure
Southeast Maljamar Grayburg San Andres Tract 9, No.2 Unit A, Section 32, Township 17 South, Range 33 East	1825 PSIG
This well located in Lea County, New Mexico.	

Injection Pressure Increase
Cross Timbers Operating Company
October 5, 1994
Page 2

The Division Director may rescind this injection pressure increase if it becomes apparent that the injected water is not being confined to the injection zone or is endangering any fresh water aquifers.

Sincerely,



William J. LeMay
Director

WJL/BES

cc: Oil Conservation Division - Hobbs
Files: WFX-614; PSI-X 3rd QTR 94
R. Brown



Cross Timbers Operating Company

OIL CONSERVATION DIVISION
RECEIVED

1994 OCT 4 AM 8 52

CASE 3462
R 3134

September 29, 1994

Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87504

Re: Step Rate Test
SMGSAU TR 9 #2
A-32-175-33E
API# 30-025-01353

Attached are the results of the Step Rate Test conducted on 9/8/94 by John West Engineering on the above referenced well. The injection rate versus wellhead pressure plot indicates that a wellhead pressure of 2,200 psig is required to fracture the reservoir. Based the fracture pressure determined for this well, Cross Timbers Operating Company requests that the approved injection pressure limit currently 810 psig be increased to ~~2,100~~ 1825 psig.

If you have any questions, please contact me at 915/682-8873.

Sincerely,

CROSS TIMBERS OPERATING COMPANY

Ray F. Martin
Operations Engineer

RFM/bu
Enclosures

cc: RFM File
Well File
OCD District I

WFX 614

WEST-TEST, INC.
 A SUBSIDIARY OF JOHN WEST ENGINEERING COMPANY
 Hobbs, New Mexico

SEP 13 1994

STEP RATE INJECTION TEST

CLIENT: CROSS TIMBERS OPERATING COMPANY

DATE: SEPTEMBER 8, 1994

WELL NAME: S.M.G.S.A.U. TR.9 NO. 2
 LEA COUNTY, NEW MEXICO

WO#: 94-14-1507

OPEN HOLE = 4050-4500

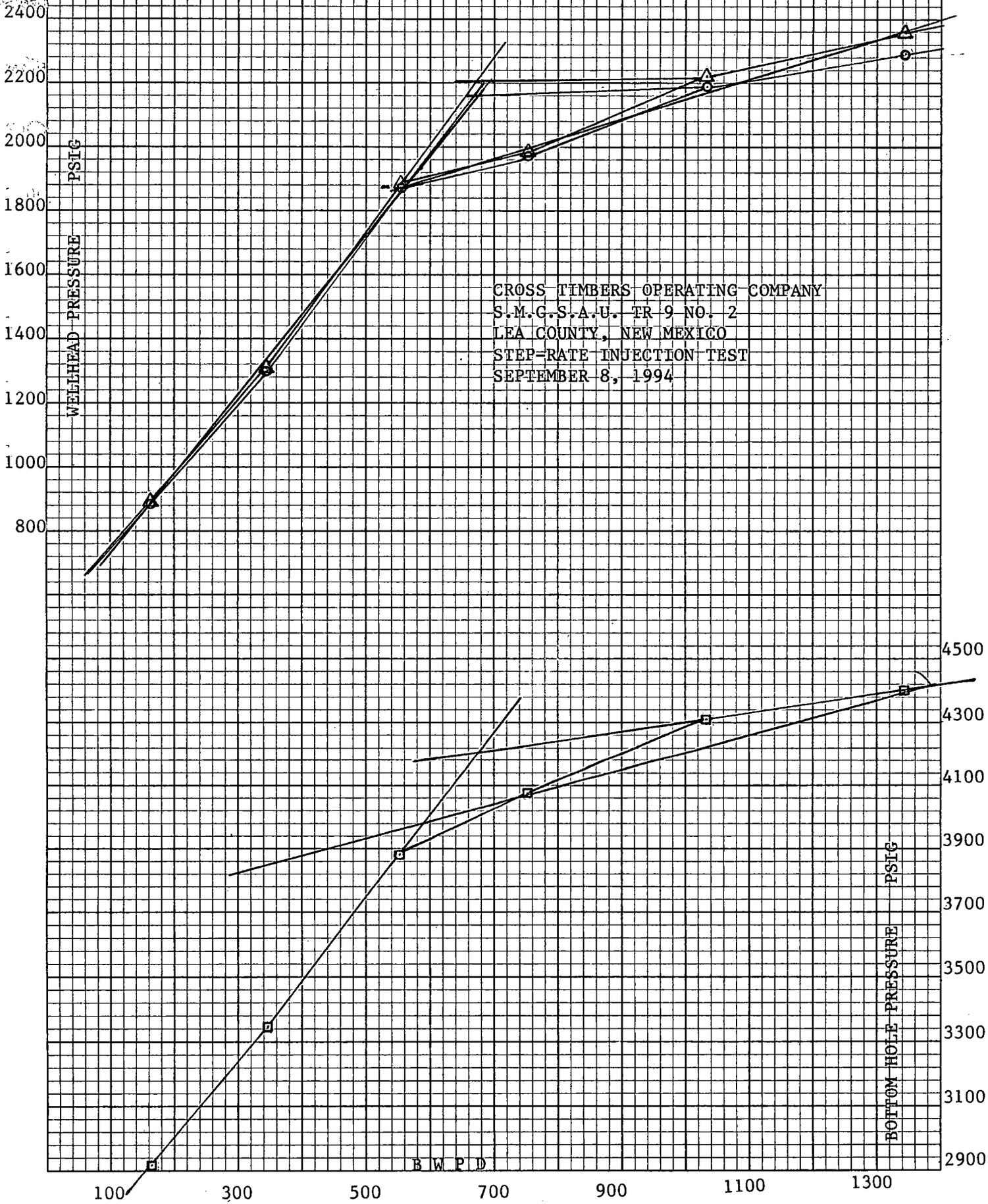
PACKER DEPTH = 3988

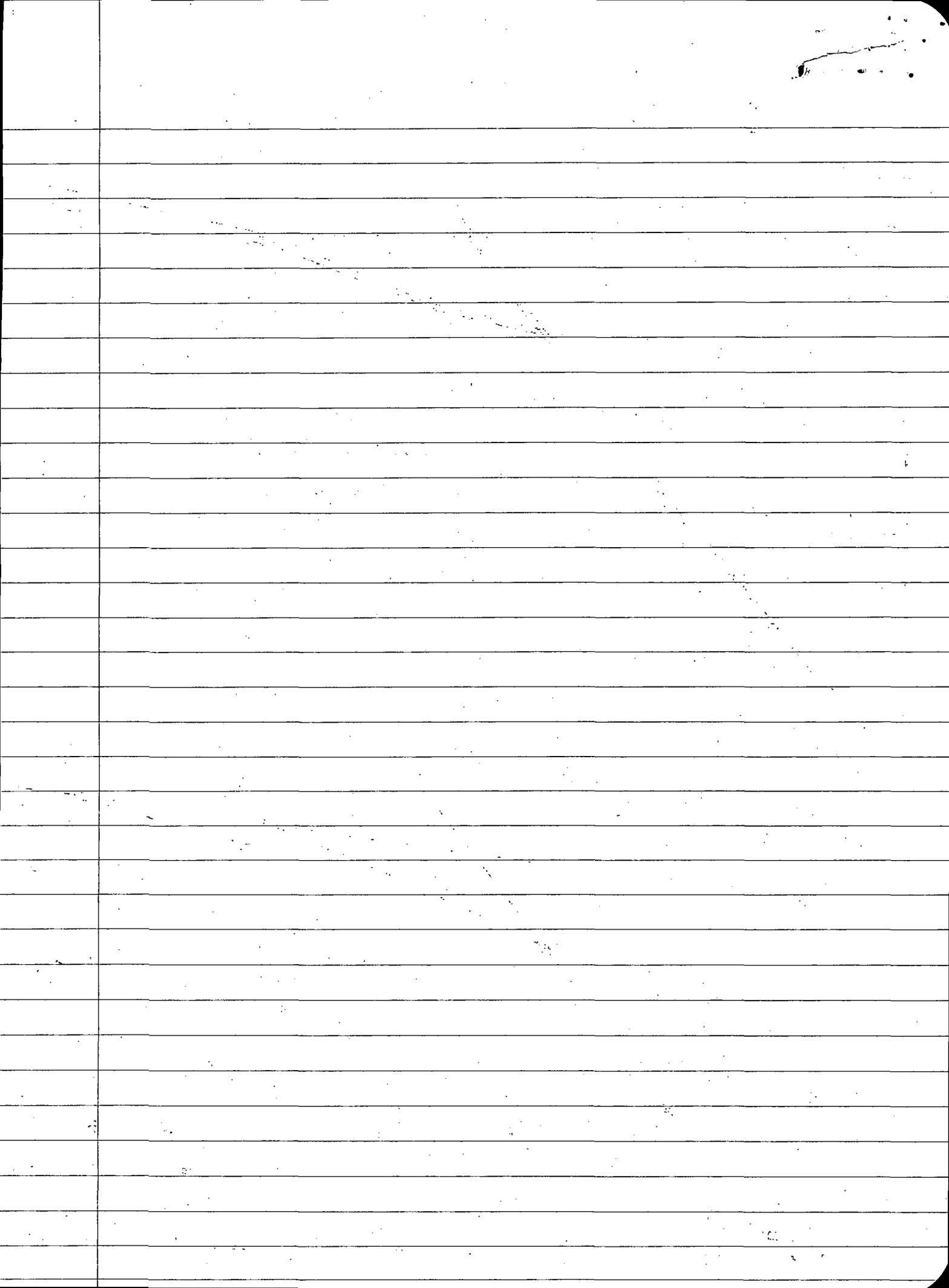
BHP GAUGE DEPTH = 4275

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2857	(7) MEASURED BHP (psi)
	9:40	245.8				245.8		2262.8
	9:45	759.8	0.7	201.6	1.677	758.1	5.88	2790.7
	9:50	843.7	1.2	144.0	0.900	842.8	4.20	2869.1
1	9:55	883.5	1.7	144.0	0.900	882.6	4.20	2914.8
				163.2				
	10:00	1216.4	3.0	374.4	5.273	1211.1	10.92	3236.5
	10:05	1287.6	4.2	345.6	4.547	1283.1	10.08	3308.5
2	10:10	1317.4	5.3	316.8	3.871	1313.5	9.24	3342.6
				345.6				
	10:15	1619.3	7.3	576.0	11.699	1607.6	16.80	3641.8
	10:20	1712.0	9.2	547.2	10.639	1701.4	15.96	3725.6
3	10:25	1881.5	11.1	547.2	10.639	1870.9	15.96	3878.6
				556.8				
	10:30	1922.8	13.8	777.6	20.382	1902.4	22.68	3989.6
	10:35	1968.5	16.3	720.0	17.677	1950.8	21.00	4037.2
4	10:40	1987.0	19.0	777.6	20.382	1966.6	22.68	4072.5
				758.4				
	10:45	2200.2	22.7	1065.6	36.509	2163.7	31.08	4265.5
	10:50	2225.8	26.3	1036.8	34.704	2191.1	30.24	4295.7
5	10:55	2225.8	29.8	1008.0	32.942	2192.9	29.40	4302.0
				1036.8				
	11:00	2362.2	34.5	1353.6	56.834	2305.4	39.48	4413.2
	11:05	2339.5	39.2	1353.6	56.834	2282.7	39.48	4395.8
6	11:10	2339.5	43.8	1324.8	54.617	2284.9	38.64	4402.9
				1344.0				

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbls)	(3) INJECTION RATE (bbls/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1) - (4)	(6) INJECTION RATE (gpm) (3)/34.2657	(7) MEASURED BHP (ps)
FALLOFF	11:11	1692.6				1692.6		3835.0
	11:12	1564.4				1564.4		3700.8
	11:13	1466.2				1466.2		3597.4
	11:14	1383.7				1383.7		3511.0
	11:15	1315.4				1315.4		3438.3
	11:20	1089.1				1089.1		3201.0
	11:25	955.6				955.6		3058.9

- △ RECORDED WELLHEAD PRESSURE
- CORRECTED WELLHEAD PRESSURE BASED ON 2-3/8" TUBING
- BOTTOM HOLE PRESSURE AT 4275 FEET







OIL CONSERVATION DIVISION
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STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

'94 OCT 17 AM 8 52 HOBBS DISTRICT OFFICE

October 12, 1994

BRUCE KING
GOVERNOR

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88240
(505) 393-6161

OIL CONSERVATION DIVISION
P.O. BOX 2088
SANTA FE, NEW MEXICO 87504-2088

RE: APPLICATION FOR PRESSURE LIMIT INCREASE FOR DISPOSAL & INJECTION WELLS

Gentlemen:

I have examined the step rate test for the:

Cross Timbers Operating Co.	SMGSAU Tr 9 #2-A	32-17-33
Operator	Lease & Well No.	Unit S-T-R

and my recommendations are as follows:

Rec 1800 PSI - AS LIMIT

Very truly yours

Jerry Sexton
Supervisor, District I

/bp

