



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

November 8, 1993

Yates Drilling Company
104 South Fourth Street
Artesia, NM 88210

**RE: Injection Pressure Increase Cactus Queen Unit,
Chaves County, New Mexico**

Dear Sirs:

Reference is made to your request dated October 4, 1993 to increase the surface injection pressure on five wells in your Cactus Queen Unit. This request is based on step rate tests conducted on these wells between September 21 and September 23, 1993. The results of the tests have been reviewed by my staff and we feel an increase in injection pressure on these wells is justified at this time.

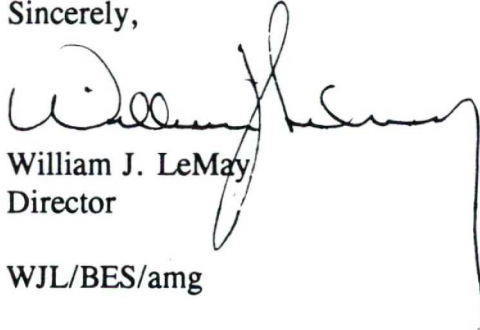
You are therefore authorized to increase the surface injection pressure on the following wells:

Well and Location	Maximum Injection Surface Pressure
Cactus Queen Unit Well No. 7 Unit E, Section 34, Township 12 South, Range 31 East	980 psig
Cactus Queen Unit Well No. 9 Unit G, Section 34, Township 12 South, Range 31 East	1210 psig
Cactus Queen Unit Well No. 10 Unit L, Section 34, Township 12 South, Range 31 East	1100 psig
Cactus Queen Unit Well No. 12 Unit J, Section 34, Township 12 South, Range 31 East	1510 psig
Cactus Queen Unit Well No. 13 Unit M, Section 34, Township 12 South, Range 31 East	1220 psig
All wells located in Chaves County, New Mexico.	

Injection Pressure Increase
Yates Drilling Company
November 8, 1993
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,

A handwritten signature in black ink, appearing to read 'William J. LeMay', with a long horizontal stroke extending to the right.

William J. LeMay
Director

WJL/BES/amg

cc: Oil Conservation Division - Hobbs
File: Case No. 10642

NO WAITING PERIOD

COMPANY: **YATES DRILLING COMPANY**
ADDRESS: **104 South 4th Street**
CITY, STATE, ZIP: **Artesia, New Mexico 88210**
ATTENTION: **Mr. T.L. Frazier**

Re: **Injection Pressure Increase**
Cactus Queen Unit
Chaves County, New Mexico

Dear Sir:

Reference is made to your request dated **October 4, 1993**, to increase the surface injection pressure on **5 wells in your Cactus Queen Unit**. This request is based on step rate tests conducted on these wells between **September 21**, and **September 23, 1993**. The results of the tests have been reviewed by my staff and we feel an increase in injection pressure on these wells is justified at this time.

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

<u>Well & Location</u>	<u>Maximum Injection Surface Pressure</u>
Cactus Queen Unit Well No.7 Unit E, Section 34, T12S, R31E	980 psig
Cactus Queen Unit Well No.9 Unit G, Section 34, T12S, R31E	1210 psig
Cactus Queen Unit Well No.10 Unit L, Section 34, T12S, R31E	1100 psig
Cactus Queen Unit Well No.12 Unit J, Section 34, T12S, R31E	1510 psig
Cactus Queen Unit Well No.13 Unit M, Section 34, T12S, R31E	1220 psig

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.

William J. LeMay
Director

WJL/BES

xc: **OCD - Hobbs**
 FILE - Case File 10642



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE
October 7, 1993

OIL CONSERVATION DIVISION
RECEIVED
93 OCT 12 AM 9 58

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:

Yates Drilling Company	Cactus Queen Unit 7-E	34-12-31
Operator	Lease & Well No. Unit	S-T-R

and my recommendations are as follows:

Oil

Very truly yours

Jerry Sexton
Jerry Sexton
Supervisor, District I

/bp

980

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

WELL API NO. 30-005-20959
5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)	
1. Type of Well: OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER Water Injection Well	7. Lease Name or Unit Agreement Name Cactus Queen Unit
2. Name of Operator Yates Drilling Company	8. Well No. 7
3. Address of Operator 105 South 4th Street, Artesia, NM 88210	9. Pool name or Wildcat SE Chaves Qn Gas Area Assoc,
4. Well Location Unit Letter <u>E</u> : <u>1650</u> Feet From The <u>North</u> Line and <u>990</u> Feet From The <u>West</u> Line Section <u>34</u> Township <u>12S</u> Range <u>31E</u> NMPM <u>Chaves</u> County	
10. Elevation (Show whether DF, RKB, RT, GR, etc.)	

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data	
NOTICE OF INTENTION TO:	SUBSEQUENT REPORT OF:
PERFORM REMEDIAL WORK <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>
PLUG AND ABANDON <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	PLUG AND ABANDONMENT <input type="checkbox"/>
OTHER: Request increase in Allowable Injection Pressure <input checked="" type="checkbox"/>	CASING TEST AND CEMENT JOB <input type="checkbox"/>
	OTHER: <input type="checkbox"/>

12. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

We recently authorized a step-rate test to be conducted on the subject well by John West Engineering Company of Hobbs, NM. The results of this test are attached. We are requesting that our maximum allowed injection pressure be raised to a level justified by the test.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE John West TITLE Petroleum Engineer DATE 10-4-93
TYPE OR PRINT NAME _____ TELEPHONE NO. _____

(This space for State Use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

RECEIVED

OCT 06 1993

PROBES
OFFICE

JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: YATES DRILLING COMPANY

DATE: SEPTEMBER 22, 1993

WELL NAME: CACTUS QUEEN UNIT NO. 7
CHAVES COUNTY, NEW MEXICO

WO#: 93-14-1800

MID-PERFS. = 2754 - 2760

PACKER DEPTH =

BHP GAUGE DEPTH = 2757

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)
1	9:10	17.1				17.1		1203
	9:15	29.9	2.3	662.4	11.101	18.8	19.32	1225
	9:20	75.5	4.6	662.4	11.101	64.4	19.32	1265
	9:25	99.7	7.0	691.2	12.010	87.7	20.16	1294
2				671.9				
	9:30	312.1	10.7	1065.6	26.750	285.3	31.08	1488
	9:35	355.1	14.4	1065.6	26.750	328.3	31.08	1526
	9:40	388.0	18.0	1036.8	25.428	362.6	30.24	1554
3				1056.0				
	9:45	610.1	23.2	1497.6	50.207	559.9	43.68	1761
	9:50	624.0	28.3	1468.8	48.435	575.6	42.84	1800
	9:55	651.8	33.5	1497.6	50.207	601.6	43.68	1829
4				1488.0				
	10:00	871.3	40.0	1872.0	75.866	795.4	54.60	2011
	10:05	886.5	46.4	1843.2	73.721	812.8	53.76	2038
	10:10	909.2	52.9	1872.0	75.866	833.3	54.60	2051
5				1862.4				
	10:15	1082.3	60.7	2246.4	106.300	976.0	65.52	2181
	10:20	1082.3	68.7	2304.0	111.397	970.9	67.20	2205
	10:25	1111.4	76.4	2217.6	103.792	1007.6	64.68	2229
6				2256.0				
	10:30	1231.6	85.8	2707.2	150.122	1081.5	78.96	2310
	10:35	1267.1	95.1	2678.4	147.181	1119.9	78.12	2341
	10:40	1297.5	104.5	2707.2	150.122	1147.4	78.96	2355
7				2697.6				
	10:45	1415.2	115.5	3168.0	200.786	1214.4	92.40	2436
	10:50	1467.1	126.5	3168.0	200.786	1266.3	92.40	2470
	10:55	1484.8	137.6	3196.8	204.176	1280.6	93.24	2494
				3177.6				

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OCT 06 1993

OCD HOBBS
OFFICE

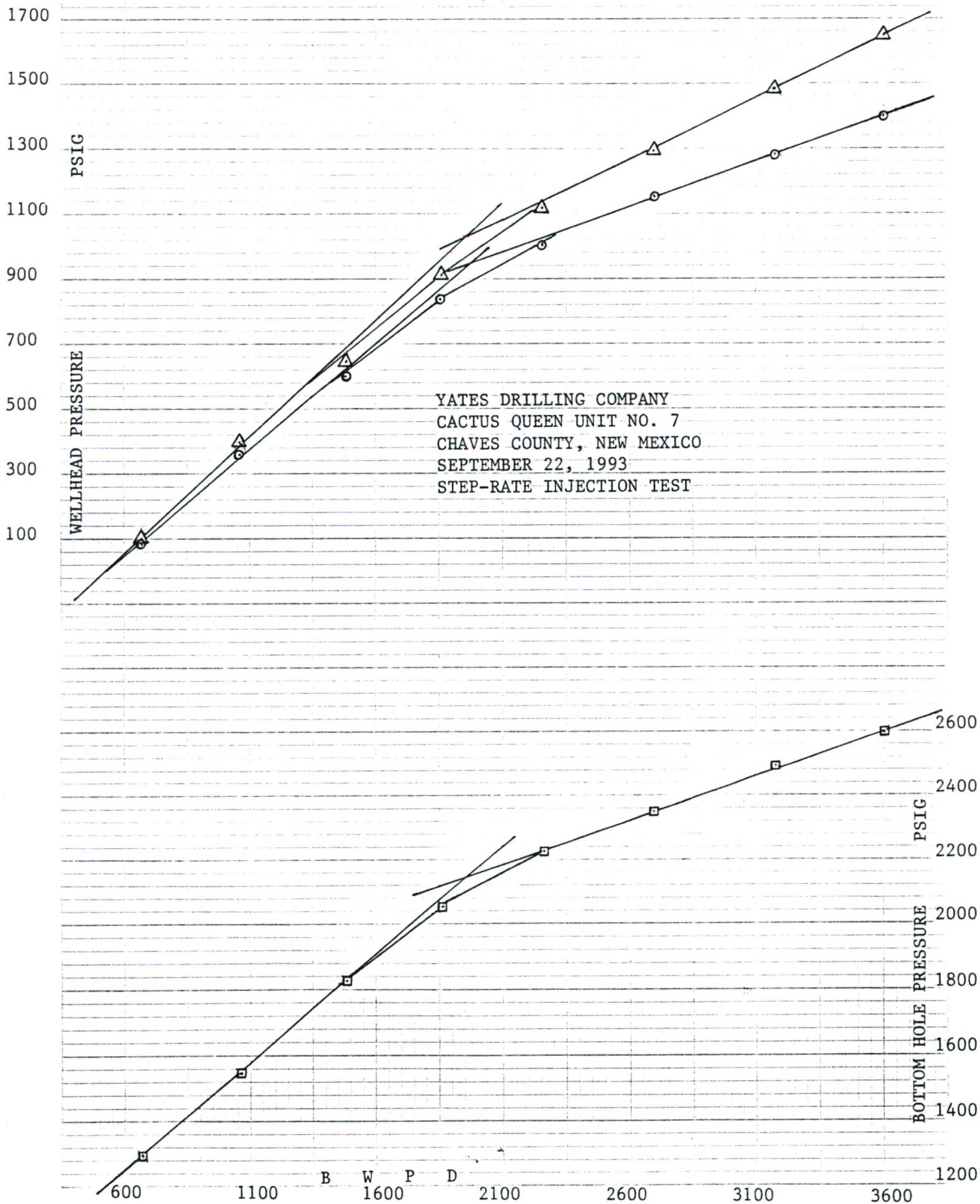
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
STEP NO. & REMARKS	TIME	SURFACE TUBING PRESS. (psig)	CUMMULATIVE VOL. INJECTED (bbls)	INJECTION RATE (bbls/day)	FRICTION HEAD LOSS (psi)	CORRECTED TUBING PRESS. (psi) (1)-(4)	INJECTION RATE (gpm) (3)/34.2957	MEASURED BHP (psi)
8 FALLOFF	11:00	1615.2	150.0	3571.2	250.604	1364.6	104.16	2566
	11:05	1616.4	162.7	3657.6	261.936	1354.5	106.68	2585
	11:10	1656.9	175.1	3571.2 3600.0	250.604	1406.3	104.16	2599
	11:11	1189.9				1189.9		2424
	11:12	1111.4				1111.4		2358
	11:13	1062.1				1062.1		2302
	11:14	1015.3				1015.3		2254
	11:15	985.0				985.0		2210
	11:20	805.9				805.9		2034
	11:25	689.9				689.9		1911

RECEIVED

OCT 06 1993

OCD HOBBS
OFFICE

- △ RECORDED WELLHEAD PRESSURE
- CORRECTED WELLHEAD PRESSURE BASED ON 2 3/8" TUBING
- BOTTOM HOLE PRESSURE @ 2757 FEET



RECEIVED

OCT 06 1993

JOHNS
OFFICE



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE
October 7, 1993

OIL CONSERVATION DIVISION
RECEIVED
1993 OCT 12 AM 9 58

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:

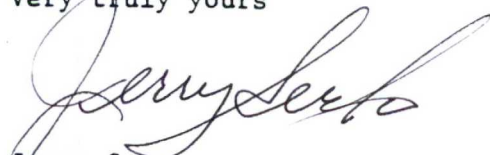
Yates Drilling Company	Cactus Queen Unit 9-G	34-12-31
Operator	Lease & Well No.	Unit
		S-T-R

and my recommendations are as follows:

OK

1210

Very truly yours


Jerry Sexton
Supervisor, District I

/bp

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

WELL API NO. 30-005-20972
5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No.
7. Lease Name or Unit Agreement Name Cactus Queen Unit
8. Well No. 9
9. Pool name or Wildcat SE Chaves Qn Gas Area Assoc,
10. Elevation (Show whether DF, RKB, RT, GR, etc.)

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A
DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT"
(FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well:
OIL WELL ☐ GAS WELL ☐ OTHER Water Injection Well

2. Name of Operator
Yates Drilling Company

3. Address of Operator
105 South 4th Street, Artesia, NM 88210

4. Well Location
Unit Letter G : 1980 Feet From The North Line and 1980 Feet From The East Line
Section 34 Township 12S Range 31E NMPM Chaves County

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	PLUG AND ABANDONMENT <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>		CASING TEST AND CEMENT JOB <input type="checkbox"/>	
OTHER: Request increase in Allowable Injection Pressure <input checked="" type="checkbox"/>		OTHER: <input type="checkbox"/>	

12. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

We recently authorized a step-rate test to be conducted on the subject well by John West Engineering Company of Hobbs, NM. The results of this test are attached. We are requesting that our maximum allowed injection pressure be raised to a level justified by the test.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE John Rhoad TITLE Petroleum Engineer DATE 10-4-93
TYPE OR PRINT NAME _____ TELEPHONE NO. _____

(This space for State Use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

RECEIVED

OCT 06 1993

WILL HOBBS
OFFICE

JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: YATES DRILLING CO.

DATE: SEPTEMBER 21, 1993

WELL NAME: CACTUS QUEEN UNIT NO. 9

WO#: 93-14-1801

CHAVES COUNTY, NEW MEXICO

MID-PERFS. = 2981 - 2986

PACKER DEPTH =

BHP GAUGE DEPTH = 2983

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)
1	1:40	20.7				20.7		1310
	1:45	99.3	1.7	489.6	6.866	92.4	14.28	1387
	1:50	142.4	3.3	460.8	6.138	136.3	13.44	1432
	1:55	174.0	4.8	432.0	5.447	168.6	12.60	1465
				460.8				
2	2:00	289.0	7.7	835.2	18.442	270.6	24.36	1576
	2:05	360.9	10.6	835.2	18.442	342.5	24.36	1654
	2:10	421.4	13.5	835.2	18.442	403.0	24.36	1715
				835.2				
3	2:15	579.0	17.9	1267.2	39.881	539.1	36.96	1844
	2:20	658.5	22.2	1238.4	38.220	620.3	36.12	1935
	2:25	725.3	26.6	1267.2	39.881	685.4	36.96	2006
				1257.6				
4	2:30	885.4	32.4	1670.4	66.484	818.9	48.72	2125
	2:35	946.0	38.1	1641.6	64.379	881.6	47.88	2200
	2:40	998.9	43.8	1641.6	64.379	934.5	47.88	2254
				1651.2				
5	2:45	1126.7	50.8	2016.0	94.147	1032.6	58.80	2645
	2:50	1178.5	57.9	2044.8	96.650	1081.8	59.64	2399
	2:55	1215.2	64.9	2016.0	94.147	1121.1	58.80	2437
				2025.6				
6	3:00	1331.6	73.8	2563.2	146.807	1184.8	74.76	2506
	3:05	1359.5	82.6	2534.4	143.770	1215.7	73.92	2546
	3:10	1402.5	91.4	2534.4	143.770	1258.7	73.92	2577
				2544.0				
7	3:15	1508.8	102.0	3052.8	202.857	1305.9	89.04	2630
	3:20	1531.6	112.5	3024.0	199.331	1332.3	88.20	2663
	3:25	1573.3	123.2	3081.6	206.412	1366.9	89.88	2687
				3052.8				

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OCT 06 1993

GOV HOBBS
OFFICE

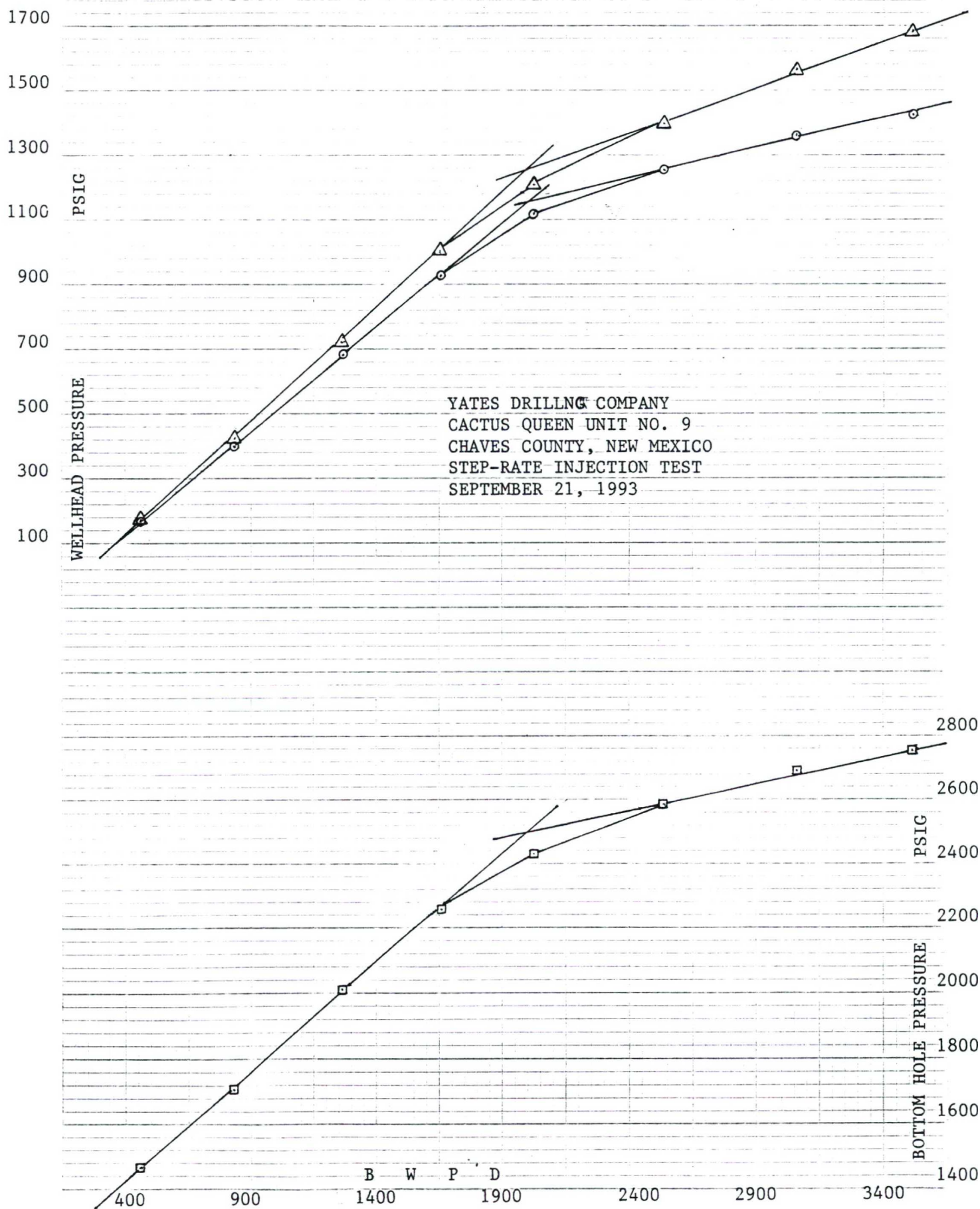
STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbis)	(3) INJECTION RATE (bbis/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2867	(7) MEASURED BHP (psi)
8 FALLOFF	3:30	1685.9	135.2	3456.0	255.188	1430.7	100.80	2722
	3:35	1701.1	147.4	3513.6	263.112	1438.0	102.48	2742
	3:40	1692.2	159.8	3571.2	271.147	1421.1	104.16	2758
				3513.6				
	3:41	1374.5				1374.5		2723
	3:42	1359.3				1359.3		2707
	3:43	1361.8				1361.8		2693
	3:44	1337.8				1337.8		2679
	3:45	1315.0				1315.0		2666
	3:50	1271.9				1271.9		2599
	3:55	1202.3				1202.3		2532

RECEIVED

OCT 06 1993

HOEBS
OFFICE

- △ RECORDED WELLHEAD PRESSURE
- CORRECTED WELLHEAD PRESSURE BASED ON 2 3/8" TUBING
- BOTTOM HOLE PRESSURE @ 2983 FEET



OFFICE
OF THE
SHERIFF

OCT 08 1993

RECEIVED



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE
October 7, 1993

OIL CONSERVATION DIVISION
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BRUCE KING
GOVERNOR

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(505) 393-6161

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SANTA FE, NEW MEXICO 87504-2088

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I have examined the step rate test for the:

Yates Drilling Company	Cactus Queen Unit 10-L	34-12-31
Operator	Lease & Well No. Unit	S-T-R

and my recommendations are as follows:

OK

Very truly yours

Jerry Sexton
Supervisor, District I

/bp

1100

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

WELL API NO. 30-005-20880
5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)	
1. Type of Well: OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER Water Injection Well	7. Lease Name or Unit Agreement Name Cactus Queen Unit
2. Name of Operator Yates Drilling Company	8. Well No. 10
3. Address of Operator 105 South 4th Street, Artesia, NM 88210	9. Pool name or Wildcat SE Chaves Qn Gas Area Assoc,
4. Well Location Unit Letter <u>L</u> : <u>1980</u> Feet From The <u>South</u> Line and <u>660</u> Feet From The <u>West</u> Line Section <u>34</u> Township <u>12S</u> Range <u>31E</u> NMPM <u>Chaves</u> County	
10. Elevation (Show whether DF, RKB, RT, GR, etc.)	

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data	
NOTICE OF INTENTION TO:	SUBSEQUENT REPORT OF:
PERFORM REMEDIAL WORK <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>
OTHER: Request increase in Allowable Injection Pressure <input checked="" type="checkbox"/>	PLUG AND ABANDONMENT <input type="checkbox"/>
	CASING TEST AND CEMENT JOB <input type="checkbox"/>
	OTHER: <input type="checkbox"/>

12. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

We recently authorized a step-rate test to be conducted on the subject well by John West Engineering Company of Hobbs, NM. The results of this test are attached. We are requesting that our maximum allowed injection pressure be raised to a level justified by the test.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE John West TITLE Petroleum Engineer DATE 10-4-93
TYPE OR PRINT NAME _____ TELEPHONE NO. _____

(This space for State Use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

RECEIVED

OCT 06 1993

**OCD HOBBS
OFFICE**

JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: YATES DRILLIN COMPANY

DATE: SEPTEMBER 22, 1993

WELL NAME: CACTUS QUEEN UNIT NO. 10
CHAVES COUNTY, NEW MEXICO

WO#: 93-14-1802

MID-PERFS. = 2718 - 2724

PACKER DEPTH =

BHP GAUGE DEPTH = 2721

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)
1	12:25	7.8				7.8		1233
	12:30	209.0	2.0	576.0	8.460	200.5	16.80	1401
	12:35	216.9	3.8	518.4	6.962	209.9	15.12	1396
	12:40	232.1	5.7	547.2	7.694	224.4	15.96	1409
				547.2				
2	12:45	431.4	8.8	892.8	19.031	412.4	26.04	1610
	12:50	454.1	11.8	864.0	17.911	436.2	25.20	1635
	12:55	475.6	14.8	864.0	17.911	457.7	25.20	1654
				873.6				
3	1:00	686.2	19.1	1238.4	34.863	651.3	36.12	1853
	1:05	721.5	23.5	1267.2	36.378	685.1	36.96	1891
	1:10	746.8	27.8	1238.4	34.863	711.9	36.12	1917
				1248.0				
4	1:15	939.8	33.5	1641.6	58.724	881.1	47.88	2085
	1:20	972.6	39.3	1670.4	60.644	912.0	48.72	2125
	1:25	990.2	45.0	1641.6	58.724	931.5	47.88	2152
				1651.2				
5	1:30	1164.8	52.2	2073.6	90.472	1074.3	60.48	2294
	1:35	1200.2	59.4	2073.6	90.472	1109.7	60.48	2330
	1:40	1239.4	66.4	2016.0	85.878	1153.5	58.80	2355
				2054.4				
6	1:45	1405.2	75.3	2563.2	133.912	1271.3	74.76	2479
	1:50	1436.8	84.0	2505.6	128.399	1308.4	73.08	2513
	1:55	1452.0	92.8	2534.4	131.142	1320.9	73.92	2537
				2534.4				
7	2:00	1605.2	103.4	3052.8	185.040	1420.2	89.04	2631
	2:05	1641.9	114.0	3052.8	185.040	1456.9	89.04	2658
	2:10	1663.4	124.6	3052.8	185.040	1478.4	89.04	2679
				3052.8				

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OCD HOBBS
OFFICE

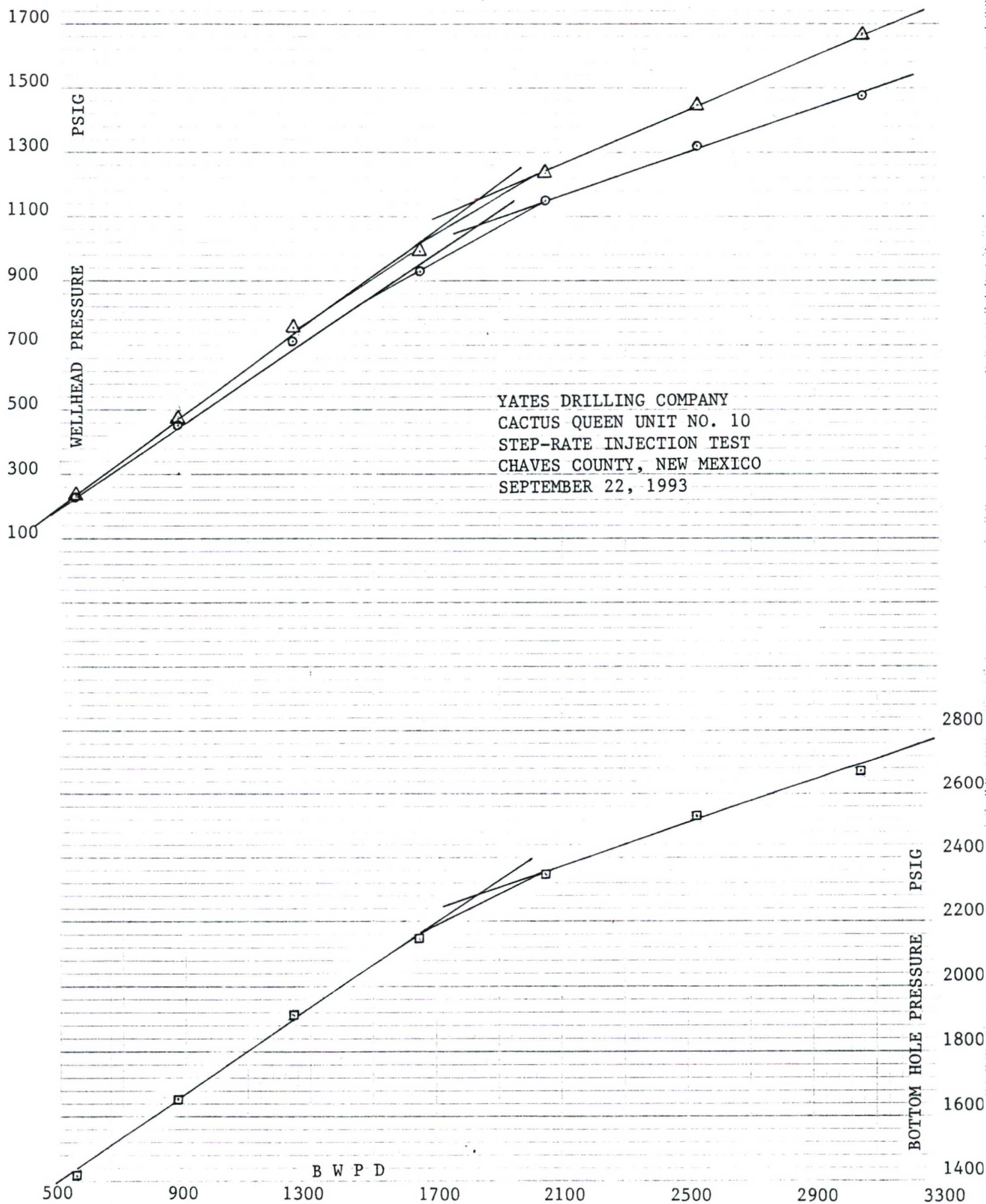
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
STEP NO. & REMARKS	TIME	SURFACE TUBING PRESS. (psig)	CUMMULATIVE VOL. INJECTED (bbis)	INJECTION RATE (bbis/day)	FRICTION HEAD LOSS (psi)	CORRECTED TUBING PRESS. (psi) (1)-(4)	INJECTION RATE (gpm) (3)/34.2857	MEASURED BHP (psi)
FALLOFF	2:11	942.3				942.3		2155
	2:12	715.3				715.3		1921
	2:13	590.5				590.5		1791
	2:14	497.1				497.1		1697
	2:15	422.7				422.7		1619
	2:20	189.2				189.2		1378
	2:25	54.8				54.8		1242

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- △ RECORDED WELLHEAD PRESSURE
- CORRECTED WELLHEAD PRESSURE BASED ON 2 3/8" TUBING
- BOTTOM HOLE PRESSURE @ 2721 FEET



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STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE
October 7, 1993

OIL CONSERVATION DIVISION
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'93 OCT 12 AM 9 58

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:

Yates Drilling Company	Cactus Queen Unit 12-J	34-12-31
Operator	Lease & Well No.	Unit S-T-R

and my recommendations are as follows:

OK

1510

Very truly yours

Jerry Sexton
Jerry Sexton
Supervisor, District I

/bp

Submit 3 Copies
to Appropriate
District Office

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-103
Revised 1-1-89

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

WELL API NO. 30-005-20963
5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No.
7. Lease Name or Unit Agreement Name Cactus Queen Unit
8. Well No. 12
9. Pool name or Wildcat SE Chaves Qn Gas Area Assoc,
10. Elevation (Show whether DF, RKB, RT, GR, etc.)

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A
DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT"
(FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well:
OIL WELL ☐ GAS WELL ☐ OTHER Water Injection Well

2. Name of Operator
Yates Drilling Company

3. Address of Operator
105 South 4th Street, Artesia, NM 88210

4. Well Location
Unit Letter J : 2310 Feet From The South Line and 2310 Feet From The East Line
Section 34 Township 12S Range 31E NMPM Chaves County

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐
PULL OR ALTER CASING ☐
OTHER: Request increase in Allowable Injection Pressure ☒

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ PLUG AND ABANDONMENT ☐
CASING TEST AND CEMENT JOB ☐
OTHER: ☐

12. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

We recently authorized a step-rate test to be conducted on the subject well by John West Engineering Company of Hobbs, NM. The results of this test are attached. We are requesting that our maximum allowed injection pressure be raised to a level justified by the test.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE John West TITLE Petroleum Engineer DATE 10-4-93
TYPE OR PRINT NAME _____ TELEPHONE NO. _____

(This space for State Use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

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OCT 06 1993

OCD HOBBS
OFFICE

JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: YATES DRILLING CO.

DATE: SEPTEMBER 21, 1988

WELL NAME: CACTUS QUEEN UNIT 12
CHAVES COUNTY, NEW MEXICO

WO#: 93-14-1803

MID-PERFS. = 2982 - 2990

PACKER DEPTH =

BHP GAUGE DEPTH = 2986

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) (8)/34.2367	(7) MEASURED BHP (psi)
1	9:30	149.2				149.2		1453
	9:35	284.4	1.2	345.6	3.608	280.8	10.08	1587
	9:40	304.7	2.4	345.6	3.608	301.1	10.08	1608
	9:45	316.1	3.5	316.8	3.072	313.0	9.24	1619
2				336.0				
	9:50	393.2	5.3	518.4	7.639	385.6	15.12	1694
	9:55	418.5	7.1	518.4	7.639	410.9	15.12	1719
	10:00	418.6	8.9	518.4	7.639	411.0	15.12	1772
3				518.4				
	10:05	533.5	11.8	835.2	18.461	515.0	24.36	1836
	10:10	560.1	14.7	835.2	18.461	541.6	24.36	1861
	10:15	577.8	17.6	835.2	18.461	559.3	24.36	1878
4				835.2				
	10:20	699.0	22.0	1267.2	39.921	659.1	36.96	1982
	10:25	734.4	26.2	1209.6	36.629	697.8	35.28	2014
	10:30	754.6	30.5	1238.4	38.258	716.3	36.12	2038
5				1238.4				
	10:35	869.5	36.2	1641.6	64.444	805.1	47.88	2123
	10:40	901.1	41.8	1612.8	62.368	838.7	47.04	2157
	10:45	935.2	47.5	1641.6	64.444	870.8	47.88	2186
6				1632.0				
	10:50	1054.0	54.5	2016.0	94.241	959.8	58.80	2272
	10:55	1071.8	61.5	2016.0	94.241	977.6	58.80	2306
	11:00	1097.2	68.4	1987.2	91.766	1005.4	57.96	2336
7				2006.4				
	11:05	1217.5	76.9	2448.0	134.970	1082.5	71.40	2412
	11:10	1256.7	85.2	2390.4	129.153	1127.5	69.72	2448
	11:15	1285.9	93.6	2419.2	132.047	1153.9	70.56	2477
				2419.2				

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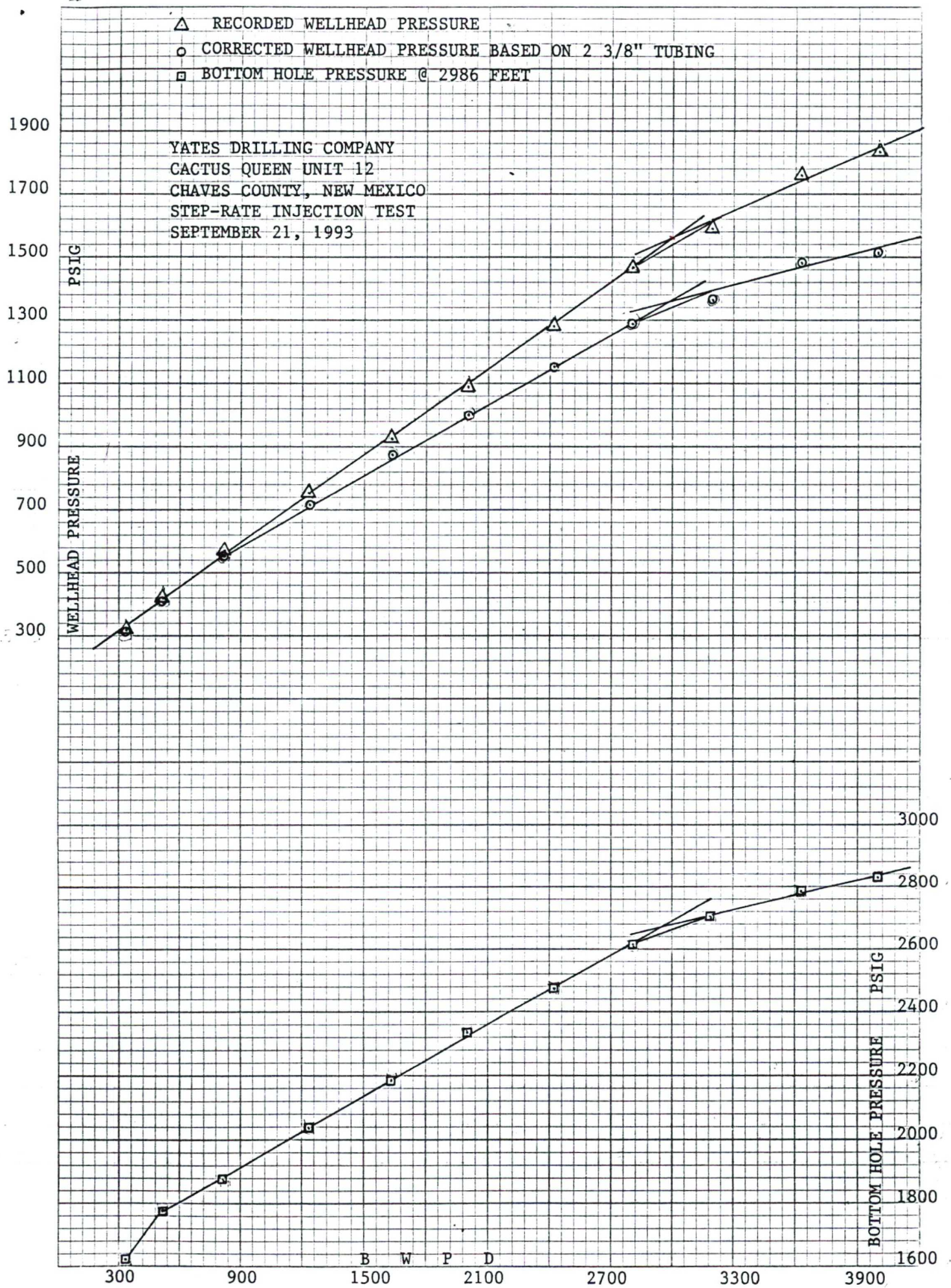
GOO HOBBS
OFFICE

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) (8)/34.2857	(7) MEASURED BHP (psi)
8	11:20	1404.9	103.4	2822.4	175.622	1229.3	82.32	2547
	11:25	1437.8	113.1	2793.6	172.321	1265.5	81.48	2580
	11:30	1465.6	122.9	2822.4	175.622	1290.0	82.32	2607
9				2813.0				
	11:35	1566.9	134.0	3196.8	221.135	1345.8	93.24	2657
	11:40	1591.0	145.0	3168.0	217.464	1373.5	92.40	2682
10	11:45	1587.2	156.1	3196.8	221.135	1366.1	93.24	2705
				3187.2				
	11:50	1703.7	168.7	3628.8	279.574	1424.1	105.84	2748
11	11:55	1726.5	181.3	3628.8	279.574	1446.9	105.84	2768
	12:00	1765.7	193.9	3628.8	279.574	1486.1	105.84	2787
				3628.8				
OUT OF WATER FALLOFF	12:05	1850.5	208.2	4118.4	353.332	1497.2	120.12	2821
	12:10	1837.9	222.1	4003.2	335.265	1502.6	116.76	2837
	12:13							
	12:15	1364.5				1364.5		2698
	12:16	1331.6				1331.6		2666
	12:17	1302.5				1302.5		2637
	12:18	1273.4				1273.4		2607
	12:19	1248.1				1248.1		2579
	12:20	1201.3				1201.3		2555
	12:25	1108.9				1108.9		2451
	12:30	1041.8				1041.8		2377

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OCD HOBBS
OFFICE



N/R



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

October 7, 1993

93 OCT 12 AM 9 58

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:

Yates Drilling Company	Cactus Queen Unit 13-M	34-12-31
Operator	Lease & Well No.	Unit S-T-R

and my recommendations are as follows:

OK

1238 1220

Very truly yours

Jerry Sexton
Supervisor, District I

/bp

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

WELL API NO.
30-005-20942
5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)	
1. Type of Well: OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER Water Injection Well	7. Lease Name or Unit Agreement Name Cactus Queen Unit
2. Name of Operator Yates Drilling Company	8. Well No. 13
3. Address of Operator 105 South 4th Street, Artesia, NM 88210	9. Pool name or Wildcat SE Chaves Qn Gas Area Assoc,
4. Well Location Unit Letter M : 990 Feet From The South Line and 990 Feet From The West Line Section 34 Township 12S Range 31E NMMPM Chaves County	
10. Elevation (Show whether DF, RKB, RT, GR, etc.)	

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data	
NOTICE OF INTENTION TO:	SUBSEQUENT REPORT OF:
PERFORM REMEDIAL WORK <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>
PLUG AND ABANDON <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>
CHANGE PLANS <input type="checkbox"/>	PLUG AND ABANDONMENT <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	CASING TEST AND CEMENT JOB <input type="checkbox"/>
OTHER: Request increase in Allowable Injection Pressure <input checked="" type="checkbox"/>	OTHER: <input type="checkbox"/>

12. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

We recently authorized a step-rate test to be conducted on the subject well by John West Engineering Company of Hobbs, NM. The results of this test are attached. We are requesting that our maximum allowed injection pressure be raised to a level justified by the test.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE John Rhodes TITLE Petroleum Engineer DATE 10-4-93
TYPE OR PRINT NAME _____ TELEPHONE NO. _____

(This space for State Use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

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OCT 06 1993

OGD HOBBS
OFFICE

JOHN WEST ENGINEERING COMPANY

Hobbs, New Mexico

STEP RATE INJECTION TEST

CLIENT: YATES DRILLING COMPANY

DATE: SEPTEMBER 23, 1998

WELL NAME: CACTUS QUEEN NO. 13

WO#: 93-14-1804

CHAVES COUNTY, NEW MEXICO

MID-PERFS. = 2723 - 2730

PACKER DEPTH =

BHP GAUGE DEPTH = 2726

STEP NO. & REMARKS	TIME	(1) SURFACE TUBING PRESS. (psig)	(2) CUMMULATIVE VOL. INJECTED (bbis)	(3) INJECTION RATE (bbis/day)	(4) FRICTION HEAD LOSS (psi)	(5) CORRECTED TUBING PRESS. (psi) (1)-(4)	(6) INJECTION RATE (gpm) (3)/34.2867	(7) MEASURED BHP (psi)
1	8:50	11.1				11.1		1190
	8:55	74.2	2.1	604.8	9.276	64.9	17.64	1252
	9:00	86.9	4.2	604.8	9.276	77.6	17.64	1264
	9:05	89.6	6.4	633.6	10.109	79.5	18.48	1272
				614.4				
2	9:10	249.0	9.8	979.2	22.619	226.4	28.56	1419
	9:15	264.4	13.2	979.2	22.619	241.8	28.56	1440
	9:20	287.2	16.6	979.2	22.619	264.6	28.56	1458
3				979.2				
	9:25	464.0	21.7	1468.8	47.891	416.1	42.84	1618
	9:30	491.8	26.8	1468.8	47.891	443.9	42.84	1646
	9:35	518.3	31.8	1440.0	46.168	472.1	42.00	1668
4				1459.2				
	9:40	688.8	38.6	1958.4	81.543	607.3	57.12	1806
	9:45	724.3	45.4	1958.4	81.543	642.8	57.12	1842
	9:50	758.4	52.1	1929.6	79.339	679.1	56.28	1871
				1948.8				
5	9:55	926.4	60.7	2476.8	125.913	800.5	72.24	2001
	10:00	968.1	69.2	2448.0	123.217	844.9	71.40	2045
	10:05	1002.2	77.7	2448.0	123.217	879.0	71.40	2081
				2457.6				
6	10:10	1171.9	87.8	2908.8	169.528	1002.4	84.84	2201
	10:15	1237.8	98.3	3024.0	182.157	1055.6	88.20	2270
	10:20	1270.7	108.2	2851.2	163.370	1107.3	83.16	2303
				2928.0				
7	10:25	1444.1	120.2	3456.0	233.202	1210.9	100.80	2413
	10:30	1486.0	132.1	3427.2	229.619	1256.4	99.96	2458
	10:35	1518.9	144.0	3427.2	229.619	1289.3	99.96	2490
				3436.8				

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JOHN HOBBS
OFFICE

		(1)	(2)	(3)	(4)	(5)	(6)	(7)
STEP NO. 3		SURFACE TUBING PRESS.	CUMMULATIVE VOL. INJECTED	INJECTION RATE	FRICTION HEAD LOSS	CORRECTED TUBING PRESS.	INJECTION RATE (gpm)	MEASURED BHP
REMARKS	TIME	(psig)	(bbls)	(bbls/day)	(psf)	(psf) (1)-(4)	(3)/34.2857	(psf)
8 FALLOFF	10:40	1698.6	157.5	3888.0	289.977	1408.6	113.40	2593
	10:45	1749.3	171.2	3845.6	284.154	1465.1	112.16	2637
	10:50	1743.0	184.9	3945.6	297.975	1445.0	115.08	2670
				3926.4				
	10:51	1105.1				1105.1		2340
	10:52	1015.3				1015.3		2241
	10:53	944.6				944.6		2165
	10:54	881.6				881.6		2098
	10:55	827.3				827.3		2043
	11:00	645.7				645.7		1856
	11:05	536.0				536.0		1740

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OCT 06 1993

OCG HOBBS
OFFICE

