



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



BRUCE KING  
GOVERNOR

ANITA LOCKWOOD  
CABINET SECRETARY

July 21, 1994

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

Pogo Producing Company  
P.O. Box 10340  
Midland, TX 79702-7340

SWD-518  
PDEV0020900518

Attention: Barrett L. Smith

**RE: Injection Pressure Increase NEL Federal Well No. 4, Eddy County, New Mexico**

Dear Mr. Smith:

Reference is made to your request dated June 16, 1994 to increase the surface injection pressure on the NEL Federal SWD Well No. 4. This request is based on a step rate test conducted on this well on June 10, 1994. The results of the test has 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
NEL Federal Well No. 4 Unit H, Section 9, Township 23 South, Range 28 East, NMPM, Eddy County, New Mexico.	900 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.

Sincerely,

William J. LeMay  
Director

WJL/DRC/amg

cc: Oil Conservation Division - Artesia  
File: SWD-518  
D. Catanach

NO WAITING PERIOD

COMPANY: Pogo Producing Company  
ADDRESS: P.O. Box 10340  
CITY, STATE, ZIP: Midland, Texas 79702-7340  
ATTENTION: Barrett L. Smith

Re: Injection Pressure Increase  
NEL Federal Well No. 4

Eddy County, New Mexico

Dear Sir:

Reference is made to your request dated June 16, 1984, to increase the surface injection pressure on the NEL Federal SWD Well No. 4. This request is based on a step rate test conducted on the well on June 10, 1984. The results of the test have been reviewed by my staff and we feel an increase in injection pressure on the well is justified at this time.

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

<u>Well &amp; Location</u>	<u>Maximum Injection Surface Pressure</u>
<u>NEL Federal Well No. 4</u>	<u>900 PSIG</u>
<u>Unit H, Section 9, T-23S, R-2E, N104W</u>	
<u>Eddy County, New Mexico</u>	

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.

XC: ~~F. GALLEGOS~~  
D. CATANACH  
FILE- SWD-518  
OCD- Arizola

OIL CONSERVATION DIVISION  
RECEIVED



**POGO PRODUCING COMPANY**

'94 JUN 23 AM 8 50

June 16, 1994

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

Attention: Mr. David R. Catanach

Re: NEL #4 Salt Water Disposal Well  
1980' FNL & 720' FEL Section 9,  
T-23-S, R-28-E, N.M.P.M.  
Eddy County, New Mexico  
Federal Lease No. NM-15433

Gentlemen:

Pogo Producing Company respectfully requests permission to increase the maximum allowable injection pressure on the NEL #4 Salt Water Disposal Well. This request is based on results of the Step Rate Test performed on June 10, 1994 (witnessed by Mike Stubblefield), which is attached.

If you need further assistance, please call the undersigned at (915) 682-6822. Thank you.

Sincerely,

POGO PRODUCING COMPANY

Barrett L. Smith  
Senior Operations Engineer

BLS:ct\c:NMOC71

Attachment

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

**RECEIVED**  
**JUN 17 1994**  
**MIDLAND**

**STEP RATE INJECTION TEST**

CLIENT: POGO PRODUCING COMPANY

DATE: JUNE 10, 1994

WELL NAME: NEL NO.4 SWD  
EDDY COUNTY, NEW MEXICO

WO#: 94-14-1017

MID-PERFS. = 2956-3576

PACKER DEPTH = 2912

BHP GAUGE DEPTH = 3268

STEP NO.		(1)	(2)	(3)	(4)	(5)	(6)	(7)
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)/34.2857	MEASURED BHP (psi)
1	10:45	389.7				389.7		2172.1
	10:50	426.1	0.9	259.2	0.868	425.2	7.56	2181.4
	10:55	384.6	1.7	230.4	0.698	383.9	6.72	2184.3
	11:00	425.0	2.5	230.4	0.698	424.3	6.72	2185.9
				240.0				
2	11:05	340.4	3.8	374.4	1.715	338.7	10.92	2192.1
	11:10	375.9	5.2	403.2	1.967	373.9	11.76	2193.9
	11:15	342.5	6.6	403.2	1.967	340.5	11.76	2196.8
3				393.6				
	11:20	425.2	8.8	633.6	4.538	420.7	18.48	2204.6
	11:25	446.7	11.0	633.6	4.538	442.2	18.48	2209.4
	11:30	436.3	13.2	633.6	4.538	431.8	18.48	2212.3
				633.6				
4	11:35	468.0	16.8	1036.8	11.286	456.7	30.24	2224.8
	11:40	476.7	20.4	1036.8	11.286	465.4	30.24	2231.2
	11:45	490.7	24.0	1036.8	11.286	479.4	30.24	2237.4
				1036.8				
5	11:50	563.5	29.5	1584.0	24.721	538.8	46.20	2254.5
	11:55	581.2	34.6	1468.8	21.498	559.7	42.84	2263.8
	12:00	590.1	40.0	1555.2	23.896	566.2	45.36	2271.6
6				1536.0				
	12:05	613.0	47.5	2160.0	43.879	569.1	63.00	2293.6
	12:10	624.3	55.4	2275.2	48.307	576.0	66.36	2307.8
	12:15	640.6	63.0	2188.8	44.968	595.6	63.84	2317.3
				2208.0				
7	12:20	718.5	73.0	2880.0	74.713	643.8	84.00	2342.7
	12:25	734.0	83.1	2908.8	76.101	657.9	84.84	2357.9
	12:30	755.8	93.1	2880.0	74.713	681.1	84.00	2370.1

2889.6

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 (psi)
8	12:35	846.6	105.6	3600.0	112.897	733.7	105.00	2392.5
	12:40	858.1	118.0	3571.2	111.232	746.9	104.16	2407.7
	12:45	951.4	130.7	3657.6	116.261	835.1	106.68	2418.5
				3609.6				
9	12:50	960.3	145.5	4262.4	154.306	806.0	124.32	2437.6
	12:55	984.5	160.4	4291.2	156.240	828.3	125.16	2448.6
	1:00	1030.6	175.3	4291.2	156.240	874.4	125.16	2458.8
				4281.6				
10	1:05	1103.7	192.9	5068.8	212.616	891.1	147.84	2476.4
	1:10	1138.3	210.4	5040.0	210.387	927.9	147.00	2488.1
	1:15	1147.5	228.1	5097.6	214.857	932.6	148.68	2495.6
				5068.8				
	1:16	703.8				703.8		2480.8
	1:17	700.0				700.0		2472.2
	1:18	693.6				693.6		2465.4
	1:19	687.2				687.2		2458.6
	1:20	680.8				680.8		2451.7
	1:25	655.3				655.3		2424.4
	1:30	636.2				636.2		2403.7



