WFX 11/24/97
734

NOV -7 [illegible]

devon
ENERGY CORPORATION

20 North Broadway, Suite 1500
Oklahoma City, Oklahoma 73102-8260

Telephone 405/235-3611
FAX 405/552-4550

November 6, 1997

State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 88505

Attention: Ben Stone

RE: East Shugart Unit #'s 75, 83 & 86
Section 34 & 35-T18S-R31E
Eddy County, New Mexico

Gentlemen:

Enclosed please find our Application for Authorization to Inject for each of the above captioned wells.

Devon Energy Corporation also requests that the maximum injection pressures for these wells be higher than .2 psi per foot of depth to the uppermost injection perforation. Like our previous application (WFX-721), this request is based on the data in Table I which shows the frac gradients obtained from stimulation treatments on wells in the area. Figure I is a map showing the location of the proposed injectors and the wells used in this study.

The frac gradient is used to calculate the maximum surface injection pressure (injection wellhead pressure gradient x depth to the uppermost perforation = maximum surface injection pressure) that can be attained without fracturing the formation. Provided the calculated wellhead pressure gradient is not exceeded, the formation cannot be fractured and injection fluids will be contained in the formation. This has been confirmed through injection surveys run on existing injection wells in the unit.

Based on the attached information, Devon respectfully request that the **maximum wellhead pressure gradient for the proposed injection wells be .49 psi per foot of depth to the uppermost perforation**. This is the average for the eight wells in the area of interest. We will also periodically run injection surveys to ensure that injection is confined to the Queen formation.

If you have any questions, please give me a call at 405-552-4509.

Sincerely,

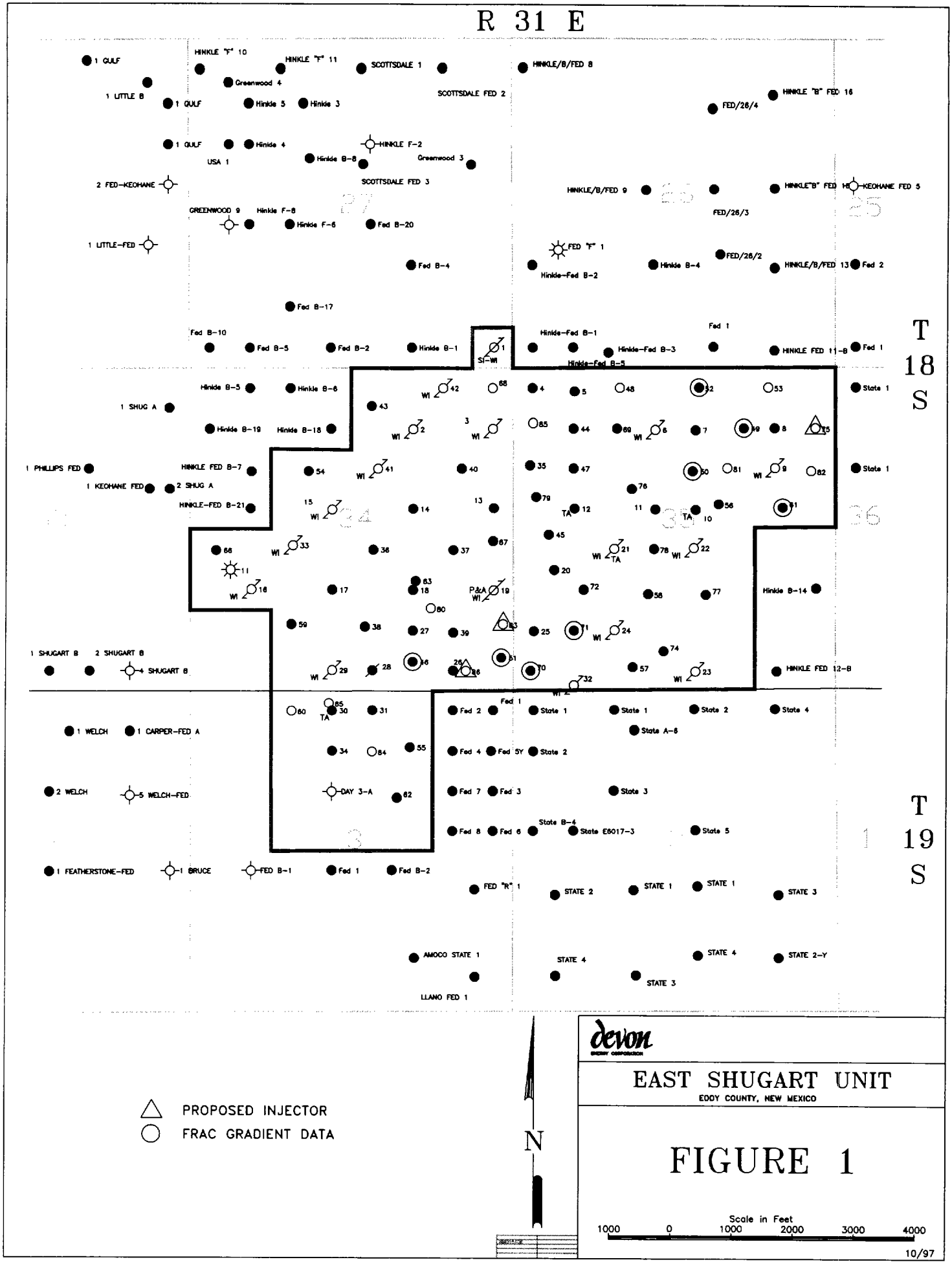
Ernie Buttross

Ernie Buttross
District Engineer

TABLE I
INJECTION WELLHEAD PRESSURE GRADIENTS
EAST SHUGART UNIT

PROPOSED INJECTOR	OFFSET WELLS	TREATMENT ISIP	TOP PERF	FRAC GRADIENT PSI/FT	WELLHEAD PRESSURE GRADIENT PSI/FT
East Shugart Unit #75					
	ESU #49	1670	3712	0.88	0.41
	ESU #50	1760	3578	0.93	0.46
	ESU #52	1460	3701	0.83	0.36
	ESU #61	2050	3563	1.01	0.54
East Shugart Unit #83					
	ESU #46	1480	3393	0.87	0.40
	ESU #51	2430	3633	1.10	0.63
	ESU #70	1370	3409	0.84	0.37
	ESU #71	2380	3344	1.15	0.68
East Shugart Unit #86					
	ESU #46	1480	3393	0.87	0.40
	ESU #51	2430	3633	1.10	0.63
	ESU #70	1370	3409	0.84	0.37
	ESU #71	2380	3344	1.15	0.68

AVERAGE WELLHEAD PRESSURE GRADIENT PSI/FT **0.49**


R 31 E
T 18 S
T 19 S
1 GULF
HINKLE "F" 10
HINKLE "F" 11
SCOTTSDALE 1
HINKLE/B/FED 8
Greenwood 4
1 LITTLE B
1 GULF
Hinkle 5
Hinkle 3
SCOTTSDALE FED 2
FED/26/4
HINKLE "B" FED 16
1 GULF
Hinkle 4
HINKLE F-2
USA 1
Hinkle B-8
Greenwood 3
2 FED-KEOHANE
SCOTTSDALE FED 3
HINKLE/B/FED 9
HINKLE"B" FED 15
KEOHANE FED 5
GREENWOOD 9
Hinkle F-8
Hinkle F-6
Fed B-20
FED/26/3
1 LITTLE-FED
FED "F" 1
FED/26/2
Fed B-4
Hinkle-Fed B-2
Hinkle B-4
HINKLE/B/FED 13
Fed 2
Fed B-17
Fed B-10
Fed B-5
Fed B-2
Hinkle B-1
Hinkle-Fed B-1
Fed 1
Hinkle-Fed B-3
HINKLE FED 11-B
Hinkle-Fed B-5
Hinkle B-5
Hinkle B-6
State 1
1 SHUG A
Hinkle B-19
Hinkle B-18
1 PHILLIPS FED
HINKLE FED B-7
1 KEOHANE FED
2 SHUG A
HINKLE-FED B-21
State 1
HINKLE FED 12-B
1 SHUGART B
2 SHUGART B
4 SHUGART B
1 WELCH
1 CARPER-FED A
State A-6
2 WELCH
5 WELCH-FED
DAY 3-A
State B-4
1 FEATHERSTONE-FED
1 BRUCE
FED B-1
Fed 1
Fed B-2
FED "R" 1
STATE 2
STATE 1
STATE 1
STATE 3
AMOCO STATE 1
STATE 4
STATE 4
STATE 2-Y
STATE 3
LLANO FED 1
PROPOSED INJECTOR
FRAC GRADIENT DATA
N
devon
EAST SHUGART UNIT
EDDY COUNTY, NEW MEXICO
FIGURE 1
Scale in Feet
1000 0 1000 2000 3000 4000
10/97

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November 6, 1997

Re: Application for Authorization to Inject
East Shugart Unit #'s 86, 75 & 83
Eddy County, NM

State of New Mexico
Oil Conservation Division
Attn: Ben Stone
2040 S. Pacheco St.
Santa Fe, NM 87505

Enclosed are the original and 1 copy of our Application for Authorization to Inject (Form C-108) for the above referenced wells in Eddy County. I also sent a copy of this application to the Artesia district office and the Bureau of Land Management office in Carlsbad. Please direct any inquiries concerning this application to our area district engineer, Ernie Buttross at (405) 552-4509.

Sincerely,
Devon Energy Corporation (Nevada)

Karen Byers

Karen Byers
Engineering Technician

/kb
Enclosures

cc: OCD - Artesia District Office
BLM – Carlsbad Office