

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: Secondary Recovery ☒ Pressure Maintenance Disposal ☐ Storage
Application qualifies for administrative approval? ☐ Yes ☒ No
- II. OPERATOR: Armstrong Energy Corporation
ADDRESS: P.O. Box 1973, Roswell, New Mexico 88202
CONTACT PARTY: Bruce A. Stubbs, P.E. PHONE: 505-624-2800
- 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 ☒ No ☒ Modification
If yes, give the Division order number authorizing the project: R-10541 (2-6-96)
- 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. 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 at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, 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 waters 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).
- *XI. 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: Bruce A. Stubbs, P.E. TITLE: Consulting Engineer
SIGNATURE:  DATE: 5-22-02
- * If the information required under Sections 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: _____

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

BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Case No. 12885 Exhibit No. 1
Submitted by:
ARMSTRONG ENERGY CORPORATION
Hearing Date: June 27, 2002

INJECTION WELL DATA SHEET

OPERATOR: ARMSTRONG ENERGY CORPORATIONWELL NAME & NUMBER: MOBIL LEA STATE #8WELL LOCATION: 330' FSL & 1650' FWL N 2 SECTION 20S TOWNSHIP 34E RANGE
FOOTAGE LOCATIONWELLBORE SCHEMATICWELL CONSTRUCTION DATA
Surface CasingHole Size: 14 3/4 Casing Size: 9 5/8"
Cemented with: 1100 sx. or ft³
Top of Cement: SURFACE Method Determined: CIRC.Intermediate CasingHole Size: _____ Casing Size: _____
Cemented with: _____ sx. or ft³
Top of Cement: _____ Method Determined: _____Production CasingHole Size: 7 7/8" Casing Size: 5 1/2"
Cemented with: 2050 sx. or ft³
Top of Cement: SURFACE Method Determined: CIRC.
Total Depth: 6100'Injection Interval5930' feet to 5910'
PERFORATED WITH 2 JSPF
(Perforated or Open Hole; indicate which)

MOBIL LEA FEDERAL #8 PMW
330' FSL & 1650 FWL
SECTION 2-T20S-R34E
LEA COUNTY, NEW MEXICO

III. PROPOSED PRESSURE MAINTENANCE WELL DATA:

A.

CONDUCTOR PIPE: 16"-54 #/FT SET @ 42', CEMENT TO SURFACE W/ 3 CU. YDS. REDI-MIX

SURFACE CASING: 9 5/8"-36 #/FT. SET @ 1700', CEMENTED TO SURFACE W/ 1100 SX

LONG STRING CASING: 5 1/2"-15.5 #/FT. SET @ 6100', CEMENTED IN TWO STAGES WITH A D.V. TOOL @ 5200'
1ST STAGE - 450 SX, CIRCULATED TO D.V. TOOL
2ND STAGE - 1600 SX CIRCULATED TO SURFACE

TOTAL DEPTH: 6100'

TUBING: 2 7/8"-6.5 #/FT., J-55, W/ FREECOM CERAMIC COATING

PACKER: BAKER LOCKSET W/ ON-OFF TOOL AND PROFILE NIPPLE, SET @ 5850'

B.

INJECTION FORMATION: DELAWARE - CHERRY CANYON - THIRD SAND
(AS SHOWN ON MOBIL LEA STATE #3 LOG FROM 5910'-6012')

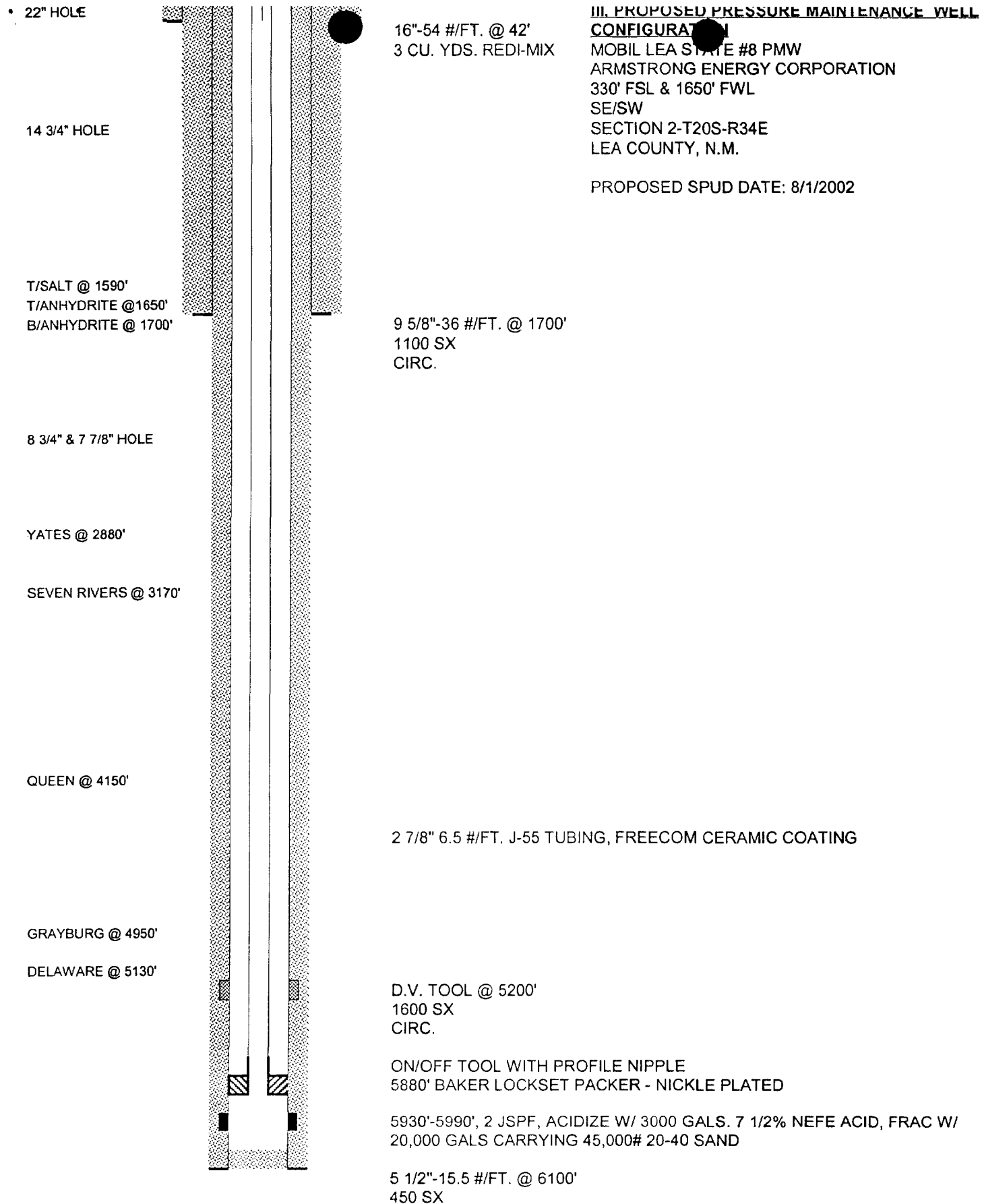
FIELD: NORTHEAST LEA DELAWARE

INJECTION INTERVAL: 5930'-5970', CASED HOLE

ORIGINAL WELL PURPOSE: THIS WELL WILL BE DRILLED AS A PRESSURE MAINTENANCE WELL.

OTHER PERFORATED INTERVALS: NONE

DEPTHS AND NAMES OF OTHER OIL & GAS ZONES IN THE AREA: DELAWARE -CHERRY CANYON - 1ST SAND - 5456'-5676'
BONE SPRINGS - 9476'-10258'
MORROW - 13034'-13462'
DEVONIAN - 14360'



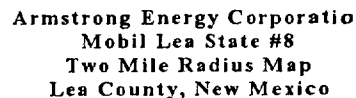
INJECTION WELL DATA SHEETTubing Size: 2 7/8" Lining Material: CERAMIC COATEDType of Packer: BAKER LOCKSET W/ ON-OFF TOOL AND PROFILESPacker Setting Depth: 5880'

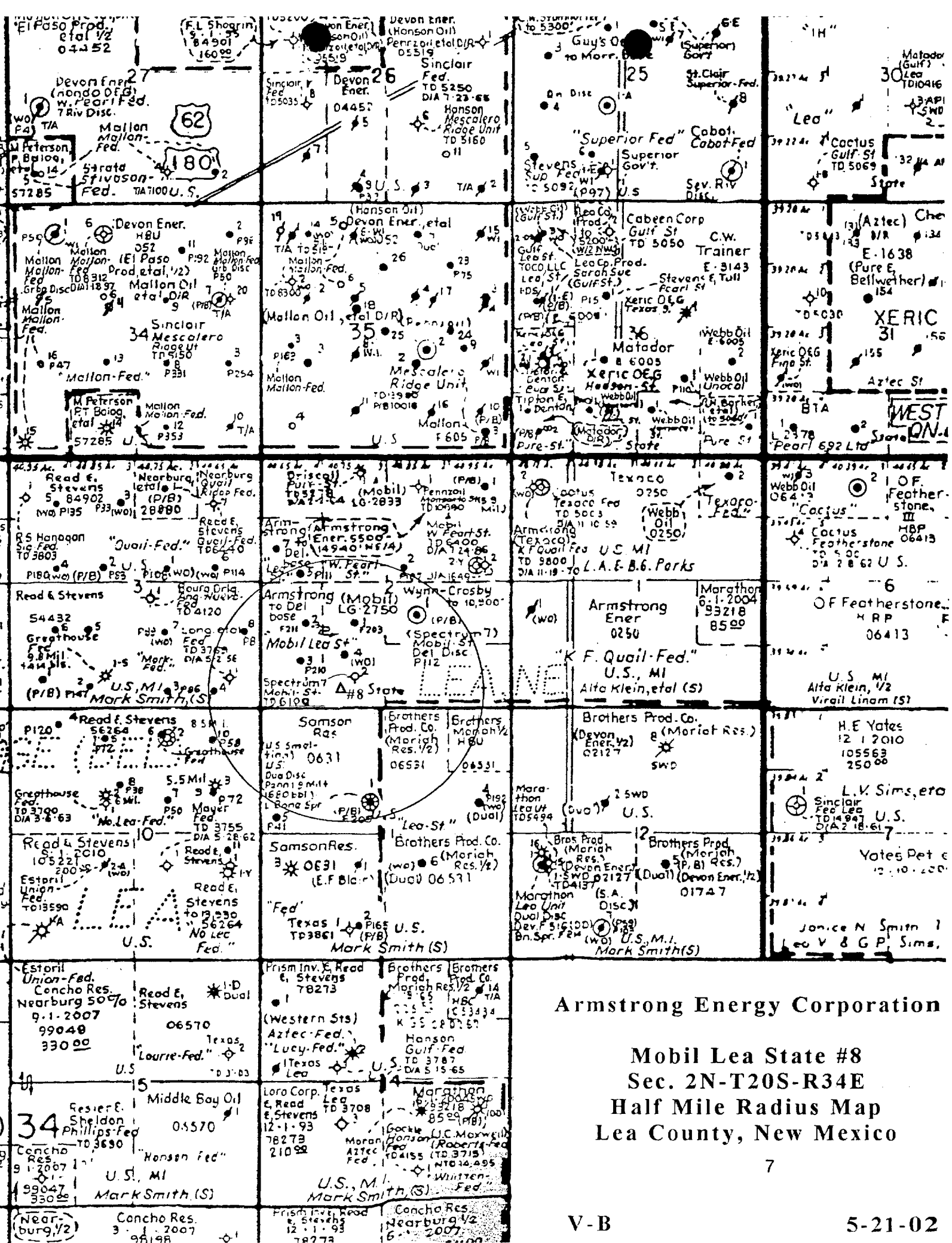
Other Type of Tubing/Casing Seal (if applicable): _____

Additional Data1. Is this a new well drilled for injection? X Yes No

If no, for what purpose was the well originally drilled? _____

2. Name of the Injection Formation: CHERRY CANYON3. Name of Field or Pool (if applicable): NORTHEAST LEA DELAWARE4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. N.A.5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: DELAWARE CHERRY CANYON 1ST SAND 5456-5676'BONE SPRING 9476-10258'MORROW 13034-13462'DEVONIAN 14360'





VI. WELLS WITHIN A 1/2 MILE RADIUS OF THE PROPOSED INJECTION WELL

API	LEASE NAME	WELL #	OPERATOR NAME	LOCATION	FIELD NAME	STATUS	ROD ZONE NA	OIL CUM	GAS CUM	WTR CUM	ID	U PERF	L PERF
30025324680000	MOBIL LEA STATE	5	ARMSTRONG ENERGY CORPORATION	2E 20S 34E SW NW	LEA NORTHEAST	ACT	DELAWARE	18028	14439	9792	6058	5610	5630
30025292040000	MOBIL STATE	1	WYNN-CROSBY ENERGY INCORPORATED	2J 20S 34E	LEA NORTHEAST	ACT	DELAWARE	103667	104853	44463	10800	5628	5695
30025316960000	MOBIL LEA STATE	1	ARMSTRONG ENERGY CORPORATION	2K 20S 34E S2 NE SW	LEA NORTHEAST	ACT	DELAWARE	190945	251018	26510	6289	5858	5931
30025319280000	MOBIL LEA STATE	2	ARMSTRONG ENERGY CORPORATION	2L 20S 34E NW SW	LEA NORTHEAST	ACT	DELAWARE	325643	344534	34068	6256	5605	6048
30025321050000	MOBIL LEA STATE	3	ARMSTRONG ENERGY CORPORATION	2M 20S 34E SW SW	LEA NORTHEAST	ACT	DELAWARE	148381	223498	132413	6300	5918	5938
30025323100000	MOBIL LEA STATE	4	ARMSTRONG ENERGY CORPORATION	2N 20S 34E SE SW	LEA NORTHEAST	ACT	DELAWARE	146963	230037	39262	6285	5544	5840
	MOBIL STATE	2	SPECTRUM 7 EXPLORATION	2N 20S 34E SE SW		P/A					6100	5698	5716
30025321580000	MARK FEDERAL	8	READ & STEVENS INCORPORATED	3I 20S 34E NE SE	LEA NORTHEAST	ACT	DELAWARE	7178	13322	29149	6349	5910	6038
30025318180000	MARK FEDERAL	4	READ & STEVENS INCORPORATED	3P 20S 34E SE SE	LEA NORTHEAST	ACT	DELAWARE	53833	68455	30837	6480	5912	592
	FEDERAL "A"	1	LANG & SCHLACHTER	3P 20S 34E SE SE		P/A					3769		
30025318220000	NORTH LEA FEDERAL	10	READ & STEVENS INCORPORATED	10A 20S 34E NE NE	LEA NORTHEAST	ACT	DELAWARE	87767	192083	174446	8488	5910	5930
30025326190000	FEDERAL 11 20 34	5	SAMSON RESOURCES COMPANY	11E 20S 34E SW NW	LEA NORTHEAST	ACT	DELAWARE	34488	21786	63409	6255	5456	5468
30025024260000	FEDERAL 11 20 34	1	SAMSON RESOURCES COMPANY	11F 20S 34E	LEA	ACT	BONE SPRING	158085	867241	29446	14819	10158	10186

22" HOLE

12 1/4" HOLE

T/SALT @ 1700'

7 7/8" HOLE

YATES @ 3590'

SEVEN RIVERS @ 3800'

QUEEN @ 4650'

DELAWARE @ 5540'

14"-28 #/FT. @ 40'
3 CU.YDS. REDI-MIX

8 5/8"-32 #/FT. @ 1705'
800 SX
CIRC.

D.V. TOOL @ 5207'
1400 SX
CIRC.
5610'-5630', 21 SHOTS

5 1/2"-15.5 #/FT. @ 6058'
325 SX

VI-A

MOBIL LEA STATE #5
ARMSTRONG ENERGY CORPORATION
2440' FNL & 870' FWL
SW/NW
SECTION 2-T20S-R34E
LEA COUNTY, N.M.

SPUD DATE: 3/26/94

WELL TYPE: OIL WELL

CONDUCTOR PIPE:

CASING: 16"-54 #/FT. @ 40'
HOLE: 22" HOLE
CEMENT: 3 CU. YDS. REDI-MIX
T.O.C.: CIRC.

SURFACE CASING:

CASING: 8 5/8"-32 #/FT. @ 1705'
HOLE: 12 1/4" HOLE
CEMENT: 800 SX.
T.O.C.: CIRC.

LONG STRING:

CASING: 5 1/2"-15.5 #/FT. @ 6058'
HOLE: 7 7/8" HOLE
CEMENT: 325 SX
2ND STAGE: D.V. TOOL @ 5207'
CEMENT: 1400 SX.
T.O.C.: CIRC.
TOTAL DEPTH: 6058'

PRODUCTION ZONES: CHERRY CANYON

13 3/8"-54.5 #/FT. K-55 @ 422'
250 SX "HLC" 3% SALT, & 1/4# FLOCELE
200 SX CLASS "C", 2% CACL
CIRCULATED 135 SX

MOBIL STATE #1
WYNN-CROSBY INC.
1980' FSL & 1980' FEL
NW/SE
SECTION 2-T20S-R34E
LEA COUNTY, N.M.

SPUD DATE: 4/16/85

WELL TYPE: OIL WELL

SURFACE CASING:

CASING: 13 3/8"-54.5 #/FT. K-55 @ 422'
HOLE: 17 1/2" HOLE
CEMENT: 450 SX
T.O.C.: CIRC.

INTERMEDIATE CASING:

CASING: 8 5/8"-32 & 28 #/FT @ 4380'
HOLE: 11" HOLE
CEMENT: 2700 SX
T.O.C.: CIRC.

LONG STRING:

CASING: 5 1/2"-17#/FT J-55 & N-80 @ 9816'
HOLE: 7 7/8" HOLE
CEMENT: 225 SX
T.O.C.: CALC. @ 8550'
2ND STAGE: D.V. TOOL @ 6374'
CEMENT: 505 SX
T.O.C.: CALC. @ 2660'
TOTAL DEPTH: 10800'

PRODUCTION ZONES: FIRST BONE SPRINGS SAND
CHERRY CANYON

11" HOLE

RUSTLER @ 1653'

YATES @ 1650'

QUEEN @ 4665'

SAN ANDRES @ 4800'

7 7/8" HOLE

DELAWARE @ 5630'

8 5/8"-32 & 28 #/FT @ 4380'
1000 SX HLC, 18 % SALT, 5# GILSONITE & 1/4 #/SX FLOCELE
1500 SX HLC, 18% SALT & 1/4 #/SX FLOCELE
200 SX CLASS "C" W/ 1% CACL
CIRCULATED 550 SX

5626', 31', 33', 44', 71, 75', 86', 93' & 95', 10 SHOTS

D.V. TOOL @ 6374'
355 SX HLC W/ 1/4#/SX FLOCELE
150 SX CLASS "H"

1.97 CU.FT./SX	699.35 CU.FT.
1.06 CU.FT./SX	159.00 CU.FT.

7 7/8" X 5 1/2"	0.1733 CU.FT./FT
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THEORETICAL FILL	4953.0 FT.
LESS 25% EXCESS	3714.8 FT.
CALCULATED T.O.C.	2660 FT.

BONE SPRINGS LIME
@ 7930'

CALCULATED T.O.C. 8550'

1ST BONE SPRINGS
SAND @ 9500'

CIBP @ 9600'
9650'-54', 9663'66', 9676'-9681' & 9636'-9668', 2 SHOTS/FT.

2ND BONE SPR. SAND
@ 10,737'

5 1/2"-17#/FT J-55 & N-80 @ 9816'
225 SX CLASS "H" 50/50 POZ 2% GEL, .6% HALAD-22A, 3% CFR-2, 5# KCL & 1/4# FLOCELE

1.30 CU. FT./SX	292.5 CU.FT.
7 7/8" X 5 1/2"	0.1733 CU.FT./FT

THEORETICAL FILL	1687.8 FT.
LESS 25% EXCESS	1265.9 FT.
CALCULATED T.O.C	8550.1 FT
T.D. @:	10800'

22" HOLE

14 3/4" HOLE

T/SALT @ 1625'

8 3/4" & 7 7/8" HOLE

B/SALT @ 3540'
YATES @ 3630'

QUEEN @ 4662'

SAN ANDRES @ 5095'

DELAWARE @ 5345'

16"-54 #/FT. @ 42'
3 CU. YDS. REDI-MIX

9 5/8"-36 #/FT. @ 1697'
1300 SX.
CIRC.

D.V. TOOL @ 5345'
1600 SX.
CIRC.
5658'-5695', 11 SHOTS
5890'-5931', 41 SHOTS

5 1/2"-15.5 #/FT. @ 6289'
290 SX

MOBIL LEA STATE #1
ARMSTRONG ENERGY CORPORATION
1800' FSL & 1980' FWL
NE/SW
SECTION 2-T20S-R34E
LEA COUNTY, N.M.

SPUD DATE: 9/30/92

WELL TYPE: OIL WELL

CONDUCTOR PIPE:

CASING: 16"-54 #/FT. @ 42'
HOLE: 22" HOLE
CEMENT: 3 CU. YDS. REDI-MIX
T.O.C.: CIRC.

SURFACE CASING:

CASING: 9 5/8"-36 #/FT. @ 1697'
HOLE: 14 3/4" HOLE
CEMENT: 1300 SX.
T.O.C.: CIRC.

LONG STRING:

CASING: 5 1/2"-15.5 #/FT. @ 6289'
HOLE: 8 3/4" & 7 7/8" HOLE
CEMENT: 290 SX
2ND STAGE: D.V. TOOL @ 5345'
CEMENT: 1600 SX.
T.O.C.: CIRC.
TOTAL DEPTH: 6289'

PRODUCTION ZONES: CHERRY CANYON

VIC

• 22" HOLE

14 3/4" HOLE

T/SALT @ 1600'

8 3/4" & 7 7/8" HOLE

YATES @ 3500'

SEVEN RIVERS @ 3790'

QUEEN @ 4655'

GRAYBURG @ 4890'

SAN ANDRES @ 5100

DELAWARE @ 5345

16"-54 #/FT. @ 40'
3 CU. YDS. REDI-MIX

9 5/8"-36 #/FT. @ 1702'
1200 SX
CIRC.

D.V. TOOL @ 5171'
1600 SX
CIRC.

5605'-5654'

5890'-5930', 39 shots

5 1/2"-15.5 #/FT. @ 6256'
380 SX

MOBIL L STATE #2
ARMSTRONG ENERGY CORPORATION
1800' FSL & 990' FWL
NW/SW
SECTION 2-T20S-R34E
LEA COUNTY, N.M.

SPUD DATE: 3/19/93

WELL TYPE: OIL WELL

CONDUCTOR PIPE:

CASING: 16"-54 #/FT. @ 40'
HOLE: 22" HOLE
CEMENT: 3 CU. YDS. REDI-MIX
T.O.C.: CIRC.

SURFACE CASING:

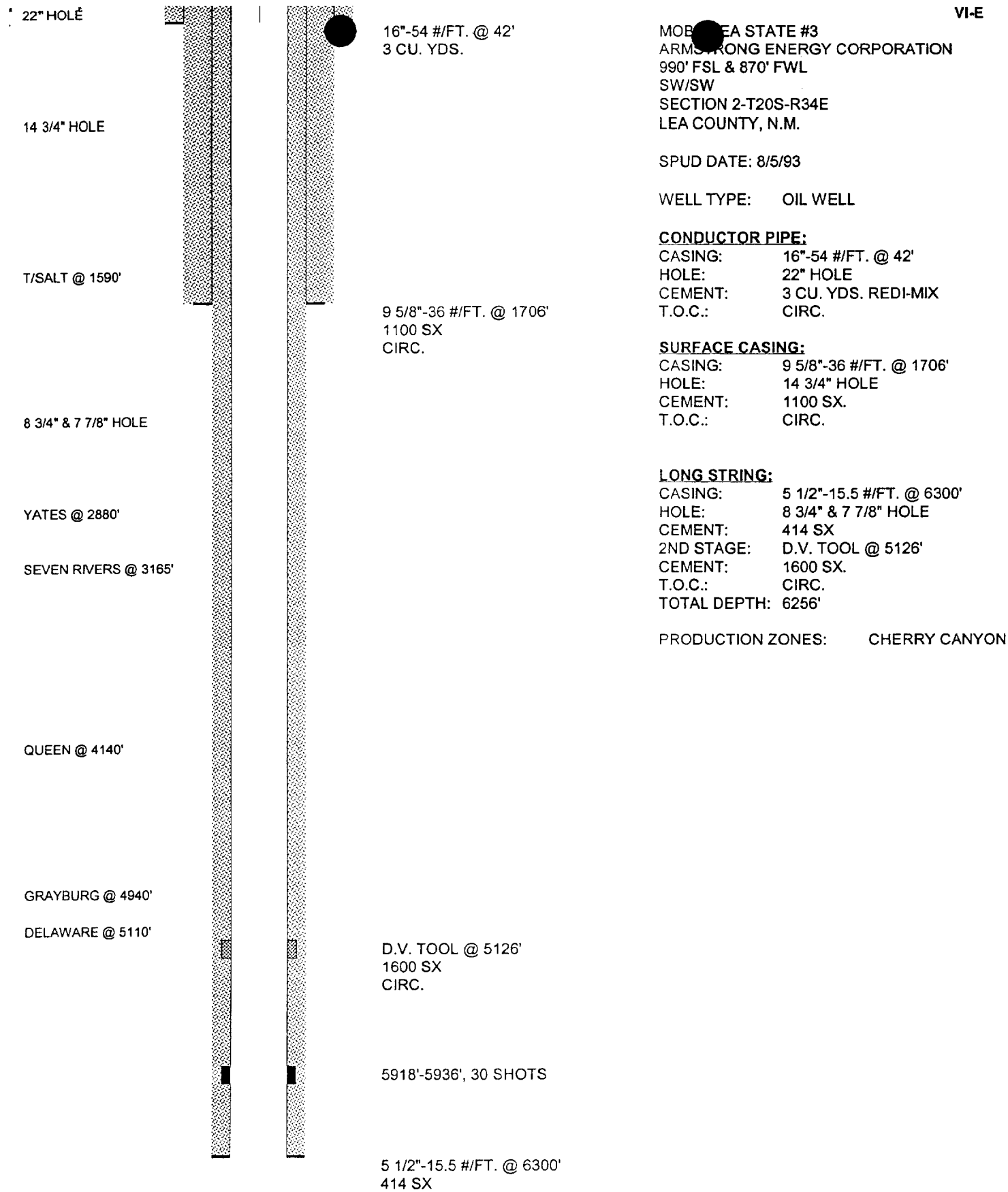
CASING: 9 5/8"-36 #/FT. @ 1702'
HOLE: 14 3/4" HOLE
CEMENT: 1200 SX.
T.O.C.: CIRC.

LONG STRING:

CASING: 5 1/2"-15.5 #/FT. @ 6289'
HOLE: 8 3/4" & 7 7/8" HOLE
CEMENT: 380 SX
2ND STAGE: D.V. TOOL @ 5171'
CEMENT: 1600 SX.
T.O.C.: CIRC.
TOTAL DEPTH: 6256'

PRODUCTION ZONES: CHERRY CANYON

VI-D



22" HOLE

14 3/4" HOLE

T/SALT @ 1605'

8 3/4" & 7 7/8" HOLE

YATES @ 3600'

SEVEN RIVERS @ 3680

QUEEN @ 4665'

DELAWARE @ 5435'

16"-54 #/FT. @ 40'
3 CU. YDS. REDI-MIX

9 5/8"-36 #/FT. @ 1706'
1050 SX
CIRC.

D.V. TOOL @ 5166'
1550 SX.
CIRC.

5910'-5940', 31 SHOTS

5 1/2"-15.5 #/FT. @ 6285'
360 SX

VI-1

MOBIL OIL STATE #4
ARMSTRONG ENERGY CORPORATION
1155' FSL & 1770' FWL
SE/SW
SECTION 2-T20S-R34E
LEA COUNTY, N.M.

SPUD DATE: 12/7/93

WELL TYPE: OIL WELL

CONDUCTOR PIPE:

CASING: 16"-54 #/FT. @ 40'
HOLE: 22" HOLE
CEMENT: 3 CU. YDS. REDI-MIX
T.O.C.: CIRC.

SURFACE CASING:

CASING: 9 5/8"-36 #/FT. @ 1706'
HOLE: 14 3/4" HOLE
CEMENT: 1050 SX.
T.O.C.: CIRC.

LONG STRING:

CASING: 5 1/2"-15.5 #/FT. @ 6285'
HOLE: 8 3/4" & 7 7/8" HOLE
CEMENT: 360 SX
2ND STAGE: D.V. TOOL @ 5166'
CEMENT: 1550 SX.
T.O.C.: CIRC.
TOTAL DEPTH: 6285'

PRODUCTION ZONES: CHERRY CANYON

12 1/4" HOLE

RUSTLER @ 1600'

T.D. @ 1731'

7 7/8" HOLE

B/SALT @ 3248'

YATES @ 3705'

SEVEN RIVERS @ 4290'

QUEEN @ 4682'

GRAYBURG @ 5113'

T.D. @ 6100'

25 SX @ SURFACE

40 SX PLUG @ 1778'

8 5/8"24 #/FT. @ 1728'
650 SX HLC W/ 1/4#/SX FLOCELE
200 SX CLASS "C" W/ 2% CACL
CIRCULATED 100 SX

CASING CUT AND PULLED @ 2903'
40 SX PLUG @ 2950', DID NOT TAG
40 SX @ 2950', TAGGED @ 2793'

EST. TOC @ 4075'

25 SX @ 4600'

25 SX PLUG @ 5600'-5400'

25 SX PLUG @ 5650'-5600'
5698', 5699', 5700', 01', 02', 05', 06', 07', 13', 14', 15' & 16'

4 1/2"-10.5#/FT. & 11.6#/FT. @ 6043'
450 SX CLASS "C" POZ W/ .6% CF-14 & 1/4#/SX FLOCELE

YIELD 1.33 CU.FT./SX

7 7/8" X 4 1/2"

LESS 25%
EST. T.O.C.

MOBIL STATE #2
SPECTRA 7" EXPLORATION
660' FSL & 1980' FWL
SE/SW
SECTION 2-T20S-R34E
LEA COUNTY, N.M.

SPUD DATE: 6/12/86

WELL TYPE: DRY HOLE, P/A

SURFACE CASING:

CASING: 8 5/8"24 #/FT. @ 1728'
HOLE: 12 1/4" HOLE
CEMENT: 850 SX.
T.O.C.: CIRC.

LONG STRING:

CASING: 4 1/2"-10.5#/FT. & 11.6#/FT. @ 6043'
HOLE: 7 7/8" HOLE
CEMENT: 450 SX
T.O.C.: CALC. @ 4075'
TOTAL DEPTH: 6100'

PRODUCTION ZONES: TESTED CHERRY CANYON

598.5 CU.FT.

0.2278 CU.FT./FT.

2627.3 FT.
1970.5 FT
4073 FT.

VI-G

MOORE FEDERAL #8
 REED & STEVENS INC.
 1650' FSL & 330' FEL
 NE/SE
 SECTION 3-T20S-R34E
 LEA COUNTY, N.M.

SPUD DATE: 8/31/93

WELL TYPE: OIL WELL

SURFACE CASING:

CASING: 13 3/8"-54.5 #/FT. @ 1496'
 HOLE: 17 1/2" HOLE
 CEMENT: 1250 SX
 T.O.C.: CIRC.

LONG STRING:

CASING: 5 1/2"-15.5 #/FT. J-55 @ 6349'
 HOLE: 7 7/8" HOLE
 CEMENT: 2690 SX
 T.O.C.: CIRC.

TOTAL DEPTH: 6349'

PRODUCTION ZONES: CHERRY CANYON

17 1/2" HOLE

OCHOA @ 1556'

7 7/8" HOLE

13 3/8"-54.5 #/FT. @ 1496'
 950 SX LITE
 250 SX P.P.
 CIRC.

YATES @ 3401'

SEVEN RIVERS @ 3840'

D.V. TOOL @ 3830'
 1400 SX HLC W/ 10 #/SX SALT
 470 SX CLASS "C"
 CIRC 86 SX TO SURFACE

DELAWARE @ 5456'

5910'-5986', 32 SHOTS

6030'-6038', 32 SHOTS

5 1/2"-15.5 #/FT. @ 6349'
 545 SX HLC W/ 5 #/SX GILSONITE
 275 SX CLASS "H"

17 1/2" HOLE

11" HOLE

7 7/8" HOLE

MARSHALL FEDERAL #4
 READ & STEVENS INC.
 330' SFL & 990' FEL
 SE/SE
 SECTION 3-T20S-R34E
 LEA COUNTY, N.M.

SPUD DATE: 10/27/93

WELL TYPE: OIL WELL

T.O.C. @ 1500', CBL

13 3/8"-54.5 #/FT. @ 1486'
 950 SX LITE
 250 CLASS "C"
 CIRC. 160 SX

SURFACE CASING:

CASING: 13 3/8"-54.5 #/FT. @ 1486'
 HOLE: 17 1/2" HOLE
 CEMENT: 1200 SX
 T.O.C.: CIRC.

INTERMEDIATE CASING:

CASING: 8 5/8"-32 #/FT @ 5005'
 HOLE: 11" HOLE
 CEMENT: 1750 SX
 T.O.C.: CIRC.

LONG STRING:

CASING: 5 1/2"-15.5 #/FT. J-55 @ 6132'
 HOLE: 7 7/8" HOLE
 CEMENT: 650 SX
 T.O.C.: 1500' - CBL

TOTAL DEPTH: 6214'

PRODUCTION ZONES: CHERRY CANYON

D.V. TOOL @ 3771'

ECP @ 3816'

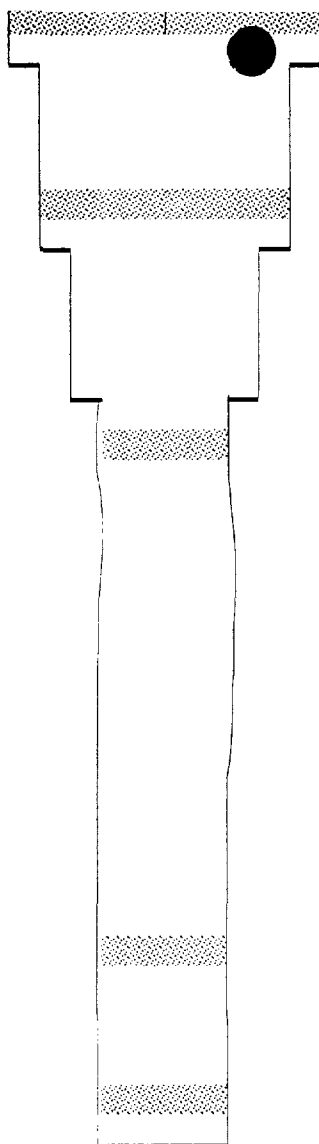
1100 SX LITE W/ 15 #/SX SALT & 1/4 #/SX FLOCELE
 250 SX PREMIUM PLUS W/ 2% CACL
 CIRC

8 5/8"-32 #/FT. J-55 & S-80 @ 5005'
 400 SX PREMIUM PLUS

5912'-5922'

PBTD @ 6157'

5 1/2"-15.5 #/FT. J-55 @ 6214'
 250 SX LITE
 400 SX CLASS "C"



BRIDGE @ 80' W/ 90 SX CEMENT

13 3/8" @ 126'
SET & PULLED

10 SX PLUG @ 600'

10 3/4" @ 720'
SET & PULLED

8" @ 1300'
SET & PULLED
20 SX PLUG @ 1500'

20 SX PLUG @ 3270'

25 SX PLUG @ 3755'

T.D. @ 3769'

FEDERAL "A" #1
LANG & SCHLACHTER
660' FSL & 660' FEL
SE/SE
SECTION 3-T20S-R34E
LEA COUNTY, N.M.

SPUD DATE: 3/26/56

WELL TYPE: DRY HOLE, P/A

THIS WELL DID NOT PENETRATE
THE CHERRY CANYON INTERVAL

ANHYDRITE @ 1562'

B/SALT @ 3160'

YATES @ 3379'

NORTH LEA FEDERAL #10
 REARD & STEVENS INC.
 660' FNL & 990' FEL
 NE/NE
 SECTION 10-T20S-R34E
 LEA COUNTY, N.M.

SPUD DATE: 2/11/93

WELL TYPE: OIL WELL

SURFACE CASING:

CASING: 13 3/8"-54.5 #/FT. J-55 @ 1550'
 HOLE: 17 1/2" HOLE
 CEMENT: 1150 SX
 T.O.C.: CIRC.

INTERMEDIATE CASING:

CASING: 8 5/8"-32 #/FT @ 4975'
 HOLE: 11" HOLE
 CEMENT: 1750 SX.
 T.O.C.: CIRC.

LONG STRING:

CASING: 5 1/2"-15.5 #/FT. J-55 @ 6245'
 HOLE: 7 7/8" HOLE
 CEMENT: 700 SX
 T.O.C.: 1700'

TOTAL DEPTH 6245'

PRODUCTION ZONES: CHERRY CANYON

17 1/2" HOLE

OCHOA @ 1556'

T.O.C. @ 1700'

13 3/8"-54.5 #/FT. J-55 @ 1550'
 900 SX LITE
 250 SX P.P. W/ 2% CACL
 CIRC.

YATES @ 3401'

SEVEN RIVERS @ 3840'

D.V. TOOL @ 3803'
 ECP @ 3865'
 1100 SX LITE
 250 P.P.
 CIRC. 125 SX

7 7/8" HOLE

DELAWARE @ 5456'

8 5/8"-32 #/FT S-80 & J-55 @ 4975'
 400 SX CLASS "H"
 CIRC 80 SX @ D.V. TOOL

5910'-5930', 40 SHOTS

5 1/2"-15.5#/FT. J-55 @ 6245'
 250 SX LITE
 450 SX P.P.

FEDER #5
 SAMSON RESOURCES
 2310' FNL & 330' FWL
 SW/NW
 SECTION 11-T20S-R34E
 LEA COUNTY, N.M.

SPUD DATE: 12/4/94

WELL TYPE: OIL WELL

SURFACE CASING:

CASING: 9 5/8"-36 #/FT. @ 1607'
 HOLE: 12 1/4" HOLE
 CEMENT: 600 SX
 T.O.C.: CIRC.

LONG STRING:

CASING: 5 1/2"-17 #/FT. J-55 @ 6255'
 HOLE: 7 7/8" HOLE
 CEMENT: 1320 SX
 T.O.C.: CIRC.

TOTAL DEPTH: 6255'

PRODUCTION ZONES: CHERRY CANYON

12 1/4" HOLE

RUSTLER @ 1590'

7 7/8" HOLE

YATES @ 3422'

SEVEN RIVERS @ 3830'

DELAWARE @ 5454'

9 5/8"-36 #/FT. @ 1607'
 450 SX CLASS "C" LITE
 150 SX CLASS "C"
 CIRC.

D.V. TOOL @ 3009'
 610 SX CLASS "C" W/ADD.
 100 SX CLASS "C"

5456'-5466', 21 SHOTS

CIBP @ 5560'

5702'-5782', 100 SHOTS

5 1/2"-17 #/FT. J-55 @ 6255'
 410 SX CLASS "C" LITE
 200 SX CLASS "C" W/ADD.

FEDERAL
SAMSON
1960 FNL
SE/NW
SECTION 11-T20S-R34E
LEA COUNTY, N.M.

18'-85 #FT. @ 723
1200 SX
CIRC.

SPUD DATE: 11/4/60

WELL TYPE: GAS WELL - OIL WELL

SURFACE CASING:

CASING: 18'-85 #FT. @ 723
HOLE: 24" HOLE
CEMENT: 1200 SX
T.O.C.: CIRC.

INTERMEDIATE CASING:

CASING: 10 3/4" @ 5293'
HOLE: 13 3/4" HOLE
CEMENT: 3420 SX
T.O.C.: CIRC.

LONG STRING:

CASING: 7"-29 & 32 #/FT @ 14360'
HOLE: 9 5/8" HOLE
CEMENT: 1700 SX
T.O.C.: CALC. @ 8680'

TOTAL DEPTH: 14619'

PRODUCTION ZONES:

TESTED DEVONIAN
PRODUCED MORROW
RECOMPLETED TO BONE SPRINGS

10 3/4" @ 5293'
3420 SX
CIRC.

EST TOC @ 8680'

SQUEEZE HOLES @ 8420' & 8555'
SHOT HOLES @ 8470'
SQUEEZE W/ 30 SX CLASS "H" W/ 75% CF-14
SQUEEZE W/ 30 SX CLASS "H"
SQUEEZE W/ 30 SX CLASS "H" W/ 75% CF-14

1015F-1018F, 32 SHOTS
SQUEEZED W/ 100 SX CLASS "H" W/ 84/SX SAND.
1/4 #BX FLOCELE, .5% CPR-2
10253-10256, 10180-10186, 9512-9577, 9580-9569, 9478-9495, 4 JBRW

P8TD @ 12686'
SPOT #1 SX CLASS "H" W/ 75% CF-14 ON TOP OF PACKER
SPOT #5 SX CLASS "H" W/ 75% CF-14 ON TOP OF PACKER
PACKER @ 12645'

13034-13054, 80 SHOTS
CIBP @ 13056'

7"-26 & 32 #/FT @ 14360'
1700 SX
T.D. @ 14619'

MOBIL LEA FEDERAL #8 PMW
330' FSL & 1650 FWL
SECTION 2-T20S-R34E
LEA COUNTY, NEW MEXICO

VII. PROPOSED OPERATION:

VOLUME OF FLUID TO BE INJECTED: AVERAGE DAILY RATE 500 BWPD
MAXIMUM DAILY RATE 700 BWPD

SYSTEM TYPE: CLOSED

INJECTION PRESSURE: AVERAGE INJECTION PRESSURE 1000 PSI
MAXIMUM INJECTION PRESSURE 1186 PSI (5930' X .2 PSI/FT.)

WATER SOURCE: PRODUCED DELAWARE WATER FROM WELLS IN SECTIONS 1, 2, 3 & 10
T20S-R34E

WATER ANALYSIS: MOBIL LEA STATE #1 12/9/92

TOTAL HARDNESS	1820.00	me/l
CALCIUM	32076.98	mg/l
MAGNESIUM	2673.31	mg/l
IRON	30.00	mg/l
SODIUM	44604.19	mg/l
CHLORIDE	1321995.38	mg/l
SULFATE	550.00	mg/l
CARBONATE	0.00	mg/l
BICARBONATE	183.04	mg/l
TOTAL SOLIDS	213112.90	mg/l
CARBON DIOXIDE	217.80	mg/l
pH	6.65	
SPECIFIC GRAVITY	1.14	
TDS	213115.89	
RESISTIVITY	0.057	@ 70 DEGREES

ARTS STRONG ENERGY CORPORATION

MOBIL LEA FEDERAL #8 PMW
330' FSL & 1650 FWL
SECTION 2-T20S-R34E
LEA COUNTY, NEW MEXICO

VIII. GEOLOGICAL DATA:

GEOLOGICAL NAME: DELAWARE - CHERRY CANYON

LITHOLOGICAL DETAIL: PRIMARILY SANDSTONES INTERBEDDED WITH LIMESTONE AND SHALE.

FORMATION TOP: CHERRY CANYON - THIRD SAND @ -2239
(MOBIL LEA STATE #3 LOG)

THICKNESS: 104 FT, 5910' - 6014'

GEOLOGICAL DATA OF DRINKING WATER ZONE: THE UNDERGROUND SOURCE OF DRINKING WATER IN THE AREA IS THE "CHINLEE", FORMATION WHICH OCCURS AT 65'-200' AND IS APPROXIMATELY 100'-150' THICK. THE CLOSEST FRESHWATER WELL IS THE ROBERTS WELL LOCATED ONE AND ONE-HALF MILES WEST IN THE SE/SE SECTION 4-T20S-R34E. THE STATE ENGINEERS OFFICE INDICATES THAT THERE ARE ONLY MINOR ISOLATED ACCUMULATIONS OF FRESH WATER IN THIS AREA AND THERE ARE NO WELLS WITHIN ONE MILE OF THE PROPOSED WELL.

ARMSTRONG ENERGY CORPORATION

MOBIL LEA FEDERAL #8 PMW
330' FSL & 1650 FWL
SECTION 2-T20S-R34E
LEA COUNTY, NEW MEXICO

IX. PROPOSED STIMULATION PROGRAM:

ACID BREAKDOWN: AFTER PERFORATING THE ZONE WILL BE ACIDIZED WITH 3000 GALLONS OF 7 1/2% HCL NEFE ACID WITH RCN BALLSEALERS.

FRACTURE STIMULATION: THE ZONE WILL BE FRACTURE STIMULATED WITH 20,000 GALLONS OF CROSSLINKED GELLED WATER CARRYING 45,000 POUNDS OF 16-30 SAND.

X. LOGGING AND TEST DATA: THIS WELL HAS NOT BEEN DRILLED YET. LOGS AND TEST DATA WILL BE SUBMITTED TO THE COMMISSION UPON COMPLETION OF THIS WELL. THE ANTICIPATED COMPLETION DATE IS SEPTEMBER, 2002.

MOBIL LEA FEDERAL #8 PMW
330' FSL & 1650 FWL
SECTION 2-T20S-R34E
LEA COUNTY, NEW MEXICO

XI. ANALYSIS OF FRESH WATER WELLS:

THE CLOSEST SOURCE OF FRESH WATER IS A WINDMILL USED FOR LIVESTOCK WATERING LOCATED IN THE SE/SE OF SECTION 4-T20S-R34E. THIS IS CALLED THE ROBERTS WELL AND IT IS APPROXIMATELY ONE AND ONE-HALF MILES WEST OF THE PROPOSED PRESSURE MAINTENANCE WELL. A RECENT CHECK (10/31/95) BY ARMSTRONG ENERGY'S PUMPER INDICATED THIS WELL IS CAPPED AND WATER IS BEING PIPED TO THIS STOCK TANK FROM A SOURCE APPROXIMATELY TWO AND ONE-HALF MILES NORTH NORTHEAST OF THIS SITE. A SAMPLE OF THIS WATER WAS ANALYZED AND THE RESULTS ARE INCLUDED.

MR. KEN FRESQUEZ, WITH THE NEW MEXICO STATE ENGINEERS OFFICE IN ROSWELL, INDICATES THERE IS ONLY LIMITED AMOUNTS OF FRESH WATER IN THE AREA AND THE ROBERTS WELL IS THE CLOSEST SOURCE OF FRESH WATER. HE INDICATES THE ROBERTS WELL WAS DRILLED TO A DEPTH OF 200 FEET AND PRODUCES WATER FROM THE CHINLEE FORMATION. IN JANUARY 1986 THE WELL HAD A FLUID LEVEL OF 125.86 FEET FROM THE SURFACE.

SAMPLE FROM THE ROBERTS WELL STOCK TANK
ANALYZED BY BAKER PETROLEUM CHEMICALS, INC.

11/01/95

ANALYSIS # 4462

TOTAL HARDNESS	1.00 me/l
CALCIUM	20.00 mg/l
MAGNESIUM	0.00 mg/l
IRON	0.00 mg/l
SODIUM	4452.80 mg/l
CHLORIDE	5000.00 mg/l
SULFATE	660.00 mg/l
CARBONATE	600.00 mg/l
BICARBONATE	1220.00 mg/l
TOTAL SOLIDS	11952.80 mg/l
CARBON DIOXIDE	0.00 mg/l
pH	7.70
SPECIFIC GRAVITY	1.00
TDS	11952.80 PPM

ARMSTRONG ENERGY CORPORATION

MOBIL LEA FEDERAL #8 PMW
330' FSL & 1650 FWL
SECTION 2-T20S-R34E
LEA COUNTY, NEW MEXICO

XII. COMMUNICATION WITH SOURCES OF DRINKING WATER:

AFTER EXAMINING ALL AVAILABLE GEOLOGICAL AND ENGINEERING DATA, WE FIND NO EVIDENCE OF OPEN FAULTS OR ANY OTHER HYDROLOGIC CONNECTION BETWEEN THE INJECTION ZONE AND ANY UNDERGROUND SOURCE OF DRINKING WATER.

ARROW STRONG ENERGY CORPORATION

MOBIL LEA FEDERAL #8 PMW
330' FSL & 1650 FWL
SECTION 2-T20S-R34E
LEA COUNTY, NEW MEXICO

XIII. NOTICE

A COPY OF OUR APPLICATION HAS BEEN FURNISHED BY CERTIFIED MAIL TO THE SURFACE OWNER AND TO EACH LEASEHOLD OPERATOR WITHIN ONE-HALF MILE OF OUR PROPOSED PRESSURE MAINTENANCE WELL. SEE LISTING ON EXHIBIT "A".