Form 3160-5
(November 1994)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD-HOBBS

FORM APPROVED
OMB No. 1004-0135
Expires July 31, 1996

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

RECEIVED

SUBMIT IN TRIPLICATE - Other instructions on reverse side

JUN 27 2008

HOBBS OCD

5. Lease Serial No.
NM-3622

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

1. Type of Well
[X] Oil Well [ ] Gas Well [ ] Other

8. Well Name and No.
Scout 18 Federal Battery

2. Name of Operator
Cimarex Energy Co. of Colorado

9. API Well No.
Various

3a. Address
PO Box 140907; Irving, TX 75014-0907

3b. Phone No. *(include area code)*
972-401-3111

10. Field and Pool, or Exploratory Area
Tonto; 7 Rivers

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Various Footages
18-19S-34E

11. County or Parish, State
Lea County, NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
[ ] Notice of Intent	[ ] Acidize	[ ] Deepen	[ ] Production (Start/Resume)	[ ] Water Shut-Off
	[ ] Alter Casing	[ ] Fracture Treat	[ ] Reclamation	[ ] Well Integrity
[X] Subsequent Report	[ ] Casing Repair	[ ] New Construction	[ ] Recomplete	[ ] Other
	[ ] Change Plans	[ ] Plug and Abandon	[ ] Temporarily Abandon	
[ ] Final Abandonment Notice	[ ] Convert to Injection	[ ] Plug Back	[X] Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, included estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Cimarex Energy Co. of Colorado respectfully requests approval for disposal of produced water from the Scout 18 Federal Battery per the attached Water Production and Disposal information.

Scout 18 Federal No. 1	30-025-37880	1800 FSL & 410 FWL
Scout 18 Federal No. 2	30-025-37892	710 FSL & 660 FWL
Scout 18 Federal No. 3	30-025-37893	810 FSL & 1830 FWL
Scout 18 Federal No. 4	30-025-37880	1750 FSL & 2030 FEL
Scout 18 Federal No. 5	30-025-37881	660 FSL & 2030 FEL
Scout 18 Federal No. 6	30-025-37884	660 FSL & 660 FEL
Scout 18 Federal No. 7	30-025-38248	1650 FSL & 1980 FWL
Scout 18 Federal No. 8	30-025-38249	1650 FSL & 695 FEL
Scout 18 Federal No. 13	30-025-38048	1980 FNL & 510 FWL

APPROVED
JUN 22 2008
JAMES A. AMOS
SUPERVISOR-EPS

14. I hereby certify that the foregoing is true and correct

Name *(Printed/Typed)*
Natalie Krueger

Title
Regulatory Analyst

Signature
Natalie Krueger

Date
February 15, 2008

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by	Title	Date
Conditions of Approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon	Office	

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on reverse)

Water Production & Disposal Information

Scout 18 Federal Battery (Wells 1,2,3,4,5,6,7,8, & 13)

In order to process your disposal request, the following information must be completed:

1. Name of formations producing water on this lease: Tonto; 7 Rivers
2. Amount of water produced from all formations in barrels per day: 210.2 bpd
3. Attach a current water analysis of produced water from all zones showing at least the total dissolved solids, PH, and the concentrations of chlorides and sulfates (one sample will suffice if the water is commingled): Attached
4. How water is stored on this lease: 2 500 bbl fiberglass tanks
5. How water is moved to the disposal facility: Trucked
6. Identify the disposal facility by:
   A. Facility Operator's Name: Louray Oil Company, LLC
   B. Name of facility or well name and number: Government E No. 1
   C. Type of facility or well (WDW, WIW, ect.: SWD
   D. Location by ¼ ¼ SESW section 25 township 19S range 34E
7. Attach a copy of the state-issued permit for the Disposal Facility.

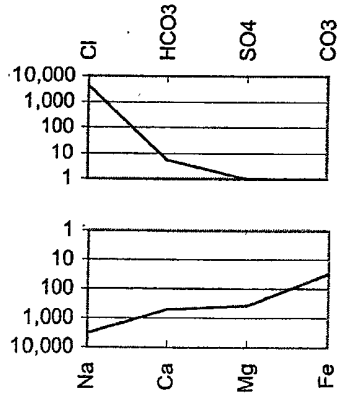
Submit to this office (**414 West Taylor; Hobbs, NM 88240**) the above-required information on a sundry notice 3160-5. Submit 1 original and 5 copies within the required time frame. This form may be used as an attachment to the sundry notice. Call me at 505-393-3612 if you need to further discuss this matter.

CAPITAN CHEMICAL
WATER ANALYSIS REPORT

	Cimarex Co. of Colorado	Date Sampled	: 11/09/06
Lease Name	: Scout	Capitan Rep.	: Joe Hughes
Well Number	: Battery (Water Leg)	Company Rep.	: Cliff Johnson - Joe Carrillo
Location	: Lea County New Mexico		

ANALYSIS						
1. pH	5.43					
2. Specific Gravity @ 60/60 F.	1.162					
3. CaCO3 Saturation Index @ 80 F.	+0.375	'Calcium Carbonate Scale Possible'				
@ 140 F.	+2.585	'Calcium Carbonate Scale Possible'				
Dissolved Gasses						
4. Hydrogen Sulfide	0	PPM				
5. Carbon Dioxide	794	PPM				
6. Dissolved Oxygen	Not Determined					
Cations	mg/L	/	Eq. Wt.	=	MEQ/L	
7. Calcium (Ca++)	10,200	/	20.1	=	507.46	
8. Magnesium (Mg++)	4,496	/	12.2	=	368.48	
9. Sodium (Na+) Calculated	77,173	/	23.0	=	3,355.37	
10. Barium (Ba++)	Not Determined	/	68.7	=	0.00	
Anions						
11. Hydroxyl (OH-)	0	/	17.0	=	0.00	
12. Carbonate (CO3=)	0	/	30.0	=	0.00	
13. Bicarbonate (HCO3-)	342	/	61.1	=	5.59	
14. Sulfate (SO4=)	18	/	48.8	=	0.37	
15. Chloride (Cl-)	150,000	/	35.5	=	4,225.35	
Other						
16. Soluble Iron (Fe)	550	/	18.2	=	30.22	
17. Total Dissolved Solids	242,229					
18. Total Hardness As CaCO3	44,000					
Calcium Sulfate Solubility @ 90 F.	1,321					
20. Resistivity (Measured)	0.060	Ohm/Meters	@ 70	Degrees (F)		

Logarithmic Water Pattern



PROBABLE MINERAL COMPOSITION

COMPOUND	Eq. Wt.	X	MEQ/L	=	mg/L
Ca(HCO3)2	81.04	X	5.59	=	453
CaSO4	68.07	X	0.37	=	25
CaCl2	55.50	X	501.50	=	27,833
Mg(HCO3)2	73.17	X	0.00	=	0
MgSO4	60.19	X	0.00	=	0
MgCl2	47.62	X	368.48	=	17,547
NaHCO3	84.00	X	0.00	=	0
NaSO4	71.03	X	0.00	=	0
NaCl	58.46	X	3,355.37	=	196,155

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

BRUCE KING
GOVERNOR

3-3-94

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88241-1980
(505) 393-6161

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

SWD-559

RE: Proposed:
MC
DHC
NSL
NSP
SWD X
WFX
PMX

Gentlemen:

I have examined the application for the:

Subsurface Water Disposal Inc Government E # 1-N 25-19-34
Operator Lease & Well No. Unit S-T-R

and my recommendations are as follows:

OK

Yours very truly,

Jerry Sexton
Supervisor, District 1

/ed

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501

FORM C-108
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ yes ☐ no

II. Operator: Subsurface Water Disposal, Inc.

Address: P.O. Box 1002 Hobbs, NM 88241

Contact party: Lowell B. Deckert Phone: (505) 393-9161

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
If yes, give the Division order number authorizing the project _____.

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 geological data on the injection zone including appropriate lithologic detail, geological 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 source 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 source 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: Lowell B. Deckert Title Consultant

Signature: Lowell B. Deckert Date: 2-24-'94

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal.

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

(1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

(1) The name, address, phone number, and contact party for the applicant;

(2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;

(3) the formation name and depth with expected maximum injection rates and pressures; and

(4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

SUBSURFACE WATER DISPOSAL, INC.
P.O. BOX 1002
HOBBS, NEW MEXICO 88241-1002

Proposed Work To Convert Well To Salt Water Disposal Service:

Government "E" # 1 (formerly Armstrong Energy Corp., Lea Bone Springs producing well): Unit "N", Section 25, Township 19 South, Range 34 East, Lea Co., New Mexico

1) MIRU pulling unit. Make bit and scraper trip to PBTD: 10,277'

2) Perforate Bone Springs interval: 9716' to 9746'.
(present Bone Springs perfs.: 9716' to 9720')

3) Acidize Bone Springs perfs 9716' to 9746' with 2500 gallons NE Fe 15% hydrochloric acid.

4) Take injectivity test.

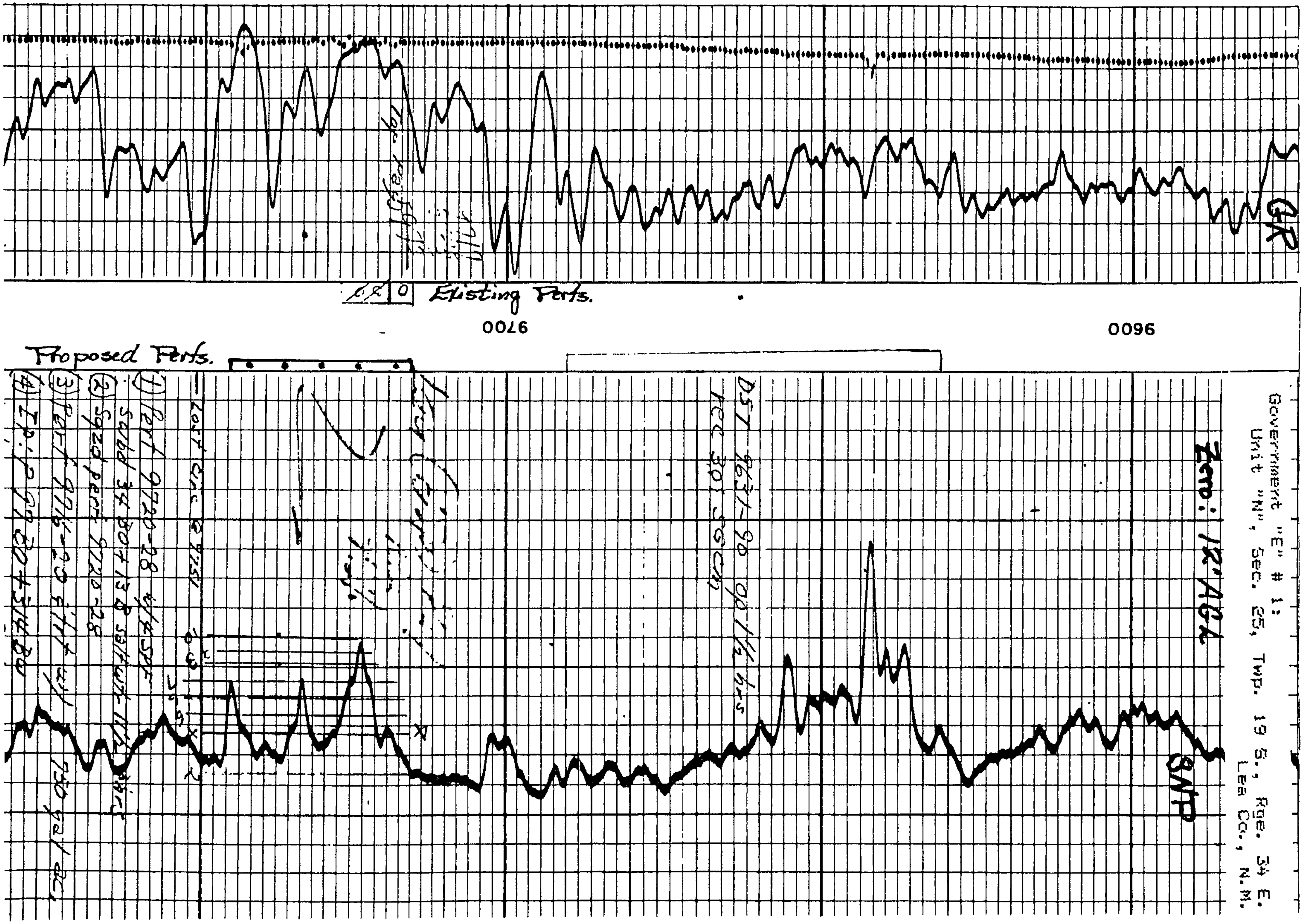
5) Set 5 ½" packer on wireline @ 9700'.

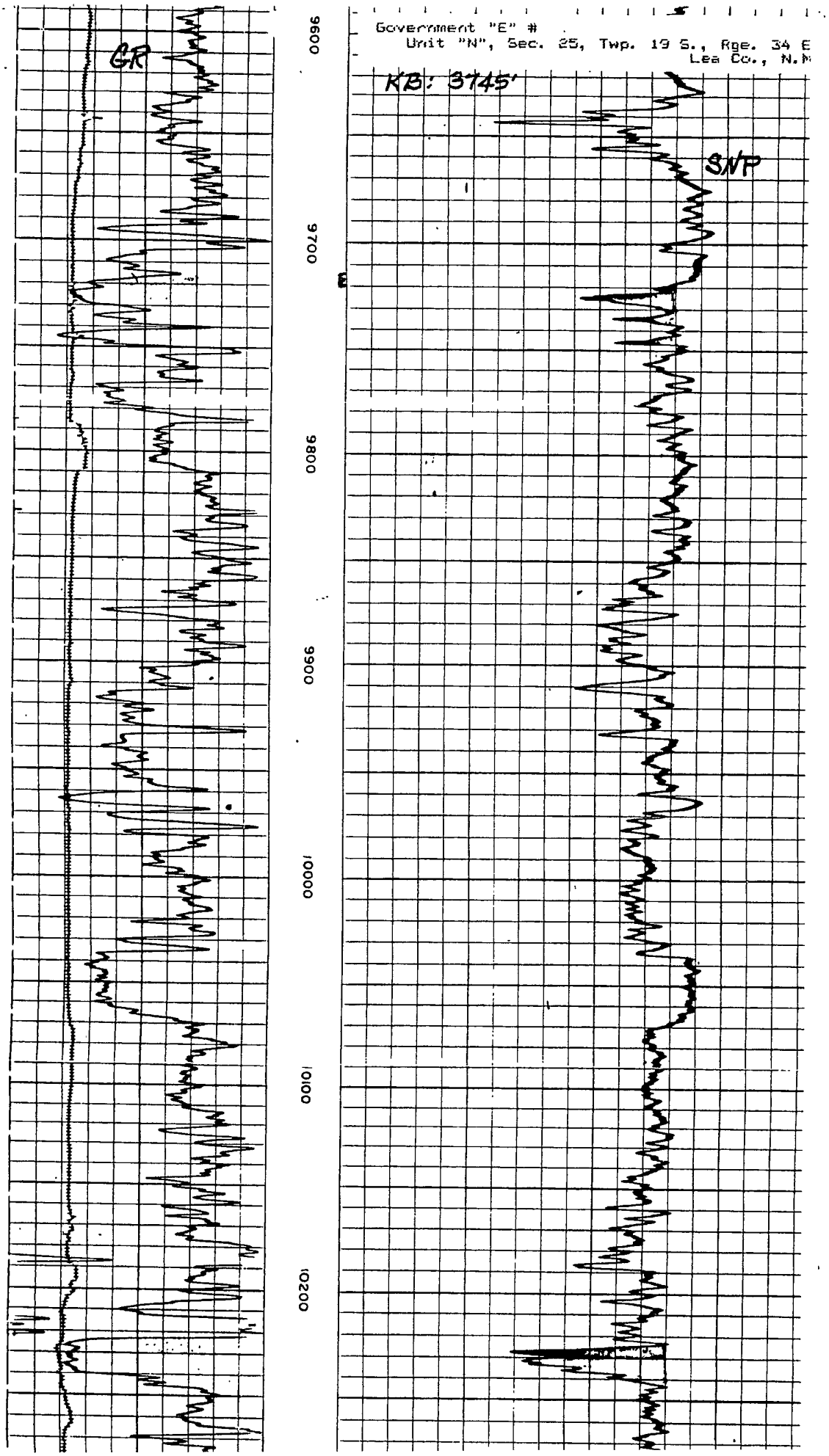
6) Run 2 7/8" injection tubing and one joint tailpipe.

7) Displace tubing-casing annulus with fresh water and packer fluid.

8) Stab into packer and test annulus for 30 minutes @ 500 psi.

9) Place on injection and take injectivity test.

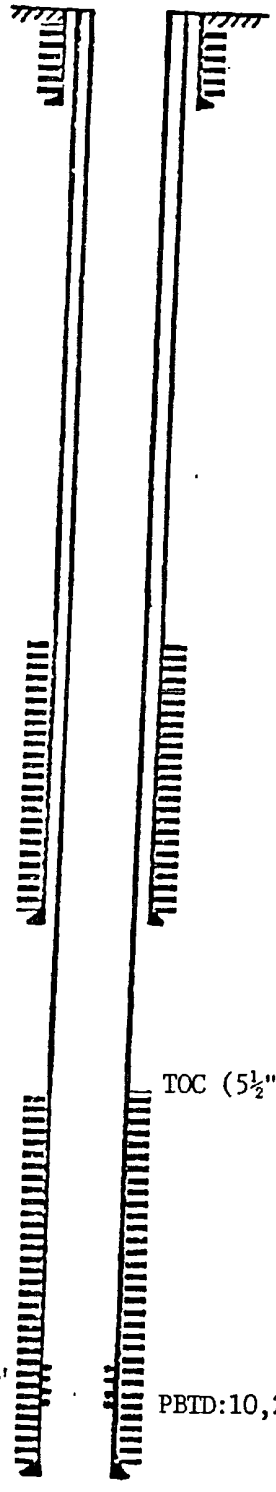

GR
Existing Perfs.
9700
9600
Proposed Perfs.
Perf 9720-28 w/4SPF
Sqzd perf 9720-28
Zero: 12' AGL
SNP
Government "E" # 1;
Unit "N", Sec. 25, Twp. 19 S., Rge. 34 E.
Lea Co., N.M.


Government "E" #
Unit "N", Sec. 25, Twp. 19 S., Rge. 34 E
Lea Co., N.M.
KB: 3745'
GR
SNP
9600
9700
9800
9900
10000
10100
10200

OPERATOR			DATE
Armstrong Energy Corp.			2-7-94
LEASE	WELL No.	LOCATION	
Government 'E'	1	1880'FW & 610' FSL Sec 25,T19S,R34E Lea County, NM	

Schematic of Present Condition of Proposed Disposal Well

Tabular Data



Surface Casing

Size 11 3/4" set @ 400' Cemented with 450 sx.

TOC surface feet determined by circ.

Hole size 15"

Intermediate Casing

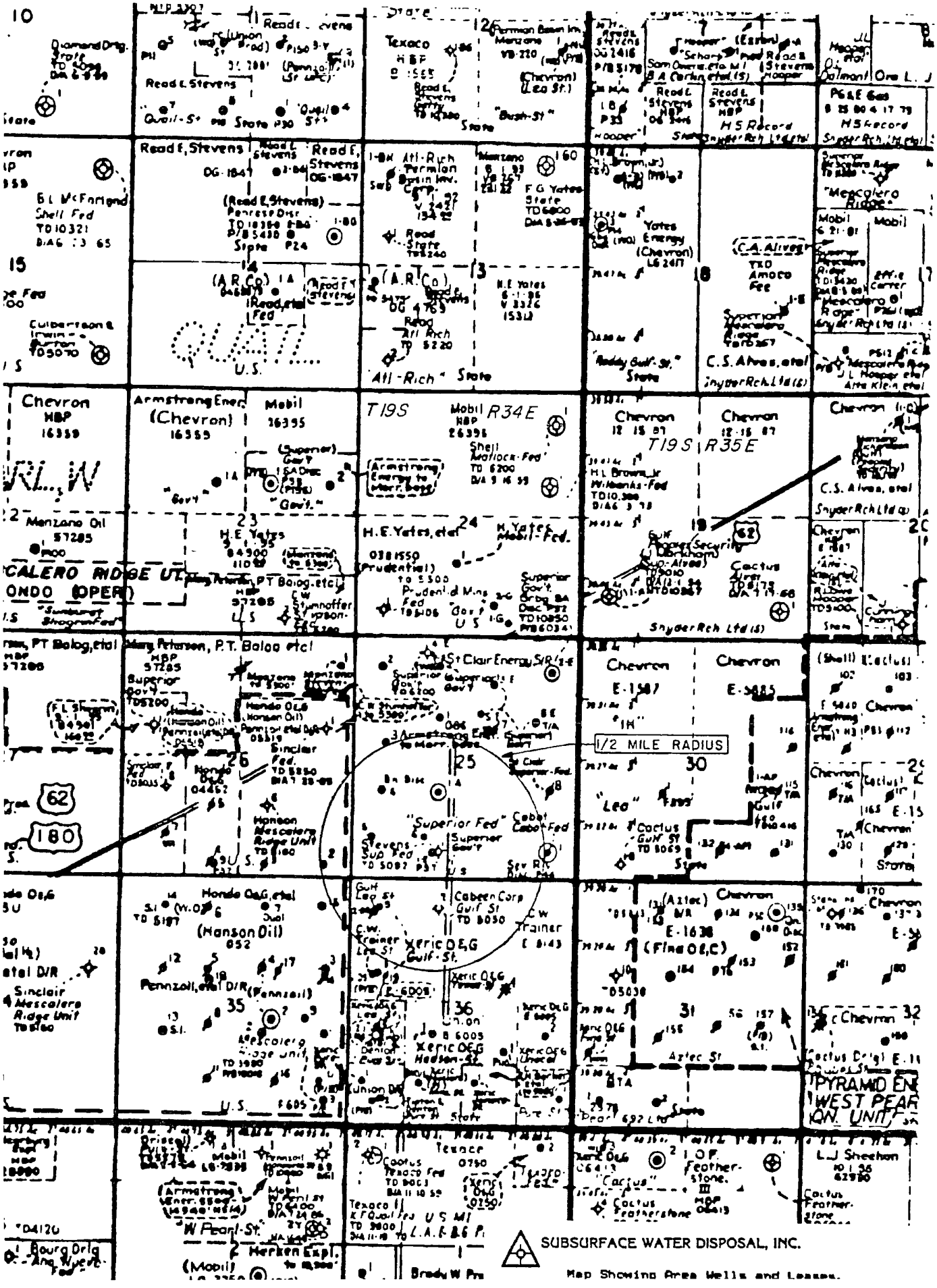
Size 8 5/8" set @ 4089' Cemented with 775 sx.

TOC NR feet Hole size 11"

Long string

Size 5½" Cemented with 500 sx.

TOC 7700 feet Hole size 7 7/8"


T19S R34E
T19S R35E
1/2 MILE RADIUS
SUBSURFACE WATER DISPOSAL, INC.
Map Showing Area Wells and Leases.

OPERATOR			DATE
Gulf Oil Corp.			2-7-94
LEASE	WELL No.	LOCATION	
Lea 'DS' State	2	770'FN & 560'FWL Sec36-T19S-R34E Lea County, NM	

P & A Well Schematic

10 sax plug:0-30'
55 sax plug: 270'
80 sax plug:367'
70 sax plug:912'-1040'
cut 8 5/8" @ 990'

Surface Casing:
Size: 13 3/8" set @ 355' Cemented with: 420 sax
Hole Size: 17½" TOC @ circulated

5 sax plug:1850-1950'

0 sax plug:2100-60'

mt. plug:2210'-2358'
cut 5½" @ 2327'

TOC (5½"): 2360'
TOC (8 5/8"): 3210'

Intermediate Casing:
Size: 8 5/8" set @ 4049' Cemented with: 265 sax
Hole Size: 11" TOC @ 3210'

0 sax plug:5300-5400'

sax plug:9300-50'
BP :9350'

perfs:9692-9706'
PB:9742'

Production Casing:
Size: 5½" set @ 9770' Cemented with: 585 sax
Hole Size: 7 7/8" TOC @ 2360

Tabulation of All Wells Within ½ Mile of Proposed Disposal Well:
Government "E" #1, "N" Sec. 25, Twp. 19 S., Rge. 34 E., Lea Co., N.M.

Location	Operator	Lease & Well #	Pool	Compl. Int.	T.D.	Status
E25-19-34	St.Clair Energy	Superior Fed. #3	Pearl Queen	4808'-5019'	5150'	Prod.
K25-19-34	St.Clair Energy	Superior Fed. "A" #1	Pearl Queen	4796'-4806'	5112'	Prod.
J25-19-34	St.Clair Energy	Superior Fed. # 4	Pearl Queen	4781'-5013'	5150'	Prod.
M25-19-34	St.Clair Energy	Superior Fed. # 5	Pearl Queen	4882'-4986'	5150'	Prod.
N25-19-34	St.Clair Energy	Superior Fed. # 6	Pearl Queen	4811'-5015'	5150'	Prod.
P26-19-34	Devon Energy	Mescalero Rdg. Ut. 26 # 2	Pearl Queen	4623'-4972'	5150'	Sl Prod.
C36-19-34	Cabeen Corp.	Gulf St. # 2	-------	---------	5050'	D & A
D36-19-34	Mack Energy	Gulf St. # 3	Pearl Queen	4763'-4996'	5148'	SI Prod.
D36-19-34	Gulf Oil	Lea St. "DS" # 2	Lea Bone Spr.	9692'-9706'	9770'	P & A

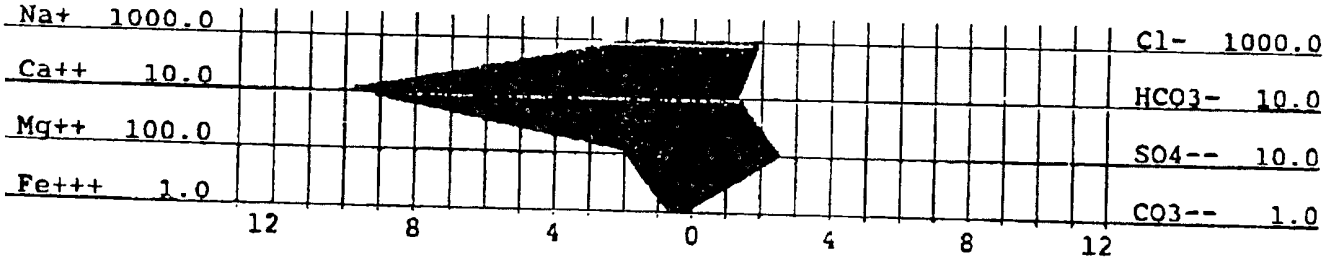
BAKER PERFORMANCE CHEMICALS
A Baker Hughes company

WATER ANALYSIS
for
ARMSTRONG ENERGY

Date of Analysis:	OCTOBER 12, 1992	**Analysis #:**	1757
Company:	ARMSTRONG ENERGY	**Company Address:**	N/D
State:	N/D	**Field:**	N/D
Lease:	GOVERNMENT E #1	**Well #:**	# 1
Oil (bbl/day):	N/D	**Water (bbl/day):**	N/D
Type of Water:	PRODUCED	**Temp.,C:**	17
Sample Source:	WELL HEAD	**Date of Sampling:**	OCTOBER 11, 1992
Representative:	DON BLACKSTOCK	**Analysis By:**	SUZANNE WILLIAMS

WATER ANALYSIS PATTERN

(number beside ion symbol indicates me/l scale unit)



DISSOLVED SOLIDS

CATIONS	me/l	mg/l
Total Hardness :	300.00	
Calcium, (Ca++) :	100.00	2004.81
Magnesium, (Mg++):	200.00	2430.28
Iron, (Fe+++) :	0.81	15.00
Barium, (Ba++) :	N/D	N/D
Sodium, Na+(calc):	1767.38	40649.65
Manganese, (Mn++):	0.00	0.00
ANIONS		
Chloride, Cl- :	2028.17	71997.52
Sulfate, SO4-- :	26.01	1250.00
Carbonate, CO3-- :	0.00	0.00
Bicarbonate,HCO3-:	14.00	854.18
Hydroxyl,OH- :	0.00	0.00
Sulfide, S-- :	0.00	0.00
TOTAL SOLIDS (quant.):		119201.40

DISSOLVED GASES

Hydrogen sulfide:	0.00	mg/l
Carbon dioxide :	308.88	mg/l
Oxygen :	N/D	mg/l

PHYSICAL PROPERTIES

pH :	6.05
Spec Grav. :	1.100
TDS (calc.) :	119215.45

SCALE STABILITIES

Temp.,C	CaCO3	CaSO4	BaSO4
17.0	-0.48	5491	0
27.0	-0.31	5708	0
37.0	-0.10	6002	0
Max entity, (calc.)	1836		0

RESIDUAL HYDROCARBONS: N/D

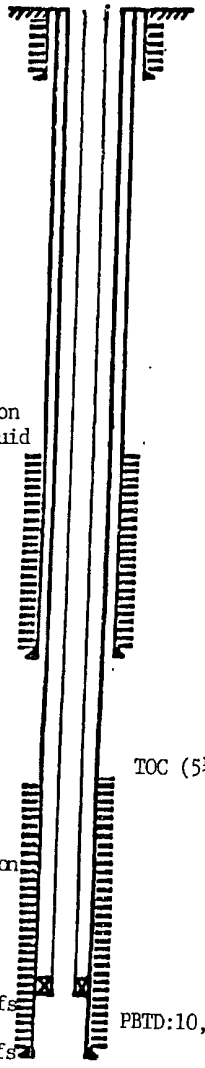
/D = not determined

@20'C...CALCIUM SULFATE SCALING IS UNLIKELY.
@20'C...MODERATE CORROSIVE.

OPERATOR			I
Subsurface Water Disposal, Inc.			2-7-94
LEASE	WELL No	LOCATION	
Government 'E'	1	1880'FW & 610'FSL Sec25,T19S,R34E	

Lea County, NM

Schematic of Proposed Disposal Well



Surface Casing:
Size: 11 3/4" set @ 400' Cemented with: 450 sax
Hole Size: 15" TOC @ circ'

csg-tbg annulus filled w/corrosion inhibited pkr.fluid

Intermediate Casing:
Size: 8 5/8" set @ 4089' Cemented with: 775 sax
Hole Size: 11" TOC @ NR'

TOC (5½"):7700'

9700' of 2 7/8" plastic -lined tbg. set on injection packer

Proposed B.S. perfs 9716-20' (Present B.S. perfs 9716-46')

PBTD:10,277'

Production Casing:
Size: 5½" set @ 10,300' Cemented with: 500 sax
Hole Size: 7 7/8" TOC @ 7700' TD: 10,300'

Tubing size 2 7/8" lined with plastic (material) set in a Baker Model 'R' (brand and model) packer at 9700 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Bone Springs (perfs. 9716-46')
2. Name of Field or Pool (if applicable) Lea Bone Springs
3. Is this a new well drilled for injection? ☐ Yes ☒ No
   If no, for what purpose was the well originally drilled? Bone Springs oil production
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Pearl Seven Rivers (oil & gas): 3900-4000', Pearl Queen (oil): 4600-5200'
   Pearl San Andres (oil): 5200-5300', Lea San Andres (oil): 6000-6100'

OCD - Hobbs

SUBSURFACE WATER DISPOSAL, INC.
P.O. BOX 1002
HOBBS NEW MEXICO 88241-1002

February 23, 1994

Oil Conservation Division
New Mexico Energy, Minerals and
Natural Resources Dept.
P.O. Box 2088
Santa Fe, NM 87501

Re: Application for a Commercial Salt Water Disposal Well, Government "E" #1, 1880 feet from the west line and 610 feet from the south line of Section 25, Township 19 South, Range 34 East, Lea Bone Springs Pool, Lea County, New Mexico

Gentlemen:

Subsurface Water Disposal, Inc. hereby makes application to convert the subject Bone Springs producing well to a Bone Springs water disposal well. (Details of the proposed conversion are outlined on an attached sheet.)

The Government "E" #1 was completed in 1971 as a Bone Springs production well, perforations 9716' to 9720', and is presently operating at its economic limit. Cumulative production totals 182 MBO, 517 MMcf, and 121 MBW.

The closest active Lea Bone Springs producing well is over one mile from this proposed disposal well. The only penetrating wellbore within the one-half mile area of review is a plugged Lea Bone Springs producer located 770 feet from the north and 560 feet from the west lines of Sec. 36, Twp. 19 S., Rge. 34 E. (See attached plat.) The plugging detail for this well is provided on an attached diagramatic sketch.

Overlying oil and gas pools in the area are: the Pearl Seven Rivers (oil and gas) at a depth of 3900 to 4000 feet, the Pearl Queen (oil) at a depth of 4600 to 5200 feet, the Pearl San Andres (oil) at a depth of 5200 to 5300 feet, and the Lea San Andres (oil) at a depth of 6000 to 6100 feet. A listing of all wells within one half mile and their completion interval is provided in an attached tabulation. There are no underlying oil and gas pools in this area.

The applicant requests approval to dispose of produced water in the Bone Springs interval from 9716 feet to 10,240 feet. The disposal system will be a closed system and we request a maximum surface injection pressure of 2000 psi. We anticipate initial disposal by gravity. The maximum disposal volume is estimated at 3000 barrels per day with a monthly average rate of approximately 2000 barrels per day. The produced water that we propose to dispose of will come from various sources in the area, such as: the Yates-Seven Rivers, Queen, Grayburg-San Andres, Delaware, and Bone Springs. An informal survey of oil operators indicated a need for a salt water disposal well in this area. The water produced from the Bone Springs formation has a total solids of 120,000 ppm and a chloride content of 72,000 ppm as shown on the attached

chemical analysis. We plan to test the chemical compatibility of the disposal waters and will chemically treat before injecting into the Bone Springs if needed to prevent plugging problems.

As shown on the attached diagramatic sketch, we propose to equip this well with a string of 2 7/8 inch plastic lined tubing equipped with an injection packer set at approximately 9700 feet. The casing-tubing annulus will be filled with corrosion inhibited packer fluid with the provision for surface monitoring.

The Bone Springs is of mid-to-late Permian in age and occurs at a depth of from 9500 to 10,200 feet in this area. It is described as a dolomite, sucrosic in part, with intercrystalline and vuggy porosity. The vugular porosity and possible fractures in the Bone Springs should make this an excellent disposal zone.

A physical review of the area and check with the State Engineer's office in Roswell, revealed no fresh water wells within one mile of the proposed disposal well. We have examined the available geologic and engineering data and have found no evidence of open faults or any hydrologic connection between the disposal zone and an underground source of drinking water. Furthermore, the shallow formations and the salt section will be protected by three cemented casing strings, and injection tubing and packer.

Enclosed are two copies of this application, along with Form C-108, a marked plat of the surrounding area, a tabulation of all wells within one-half mile, three diagramatic wellbore sketches, chemical analysis of Bone Springs formation water, and proposed work outline.

Certified copies of this application have been sent to all oil operators within the one-half mile area of review, the surface owner, and the Oil Conservation Division, Hobbs District Office. (We are currently pursuing BLM approval for operating on federal land.)

A notice of publication will be forwarded as soon as possible.

Subsurface Water Disposal, Inc. asks for administrative approval of this application.

Respectfully submitted by,

Lowell B. Deckert

Lowell B. Deckert, Agent for
Subsurface Water Disposal, Inc.

Copies sent to:

Offset Operators:

Devon Energy Corp., 1500 Mid-America Tower, 20 North Broadway, Oklahoma City, OK 73102

Mack Energy, P.O. Box 276, Artesia, NM 88210

St. Clair Energy Corp., P.O. Box 1392, Midland, TX 79702

Surface Owner:

U.S. Department of the Interior, Bureau of Land Management, P.O. Box 1778, Carlsbad, NM 88221

Form 3160-5
(November 1983)
(Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE (Other instructions on reverse side)

Budget Bureau No. 1004-0135
Expires August 31, 1985

N. M. OIL CONS. COMMISSION
P. O. BOX 1980
HOBBS, NEW MEXICO 88240

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—" for such proposals.)

1. OIL WELL [X] GAS WELL [ ] OTHER

2. NAME OF OPERATOR: ARMSTRONG ENERGY CORPORATION

3. ADDRESS OF OPERATOR: P.O. Box 1973, Roswell, New Mexico 88202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1880' FWL & 610' FSL

5. LEASE DESIGNATION AND SERIAL NO.: NM-086

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Government "E"

9. WELL NO.: 1

10. FIELD AND POOL, OR WILDCAT: Lea-Bone Spring

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 25, T19S, R34E

12. COUNTY OR PARISH: Lea

13. STATE: NM

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.):

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]
(Other)			

SUBSEQUENT REPORT OF:

WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOTING OR ACIDIZING	[ ]	ABANDONMENT*	[ ]
(Other) NTL-2B			[X]

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Pursuant to NTL-2B regulations, this notice indicates our method of water disposal:

A) This lease produces water from the San Andres formation.
B) 10 BWPD.
C) Water analysis is included with this notice.
D) N/A
E) Water is moved by buried pipeline.
F) Devon Energy waterflood station. NESW S.26 T19S R34E.

RECEIVED MAY 27 1 15 PM '93 BUREAU ... HOBBS ...

RECEIVED JUN 3 10 59 AM '93 CARLSBAD ...

18. I hereby certify that the foregoing is true and correct

SIGNED [signature] TITLE Operations Supervisor DATE 05-26-93

(This space for Federal or State office use)

APPROVED BY ORIG. SGD ... ARA TITLE ______ DATE JUN 17 ...

CONDITIONS OF APPROVAL, IF ANY:

see attached

*See Instructions on Reverse Side

WATER ANALYSIS REPORT
furnished by TRETOLITE CHEMICALS

COMPANY:	ARMSTRONG ENERGY
LEASE:	GOVERNMENT (SAN ANDRES)
SAMPLE POINT:	HEATER TREATER
SAMPLE DATE:	
SAMPLE TEMP.:	

pH:	6.4
H2S:	+
SPECIFIC GRAVITY:	1.185

TITRATED AND CALCULATED IONS

	MILLIGRAMS PER LITER	MILLIEQUIVALENTS PER LITER
HCO3	122.00	2.00
Cl	155490.00	4380.00
SO4	0.00	0.00
Ca	20000.00	1000.00
Mg	5589.00	458.11
Na	67249.36	2923.89

IONIC STRENGTH =	5.12
TOTAL HARDNESS =	73000.0 mg/ltr.
TOTAL DISSOLVED SOLIDS =	248296.8 mg/ltr.
TOTAL IRON (Fe) =	1.0 ppm

PROBABLE MINERAL COMPOSITION AND ION PAIRING

	MILLIEQUIVALENTS PER LITER	MILLIGRAMS PER LITER
Ca(HCO3)2	2.00	162.08
CaSO4	0.00	0.00
CaCl2	998.00	55389.00
Mg(HCO3)2	0.00	0.00
MgSO4	0.00	0.00
MgCl2	458.11	21815.43
NaHCO3	0.00	0.00
Na2SO4	0.00	0.00
NaCl	2923.89	170930.30

CALCULATED SCALING TENDENCIES

SCALING INDEX

CaCO3 @ 80 DEG F. =	1.2
CaCO3 @ 120 DEG F. =	1.9

SATURATION POINT

CaSO4 @ 70 DEG F. =	609.2 MG/LTR.
CaSO4 @ 110 DEG F. =	653.9 MG/LTR.

Disposal of Produced Water From Federal Wells
Conditions of Approval

Approval of the produced water disposal methodology is subject to the following conditions of approval:

1. That this agency be notified of any change in your method or location of disposal.

2. Compliance with all provisions of NTL-2B.

3. This agency shall be notified of any spill or discharge as required by NTL-3A.

4. This agency reserves the right to modify or rescind approval whenever it determines continued use of the approved method may adversely affect the surface or subsurface environments.

5. All aboveground structures on the lease shall be painted sandstone brown, Federal Std. 595-20318, or 30318, within 90 days if you have not already done so.

6. Any on lease open top storage tanks shall be covered with a wire screen to prevent entry by birds and other wildlife.

7. This approval should not constitute the granting of any right-of-way or construction rights not granted by the lease instrument.

8. If water is transported via a pipeline that extends beyond the lease boundary, then you need to submit within 30 days an application for right-of-way approval to the Realty Section in this office if you have not already done so.