

CHECKLIST for ADMINISTRATIVE INJECTION APPLICATIONS

Operator: BASS ENTERPRISES PROD. Well: LEGG FEDERAL Well No. 1

Contact: DAN NOTTER Title: CONSULTANT Phone: 982-0757

DATE IN 7-29-94 RELEASE DATE 8-17-94 DATE OUT 8-19-94

Proposed Injection Application is for: WATERFLOOD Expansion Initial

Original Order: R- Secondary Recovery Pressure Maintenance

SENSITIVE AREAS

SALT WATER DISPOSAL

WIPP

Capitan Reef

Commercial Operation

Data is complete for proposed well(s)? Additional Data _____

AREA of REVIEW WELLS

0 Total # of AOR

0 # of Plugged Wells

N/A Tabulation Complete

N/A Schematics of P & A's

N/A Cement Tops Adequate

N/A AOR Repair Required

INJECTION INFORMATION

Injection Formation(s) BELL CANYON / UPPER CHERRY CANYON

Source of Water DELAWARE / AROKA Compatible YES

PROOF OF NOTICE

Copy of Legal Notice

Information Printed Correctly

Correct Operators

Copies of Certified Mail Receipts

Objection Received

Set to Hearing _____ Date

NOTES: _____

APPLICATION QUALIFIES FOR ADMINISTRATIVE APPROVAL YES

COMMUNICATION WITH CONTACT PERSON:

1st Contact: Telephoned Letter _____ Date _____ Nature of Discussion _____

2nd Contact: Telephoned Letter _____ Date _____ Nature of Discussion _____

3rd Contact: Telephoned Letter _____ Date _____ Nature of Discussion _____

OIL CONSERVATION DIVISION
RECEIVED

'94 JUL 29 AM 8 50

FAX (915) 687-0086

BASS ENTERPRISES PRODUCTION CO.

6 DESTA DRIVE, SUITE 3700
P.O. BOX 2760
MIDLAND, TEXAS 79702

July 27, 1994

(915) 683-2277

**RE: NOTICE OF APPLICATION FOR
AUTHORIZATION TO INJECT
LEGG FEDERAL #1
QUAHADA RIDGE (DELAWARE) FIELD
EDDY COUNTY, NEW MEXICO
FILE: 400-WF: LEGGFDL1.INJ**

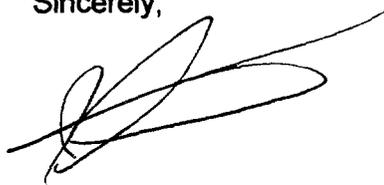
Mr. William J. LeMay
Director, Oil Conservation Division
State of New Mexico
P. O. Box 2088
Santa Fe, New Mexico 87504-2088

Dear Mr. LeMay,

Enclosed please find Bass Enterprises Production Co.'s Application for Authorization to Inject for disposal purposes into the Legg Federal #1, located in Sec. 27, T22S, R30E, Eddy County, New Mexico. Bass Enterprises Production Co. respectfully requests administrative approval as per Rule 701D.

If additional information is required, please contact Mr. Keith Bucy, Division Production Superintendent at the letterhead address.

Sincerely,



John R. Smitherman
Division Production Manager


GEG/pg

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, PO Box 2088, Santa Fe, NM 87504-2088 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.

INJECTION WELL DATA SHEET

OPERATOR

BASS ENTERPRISES PRODUCTION CO.

LEASE

LEGG FEDERAL

WELL NO. 1

660' FNL & 2004' FEL

SECTION 27

TOWNSHIP 22S

RANGE 30E

FOOTAGE LOCATION

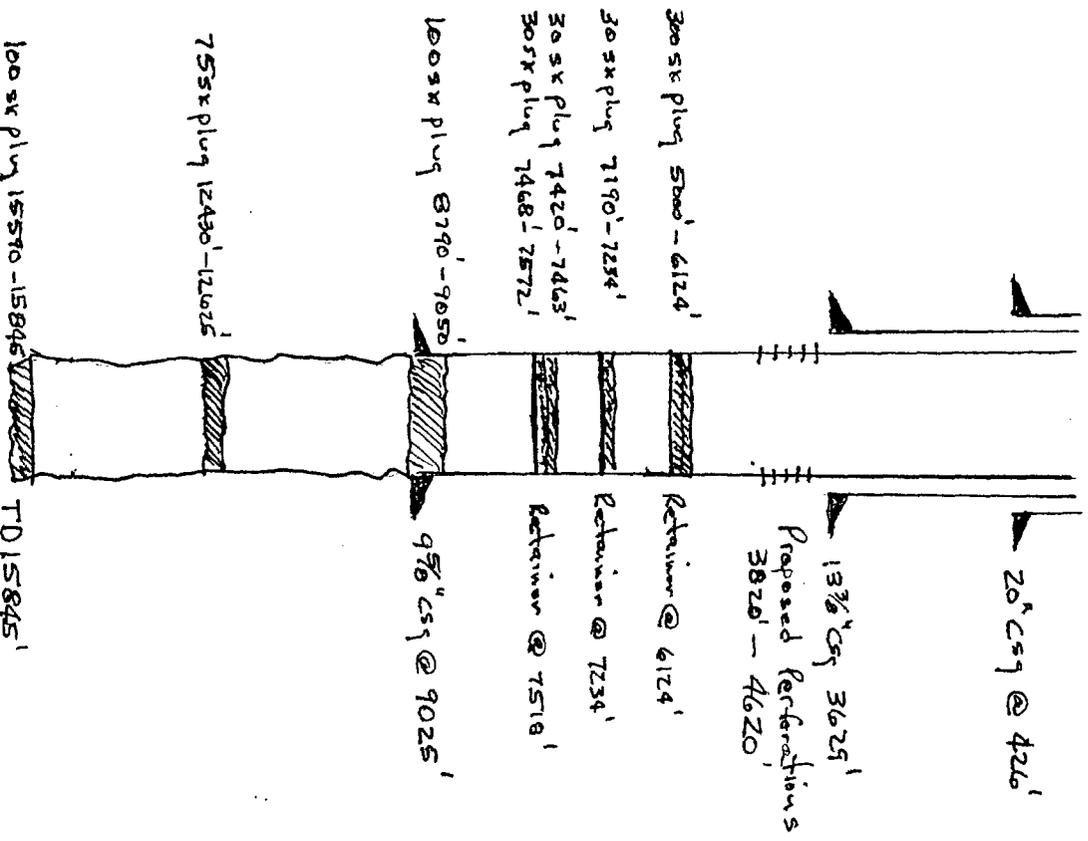
SECTION

TOWNSHIP

RANGE

Schematic

Well Construction Data



Surface Casing

Size 20" Cemented with 700 sx.

TOC Surface feet determined by circ

Hole Size 24"

Intermediate Casing

Size 13-3/8" Cemented with 3350 sx.

TOC Surface feet determined by circ

Hole Size 17-1/2"

Long String

Size 9-5/8" Cemented with 2590 sx.

TOC 2840' feet determined by Temp Survey

Hole Size 12-1/4"

Total Depth 9025'

Injection Interval (Perforated)

3820' feet to 4620' feet

(perforated or open-hole; Indicate which)

INJECTION WELL DATA SHEET

Tubing Size 2 7/8" lined with internal plastic coating set in a
Baker 9 5/8" packer at (type of internal coating) feet
3744

Other type of tubing / casing seal if applicable

Other Data

1. Is this a new well drilled for injection? Yes XX No

If no, for what purpose was the well originally drilled? oil and gas exploration

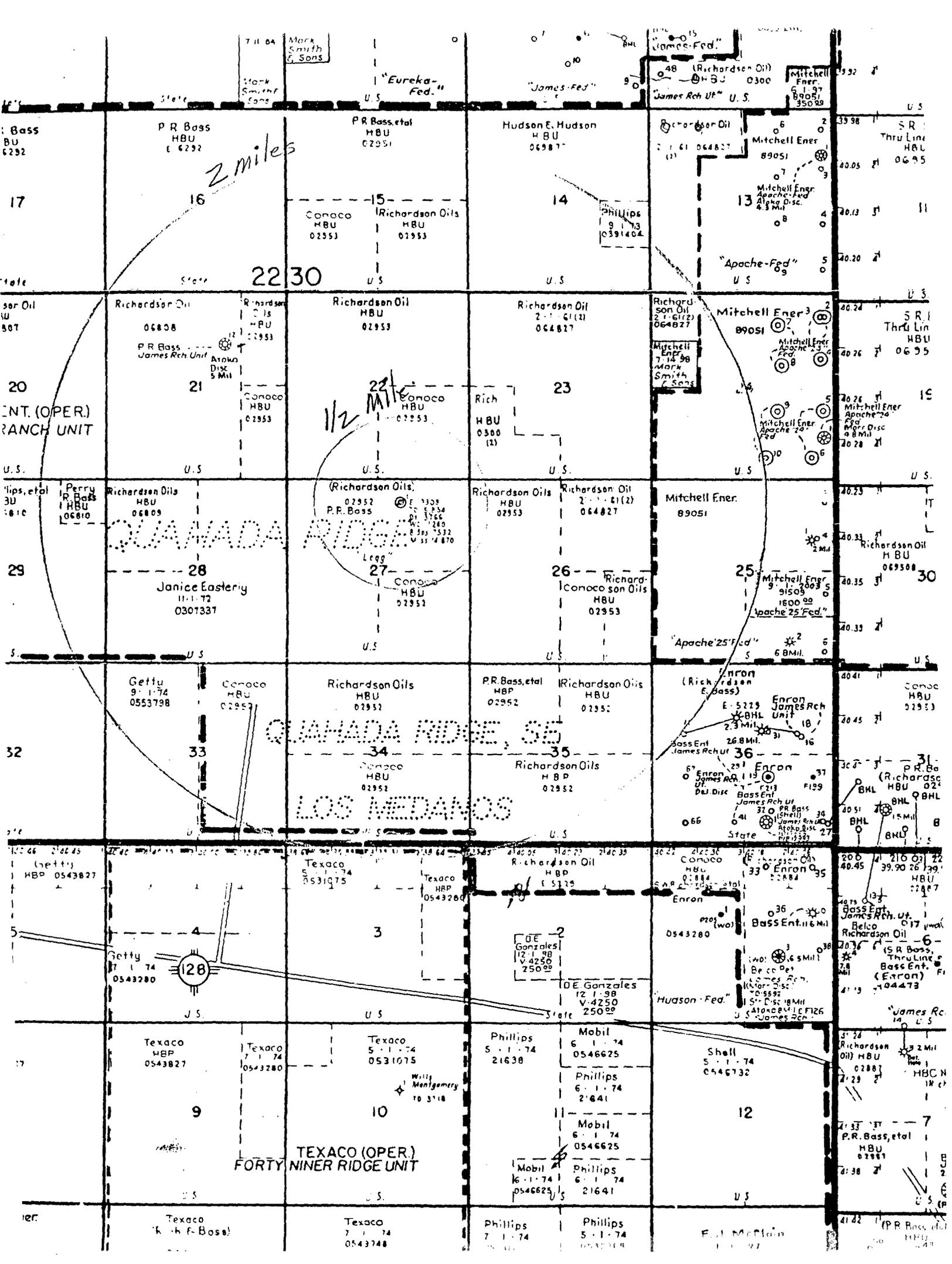
2. Name of the injection formation Ramsey/Olds

3. Name of Field or Pool (if applicable) NA

4. 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. See attached well sketch

5. Give the names and depths of any over or underlying oil or gas zones (pools) in this area.

- James Ranch Atoka 11,900'
- James Ranch Morrow 12,500'



2 miles

1/2 mile

CANADA RIDGE
LOS MEDANOS

TEXACO (OPER.)
FORTY NINER RIDGE UNIT

Bass
BU
6292

P R Bass
HBU
6292

P R Bass, et al
HBU
62951

Hudson E. Hudson
HBU
66987

James Fed.
Richardson Oil
HBU
0300

Mitchell Ener.
6-1-77
89051
35029

17

16

15

14

13

11

Richardson Oil
HBU
607

Richardson Oil
06838
P R Bass
James Rich Unit
Atown
Disc
5 Mil

Richardson Oil
HBU
02953

Richardson Oil
HBU
02953

Richardson Oil
2-1-61(2)
064827

Richardson Oil
2-1-61(2)
064827

Mitchell Ener
89051

S.R.I
Thru Lin
HBU
0695

20
INT. (OPER.)
RANCH UNIT

21

22

23

24

19

Perry
P R Bass
HBU
06810

Richardson Oils
HBU
06809

Conoco
HBU
02953

(Richardson Oils)
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PROPOSED OPERATION DATA

Section VII, Form C-108

Attachment "E"

1. Proposed daily rate and volume of fluids to be injected:

a. Average daily rate of injection: 2000 bbls

b. Maximum daily rate of injection: 3000 bbls

2. Type of system:

System will be closed.

3. Proposed injection pressure:

a. Average: 600

b. Maximum: 800

4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than re injected produced water.

Produced water from Atoka and Delaware formations will be injected.

Chemical analysis attached hereto as Attachment "E1"

5. Chemical analysis of the disposal zone formation water:

Not Available

Martin Water Laboratories, Inc.

P. O. BOX 1468
MONAHANS, TEXAS 79756
PH. 943-3234 OR 363-1040

WATER CONSULTANTS SINCE 1953
BACTERIAL AND CHEMICAL ANALYSES

709 W. INDIANA
MIDLAND, TEXAS 79
PHONE 683-4521

March 4, 1981

Mr. Jack Gevecker
Bass Enterprises Production Co.
P. O. Box 2760
Midland, TX

Subject: Recommendations relative to analysis #38114 (3-4-81), Delaware
and Atoka waters in Eddy Co., New Mexico.

Dear Mr. Gevecker:

The attached analyses were carefully studied for possible incompatibilities between the Atoka and Delaware. It is our understanding that the objective is to inject the Atoka water into the Delaware interval, which is much less significant than attempting to combine the waters on the surface.

The only incompatibility encountered is that the Atoka water is carrying a soluble iron and the Delaware water from Big Eddy Unit #49 contains sulfide, therefore resulting in an iron sulfide precipitation. However, the water from well #49 is considered unusual and normally we would expect a "sweet" water from the Delaware such as from well #47. However, we question that this incompatibility is sufficient to prevent the injection of the Atoka water into the Delaware interval. Therefore, in general, we feel that the incompatibility suggested above is not sufficient to prevent the mixing of these two waters by injecting Atoka into the Delaware interval. We have encountered no evidence of any other condition of concern.

Yours very truly,



Waylan C. Martin

WCM/sb

Attachment E1

GEOLOGICAL DATA

Section VIII, Form C-108

Attachment "F"

Lithologic Detail: Sand, Shale, Lime sequences

Geological name: Bell Canyon/Upper Cherry Canyon Delaware Mountain Group

Thickness: 800'

Depth: 3820' - 4620'

The Rustler formation is a known source of fresh water throughout this geographic area. Average depth of Rustler is 200-400 feet. No sources of fresh water are known to exist below the proposed disposal zone.

**LEGG FEDERAL WELL NO. 1
OFFSET OPERATORS AND INTERESTED PARTIES**

Offset Operators:

Conoco, Inc.
10 Desta Drive
Midland, Texas 79705
Attention: Mr. Jerry Hoover
SHEAR Director

Surface Leasee:

Mr. Kenneth Smith
P. O. Box 764
Carlsbad, New Mexico 88221-0764

I, Keith E Bucy, certify that copies of the application were mailed to the above affected parties.



07/26/94

PROPOSED STIMULATION PROGRAM

Section IX, Form C-108

Attachment "G"

Interval will be perforated with 1JSPF and treated with approximately 16,000 gallons 15% NEFE acid, if necessary to establish injection, a small fracture treatment will be pumped.

LOGGING AND TEST DATA

Section X, Form C-108

Attachment "H"

Logs already filed with Division.

CHEMICAL ANALYSIS OF FRESH WATER

Section XI, Form C-108

Attachment "I"

There are no fresh water wells within one mile of the proposed disposal site.

AFFIRMATIVE STATEMENT

Section XII, Form C-108

Attachment "J"

Applicant hereby affirms that he has examined the available geologic and engineering data and finds no evidence of open faults or other hydrologic connection between the disposal zone and any underground source of drinking water.

FEDERAL LEGG NO. 1

LOCATION: 660'FNL & 2003'FEL,SECT.27, T22S, R30E, UNIT B.
 API NO: 30015047340000
 ELEVATIONS: 3309' KB
 SPUD DATE: 07-10-53

BASS ENTERPRISES
 QUAHADA RIDGE FIELD
 EDDY COUNTY, N.M.
 DATE: 09-08-93: BEM

WELLBORE INFORMATION

20" 94#/FT, H-40, CSA 426', CMTD
 W/400 SX 3% & 300 SX REG. NEAT
 CMT CIRC TO SURFACE.

13-3/8" 61# & 68#/FT, CSA 3629'
 1ST STAGE CMTD W/950 SX SLO SET
 NEAT, 2ND STAGE CNTD W/2400 SX
 SLO SET NEAT. CMT CIRC TO SURFACE.

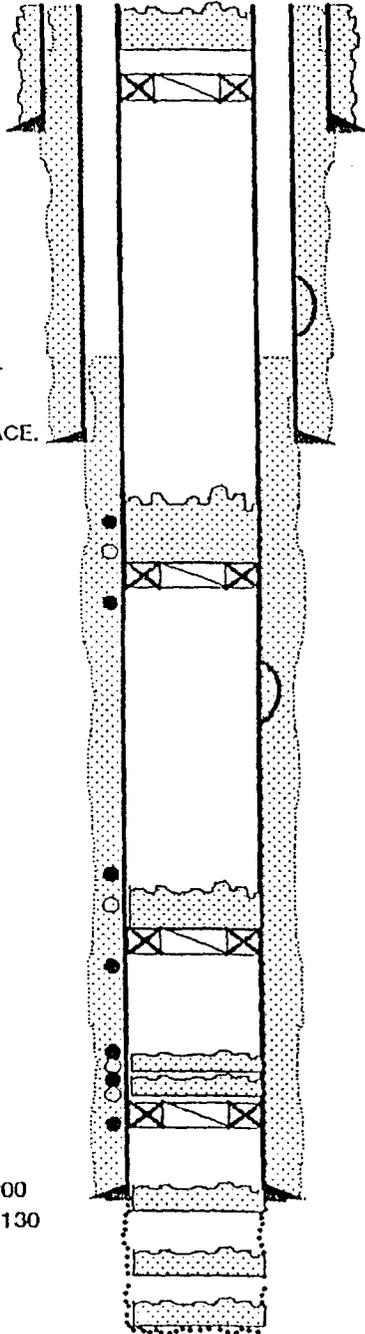
PERF @ 6082' SQZ W/100 SX
 PERF @ 6112'-6118' FRAC'D
 PERF @ 6130' SQZ W/100 SX

PERF @ 7188' SQZ W/100 SX
 PERF @ 7218'-7226' FRAC'D

PERF @ 7252' SQZ W/100 SX

PERF @ 7426' SQZ W/100 SX
 PERF @ 7458'-7466' FRAC'D
 PERF @ 7470' SQZ W/100 SX
 PERF @ 7500'-7504' FRAC'D
 PERF @ 7530' SQZ W/100 SX

9-5/8" 40# & 47#/FT, CSA 9025',
 1ST STAGE CMTD W/1060 SX 8% & 200
 SX INFERNO, 2ND STAGE CMTD W/1130
 SX 8% & 200 SX INFERNO NEAT.



SPOT 150 SX 130' TO SURFACE

RETAINER @ 254'

CENTRALIZERS @ 3578', 4818', 6336',
 6368', 7098', 9006'.

DV TOOL @ 2472'

TOC @ 2840' BY TEMP. SVY

CMT PLUG W/300 SX @ APPX. 6124'-
 5000' APPX.
 RETAINER @ 6124'

DV TOOL @ 6352'

CMT PLUG W/30 SX @ 7234' - 7190'
 RETAINER @ 7234'

CMT PLUG W/30 SX @ 7463' - 7420'
 CMT PLUG W/30 SX @ 7512' - 7468'
 RETAINER @ 7518'

CMT PLUG W/100 SX @ 9050' - 8790'

CMT PLUG W/75 SX @ 12625' - 12430'

CMT PLUG W/100 SX @ 15845' - 15590'
 TD @ 15845'

50470

**LEGG FEDERAL WELL NO. 1
OFFSET OPERATORS AND INTERESTED PARTIES**

Offset Operators:

Conoco, Inc.
10 Desta Drive
Midland, Texas 79705
Attention: Mr. Jerry Hoover
SHEAR Director

Surface Leasee:

Mr. Kenneth Smith
P. O. Box 764
Carlsbad, New Mexico 88221-0764

I, Keith E Bucy, certify that copies of the application were mailed to the above affected parties.



07/22/94



Gamma Ray-Neutron

COUNTY <u>Eddy</u> FIELD or LOCATION <u>Wildcat</u> WELL <u>Federal Legg # 1</u> COMPANY <u>Richardson & Bass</u>	COMPANY <u>RICHARDSON & BASS</u>	Location of Well 660' f NL 2003' f EL Sec.27-22S-30E
	WELL <u>FEDERAL LEGG # 1</u> <u>D-P-11</u>	
	FIELD <u>WILDCAT</u>	GRN (ES-ML-MLL-LL-SG)
	LOCATION <u>SEC.27-22S-30E</u>	Elevation: D.F.: <u>3309</u> K.B.: or G.L.:
	COUNTY <u>EDDY</u>	FILING No. _____
	STATE <u>NEW MEXICO</u>	

RUN NO.	1	2
Date	9-1-53	3-27-54
Depth Reference	RDB 23' Abv. GL	
First Reading	7683	15562
Last Reading	100	7780
Footage Measured	7583	7782
Max. Depth Reached	7684	15563
Bottom Driller	7681	15854
Maximum Temp. F.	133	202
Mud: Nature	Gel-Caustic-Obv. Lime	
" Density	9.8	12.1
" Viscosity	35	58
" Resistivity	@ °F.	.36 @ 70 °F.
Casing Size & 1	13 3/8" to 3630	13 3/8" to 3630
Weight 2	to	9 5/8" to 9030
Open Hole 1	to	8 3/4" to TD
2	to	to
Fluid Level		Surf.
Recording Speed (ft/hr)		2000
Sensitivity Tap	GR) N)	GR) 200 N) 400
Time Constant		1 1
Panel		GNC
Cpr. Rig Time	4 Hrs.	6 Hrs.
Sonde Size & Type		
Truck No.	1759-Hobbs	1758-Hobbs
Observer	Rodgers	Tefft

FOLD HERE

REMARKS

NEUTRON

GAMMA RAY



Gamma Ray-Neutron

COUNTY Eddy
 FIELD or LOCATION Wildcat
 WELL Federal Legg # 1
 COMPANY Richardson & Bass

COMPANY RICHARDSON & BASS
 WELL FEDERAL LEGG # 1
D-P-W
 FIELD WILDCAT
 LOCATION SEC. 27-22S-30E
 COUNTY EDDY
 STATE NEW MEXICO

Location of Well
 660' f NL
 2003' f EL
 Sec. 27-22S-30E
 GRN
 (ES-ML-MLL-LL-SG)
 Elevation: D.F.: 3309
 K.B.:
 or G.L.:
 FILING No. _____

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FOLD HERE

REMARKS

NEUTRON

GAMMA RAY