CHECKLIST for ADMINISTRATIVE INJECTION APPLICATIONS

Operator: Ray Westall Well: Benco No. 1

Contact: Randy Harris Title: Geologist Phone: 505-677-2370

DATE IN 5-15-97 RELEASE DATE 5-30-97 DATE OUT 7-7-97

Proposed Injection Application is for: ___ **WATERFLOOD** ___ Expansion ___ Initial

Original Order: R- _____ ___ Secondary Recovery ___ Pressure Maintenance

SENSITIVE AREAS X **SALT WATER DISPOSAL** X Commercial Well

___ WIPP ___ Capitan Reef

Data is complete for proposed well(s)? YES Additional Data Req'd _____

AREA of REVIEW WELLS

3 Total # of AOR

YES Tabulation Complete

YES Cement Tops Adequate

0 # of Plugged Wells

— Schematics of P & A's

N/A AOR Repair Required

INJECTION FORMATION

Injection Formation(s) DELAWARE Compatible Analysis YES

Source of Water or Injectate _____

PROOF of NOTICE

YES Copy of Legal Notice

YES Correct Operators

NO Objection Received

YES Information Printed Correctly

___ Copies of Certified Mail Receipts

___ Set to Hearing _____ Date

NOTES: _____

APPLICATION QUALIFIES FOR ADMINISTRATIVE APPROVAL? ___

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~~ _____

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

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

RECEIVED
MAY 15 1997
CONSERVATION DIVISION

SWD

FORM C-108 3/30/71
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: RAY WESTALL

Address: P.O. Box 4 Loco Hills, NM 88255

Contact party: RANDALL HARRIS Phone: 505 677-2370

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: RANDALL HARRIS Title GEOLOGIST

Signature: _____ Date: 5/9/97

* 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. _____

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

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.

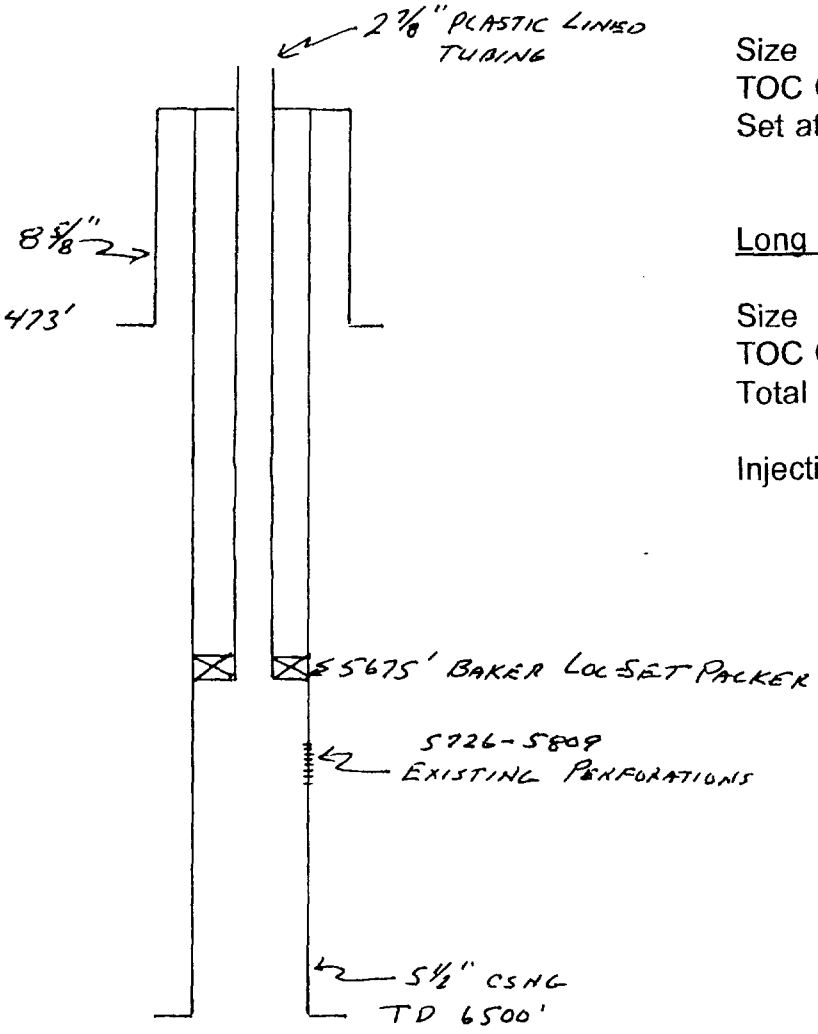
NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

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.

INJECTION WELL DATA SHEET

RAY WESTALL OPERATOR BELCO #1
2200' FNL & 660' FWL SECTION 20, TOWNSHIP-23-SOUTH, RANGE-28-EAST

Schematic



Tabular data

Surface Casing

Size 8 5/8" Cemented with 280 sxs
TOC Circulated Hole size 12 1/4"
Set at 473'

Long string

Size 51/2" Cemented with 1820 SXS
TOC Circulated
Total depth 6500'

Injection Interval 5726-5809' perforated

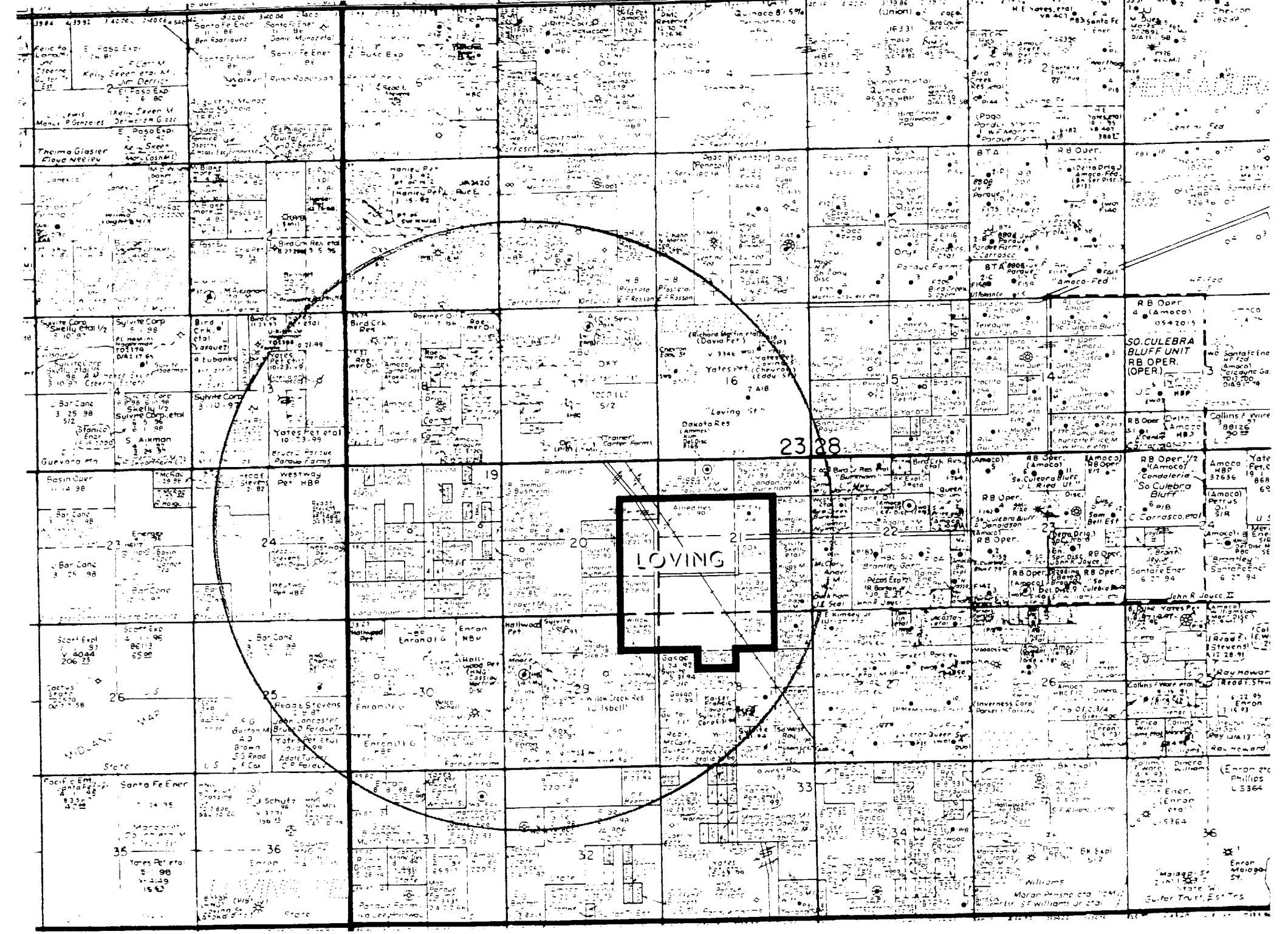
Tubing size 2 7/8" lined with plastic set in a BAKER LOC-SET packer at 5675'.

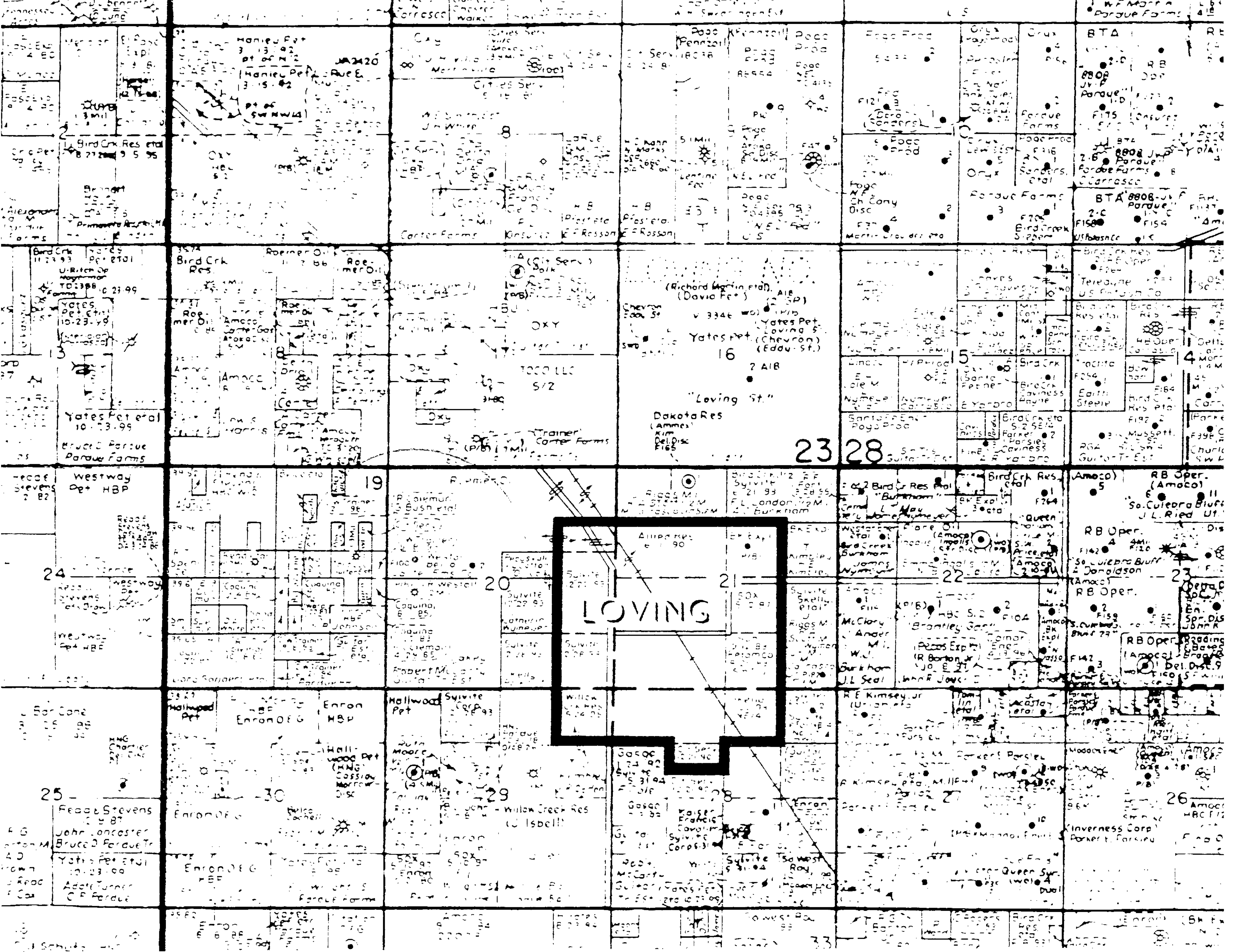
Other Data

1. Name of the injection formation: DELAWARE
2. Name of Pool: LOVING SOUTH DELAWARE.
3. Origional purpose of well: OIL & GAS PRODUCTION
4. Well has been perforated 5218-5254, 4184-4195 both cement squeezed.
5. Loving, North Morrow underlys this area at approximately 12,300'.

ATTACHMENT V

Maps that identifies all wells of public record within two miles of each proposed injection well, and the area of review one-half mile radius around each proposed injection well.


LOVING



LOVING
Loving St.
Dakota Res
Yates Pet.
OXY
TOCO LLC S/2
Carter Farms
Parque Farms
Yates Pet etal 10-23-99
Westway Pet HBP
Enron O&G
Hallwood Pet
Willow Creek Res
Inverness Corp
RB Oper.
BTA
Bird Crk Res
Roemer Oil
Amoco
16
23
28
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ATTACHMENT VI

Data on all wells of public record within the area of review. There are no plugged wells.

Well name	Location	Spud date	Sur. Casing	Int. Casing	Prod. Casing	Completion
TOCO LLC Guitar Estate Com #1	SWNE Sec 19 T23S-R28E	04/02/80	16" @ 368 900 sxs Circ.	10 3/4"@ 2420 2300 sxs Circ. 7" @ 9660 1350 sxs Circ.	5" @ 12,5806 760sxs T/2450	12410-12536 Loving North Morrow Gas
Ray Westall Belco #2	SENW Sec 20 T23S-R28E	12/12/85	8 5/8" @ 475 200 sxs Circ.		5 1/2" @ 5930 665 sxs Circ	5846-5865 Loving Delaware OIL
Ray Westall Lakey #1	NWSW Sec 20 T23S-R28E	06/15/80	20" @ 450 750 sxs Circ.	10 3/4"@ 2,415 2,175 sxs Circ. 7 5/8" @ 9,615 1,610 sxs T/2030	5" @ 12,330' 730 sxs	124008-12505 Loving North Morrow Gas

ATTACHMENT VII

PROPOSED OPERATION

1. Plans are to inject 150-200 bbls of produced water per day.

2. The injection system is be a closed system.

3. The estimated injection pressure is 500 psig. Maximum pressure will be 1000 psig.

4. Injection fluid will be reinjected produced water from the Belco #2 and Lakey #1.

5. A sample of produced water is attached.

LOCATION

YOUR EXT. NO.

THE WESTERN COMPANY

WATER ANALYSIS

ANALYSIS NO.

GENERAL INFORMATION

OPERATOR	RAY WESTALL	DATE SAMPLED	5-8-85
WELL	BELCO #1	DATE RECEIVED	5-8-85
FIELD		SUBMITTED BY	
FORMATION	DELEWARE	WORKED BY	DP & R.W.
COUNTY	EDDY	SAMPLE DESCRIPTION:	
STATE	N.M.		
DEPTH			

PHYSICAL AND CHEMICAL DETERMINATIONS

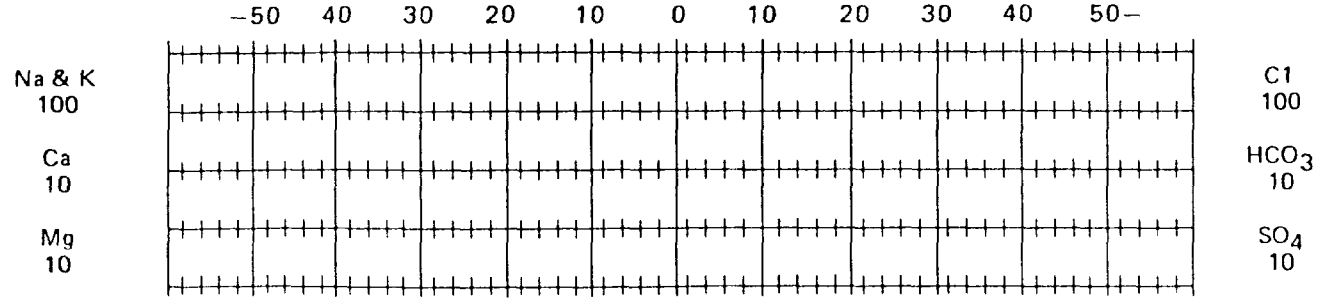
SPECIFIC GRAVITY	1.205 AT 78 °F		TOTAL DISSOLVED SOLIDS	PPM
pH	6		RESISTIVITY	.051 AT 78 PPM
IRON	GOOD / STRONG		SULFATE	500 PPM
HYDROGEN SULFIDE	NONE		BICARBONATE	.7 427 PPM
HARDNESS	240 240,000		CHLORIDE	9.3 186,000 PPM
CALCIUM	9.6 38,400		SODIUM CHLORIDE	~~305,970~~ 305,970 PPM
MAGNESIUM	34,992 PPM		SODIUM	PPM
SODIUM & POTASSIUM	10,839.9 PPM		POTASSIUM	PPM
PHOSPHATE			KCL = 0 %	

REMARKS:

5245.2
8.2
10.4
5263.8

1916.16
2876.34
479250

for Stiff type plot (in meq./1.)



FORM 952-1025 (3/81)

ANALYST _____

ATTACHMENT VIII

The proposed injection zones are sands of the Delaware Formation. These sands are composed of fine-grained quartz sand with varing amounts of shales. They have varing thickness from 1-100 feet thick. There is possible drinking water overlying the injection in the surface sands at a depth of 0-350' There is no known source underlying the injection interval.

ATTACHMENT XII

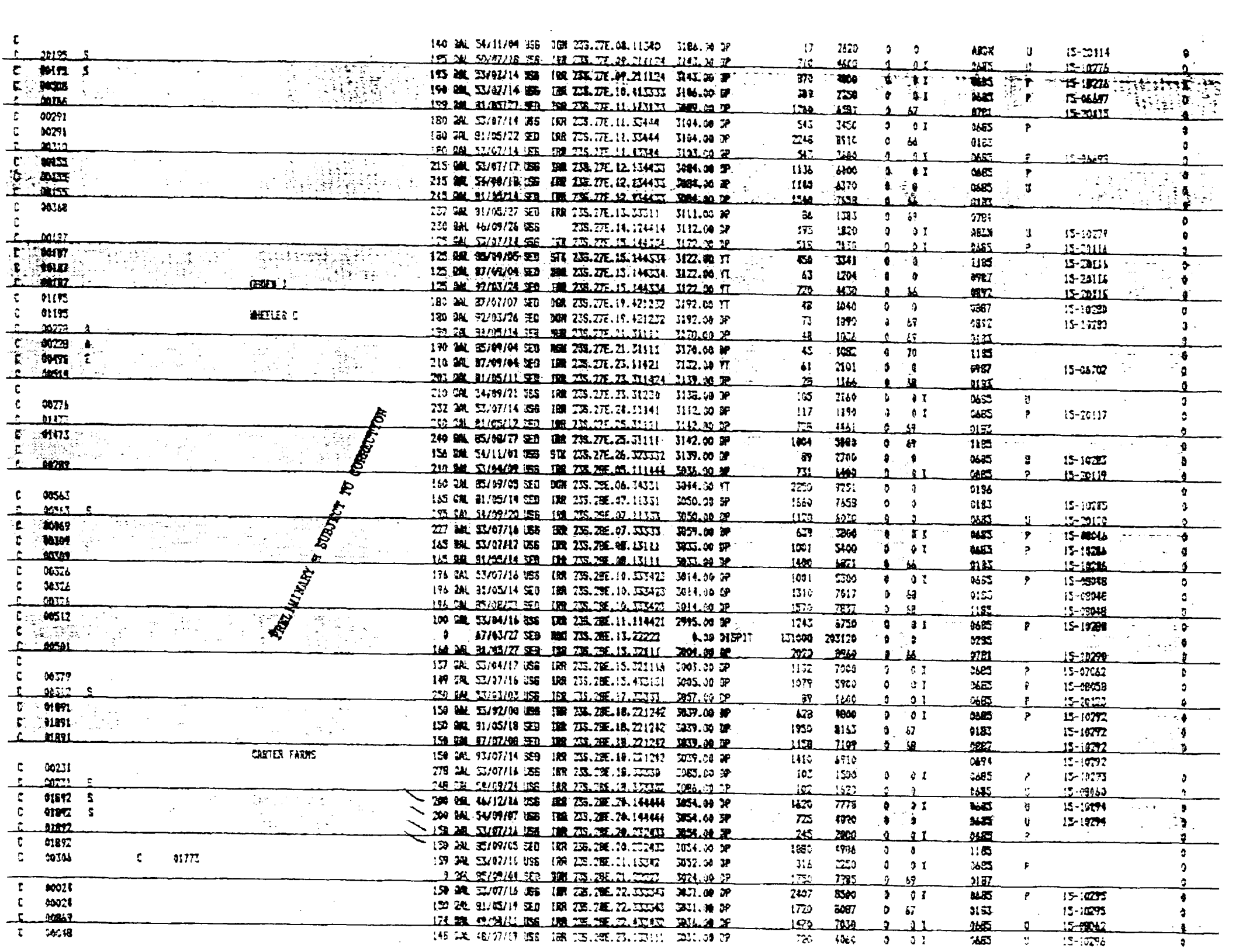
All available geologic and engineering data have been examined and there is no evidence of open faults or any other hydrologic connection between the disposal zone and any source of drinking water.

ATTACHMENT XI

Listing of water wells in the area with analysis from the State engineers office.

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	SLB	04	00	1947	IRR DCL	23S	28E	15	221	23S	28E	015	0789	CARRASCO C A JR	0.00	0.00				
2526	C	00311				SRA	04	07	1952	DOM PMT	23S	28E	16	124	23S	28E	16	0763	CARTER FARMS CO	0.00	3.00				
2527	C	00520				SRA	12	17	1953	STK PMT	23S	28E	16	311	23S	28E	16	0863	CARTER FARMS CO	0.00	3.00				
2528	C	00521				SRA	12	17	1953	STK PMT	23S	28E	16	311	23S	28E	16	0863	CARTER FARMS CO	0.00	3.00				
2529	C	01734				SRA	10	05	1964	DOM PMT	23S	28E	17	2080	23S	28E	17		FELX MARY G	0.00	3.00				
2530	C	00851				SRA	08	19	1958	IRR PMT	23S	28E	17	310	23S	28E	17	0863	CARTER FARMS INC	0.00	3.00				
2531	C	00317	S	C	00313	SCB	04	07	1952	IRR PMT	23S	28E	17	3333	23S	28E	16	0593	CARTER FARMS INC	0.00	0.00				
2532	C	00461		SR	00006	P	SCB	07	16	1953	IRR PMT	23S	28E	18	11134	23S	28E	18	5793	CARRASCO MARK R	0.00	0.00				
2533	WC	00333		SR	00006	P	SCB	07	00	1887	IRR LIC	23S	28E	18	2140	23S	28E	09	0476	SHEER CURTIS E & CARRIE B	0.00	0.00				
2534	C	00333	S	SR	00006	P	SCB	00	00	1946	IRR LIC	23S	28E	18	214234	23S	28E	18	1093	FELX HARBOR & CARRIE	0.00	0.00				
2535	C	01891				SRA	04	00	1947	IRR DCL	23S	28E	18	2212	23S	28E	18	0593	CARTER FARMS INC	7.00	23.10	NO HYDRO. FILE SHOWS			
3																									
2536	C	01891				SRA	04	00	1947	IRR DCL	23S	28E	18	2212e	23S	28E	17	0593	CARTER FARMS INC	106.50	319.50	NO HYDRO. FILE SHOWS			
RES.																									
2537	C	01891				SRB	04	00	1947	IRR DCL	23S	28E	18	2212e	23S	28E	08	0593	CARTER FARMS INC	77.00	231.00	NO HYDRO. FILE SHOWS			
ES.																									
2538	C	01891		SR	00006	P	SCB	04	00	1947	IRR DCL	23S	28E	18	2212e	23S	28E	08	0593	CARTER FARMS INC	0.00	0.00				
2539	C	01891		SR	00006	P	SCB	04	00	1947	IRR DCL	23S	28E	18	2212e	23S	28E	16	0593	CARTER FARMS INC	0.00	0.00				
2540	C	00231		C	00231	S	SRA	00	00	1946	IRR DCL	23S	28E	18	3333	23S	28E	18	0493	FARM CREDIT BANK OF WICHITA	20.00	60.00	04/93			
2541	C	00221		SR	00006	P	SCB	00	00	1946	IRR DCL	23S	28E	18	3333e	23S	28E	18	3476	SOBERS R E	0.00	0.00				
3501	C	02180				SRA	08	18	1969	DOM PMT	23S	28E	18	3	23S	28E	018	0889	JONES RICHARD LEE & PATRICIA R	0.00	3.00	01/90			
3503	C	00221	A	C	00231		SRA	00	00	1946	IRR DCL	23S	28E	18	3333	23S	28E	018	0493	MORGHAN ALBERT C AND KATY S	93.00	279.00	04/93			
3503	C	00231	A	SR	00006		SCB	00	00	1946	IRR DCL	23S	28E	18	3333	23S	28E	018	0493	MORGHAN ALBERT C AND KATY S	0.00	0.00	04/93			
7502	C	01992				SRA	12	02	1981	IRR PMT	23S	28E	19	143	23S	28E	19	0804	READ & STEPHEN	0.00	0.00				
2543	C	00785				SRA	07	02	1957	EXP PMT	23S	28E	19	310	23S	28E	19	1287	ARNOLD EDWARD	0.00	0.00	01/88			
2544	C	01537				SRA	04	16	1974	IRR PMT	23S	28E	19	3110	23S	28E	19		ALLISON DALTON R	0.00	3.00				
2545	C	00776				SRA	00	00	1900	WAT APP	23S	28E	19	330	23S	28E	19	0474	ARNOLD EDWARD	0.00	0.00				
2546	C	01477		SR	00006	P	SCB	06	05	1972	IRR PMT	23S	28E	19	3312e	23S	28E	19	0693	SCOTT G E	0.00	0.00				
2547	C	00548					SRA	30	20	1952	WAT PMT	23S	28E	20	966	23S	28E	20	0763	C I O	0.00	0.00				
2548	C	00312		SR	00006	P	SCB	04	07	1952	IRR PMT	23S	28E	20	13334	23S	28E	20	0593	CARTER FARMS INC	0.00	0.00	SEE C-00313 ALSO			
2549	C	01892	S	SR	00006	P	SCB	03	00	1947	IRR DCL	23S	28E	20	1444	23S	28E	20	0593	CARTER FARMS INC	0.00	0.00	SEE C-01892 ALSO			
2550	C	01892					SRA	12	00	1946	IRR DCL	23S	28E	20	2324	23S	28E	20	0593	CARTER FARMS INC	139.50	418.50				
2551	C	01892		SR	00006	P	SCB	12	00	1946	IRR DCL	23S	28E	20	23244	23S	28E	16	0593	CARTER FARMS INC	0.00	0.00				

2552	C	01882					SHA	04	23	1979	30N PMT	23S	28E	20	400	23S	28E	20	0884	RODRIGUEZ SAMUEL	0.00	3.00	
2553	C	00911					SHA	01	12	1960	30N PMT	23S	28E	20	421	23S	28E	20	0863	HYMEYER BILL	0.00	3.00	
2554	C	00539					SHA	02	18	1954	30N PMT	23S	28E	21	333	23S	28E	21	1287	HILL JIMMIE R	0.00	3.00 01/88	
2555	C	00544					SHA	03	04	1954	30N PMT	23S	28E	21	133	23S	28E	21	0863	DAVIS W J	0.00	3.00	
2556	C	01341					SHA	07	18	1966	3[illegible] PMT	23S	28E	21	1334	23S	28E	21		KIMBLEY T J	3.00	0.00	
2557	C	01773		SR	00806	P	SCD	03	30	1982	10R DCL	23S	28E	21	13344	23S	28E	21	0785	BINGHAM A C	0.00	0.30	SEE C-00306 ALSO
2558	C	00306		SR	00806	P	SCD	02	28	1952	10R PMT	23S	28E	21	13344	23S	28E	21	0493	KIMBLEY T J	0.00	0.30	SEE C-01773 ALSO
2559	C	00585					SCD	08	11	1958	00T PMT	23S	28E	21	213	23S	28E	21	0863	LONDON FRANK L	0.00	3.00	
2560	C	01885					SHA	12	06	1979	30N PMT	23S	28E	21	220	23S	28E	21	0884	LONDON FRANK	0.00	3.00	
2561	C	00306		C	00306	S	SCD	03	04	1957	10R PMT	23S	28E	21	2533	23S	28E	21	0493	KIMBLEY T J	0.00	0.00	
2562	C	00706					SHA	05	11	1958	30N PMT	23S	28E	21	310	23S	28E	21	0863	COPE W L	0.00	3.00	
2563	C	00258					SHA	01	00	1934	00T DCL	23S	28E	21	311	23S	28E	21	0885	LOVING VILLAGE OF	0.00	0.00	
2564	C	00258	S	C	00258		SHA	00	00	1941	00T PMT	23S	28E	21	311	23S	28E	21	0763	LOVING VILLAGE OF	0.00	0.00	
2565	C	00577					SHA	07	29	1954	00R COM	23S	28E	21	313	23S	28E	21	1287	COPE W L	0.00	0.00 01/88	
2566	C	00578					SHA	07	29	1954	00R PMT	23S	28E	21	313	23S	28E	21	0863	NICHOLS CARL H	0.00	3.00	
2567	C	00643					SHA	03	02	1955	30R PMT	23S	28E	21	313	23S	28E	21	0863	HINTON J W	0.00	3.00	
2568	C	00685					SHA	04	30	1954	10R COM	23S	28E	21	323	23S	28E	21	1287	LOVING MUN SCHOOLS	0.00	0.00 01/88	
2569	C	00650					SHA	04	18	1955	30N PMT	23S	28E	21	334	23S	28E	21	0863	CARTHESS TROY	0.00	3.00	
2570	C	00716					SHA	04	08	1956	30R PMT	23S	28E	21	3323	23S	28E	21	0863	JONES LEONARD	0.00	3.00	
2571	C	00464					SHA	08	08	1955	00R PMT	23S	28E	21	341	23S	28E	21	0863	[illegible] L T	0.00	3.00	
2572	C	00327		SR	00806	P	SCD	05	02	1952	10R PMT	23S	28E	21	42334	23S	28E	21	0593	CARRASCO SIDE JR	0.00	0.00	
3648	C	00306	B	C	00306	S	SCD	02	28	1952	10R PMT	23S	28E	21	133	23S	28E	021	0593	KIMBLEY HAYDEN	0.00	0.30 02/94	
2573	C	01326					SHA	05	11	1966	30N PMT	23S	28E	22	1126	23S	28E	22		HYMEYER JAMES	0.00	3.00	
2574	C	01872					SHA	09	18	1979	30N PMT	23S	28E	22	1200	23S	28E	22	0884	DOYLE PERRY	0.00	3.00	
2575	C	00127		SR	00806	P	SCD	03	01	1948	10R PMT	23S	28E	22	122	23S	28E	22	0493	HICKS C E	0.00	0.00	
2576	C	01253		SR	00806	P	SCD	11	06	1965	10R PMT	23S	28E	22	1311	23S	28E	22	0593	WORKMAN A C	0.00	0.30	
2577	C	01887		SR	00806	P	SCD	09	18	1972	10R PMT	23S	28E	22	143	23S	28E	22	0693	JASSO NIEVES	0.00	0.30	
2578	C	00094	AS				SHA	08	29	1974	10R PMT	23S	28E	22	23113	23S	28E	22	0394	GREEN DOROTHY W	0.00	3.00 03/94	
2579	C	00094		SR	00806	P	SCD	11	23	1948	10R PMT	23S	28E	22	23142	23S	28E	22	1593	SETTL JOHN J	0.00	3.00	SEE C-00088 ALSO
2580	C	00094	A	SR	00806	P	SCD	01	23	1948	10R PMT	23S	28E	22	243442	23S	28E	22	0394	GREEN DOROTHY W	0.00	0.00 03/94	
2581	C	00024					[illegible]																


PRELIMINARY * SUBJECT TO CORRECTION

ATTACHMENT XIV

PROOF OF NOTICE

Leasehold operators within one-half mile of the well location are Amoco and TOCO LLC. Each of these operators were provided a copy of our application by certified mail. Proof of notice is enclosed. The surface owner is Carter farms.

PROOF OF PUBLICATION

Proof of publication will be from the Artesia Daily Press and will be forwarded.

Copies of this application has been sent to:

Amoco
P.O. Box 4891
Houston, Tx. 77210

Certified Mail # P 333 336 145

TOCO LLC
P.O. Box 888
Hobbs, NM. 88241-0888

Certified Mail # P 333 336 144

Oil Conservation Division
811 S. 1st Street
Artesia, NM 88210

Oil Conservation Division
2040 So. Pacheco St.
Santa Fe, NM. 87505-5472

SURFACE OWNER

Albert Carter
1411 W. Orchard Ln.
Carlsbad, NM. 88220

Certified Mail # P 333 336 146