

Post Office Box 68 Hobbs, New Mexico 88240

L. R. Smith District Manager

August 4, 1986

AUG - 0 1986

File: SGH-1151-416

Re:

Application for Unorthodox Locations,

Directional Drilling, and Injection Authorization South Hobbs (GSA) Unit

Northern Leaseline Infill Drilling Hobbs Grayburg San Andres Pool

Lea County, New Mexico

State of New Mexico Energy and Minerals Department Oil Conservation Division P. O. Box 2088 Santa Fe, NM 87501

Amoco Production Company hereby requests administrative approval to infill drill along the Northern Leaseline of our South Hobbs (GSA) Unit Pressure Maintenance Project. This drilling project will include the drilling of two producers and seven injectors. Of these nine wells, seven will be directionally drilled and six will be at unorthodox surface locations.

Exhibit "A" is a tabulation of the seven directionally drilled wells' proposed locations. The six wells which will be drilled at unorthodox locations within the Unit are so noted. A South Hobbs (GSA) Unit map is included with the proposed drilling sites shown and a copy of the individual well plats (C-102).

The availability of suitable surface locations for these South Hobbs (GSA) Unit wells is limited. In most cases, the surface locations corresponding to the bottom hole locations could not be acquired. (See Exhibit "B" for specific reasons.) To obtain the optimum pattern geometry, these wells must be directionally drilled from the closest available property. Unorthodox surface locations are also required to minimize the degree of deviation.

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Exhibit "C" is the NMOCD Forms C-108 (Application for Authorization to Inject) with all required attachments included for the seven proposed injection wells. These wells are shown on the attached South Hobbs Unit map.

Required notice of this application has been served by certified mail to each offset leasehold operator and to each surface owner on whose property the proposed injection wells are located. Each of the parties shown on the attached service list has been furnished a copy of this letter complete with all attachments.

If you have any questions concerning this application, please contact Charles Herring in our Hobbs District Office, (505) 393-1781, Extension 2252.

CMH/sh APRDO2-GG

Attachments

cc: State of New Mexico
Energy and Minerals Department
Oil Conservation Division
P. O. Box 1980
Hobbs, NM 88240

### SERVICE LIST SOUTH HOBBS (GSA) UNIT NORTHERN LEASELINE INFILL DRILLING

#### Surface Owners

State of New Mexico Commissioner of Public Lands P. O. Box 1148 Santa Fe, NM 87504

Allstate Construction P. O. Box 1229 Hobbs, NM 88240

Phillips Petroleum Company 4001 Penbrook Odessa, TX 79762

#### Offset Operators

Shell Western E&P, Inc. P. O. Box 991 Houston, TX 77001

Conoco, Inc. P. O. Box 460 Hobbs, NM 88240

Chevron U.S.A. Attn: J. C. Prindle P. O. Box 670 Hobbs, NM 88240

Marathon Oil Company P. O. Box 552 Midland, TX 79702

#### NEW MEXICO OIL CONSERVATION COMMISSION WELL LOCATION AND ACREAGE DEDICATION PLAT

		All distances must be i	rom the outer boundaries of	the Section.	
Operator			Lease		Well No.
Amoco Pro	duction Compa	any	South Hobbs (	(G-SA) Unit	211
Unit Letter	Section	Township	Range	County	
F	5	19 South	38 East	Lea	
Actual Footage Loc	cation of Well:				
1790	feet from the	North line and	1420 fee	et from the West	line
Ground Level Elev.	Producing Fo	rmation	Pool		Dedicated Acreage:
3620.4'		rg-San Andres	Hobbs GSA		40 Acres
	1 1:	ated to the subject w	11 1 1 1 1	1 1 1 .1	Acres
<ol> <li>If more the interest as</li> <li>If more the</li> </ol>	nan one lease is nd royalty).	dedicated to the wel	l, outline each and ide	entify the ownership th	ereof (both as to working all owners been consoli-
X Yes		inswer is "yes;" type o			1 (1)
		owners and tract desc	criptions which have a	ctually been consolida	ted. (Use reverse side of
No allowal					nunitization, unitization, approved by the Commis-
	1		1		CERTIFICATION
1420'—	0621	REGISTERS	PROFESSION SURFER SOLUTION OF THE SOLUTION OF	Name Position Administ Company	ertify that the information con- ein is true and complete to the knowledge and belief.  Associative Analyst (SG)  coduction Company
ľ	S			Date P	oduction company
	)			August 4	1086
10	ared around cation was M- no buried pip re found.	scoped		I hereby shown on to notes of a under my s	certify that the well location this plat was plotted from field actual surveys made by me or supervision, and that the same and correct to the best of my and belief.
dr	illed. Botto	e directionally om hole location wand 910' F.W.L.		Registered Pand/or Land	y 9, 1986 rofessional Engineer Surveyor
0 330 660	90 1320 1650 19	80 2310 2640 2000		oo contificate N	O JOHN W. WEST, 676 RONALD J. EIDSON, 3239

#### NEW MEXICO OIL CONSERVATION COMMISSION WELL LOCATION AND ACREAGE DEDICATION PLAT

	A	Il distances must be f	rom the outer boundaries of	the Section.		
Operator Amoco Produ	ction Company	<i>y</i>	Lease South Hobbs	(G-SA) Ur	nit	Well No.
Unit Letter Secti	on Tow	mship 19 South	Runge 38 East	County Le	ea County	
Actual Footage Location of 2589 feet	i Well: from the West	line omd	1478 <sub>fee</sub>	et from the	North	line
Ground Level Elev. 3622.1	Producing Formation Grayburg=S		Hobbs GSA		Dedic	cated Acreage: 40 Acres
1. Outline the acr	eage dedicated	to the subject we	ell by colored pencil o	or hachure m	arks on the pla	it below.
2. If more than or interest and roy		icated to the wel	, outline each and ide	entify the ow	nership thereo	f (both as to working
		ent ownership is c zation, force-pooli	dedicated to the well, ng. etc?	have the int	terests of all o	owners been consoli-
X Yes .	No If answe	r is "yes;" type o	f consolidation <u>Un</u>	itization		
If answer is "n this form if nec		ers and tract desc	riptions which have a	ctually been	consolidated.	(Use reverse side of
No allowable wi	ll be assigned to		interests have been dunit, eliminating suc			
	<u></u>		i I		CER	RTIFICATION
		294°20 07/1			tained herein is	that the information con- true and complete to the dedge and belief.
	2589'————————————————————————————————————	direc botto	This well is to ionally drilled, hole flocation vol. 1. and 245	The /	Company	ive Analyst (SG)
location wa	l ¢a around the \$ M-scoped an	nd	!		Date August 4, 1	
no buried p found.	ipelines werd	GISTERE	PROFESSION OF THE INCHES		shown on this p notes of actual under my superv	y that the well-location lat-was plotted from field surveys made by me or rision, and that the same rrect to the best of my selief.
· ·	†		DHNIW.	F	Date Surveyed July 25, 1 Registered Profess and/or Land Surve	sional Engineer
					•	OHN W. WEST, 676

#### NEW MEXICO OIL CONSERVATION COMMISSION WELL LOCATION AND ACREAGE DEDICATION PLAT

		All distances must be fro	on the outer boundaries of	of the Section.	···-	
Operator Amo'co Pro	oduction Comp	1	Lease South Hobbs	(G-SA) l	Jnit	Well No. 213
Unit Letter	Section 5	Township 19 South	Romge 38 East	County	Lea	
Actual Footage Lo	1		30 14.50			
890	feet from the	North line and		et from the	East	line
Ground Level Elev 3622.9'		g-San Andres	Hobbs GSA			Dedicated Acreage; 40 Acres
1. Outline t	he acreage dedic	ated to the subject we	l by colored pencil	or hachure i	marks on the	e plat below.
	han one lease is and royalty).	s dedicated to the well,	outline each and id	entify the o	wnership th	ereof (both as to working
	communitization,	unitization, force-poolin	g. etc?			all owners been consoli-
X Yes	No If	answer is "yes," type of	consolidation Un	itizatio	n	,
	is "no," list the	owners and tract descr	ptions which have a	ictually bee	n consolida	ted. (Use reverse side of
No allowa	ble will be assig					nunitization, unitization, approved by the Commis-
	1					CERTIFICATION
	98		232.6	5'	tained here	ertify that the information con- ein is true and complete to he knowledge and belief.
	+ }	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			Nam	him Il Min
	Inset	area M-s	ere was a 100' coped around th and the pipeli	is	Administ	rative Analyst(SG)
	1		the inset were			oduction Company
	I				August 4	, 1986
da wa	rilled. Bott	e directionally om hole location .N.L. and 1375'	PROFESSION OF THE SURPLE OF TH		shown on to notes of a under my s	certify that the well location his plat was plotted from field ctual surveys made by me or upervision, and that the same d correct to the best of my and belief.
	† 	936	JOHN WEYES			0, 1986
			1		Certificate No.	2/1 lent
0 330 660	190 1320 1680 19	80 2310 2640 2000	1500 1000		/Certificate No	JOHN W. WEST, 676 RONALD J. EIDSON, 3239

#### NEW MEXICO OIL CONSERVATION COMMISSION WELL LOCATION AND ACREAGE DEDICATION PLAT

		All distances, must be from	the outer boundarie	es of the Section	1.	
Operator		Le	dse			Well No.
Amoco Pro	duction Compan	ny	South Hobb	s (G-SA) U	Jnit	215
Unit Letter	Section	Township	Range	County		
E	4	19 South	38 East	Lea	a	
Actual Footage Loc	ation of Well:	<u> </u>				
1398		orth line and	227	(na) (m - 1) -	West	14.
Ground Level Elev.	Producing For			feet from the		line Dedicated Acreage:
l .		g-San Andres	Hobbs GSA			40
3607.4'	di aybur	g-sail Allares	110003 037	· · · · · · · · · · · · · · · · · · ·		40 Acres
1. Outline th	e acreage dedica	ted to the subject well	by colored pend	cil or hachure	marks on ti	he plat below.
	C	•	•			•
2 If more th	an one lease is	dedicated to the well, o	utline each and	l identify the	ownership t	hereof (both as to working
	nd royalty).				ownerourp c	mercor (both as to working
interest at	ild loyalty).					
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				en, have the	interests of	f all owners been consoli-
dated by c	communitization, u	nitization, force-pooling.	etc?			
				Initization	0	
X Yes	No li an	nswer is "yes;" type of c	onsolidation <u> </u>	11101200101	· · · · · · · · · · · · · · · · · · ·	
If answer	is "no," list the	owners and tract descrip	tions which hav	e actually be	en consolid	ated. (Use reverse side of
this form i	f necessary.)		· · · · · · · · · · · · · · · · · · ·			
No allowal	ble will be assigne	ed to the well until all in	terests have bee	en consolida	ted (by com	munitization, unitization,
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sion.						
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	1		W WI WELL		Date	
	1		Alla San		August	4. 1986
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&	no byried pipe	elines	1		i i	this plat was plotted from field
we	re found.				notes of	actual surveys made by me or
	<b>!</b>		· 1		under my	supervision, and that the same
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#### NEW MEXICO OIL CONSERVATION COMMISSION WELL LOCATION AND ACREAGE DEDICATION PLAT

		All distances mus	t be from the outer boundari	es of the Section.	
Operator Amoc	o Production	Company	South Hobb	s (G-SA) Unit	Well No. 216
Unit Letter	Section	Township	Range	County	
С	4	19 South	38 East	Lea	•
Actual Footage Lo	ocation of Well:				
116			e cond 2411	feet from the W	est line
Ground Level Elev	ľ		Pool		Dedicated Acreage:
3610.4'		ourg-San Andres	Hobbs GSA		40 Acres
2. If more	_	·	ct well by colored pen		ship thereof (both as to working
	communitization	, unitization, force-			sts of all owners been consoli-
[A] Ica		answer is yes, c	pe or comportation _		
		e owners and tract	descriptions which has	ve actually been cor	nsolidated. (Use reverse side of
	if necessary.)				
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			1		CERTIFICATION
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	l	- 99	ł		hereby certify that the information con- ined herein is true and complete to the
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ep.	1		· 	Αć	dministrative Analyst
NOTE: A	n area aroun	d the	Į		pany .
1	ocation was	M-scoped	1	An	noco Production Company
	no buried p	ipelines		Date	
₩	ere found.		6510	AL AL	ugust 4, 1986
			AND STERED SUN AND SUN	Sh no un is	hereby certify that the well location fown on this plat was plotted from field stes of actual surveys made by me or order my supervision, and that the same true and correct to the best of my lowledge and belief.
	) )		 	1 1	Surveyed July 10, 1986
	 		·	Regi	stered Professional Engineer or Land Surveyor
	<u> </u>		† 		In/W/who
				Cont	iticate No. JOHN W. WEST, 676
0 330 660	190 1320 1650	1980 2310 2640	2000 1500 1000	80Q Vo.	RONALD J. EIDSON, 3239

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		All distances must be fr	om the outer boundaries o	the Section.	
Operator			Lease		Well No.
Amoco	Production Co	ompany	South Hobbs	(G-SA) Unit	217
Unit Letter	Section	Township	Range	County	
G	4	19 South	38 East	Lea Coun	ty
Actual Footage Loc	ation of Well:				
1407	feet from the	North line and	2203 fe	et from the East	line
Ground Level Elev.	Producing Fo	<del></del>	Pool		Dedicated Acreage:
3615.6	Graybu	rg-San Andres	Hobbs GSA		40 Acres
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2. If more th		ated to the subject we			hereof (both as to working
dated by one of the language of this form in the lowest of	No If a is "no," list the f necessary.)	unitization, force-pooling answer is "yes;" type of owners and tract descripted to the well until all	ng. etc?  f consolidation Un  riptions which have a  interests have been	itization ctually been consolid	ated. (Use reverse side of umunitization, unitization, approved by the Commis-
sion.	re was a 100		Tunit, eminiating su	Threfests, has been	CERTIFICATION
are loc	a M-scoped and the wn in the insulation and the ins	round this e pipelines	The .1. be	Position Adminis Company Amoco P	trative Analyst (SG)
		lnset	PROFESSION AND SURI AND SURI 676 676	shown on nates of under my is true of knowledg  Date Survey  July 2	3, 1986 Professional Engineer
				Certificate	No. JOHN W. WEST, 676
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#### NEW MEXICO OIL CONSERVATION COMMISSION WELL LOCATION AND ACREAGE DEDICATION PLAT

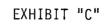
		All distances must be fr	om the outer boundaries of	of the Section.	
Operator			Lease		Well No.
Amo	co Production	Company	South Hobbs	(G-SA) Unit	218
Unit Letter	Section	Township	Range	County	
A	4	19 South	38 East	Lea	
Actual Footage La	ocation of Well:		· · · · · · · · · · · · · · · · · · ·		
652		orth line and	563 te	et from the East	line
Ground Level Elev	<del></del>		Pool	TOTAL THE	Dedicated Acreage:
3617.9'	1	-San Andres	Hobbs GSA		10
<ol> <li>Outline</li> </ol>	the acreage dedica	ted to the subject we	ll by colored pencil	or hachure marks on t	he plat below.
interest	and royalty).	•		,	thereof (both as to working
	communitization, v	ifferent ownership is c initization, force-pooli nswer is "yes," type o	ng. etc?		f all owners been consoli-
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_	r is "no;" list the if necessary.)	owners and tract desc	riptions which have a	actually been consolic	lated. (Use reverse side of
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	•				n approved by the Commis-
sion.	oring, or otherwise,	or unitri a mon standard	dire, chimmeting su	ien interests, nas bee	in approved by the Commis-
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NOTE:	An arqa around	the	ŀ	1	strative Analyst (SG)
į	location was M	-scoped		<b>—————</b>	
1	& no buried pi			Amoco I	Production Company
•	were found.	•		<u> </u>	
}	1		i	August.	4, 1986
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NOTE:	This well to h	e directionally			
		om hole location	1	I heroby	certify that the well location
B C	1	F.N.L. and 270'	1	shown o	n this plat was plotted from field
B)	F.E.L,	1.N.L. and 270	1	notes of	actual surveys made by me or
]	1.2.51			under my	supervision, and that the same
	j		OFFSCIO	is true	and correct to the best of my
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1			OHN W. WES		11/1/4
<u> </u>					M/V WW
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1					RONALD I FIDSON 3239

#### NEW MEXICO OIL CONSERVATION COMMISSION WELL LOCATION AND ACREAGE DEDICATION PLAT

		All distances must b	e from the oute	r boundaries	of the Section.			
Operator			Lease				Well No.	
Amoco	Production Co	ompany	South	Hobbs (	G-SA) Uni	t .	219	
Unit Letter	Section	Township	Roznge	•	County			
D	3	19 South	38	East		Lea		
Actual Footage Loc	ation of Well:							
657	feet from the	North line or	<sub>id</sub> 787	f	eet from the	West	line	
Ground Level Elev.	Producing For	mation	Pool				Dedicated Acreage:	
3628.0'	Graybur	g-San Andres	Hot	bs GSA			40	cres
					1 1	1 .1		
1. Outline th	e acreage dedica	ted to the subject	well by cold	ored pencil	or hachure	marks on th	ie plat below.	
	an one lease is nd royalty).	dedicated to the w	ell, outline	each and id	dentify the o	wnership t	hereof (both as to work	cing
3. If more the	in one lease of d	ifferent ownership i	s dedicated	to the well	l, have the i	nterests of	all owners been cons	oli-
dated by c	ommunitization, u	nitization, force-po-	oling.etc?					
				D.		_		
X Yes	No If an	nswer is "yes;" type	of consolid	ationUr	II LIZAT 101	1		
If answer	is "no," list the	owners and tract de	scriptions w	hich have	actually bee	n consolid	ated. (Use reverse side	e of
i e	f necessary.)	·						
No allowat	ole will be assigne	ed to the well until	all interests	have been	consolidate	ed (by com	munitization, unitizati	ion
ł	-					•	approved by the Comm	
sion.	ing, or otherwise,	or unit, a non stand				, nab been	approved by the conin	1113-
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787'	96.5		Pino			_ //	rein is true and complete to	THE
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	ı	) i	1 KEW	NEXIVE /			roduction Company	,
NOTE: A	n area around	the	NO.	LENIES /			Todaccion company	
1	ocation was M	-scoped		V. View		Company August	1 1006	
&	no buried pi	pelines		And the second		August	4, 1900	
	ere found.		i		]	Date		
	1		i		1		·	
	1							
NOTE: T	his well to b	e directionally	·					
1 1		tom hole locati				1 heraby	certify that the well local	tion
1 I	1	.N.L. and 1220'			İ	shown on	this plat was plotted from f	field
"	1		1			notes of	actual surveys made by me	e 01
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# EXHIBIT "B" REASONS FOR DIRECTIONALLY DRILLING AND/OR UNORTHODOX LOCATIONS

WELL	. NO.		REASO	ON I	OR DEV	/IATION	
SHU	#211	Bottomhole	location	is	under	residential	housing.
SHU	#212	Bottomhole	location	is	under	residential	housing.
SHU	#213	Bottomhole	location	is	under	commercial	building.
SHU	#215	Bottomhole	location	is	under	commercial	gas plant.
SHU	#217	Bottomhole	location	is	under	commercial	building.
SHU	#218	Bottomhole	location	is	under	commercial	building.
SHU	#219	Bottomhole	location	is	under	residential	l housing.



# EXHIBIT "A" SOUTH HOBBS (GSA) UNIT

WELL NAME	TYPE OF	SURFACE LOCATION BOTTOMHOLE LOCATION	KICKOFF POINT BELOW SURFACE	BOTTOMHOLE DEVIATION	OTTOMHOLE ELEVATION (GRND. LEVEL)
SHU No. 211 *	Prod.	1790' FNL x 1420' FWL, Sec. 5, T-19-S, R-38-E 1600' FNL x 910' FWL, Sec. 5, T-19-S, R-38-E	1,700'	544.2'	3,620.4'
SHU No. 212 *	Inj.	1478' FNL x 2589' FWL, Sec. 5, T-19-S, R-38-E 7 900' FNL x 2450' FWL, Sec. 5, T-19-S, R-38-E	1,700'	594.5'	3,622.1'
SHU No. 213 *	Inj.	890' FNL x 1275' FEL, Sec. 5, T-19-S, R-38-E 7 680' FNL x 1375' FEL, Sec. 5, T-19-S, R-38-E	1,700'	232.6'	3,622.91
SHU No. 215 *	Inj.	1398' FNL x 1227' FWL, Sec. 4, T-19-S, R-38-E ★ 1000' FNL x 1250' FWL, Sec. 4, T-19-S, R-38-E	1,700'	398.7'	3,607.4'
SHU No. 216 *	Inj.	1166' FNL x 2411' FWL, Sec. 4, T-19-S, R-38-Eಳ Straight Hole		0	3,610.4'
SHU No. 217 *	Inj.	1407' FNL x 2203' FEL, Sec. 4, T-19-S, R-38-E ≠ 1030' FNL x 1575' FEL, SEc. 4, T-19-S, R-38-E	1,700'	732.5'	3,615.6'
SHU No. 218	Inj.	652' FNL x 563' FEL, Sec. 4, T-19-S, R-38-E ≠ 1000' FNL x 270' FEL, Sec. 4, T-19-S, R-38-E	1,700'	454.9'	3,617.9'
SHU No. 219	Inj.	657' FNL x 787' FWL, Sec. 3, T-19-S, R-38-E 록≯ 900' FNL x 1220' FWL, Sec. 3, T-19-S, R-38-E	1,700'	496.5'	3,628.0'

<sup>\*</sup> Unorthodox Surface Locations

PLICA	TION FOR AUTHORIZATION TO INJECT
I.	Purpose: Secondary Recovery X Pressure Maintenance Disposal Storage Application qualifies for administrative approval? yes no
II.	Operator: Amoco Production Company
	Address: P. O. Box 68, Hobbs, NM 88240
•	Contact party: Mr. John M. Breeden Phone: (505) 393-1781
II.	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.
I V .	Is this an expansion of an existing project? $\overline{X}$ yes $\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $
٧.	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.
II.	Attach data on the proposed operation, including:
	<ol> <li>Proposed average and maximum daily rate and volume of fluids to be injected;</li> <li>Whether the system is open or closed;</li> <li>Proposed average and maximum injection pressure;</li> <li>Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and</li> <li>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.).</li> </ol>
	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.
х.	Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)
ci.	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.
	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.
II.	Applicants must complete the "Proof of Notice" section on the reverse side of this form.
٧.	Certification
	I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.  Name: Charles M. Herring Title Administrative Analyst (SG)
	Signature: hull M. Losling Date: August 4, 1986
submi	e information required under Sections VI, VIII, X, and XI above has been previously tted, it need not be duplicated and recommitted. Please show the date and circumstance e earlier submittal. R-4934, 12-3-84; R-4934-A, 8-4-83; R-4934-C, 9-30-83; PMX-81, 4-15-8
	-130, 10-17- <b>7</b> 4; PMX-132, 10-31-84; PMX-134, 2-5-85

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

#### 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.

- 8. 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.

# ITEM III WELL DATA SOUTH HOBBS UNIT NORTHERN LEASELINE INFILL DRILLING

AMOCO		South Holobs	Unit	
ZIZ WELL NO.	1478 ENLX2589 FWL	SECTION	19-5 TOWNSHIP	38-E RANGE
Schem	ntie		Tabular Data	
See Att	ached sketch	TOC CIRC	Cemented with feet determined by	
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		TOC	feet determined by	· ·
		Long string	· .	·
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	er lok-set	, (n	er at ± 3980	feet
Other Data	any other casing-tubing the injection formation		dres	
2. Name of F	ield or Pool (if applica	ible) Holobs		
If no, fo	or what purpose was the w	ell originally dri	11ed?	
4. Has the wand give	vell ever been perforated plugging detail (sacks d	in any other zone of cement or bridge	(s)? List all such per plug(s) used) <u>NoN</u>	forated interval Q
	depth to and name of any	overlying and/or indox	underlying oil or gas zo Bluebry + 5700, Pri	ones (pools) in NEACH ± 6600
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SUBJECT South Hobbs Unit No. 212

(SD) 1478' FNL \* 2589' FWL, Sec. 5, T-A-5, R-38 E BHL) 1900 FNL x 2450 FWL, Sec 5, 7- 19-5, R-38 E Elev: 3622 GL 85/8" C3A 1600' CMT & CQ. C Hole Size 12/4" Z38 Plastic Conted Tba. 5 2" Baker Lok-set PSA ± 3980 TVD 3880' Grayourg 3990' Sar Ordies 4006 San Ondias zone II Sandraires Zone III 4-080 Perts: Approx 4026-4230 5½" CSA 4300 TVD GROSS interval CMT "Cl. C. Circ Hole Size 7% TO: 4-300

OPERATOR		LLASE			
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SUBJECT South Hobbs Unit No. 213

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(SL) 890' FNL x /275 (BHL) 680' FNL x 1375'	FEL, Sec. 5, - FEL, Sec. 5,	7-19-5, R-38 T-19-5, R-3	- <i>E</i> 8- <b>E</b>
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Circ.			
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#### INJUCTION WELL DATA SHIFT

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(brand and model)			1000
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	of cement or orido		
	or cement or oridi		



FILE		

SHEET NO.

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SUBJECT South Hobbs Unit No 216

(SL) 1166 FNI x 2411 FWL, Sec. 4, T-19-5, R-38-E (BHL) 1030' FNL x 2475' FWL, Sec 4, T-19-5, R-38-E Elevi 3610 'G.L. 898 CSA 1600' COIT YO.C. Cicc Hole Size 13/4 23/8 Plastic Coated TBGX BAKEr Lok-set PSA # 3980 TVD 3885' Grayburg 3986 San Ordines 4026 Sandroics Zone II 4081 Son andres Zone III Perfs: 4026-4231 TVD 000000000 Approximate GROSS 5%" CSA 4300" Interval CMT WOLC. Cic Hob Size 7% TO: 4300

217	1407 FNI Y :	2203 EFL	4	19-5	78-F
LL NO.	FOOTAGE LOCATIO	ZZO3 FEL SEC	CTION	TOWNSHIP	RANGE
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				et determined by	
•		Hole size		e determined by	
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		Long strin			
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		·		t determined by	
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	•	iotal dept	th <u>43c</u>		
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bing size _ RAke	2 % r lok-set		packer at _	3.990	feet
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PAKe (bran	er lok-set		packer at _		feet
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her Data Name of t	d and model) any other casing he injection for		packer at _	3990	feet
Chran r describe her Data Name of t	d and model) any other casing he injection for ield or Pool (if	rmation <u>S</u>	packer atan Andres Field	3990	feet
Chran describe her Data  Name of t  Name of F  Is this a	d and model) any other casing he injection for ield or Pool (if	rmationS	n Andrea Holdos Fiel	3990 d	feet
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	ENGINEERING	

JBJECT	South Hobbs Ur	it No	217	 DATE
				RY

(SL) 1407 FNL x 2203 FEL, Sec 4, T-19-5, R-38-E (BHL) 1030 FNLX 1575 FEL, Sec. 4, T= 19-5, R-38-E Elevi 3616 G.L. 85/8" CSA 1600' CMT" Cl. C. Circ. Hole Size 17/4" 23/8 TBG Plastic Coaled X Baker lok-set PSA ± 3990 TVD 3888 Grayburg 3991 San Ordies 4037 San Ordies Zone II 4094 Son Ordies Zone III Perts: 4037-4231 TVD 5½" CSA 4300' approximate Geossinterval CMI WCQ. C. Circ Hole Size 7% Tn: 4-300'

218	652 ENI V 563 E	FEL 4 SECTION	19-5	38-E
ELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE
Schemat	,		Tubular Data	
	<u> </u>	Surface Casing	YUU IATEN	٠.
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see alla	ched sketch	TOC CIRC	- fect determined by	
		Hole size 12	1/4	
•		Intermediate Casing	•	
	,	Size		b
·		100		
		Hole size	_ reet determined by	
		Long string		
		5ize 5/2		
•	·	Hole size		
•				
		Total depth	T300	
		Injection interval	, i	<u> </u>
		4042 feet (perforated or open-	to 4224 nole, indicate which	feet terts
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•				<u>:</u> .
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bing size	<u> </u>	ed with Plast	(C cerial)	set in a
BAKER	lok-set	packer	at <u>3990</u>	feet
r describe an	y other casing-tubi	ng seal).	•	
her Data	•		•	
Name of the	e injection formatio	n San andr	eD	
Name of Fig	eld or Pool (if appl	icable) Holdes F	Feld	
Is this a r	new well drilled for	injection? X7 Yes		
•	what purpose was th	e well originally drille	ed?	
If no, for				
If no, for	<u> </u>			
Has the wel	l ever been perfora	ted in any other zone(s) s of cement or bridge of	)? List all such pe lug(s) used) — N∧.	rforated interv )0
Has the wel	l ever been perfora ugging detail (sack	ted in any other zone(s) s of cement or bridge pl	? List all such pe lug(s) used) <u>ルの人</u>	rforated interv
Has the wel	l ever been perfora ugging detail (sack	ted in any other zone(s) s of cement or hridge pl	)? List all such pe lug(s) used) <u>ルの人</u>	rforated interv



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SUBJECT South Hobbs Unit No. 218

(SL) 652 FNL x 563 FEL, Sec. 4, T-19-S, R 38-E (BHL) 1000' FNLx 270 FEL, Sec. 4, T-19-5, R-38-E Elevi 3618 G.L. 858" CSA 1600' CMT W Cl. C. Circ Hole Size 124-" 23/8 Plantic Coaled ToG X Baker Lok-set PSA ± 3990'TVD 3903' Grayburg 3999' San andres 4042' San andres Zone II San Ordice Zone III 4095 000000 Perfs: 4042-4224 TVD 5½" CSR 4300' CMT " CQ. Q. Approximate GROSS Tuterval Circ Hole Size 7% TD: 4-300'

~17	1.57 THILL OFF THE	٦ ٦	19-5	20-E
219 WELL NO.	FUOTAGE LOCATION	L 3 SECTION	19-5 TOWNSHIP	RANGI.
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		Hole size	2 1/4	
	•	Intermediate Casing	i v	
•		Size	Cemented wit	h
		100	feet determined by	
•	· ·	Hole size		·
		Long string		
		Size 5 1/2	Cemented wit	hs
		TOC CIPC	feet determined by	
	•		778	
		Total depth	4300	· ·
•		Injection interval		
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		(perforated or open-	to 422Z hole, indicate which	) rece lett 2
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ubing size Ra	23 linea	, , , , , , , , , , , , , , , , , , , ,	iterial)	<del></del>
Jubing size	238 lines  ker lok-set  and and model)	d with Plas	iterial)	set in a feet
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or described ther Data  Name of Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Signature Sign	the injection formation field or Pool (if applic a new well drilled for if for what purpose was the well ever been perforate	packer  packer  packer  packer  packer  And  cable)	replated A020  Field  To No  led?  List all such pe	feet
Chracor described ther Data  Name of Name of Is this If no, It is the and give	the injection formation field or Pool (if applic a new well drilled for if for what purpose was the well ever been perforate	packer  packer  packer  seal).  San And  cable) Hodos  injection? A7 Yes  well originally drill  ed in any other zone(se  of cement or bridge p	repair 4020  repair 4020  repair 4020  repair 4020  repair 4020  repair 4020  repair 4020  repair 4020  repair 4020  repair 4020  repair 4020  repair 4020  repair 4020  repair 4020  repair 4020  repair 4020  repair 4020  repair 4020  repair 4020  repair 4020  repair 4020  repair 4020  repair 4020  repair 4020  repair 4020  repair 4020  repair 4020  repair 4020  repair 4020	rforated interv



ENGINEERING CHART

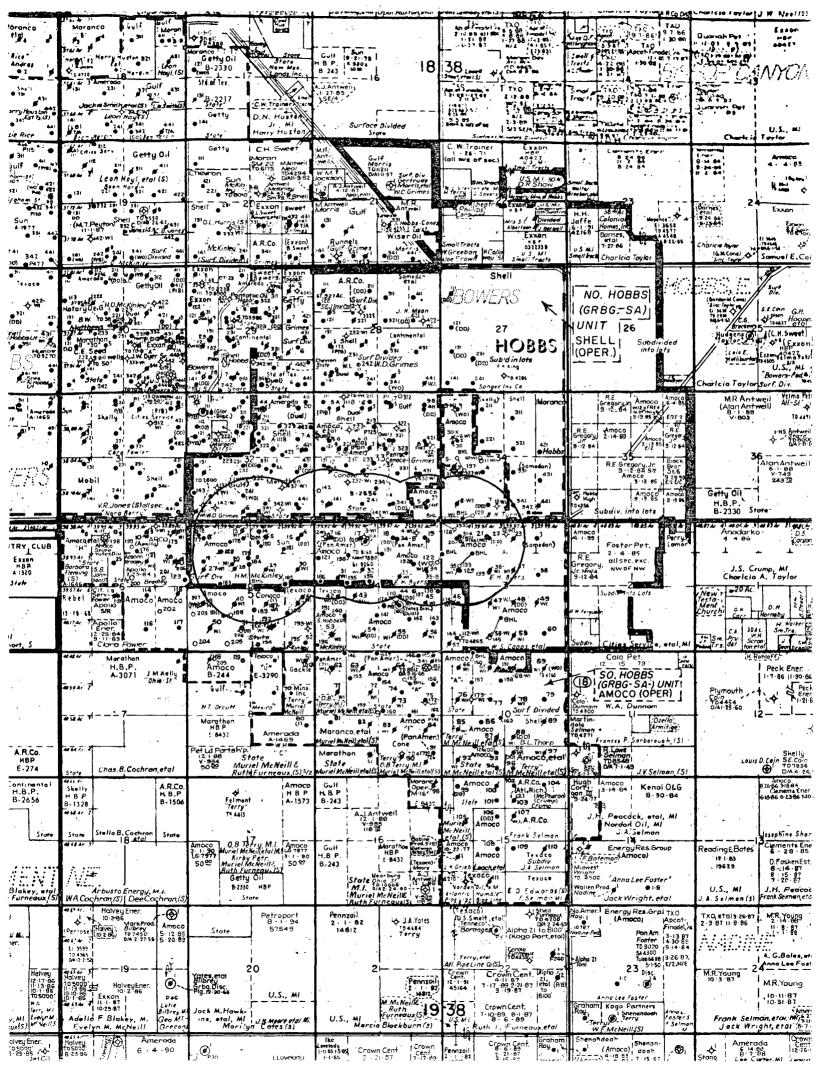
FILE		
APPN		

SHEET NO.

SUBJECT South Hobbs Unit No. 219

					BY
(5L) 657 FNL x 78	17' FW/1	5003	T.19. <	R- 38-	
(BHL) 900' FNL x 12.					
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					3628 G.L.
					) W O O O O O O O O O O O O O O O O O O
				<u> </u>	
				-	
856" CSA 1600'					
CMT Wes. c.					
Circ					
Hole Size 1241					
		TO TAKE STORE OF THE PROPERTY OF THE PARTY O			
				23/2 P	lastic Coated TBG
				X	BAKET Lok-set
					A = 4020 TUD
3935 Grayburg					
to20' San andres		$\leq$			
4071' San ardins Zone II					
4126' San andies Zone II			00	Perfs:	4071-4222' TVD
			0	Í !_ /	pproximale GROSS
5½ C5A 4300 CMT CQ. C.			800		approximate Gross
CMT DQ. C.					
_Cicc					
Hole Size 7/8"	TT	1: 4300	)′		

## ITEM V AREA OF REVIEW



# ITEM VI PERTINENT DATA FOR WELLS WITHIN AREA OF REVIEW

The data within Item VI has already been submitted. Please reference the following approved orders:

Order No.	<u>Date</u>
R-4934	12-03-74
R-4934 <b>-</b> A	08-04-83
R-4934-C	09-30-83
PMX-81	04-15-80
PMX-130	10-17-84
PMX-132	10-31-84
PMX-134	02-05-85

## ITEM VII PROPOSED OPERATIONS

### San Andres Injection Wells:

Average Injection Rate: 1000 BWPD Average Injection Pressure: 100 psi Maximum Injection Rate: 2500 BWPD

Maximum Injection Pressure: In accordance with Rule 11 of Order

No. R-4934-E

This system is closed with only South Hobbs Unit produced water and City of Hobbs makeup water being injected.

Water injected is compatible with the receiving formation. Water analysis sheets for the South Hobbs Unit produced water and the City of Hobbs makeup water are attached.



Date Received: 5-20-83



#### **WATER ANALYSIS REPORT**

Company: AMOCO PRODUCTION CO.

County: Lea

State:

Lease:

New Mexico

S.H.U. Lab No.: 10251

Date Typed:8 - 27 - 85

Date Sampled:8 - 19 - 85

Sampled By: H. Smith

Sample Source: 5000 Inlet (SHU Produced WTR.)

**DISSOLVED SOLIDS CATIONS** 

	mg/l	me/l
Sodium, Na(calc.)	2,609	113
Calcium, Ca	419	21
Magnesium, Mg	111	10
Potassium, K	102	3
Iron, Soluble	0.40	0.02
Iron. Insoluble	0.13	< 0.01
Iron, Total	0.53	0.02
Manganese, Mn	0.00	0.00
Barium, Ba	***************************************	-
Strontium, Sr		

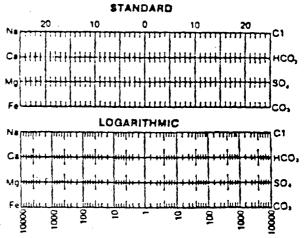
Bicarbonate, HCO3	1,702	
Carbonate, CO3	7 702	27
Sulfate, SO <sub>4</sub>	0	0
	640	13
Chloride, Cl	3,720	105
ANIONS	7 700	305

Total Dissolved Solids (calc.) 9,305

OTHER PROPERTIES

pri .	7.6
Specific Gravity, 60/60 F.	1.006
Nonograph Sp. Gr.	1.004 - 1.008
Specific Gravity, Uncorrected	1.003
Temperature, (oF)	74.8
Resistivity, OHMS-CM	9 <u>0 e 74 8</u>

WATER PATTERNS - me/l



STIFF & DAVIS STABILITY INDEX:

CO3=	60°	1000	1200	1800
	+ 1.39	+ 1.87	+ 2.05	+ 2.82
SO <sub>4</sub> =	55 <sup>0</sup>	95 <sup>0</sup>	1220	1760
	-25.35	-26.48	-26,66	-23.95

Remarks & Recommendations:

WELCHEM Representative

Date Received: 8-20-8;

### **WATER ANALYSIS REPORT**

Company: AMOCO PRODUCTION CO.

County: Lea

State:

New Mexico

Lease: Lab No.:

S.H.U. 10253

Date Typed: 8 - 27 - 85

Date Sampled: 8 - 19 - 85

Sampled By: H. Smith

Sample Source: City Water Supply

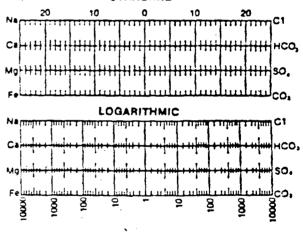
**DISSOLVED SOLIDS CATIONS** 

	mg/l	me/i
Sodium, Na(calc.)	242	10
Calcium, Ca	91	4
Magnesium, Mg	16_	
Potassium, K	9	0_2
Iron, Soluble	0.31	0.01
Iron, Insoluble	0.41	0.01
Iron, Total	0.70	0.02
Manganese, Mn	0.00	0.00
Barium, Ba		
Strontium, Sr		

444045		
ANIONS	360	1.0
Chloride, Cl	118	2
Sulfate, SO <sub>4</sub>	<u></u>	<u> </u>
Carbonate, CO <sub>3</sub> Bicarbonate, HCO <sub>3</sub>	250	4
bicarbonate, 11003		·

Total Dissolved Solids (calc.) ,086 OTHER PROPERTIES Specific Gravity, 60/60 F. Nonograph Sp. Gr. 0.998 Specific Gravity, Uncorrected 75.0 Temperature, (oF) 850 € 75.0 Resistivity, OHMS-CM

> WATER PATTERNS - me/l STANDARD



STIFF & DAVIS STABILITY INDEX.

CO3=	60°	100°	1200	1800
	+ 0.59	+ 0.96	+ 1.13	+ 1.67
SO4=	55 <sup>0</sup>	95 <sup>0</sup>	1220	1760
	-20.81	-22.82	-22.74	-19.60

Remarks & Recommendations:

# ITEM VIII GEOLOGICAL DATA

The Grayburg Formation consists of a sandy dolomite with interbedded dolomite sands. It is approximately 100' thick with the top and bottom at  $\pm 3950'$  and  $\pm 4050'$  respectively.

The San Andres Formation consists of a clean crystalline dolomite. It lies directly below the Grayburg at  $\pm 4050'$ . The injection zone consists of the top 300' from  $\pm 4050'$  to  $\pm 4350'$ .

The lower limit of potable water occurance in this area is  $\pm 1600$ ' which is the top of the Rustler Anhydrite. The Ogallala Formation is the primary fresh water aquifer with a lower limit of  $\pm 300$ '.

## ITEM IX PROPOSED STIMULATION PROGRAM

San Andres: Initial stimulation will consist of  $\pm 4000$  gallons of 15% HCl acid.

## ITEM XII AFFIRMATIVE STATEMENT

While evaluating the proposed wells for injection and gathering the required information for this application, no evidence of open faults or any other hydrologic connection between the proposed injection zones and any underground source of drilling water was found.

ITEM XIII
PROOF OF NOTICE

#### AFFIDAVIT OF PUBLICATION

State of New Mexico, County of Lea.

1, \_\_\_\_\_

Robert L. Summers

of \_\_

of the Hobbs Daily News-Sun, a daily newspaper published at Hobbs, New Mexico, do solemnly swear that the clipping attached hereto was published once a week in the regular and entire issue of said paper, and not in a supplement thereof for a period

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937, and payment of fees for said publication has been made.

My Commission expires \_\_

LEGAL NOTICE
AUGUST 1, 1986
TO WHOM IT MAY
CONCERN:
Amoco Production Company
will on or before August 4, 1986;
apply for administrative approval to drill seven water injection wells in our South Hobbs
(GSA) Unit.
All proposed drilling locations are in Sections 3, 4, and 5,
Township 19 South,
Range 38-East; Lea County,
New Mexico.
The purpose of this work-is too develop the Northern Leaseline area of the South Hobbs
Pressure Maintenance Project.
Water will be injected into the San Andres Formation at an average rate of 1000 BWIPD with an average pressure of 100 psi. Surface pressures will be limited to 2 psi per foot until step rate tests are performed.
Any questions concerning this project may be directed to Mr. John M. Breeden, District Foreman, Amoco Production Company, P. O. Box 68, Hobbs, NM 88240, Phone: (505) 393-1781.
Interested parties must file objections or request for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, NM 87501, within fifteen (15) days.
L.R. Smith

	P 169 573 585	
	RECEIPT FOR CERTIFIED MAIL	P 169 573 579  RECEIPT FOR CERTIFIED MAIL
	NO INSURANCE COVERAGE PROVIDED	NO INSURANCE COVERAGE PROVIDED
	NOT FOR INTERNATIONAL MAIL	NOT FOR INTERNATIONAL MAIL
<b>9</b>	(See Reverse)	(See Reverse)
	Sent to Mara thon Oil Company Street and No. 552	Sent to, State of New Mexico, Comm of tubbonds
	Street and No.	State of New Mexico, Comm of Aubhands  Sincer and No. 1. 0. Box 1148
	P.O. State and ZIP Code  Midland, TX 79702	P.O., State and ZIP Code Santa Fe. NM 87504
	o Postage s	Postage \$192
	Certified Fee	Certified Fee
	Special Delivery Fee	Special Delivery Fee
	Restricted Delivery Fee	Restricted Delivery Fee
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	P 169 573 581	P 169 573 582
		RECEIPT FOR CERTIFIED MAIL
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	P.O. State and ZIP Code Odesso, TX 79762	P.O. State and ZIP Code  Anuston, TX 1700
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	Restricted Delivery Fee	Restricted Delivery Fee
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P 169 573 583

### RECEIPT FOR CERTIFIED MAIL

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(See Reverse)

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