



David L. Wacker
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Production Department
Hobbs Division
North American Production

Conoco Inc.
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P.O. Box 460
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(505) 397-5800

December 12, 1988

Mr. William LeMay
State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501-2088

Dear Mr. LeMay:

Application for Expansion of CO₂ Injection Project -
MCA Unit - Lea County, New Mexico

Conoco Inc. respectfully requests administrative approval to expand the CO₂ injection project at the MCA Unit in the Maljamar Grayburg San Andres formation. This project was originally approved on October 30, 1979, under Order R-6157. This order was basically for the pilot project for the CO₂ flood at the MCA Unit but also gave us permission to expand this project administratively.

Conoco is now preparing to start Phase I of this CO₂ flood for this Unit. This CO₂ flood is anticipated to recover an additional 26 MMBO above the continued waterflood operation.

The following information is attached:

- 1) List of the proposed CO₂ injection wells
- 2) Schematic for the two new injection wells No. 114 and No. 380
(All other proposed CO₂ injection wells were previously water injection wells)
- 3) Tabulation of data on all other wells within the area of review
- 4) Schematics of all plugged wells
- 5) Data on proposed operation
- 6) Appropriate geological data on the injection zone. Please note that there is no fresh water underlying the MCA Unit, not even windmill water.
- 7) Proof of Notice

There are no offset operators to these proposed CO₂ injection wells. Tracts containing injection wells are within the MCA Unit and offset by Unit tracts.

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Your immediate attention to this matter would be appreciated. The granting of this Application will prevent waste and will not impair the correlative rights of any party. If you have any questions regarding this request, please contact Ms. Ceal Yarbrough at (505) 397-5825.

Yours very truly,



David L. Wacker
Division Manager

COY/jd
cc/enc:
New Mexico Oil Conservation Division
P.O. Box 1980
Hobbs, NM 88240

LEASE NAME & NO.--- TYPE				LOCATION-----	SPUD	PROD/INJ	-----CASING-----	-----CEMENT-----	-----CASING-----	-----CEMENT-----	-----CASING-----	-----CEMENT-----	TD/PB/D							
						INTERVAL	SIZE	DEPTH	SACKS	TOC	SIZE	DEPTH	SACKS	TOC	SIZE	DEPTH	SACKS	TOC	TD/PB/D	
MCA UNIT	94	INJ	660' FSL & 660' FEL 20 T17S R32E	06-10-45	3738'-4089'	12-3/4"	20'	NOT CEMENTED	7"	3600'	360	NR	5-1/2"	3110'-4050'	350	CIRC	4090'/4050			
MCA UNIT	109	INJ	660' FNL & 660' FNL 29 T17S R32E	08-04-40	3675'-3705'	8-5/8"	873'	50	CIRC	7"	3493'	100	2830'	4-1/2"	3631'	175	1100'	3977'/3965		
MCA UNIT	111	INJ	660' FNL & 1980' FEL 29 T17S R32E	03-19-49	3724'-3761'	8-5/8"	1922'	100	CIRC	7"	3541'	150	2540'	4-1/2"	3660'	300	1600'	4070'/4070		
MCA UNIT	114	INJ	660' FNL & 660' FNL 28 T17S R32E	07-26-45	3888'-4040'	12-1/2"	20'	23	CIRC	5-1/2"	3551'	150	2400'	4"	4075'	200	CIRC	4076'/4043		
MCA UNIT	119	INJ	660' FNL & 660' FNL 27 T17S R32E	09-09-45	3894'-4150'	12-1/2"	23'	25	CIRC	5-1/2"	3556'	200	2200'					4150'/4150		
MCA UNIT	121	INJ	660' FNL & 1980' FEL 27 T17S R32E	12-07-49	3786'-4030'	13-1/4"	21'	20	CIRC	7"	3542'	400	1820'	4-1/2"	3765'	30	1000'	4092'/4086		
MCA UNIT	145	INJ	1980' FNL & 660' FEL 27 T17S R32E	07-23-40	3878'-4032'	12-1/2"	20'	20	CIRC	7"	3540'	400	1530'	4-1/2"	3818'	325	300'	4091'/4091		
MCA UNIT	147	INJ	1980' FNL & 1980' FNL 27 T17S R32E	05-19-42	3830'-4100'	12-1/2"	20'	25	CIRC	5-1/2"	3543'	250	2100'					4150'/4150		
MCA UNIT	150	INJ	1980' FNL & 660' FEL 28 T17S R32E	11-06-45	3822'-4119'	12-1/2"	21'	15	CIRC	5-1/2"	3545'	300	2127'	4-1/2"	3793'	125	3389'	4157'/4157		
MCA UNIT	152	INJ	1980' FNL & 1980' FNL 28 T17S R32E	11-03-45	3726'-4038'	12-1/2"	30'	15	CIRC	5-1/2"	3620'	300	2200'	4"	4061'	280	3273'	4123'/4072		
MCA UNIT	154	INJ	1980' FNL & 600' FEL 29 T17S R32E	06-07-40	3758'-4040'	8-5/8"	860'	50	CIRC	7"	3560'	100	NR	4-1/2"	3703'	300	2400'	4082'/4059		
MCA UNIT	157	INJ	1980' FNL & 1980' FNL 29 T17S R32E	08-13-40	3755'-4009'	8-5/8"	910'	50	CIRC	7"	3492'	100	2192'	4-1/2"	4020'	65	3377'	4031'/4011		
MCA UNIT	169	INJ	1480' FSL & 330' FNL 29 T17S R32E	02-11-41	3767'-4058'	8-5/8"	990'	50	630'	7"	3488'	100	2270'	4-1/2"	3735'	325	CIRC	4080'/4060		
MCA UNIT	171	INJ	1980' FSL & 1980' FEL 29 T17S R32E	02-20-41	3818'-4099'	8"	1010'	50	CIRC	7"	3505'	100	2500'	4-1/2"	3784'	300	500'	4140'/4140		
MCA UNIT	175	INJ	1980' FSL & 660' FNL 28 T17S R32E	12-02-45	3829'-4073'	12-1/2"	20'	15	CIRC	5-1/2"	3547'	300	NR	4-1/2"	3796'	100	CIRC	4125'/4092		
MCA UNIT	180	INJ	1980' FSL & 660' FNL 27 T17S R32E	07-14-40	3860'-4081'	8-5/8"	288'	50	CIRC	5-1/2"	3539'	250	2000'	4-1/2"	3822'	100	300'	4170'/4170		

07-Dec-98 MCA CO2 AUTHORIZATION TO INJECT -- PROPOSED INJECTION WELLS

LEASE NAME & NO.	TYPE	LOCATION	SPUD	PROD/INJ	INTERVAL	SIZE	DEPTH	SACKS	TOC	SIZE	DEPTH	SACKS	TOC	SIZE	DEPTH	SACKS	TOC	TD/PRTD
						---CASING---		---CEMENT---		---CASING---		---CEMENT---		---CASING---		---CEMENT---		
MCA UNIT	184 INJ	1980' FSL & 1980' FEL	27 11/75 R3ZE	12-23-47	3946'-4190'	12-1/2"	20'	25	CIRC	5-1/2"	3566'	250	2530'	4-1/2"	3535'	410	296'	4180' / 4157'
MCA UNIT	205 INJ	660' FSL & 1980' FEL	27 11/75 R3ZE	10-28-40	3960'-4142'	8-5/8"	307'	50	CIRC	5-1/2"	3510'	250	1340'	4"	4194'	55	NR	4230' / 4194'
MCA UNIT	207 INJ	660' FSL & 660' FEL	28 11/75 R3ZE	11-25-40	3805'-4142'	12-1/2"	21'	15	CIRC	5-1/2"	3586'	300	2200'	4-1/2"	4168'	125	4059'	4170' / 4170'
MCA UNIT	209 INJ	660' FSL & 1980' FEL	28 11/75 R3ZE	12-05-40	3848'-3974'	12-1/2"	29'	14	CIRC	5-1/2"	3539'	300	2100'	4"	4020'	300	CIRC	4025' / 4020'
MCA UNIT	223 INJ	660' FSL & 1980' FEL	33 11/75 R3ZE	01-23-41	3887'-4137'	8"	29'	15	CIRC	5-1/2"	3558'	250	290'	4-1/2"	3842'	130	3523'	4135' / 4120'
MCA UNIT	273 INJ	1980' FSL & 560' FEL	26 11/75 R3ZE	04-01-71	4042'-4213'	7-5/8"	1030'	450	CIRC	4-1/2"	4260'	325	2300'					4260' / 4254'
MCA UNIT	301 INJ	1980' FSL & 1780' FEL	28 11/75 R3ZE	08-22-72	3820'-4151'	7-5/8"	867'	375	CIRC	4-1/2"	4220'	300	2100'					4220' / 4170'
MCA UNIT	360 INJ	766' FNL & 1874' FEL	28 11/75 R3ZE	07-26-88	3810'-4090'	13-3/8"	845'	770	CIRC	5-1/2"	4110'	2700	1200'					4110' / 4067'

INJECTION WELL DATA SHEET

Conoco Inc

MCA Unit

OPERATOR

LEASE

114

660' FNL & 660' FWL

28

T-17S

R-32E

WELL NO.

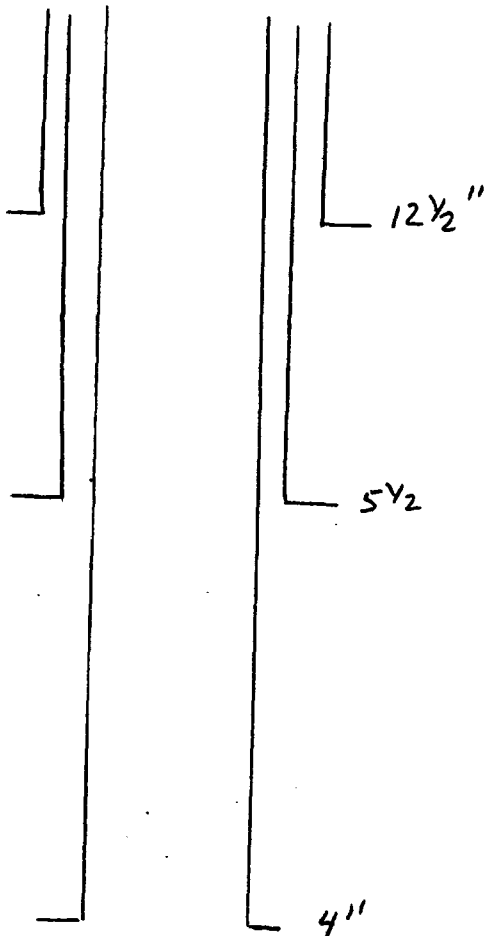
FOOTAGE LOCATION

SECTION

TOWNSHIP

RANGE

Schematic



Tabular Data

Surface Casing

Size 12 1/2" Cemented with 23 sx.TOC Surface feet determined by circulationHole size 13 3/4"

Intermediate Casing

Size 5 1/2" Cemented with 150 sx.TOC 2400' feet determined by estimateHole size 8 3/4"

Long string

Size 4" Cemented with 325 sx.TOC Surface feet determined by circulationHole size 4 3/4"Total depth 4018'

Injection interval Perforated

3714' feet to 4040' feet
(perforated or open-hole, indicate which)

Tubing size 2 3/8" lined with Plastic coating set in a
(material)
OT is 4" Inter-lock packer at 3672' feet
(brand and model)

(or describe any other casing-tubing seal).

Other Data

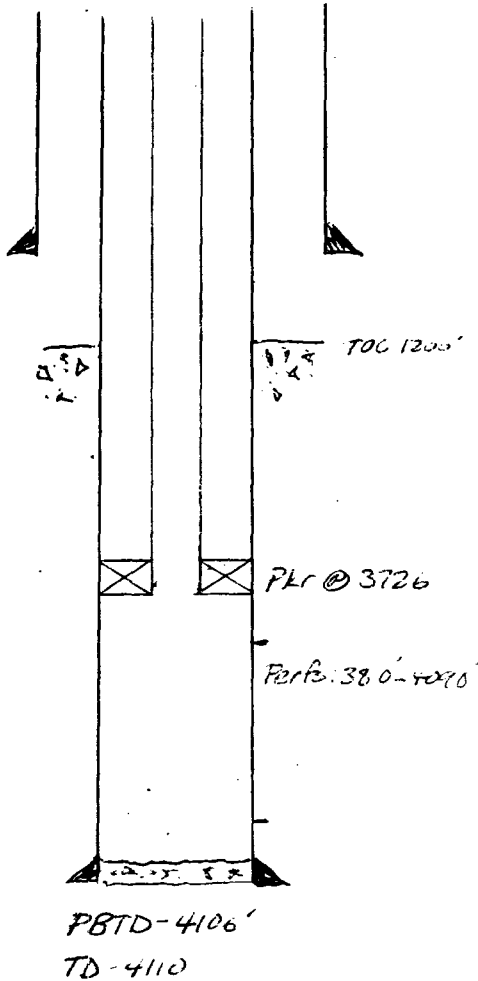
- Name of the injection formation Grayburg / San Andres
- Name of field or Pool (if applicable) MCA Unit
- Is this a new well drilled for injection? ☐ Yes ☒ No
If no, for what purpose was the well originally drilled? Producer
- Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used)
No
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.

INJECTION WELL DATA SHEET

OPERATOR	LEASE			
CONOCO	MCA Unit			
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE
3800	766' FNL, 1874' FEL	28	17	32

Schematic

Tabular Data



Surface Casing

Size 13 3/8" Cemented with 770 sx.
 TOC Surface feet determined by circulated cmst.
 Hole size 17 1/2"

Intermediate Casing

Size N/A Cemented with _____ sx.
 TOC _____ feet determined by _____
 Hole size _____

Long string

Size 5 1/2" Cemented with 2700 sx.
 TOC 1200' feet determined by temp survey
 Hole size 7 7/8"
 Total depth 4110'

Injection interval

3809 feet to 4090 feet
 (perforated) or open-hole, indicate which)

Tubing size 2 3/8" lined with plastic (TK-99 coating) set in a
 (material)
Otis Interlock packer at 3726' feet
 (brand and model)

(or describe any other casing-tubing seal).

Other Data

- Name of the injection formation Grayburg / San Andres
- Name of field or Pool (if applicable) _____
- Is this a new well drilled for injection? ☒ Yes ☐ No
 If no, for what purpose was the well originally drilled? _____
- 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
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Vates formation (oil & gas) at +/- 2300', Queen formation (oil & gas) at +/- 3100'. Deeper zones are not penetrated by injection wells. Padlock (+/- 5200') is productive to the northwest. Abe/Wolfcamp (+/- 4000') is productive to the north

07-Dec-88 MCA CO2 AUTHORIZATION TO INJECT - REVIEW AREA WELLS

LEASE NAME & NO.---	TYPE	LOCATION-----	SPUD	PROD/INJ		-----CASING-----		---CEMENT---		-----CASING-----		---CEMENT---		-----CASING-----		---CEMENT---	
				PROD/INJ	INTERVAL	SIZE	DEPTH	SACKS	TOC	SIZE	DEPTH	SACKS	TOC	SIZE	DEPTH	SACKS	TOC
MCA UNIT	45	INJ	1980' FWL & 1980' FWL	21 1175 R32E	10-22-36	3751'-4106'	10-3/4" 2301'	300	1430'	8-5/8" 3050'	7"	3821'	80	2701'	4181'/4177'		
MCA UNIT	65	INJ	1980' FSL & 1980' FEL	20 1175 R32E	10-27-39	3801'-4041'	12-1/2" 40'		CIRC	7"	3565'	350	1240'	4-1/2"	3780'	60	3148'
MCA UNIT	66	INJ	1980' FSL & 660' FEL	20 1175 R32E	07-11-45	3800'-4066'				7"	3561'	485	2000'				4072'/4072'
MCA UNIT	67	INJ	1980' FSL & 660' FEL	21 1175 R32E	02-01-41	3707'-4115'	12-1/4" 40'	20	CIRC	7"	3594'	400	2000'	5-1/2"	3842'	40	3500'
MCA UNIT	68	INJ	1395' FSL & 1347' FWL	21 1175 R32E	10-20-49	3741'-4085'	10-3/4" 95'	50	CIRC	7"	3741'	310	1710'				4100'/4100'
MCA UNIT	72	INJ	1980' FSL & 660' FWL	22 1175 R32E	01-23-42	3766'-4088'	8-5/8" 942'	50	CIRC	7"	3623'	150	2630'	4-1/2"	3723'	50	3414'
MCA UNIT	74	INJ	1980' FSL & 1980' FEL	22 1175 R32E	05-22-40	3770'-4074'	12-1/2" 25'	25	CIRC	7"	3596'	250	1932'	4-1/2"	3715'	325	1000'
MCA UNIT	84	INJ	660' FSL & 660' FEL	22 1175 R32E	11-07-39	3849'-4064'	12-1/2" 20'	20	CIRC	7"	3554'	400	1932'	4-1/2"	3775'	350	CIRC
MCA UNIT	85	PROD	660' FSL & 1980' FEL	22 1175 R32E	02-23-40	3940'-4093'	12-1/2" 20'	20	CIRC	7"	3535'	400	2600'				4093'/4093'
MCA UNIT	86	PROD	25' FSL & 2612' FWL	22 1175 R32E	12-01-55	3801'-3970'	8-5/8" 143'	100	CIRC	5-1/2" 4099'	710	2000'					4100'/4093'
MCA UNIT	87	INJ	660' FSL & 1980' FWL	22 1175 R32E	08-19-44	3846'-4080'	12-1/2" 25'	25	CIRC	7"	3606'	250	1940'	4-1/2"	3777'	275	1800'
MCA UNIT	88	PROD	660' FSL & 660' FWL	22 1175 R32E	04-17-45	3838'-4145'	12-1/2" 24'	25	CIRC	7"	3600'	450	1800'	5-1/2"	4158'	100	3226'
MCA UNIT	89	PROD	25' FSL & 50' FWL	22 1175 R32E	10-09-46	3814'-4136'	8-5/8" 948'	75	CIRC	7"	3746'	160	2000'	5-1/2"	4160'	140	3354'
MCA UNIT	90	INJ	660' FSL & 660' FEL	21 1175 R32E	05-23-45	3776'-4124'	12-1/2" 20'	25	CIRC	7"	3590'	450	1200'	4-1/2"	3890'	275	2400'
MCA UNIT	91	PROD	660' FSL & 1980' FEL	21 1175 R32E	02-01-47	3776'-4096'	8-5/8" 889'	50	CIRC	7"	3573'	150	1623'				4103'/4103'
MCA UNIT	92	PROD	660' FSL & 1980' FWL	21 1175 R32E	09-28-40	3869'-4082'	8-5/8" 888'	50	CIRC	7"	3552'	150	2000'				4082'/4082'
MCA UNIT	93	PROD	660' FSL & 660' FWL	21 1175 R32E	08-06-40	3714'-4052'	8-5/8" 889'	50	CIRC	7"	3566'	150	1950'	5-1/2"	4078'	160	3221'

4080'/4078'

07-Dec-88 MCA CO2 AUTHORIZATION TO INJECT - REVIEW AREA WELLS

LEASE NAME & NO.	TYPE	LOCATION	SPUD	PROD/INJ		-----CASING-----		-----CEMENT-----		-----CASING-----		-----CEMENT-----		-----CASING-----		-----CEMENT-----	
				INTERVAL	SIZE	DEPTH	SACKS	TOC	SIZE	DEPTH	SACKS	TOC	SIZE	DEPTH	SACKS	TOC	TD/PRD
MCA UNIT 95	PROD	660' FSL & 1980' FEL	20 117S R32E	03-03-47	8-5/8"	880'	50	CIRC	7"	3550'	150	1800'	5-1/2"	4055'	135	3318'	4055'/4055'
MCA UNIT 96	PROD	25' FSL & 2590' FML	20 117S R32E	10-13-48	10-3/4"	60'	50	CIRC	5-1/2"	3653'	250	1850'					4048'/4048'
MCA UNIT 97	INJ	660' FSL & 1980' FML	20 117S R32E	08-23-45	8-5/8"	760'	50	CIRC	7"	3528'	150	2530'	4-1/2"	3685'	300	800'	4077'/4077'
MCA UNIT 98	PROD	660' FSL & 660' FML	21 117S R32E	03-13-46	8-1/4"	760'	50	CIRC	7"	3562'	150	1800'	5-1/2"	3298'	190	NR	4013'/4008'
MCA UNIT 99	INJ	25' FSL & 25' FEL	19 117S R32E	10-01-46	8-5/8"	735'	65	CIRC	7"	3600'	160	2500'	4-1/2"	3900'	80	3488'	4010'/4010'
MCA UNIT 100	INJ	660' FSL & 660' FEL	19 117S R32E	06-19-41	8-5/8"	721'	50	CIRC	7"	3525'	150	440'	4-1/2"	3575'	275	1260'	4040'/4040'
MCA UNIT 107	INJ	660' FML & 1980' FEL	30 117S R32E	09-27-40	8-5/8"	878'	50	CIRC	7"	3414'	100	2114'	5-1/2"	4010'	150	3140'	4010'/4010'
MCA UNIT 108	PROD	660' FML & 660' FEL	30 117S R32E	05-16-40	8-5/8"	900'	50	CIRC	7"	3440'	150	1500'	5-1/2"	4000'	120	3238'	4000'/4000'
MCA UNIT 110	PROD	660' FML & 1980' FEL	29 117S R32E	07-16-40	8-5/8"	920'	50	CIRC	7"	3497'	100	2100'	5-1/2"	4073'	125	3221'	4073'/4071'
MCA UNIT 112	PROD	660' FML & 660' FML	29 117S R32E	03-21-39	8-5/8"	950'	50	CIRC	7"	3560'	100	2000'	5-1/2"	4069'	150	3332'	4072'/4059'
MCA UNIT 113	INJ	80' FSL & 25' FEL	28 117S R32E	11-16-46	8-5/8"	969'	50	CIRC	7"	3636'	150	NR					4072'/4072'
MCA UNIT 115	PROD	660' FML & 2010' FML	28 117S R32E	09-20-45	8-1/4"	902'	50	CIRC	7"	3552'	125	2000'	5-1/2"	4087'	50	NR	4086'/4085'
MCA UNIT 116	INJ	75' FML & 2560' FEL	28 117S R32E	11-21-49	10-3/4"	910'	75	CIRC	7"	3735'	450	1025'					4119'/4086'
MCA UNIT 117	PROD	660' FML & 1980' FEL	28 117S R32E	02-02-44	12-1/2"	31'	15	CIRC	5-1/2"	3552'	200	2000'	4"	3663'	200	NR	4140'/4100'
MCA UNIT 118	PROD	660' FML & 660' FEL	28 117S R32E	10-07-45	12-1/2"	23'	15	CIRC	5-1/2"	3548'	200	2300'	4-1/2"	4145'	300	NR	4145'/4145'
MCA UNIT 120	PROD	660' FML & 1980' FML	27 117S R32E	12-08-43	12-1/2"	21'	14	CIRC	5-1/2"	3536'	250	2500'					4152'/4119'
MCA UNIT 122	PROD	660' FML & 660' FEL	27 117S R32E	03-09-50	12-1/2"	30'	20	CIRC	7"	2385'	160	2100'	5-1/2"	3547'	150	845'	4089'/4089'

LEASE NAME & NO.---				TYPE	LOCATION-----	SPUD	PROD/INJ	-----CASING-----		-----CEMENT-----		-----CASING-----		-----CEMENT-----		-----CASING-----		-----CEMENT-----		TD/PERD
								SIZE	DEPTH	SACKS	TOC	SIZE	DEPTH	SACKS	TOC	SIZE	DEPTH	SACKS	TOC	
MCA UNIT	123	INJ	660' FNL & 660' FNL	26 117S R32E	09-18-39	3774'-4000'	12-1/2"	20'	16	CIRC	5-3/4"	3525'	200	2190'	4-1/2"	3891'	175	CIRC	4038'/4050'	
MCA UNIT	143	INJ	1980' FNL & 1980' FNL	26 117S R32E	06-18-41	3861'-4075'	8-5/8"	21'	10	CIRC	5-1/2"	3640'	200	2690'			4083'/4077'			
MCA UNIT	144	PA'D	1980' FNL & 660' FNL	26 117S R32E	06-04-40		12-1/4"	20'	25	CIRC	5-1/2"	3536'	200	3530'			4139'/3750'			
MCA UNIT	146	PROD	1980' FNL & 1980' FEL	27 117S R32E	01-05-46	3815'-4045'	12-1/2"	21'	15	CIRC	5-1/2"	3529'	250	2300'			4109'/4100'			
MCA UNIT	148	PROD	1980' FNL & 660' FNL	27 117S R32E	03-18-40	3830'-4034'	12-1/2"	20'	23	CIRC	5-1/2"	3543'	250	2500'			4140'/4140'			
MCA UNIT	149	PROD	2600' FNL & 25' FNL	27 117S R32E		3955'-4035'	8-5/8"	1020'	100	CIRC	7"	3827'	175	2000'	5-1/2"	4204'	90	3326'	4204'/4088'	
MCA UNIT	151	PROD	1900' FNL & 1295' FEL	28 117S R32E	11-21-45	3728'-4100'	12-1/2"	20'	14	CIRC	5-1/2"	3555'	300	2200'	4-1/2"	4111'	160	3255'	4111'/4111'	
MCA UNIT	153	PROD	1980' FNL & 660' FNL	28 117S R32E	12-22-46	3770'-3950'	8-1/4"	898'	NR	NR	5-1/2"	3536'	100	2500'	4-1/2"	3969'	85	NR	4010'/3965'	
MCA UNIT	155	PROD	1980' FNL & 1980' FEL	29 117S R32E	02-24-40	3736'-3780'	8-5/8"	880'	50	CIRC	7"	3539'	150	1589'			4015'/4015'			
MCA UNIT	156	PROD	2580' FNL & 2595' FNL	29 117S R32E	01-07-49	3887'-4096'	10-3/4"	59'	50	CIRC	8-5/8"	939'	50	700'	7"	3695'	300	2000'	4136'/4136'	
MCA UNIT	158	PROD	1980' FNL & 660' FNL	29 117S R32E	06-21-46	3747'-3961'	8-5/8"	903'	50	CIRC	7"	3447'	100	2147'	5-1/2"	3970'	200	3194'	3992'/3970'	
MCA UNIT	159	INJ	1980' FNL & 660' FEL	30 117S R32E		3660'-3697'	8-5/8"	912'	50	CIRC	7"	3405'	150	1455'	4-1/2"	3647'	325	800'	4015'/4015'	
MCA UNIT	166	IPA	1980' FSL & 1980' FEL	30 117S R32E	05-17-41		8-5/8"	865'	50	CIRC	7"	3412'	100	2500'	4-1/2"	3719'	300	2100'	4066'/4066'	
MCA UNIT	167	PROD	1980' FSL & 660' FEL	30 117S R32E	12-09-40	3726'-3738'	8-5/8"	975'	50	CIRC	7"	3465'	100	2100'	5-1/2"	3976'	150	3133'	4061'/3974'	
MCA UNIT	168	PROD	2615' FSL & 140' FEL	30 117S R32E	04-04-50	3701'-4040'	10-3/4"	31'	25	CIRC	8-5/8"	973'	50	CIRC	7"	3676'	300	1800'	4059'/4059'	
MCA UNIT	168														5-1/2"	4055'	135	3372'		

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LEASE NAME & NO.	TYPE	LOCATION	SPUD	PROD/INJ	INTERVAL	SIZE	DEPTH	SACKS	TOC	SIZE	DEPTH	SACKS	TOC	SIZE	DEPTH	SACKS	TOC	TD/PBD
						---CASING---	---CEMENT---	---CASING---	---CEMENT---	---CASING---	---CEMENT---	---CASING---	---CEMENT---	---CASING---	---CEMENT---	---CASING---	---CEMENT---	
MCA UNIT 170	PROD	1980' FSL & 1980' FWL	29 1175 R32E	12-10-40	3792'-4096'	8-5/8"	990'	50	CIRC	7"	3482'	100	2000'	5-1/2"	4157'	150	3263'	4157'/4157
MCA UNIT 172	PROD	1295' FSL & 1345' FEL	29 1175 R32E	07-08-49	3846'-3998'	10-3/4"	58'	50	CIRC	8-5/8"	1025'	50	511'	7"	3565'	100	2000'	4050'/4050
MCA UNIT 173	PROD	1980' FSL & 660' FEL	29 1175 R32E	12-02-40	3794'-4142'	8-5/8"	992'	50	CIRC	7"	3535'	100	2235'	5-1/2"	4184'	175	3200'	4184'/4165
MCA UNIT 174	PROD	2590' FSL & 25' FWL	28 1175 R32E	08-15-46	3894'-4104'	8-5/8"	959'	50	CIRC	7"	3683'	150	2150'	5-1/2"	3379'-4120'	125	CIRC	4120'/4107
MCA UNIT 176	PROD	1980' FSL & 1980' FWL	28 1175 R32E	09-21-40	3791'-4020'	12-1/2"	23'	15	CIRC	5-1/2"	3580'	300	2100'	4"	4081'	125	3228'	4081'/4079
MCA UNIT 177	PROD	2600' FSL & 2470' FEL	28 1175 R32E	08-29-46	3750'-4112'	8-5/8"	1072'	50	CIRC	7"	3698'	175	2100'	5-1/2"	4157'	150	3532'	4163'/4163
MCA UNIT 178	IPA	1980' FSL & 1980' FEL	28 1175 R32E	01-30-46		12-1/2"	21'	15	CIRC	5-1/2"	3546'	300	2121'					4156'/4024
MCA UNIT 179	PROD	1980' FSL & 660' FEL	28 1175 R32E	03-03-46	3815'-4104'	12-1/2"	22'	15	CIRC	5-1/2"	3568'	300	2100'	4"	3756'	250	80'	4123'/4123
MCA UNIT 181	PROD	1980' FSL & 1980' FWL	27 1175 R32E	03-26-50	3935'-4086'	12-1/2"	21'	25	CIRC	5-1/2"	3582'	200	2600'	4-1/2"	4180'	255	CIRC	4180'/4180
MCA UNIT 183	PROD	1295' FSL & 2615' FEL	27 1175 R32E	12-15-47	3990'-4075'	8-5/8"	1132'	100	CIRC	7"	3733'	250	2000'	5"	3741'	60	3000'	4205'/4205
MCA UNIT 185	PROD	1345' FSL & 1345' FEL	27 1175 R32E	08-17-54	4029'-4212'	8-5/8"	66'	100	CIRC	5-1/2"	4265'	1500	CIRC					4265'/4232
MCA UNIT 186	PROD	1980' FSL & 660' FEL	27 1175 R32E	01-17-48	3856'-4094'	12-1/2"	20'	25	CIRC	5-1/2"	3555'	200	2600'					4195'/4195
MCA UNIT 187	TA'D	1980' FSL & 660' FWL	26 1175 R32E	08-16-40	3960'-4063'	8-5/8"	282'	50	CIRC	5-1/2"	3559'	250	2520'					4073'/4073
MCA UNIT 188	PROD	1980' FSL & 1980' FWL	26 1175 R32E	04-06-41	4028'-4192'	8"	21'	25	CIRC	5-1/2"	3482'	250	2300'					4318'/4318
MCA UNIT 201	PROD	1295' FSL & 1370' FWL	26 1175 R32E	08-07-48	4076'-4131'	8-5/8"	1187'	75	CIRC	5-1/2"	3896'	100	2300'					4310'/4310
MCA UNIT 202	INJ	660' FSL & 660' FWL	26 1175 R32E	02-24-41	4020'-4170'	8-5/8"	22'	25	CIRC	5-1/2"	3486'	100	2400'					4300'/4300
MCA UNIT 203	PA'D	660' FSL & 660' FEL	27 1175 R32E	06-18-40		8-5/8"	249'	50	CIRC	5-1/2"	3522'	250	2200'					4152'/4131

LEASE NAME & NO.				TYPE	LOCATION	SPUD	PROD/INTJ	---CASING---		---CEMENT---		---CASING---		---CEMENT---		---CASING---	
								SIZE	DEPTH	SACKS	TOC	SIZE	DEPTH	SACKS	TOC	SIZE	DEPTH
MCA UNIT	204	PROD	660' FSL & 1980' FEL	27 117S R32E	05-20-40	4044'-4125'	12-1/2"	30'	25	CIRC	5-1/2"	3552'	200	2600'		4-1/2"	3615'
MCA UNIT	206	PROD	660' FSL & 660' FWL	27 117S R32E	06-27-49	3705'-4003'	8-5/8"	294'	50	CIRC	5-1/2"	3592'	250	2000'		4-1/2"	3615'
MCA UNIT	208	PAID	660' FSL & 1980' FEL	28 117S R32E			8"	21'	15	CIRC	5-1/2"	3595'	300	2350'			
MCA UNIT	210	PAID	660' FSL & 660' FWL	28 117S R32E	11-10-40		12-1/2"	22'	15	CIRC	5-1/2"	3563'	300	2700'			
MCA UNIT	211	INTJ	660' FSL & 660' FEL	29 117S R32E	04-26-41	3857'-4013'	8-5/8"	1059'	50	CIRC	5-1/2"	3593'	450	1720'		4-1/2"	3820'
MCA UNIT	212	PROD	660' FSL & 1980' FEL	29 117S R32E	07-07-41	3845'-3990'	8-5/8"	1255'	50	CIRC	7"	3525'	100	2000'		5"	3794'
MCA UNIT	213	INTJ	660' FSL & 660' FWL	29 117S R32E	08-09-41	3880'-4010'	8"	1067'	50	CIRC	7"	3547'	100	2300'		4-1/2"	3839'
MCA UNIT	214	PROD	660' FSL & 660' FWL	29 117S R32E	07-22-41	3854'-3990'	8-5/8"	1050'	50	CIRC	7"	3546'	100	2050'			
MCA UNIT	215	INTJ	660' FSL & 660' FEL	30 117S R32E	05-14-47	3745'-4135'	8-5/8"	845'	50	CIRC	7"	3707'	100	CIRC		4-1/2"	3959'
MCA UNIT	220	INTJ	660' FSL & 660' FWL	33 117S R32E	05-01-41	3661'-3915'	8-3/4"	1195'	50	CIRC	7"	3566'	100	2900'		4-1/2"	3815'
MCA UNIT	221	PAID	660' FSL & 1980' FWL	33 117S R32E	01-23-46		8-5/8"	1206'	50	CIRC	5-1/2"	3540'	100	3120'			
MCA UNIT	222	PROD	50' FSL & 2500' FEL	33 117S R32E	12-06-46	3906'-3971'	8-5/8"	1154'	50	CIRC	7"	3878'	150	2500'		5-1/2"	4200'
MCA UNIT	224	PROD	560' FSL & 660' FEL	33 117S R32E	01-07-41	3900'-4170'	8-5/8"	24'	15	CIRC	5-1/2"	3547'	150	290'			
MCA UNIT	225	PROD	25' FSL & 25' FWL	34 117S R32E	08-15-46	4009'-4098'	8-5/8"	1144'	50	CIRC	7"	3948'	175	1675'			
MCA UNIT	226	INTJ	660' FSL & 660' FWL	34 117S R32E	02-25-41	3940'-4194'	8-5/8"	1154'	100	CIRC	7"	3545'	150	1600'		4-1/2"	3907'
MCA UNIT	227	PROD	660' FSL & 1980' FSL	34 117S R32E	06-15-41	3743'-4171'	8-5/8"	1135'	50	CIRC	7"	3743'	100	2443'			
MCA UNIT	229	INTJ	660' FSL & 1980' FEL	34 117S R32E	04-04-41	3950'-4350'	8-5/8"	221'	10	CIRC	5-1/2"	3545'	200	CIRC		4-1/2"	3950'

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LEASE NAME & NO.	TYPE	LOCATION	SRUD	PROD/INJ		---CASING---		---CEMENT---		---CASING---		---CEMENT---		---CASING---		---CEMENT---	
				INTERVAL	SIZE	DEPTH	SACKS	TOC	SIZE	DEPTH	SACKS	TOC	SIZE	DEPTH	SACKS	TOC	TD/PBTD
MCA UNIT 230	PAID	1980' FNL & 1980' FEL	33 1175 R32E		8"	22'	15	CIRC	5-1/2"	3566'	250	2376'					4188' / 4188'
MCA UNIT 231	PROD	1345' FNL & 2615' FEL	33 1175 R32E	06-15-54	8-5/8"	67'	30	CIRC	5-1/2"	4274'	2200	CIRC					4280' / 4224'
MCA UNIT 232	INJ	1880' FNL & 1980' FNL	33 1175 R32E	09-12-45	8-5/8"	1124	75	CIRC	7"	3755'	170	2380'	4-1/2"	4010'	300	1100'	4330' / 4330'
MCA UNIT 234	PROD	25' FSL & 1325' FNL	21 1175 R32E	06-10-63	8-5/8"	846'	780	CIRC	5-1/2"	3721'	425	1800'	4-1/2"	4100'	128	1465'	4100' / 4095'
MCA UNIT 235	INJ	1325' FNL & 1325' FNL	28 1175 R32E	06-27-63	8-5/8"	882'	700	CIRC	5-1/2"	4182'	750	2000'					4182' / 4100'
MCA UNIT 249	INJ	660' FSL & 1980' FNL	26 1175 R32E	03-02-42	8-5/8"	31'	13	CIRC	7-5/8"	32'	SET	CLAMPS	4-1/2"	4101'	75	3700'	4358' / 4218'
MCA UNIT 251	PROD	1100' FSL & 2600' FNL	21 1175 R32E	01-19-70	8-5/8"	825'	575	CIRC	5-1/2"	4250'	350	2500'					4250' / 4110'
MCA UNIT 252	PROD	1250' FNL & 200' FNL	28 1175 R32E	04-11-70	8-5/8"	825'	500	CIRC	5-1/2"	4080'	250	2670'					4080' / 4077'
MCA UNIT 254	PROD	810' FSL & 2080' FEL	28 1175 R32E	04-23-70	8-5/8"	890'	350	CIRC	5-1/2"	4100'	265	1500'					4100' / 4097'
MCA UNIT 256	INJ	2590' FSL & 1310' FEL	20 1175 R32E	05-11-70	8-5/8"	748'	300	28'	5-1/2"	4145'	300	2400'					4145' / 3920'
MCA UNIT 260	PROD	25' FNL & 1295' FEL	28 1175 R32E	08-05-70	8-5/8"	988'	450	CIRC	5-1/2"	4200'	300	2540'					4200' / 4151'
MCA UNIT 261	PROD	25' FSL & 1345' FNL	28 1175 R32E	07-25-70	8-5/8"	950'	400	CIRC	5-1/2"	4135'	1150	1475'					4135' / 4129'
MCA UNIT 262	INJ	2615' FNL & 25' FNL	21 1175 R32E	12-30-70	8-5/8"	780'	350	CIRC	5-1/2"	4145'	250	2900'					4145' - 4130'
MCA UNIT 264	PROD	1345' FSL & 25' FEL	19 1175 R32E	01-22-71	8-5/8"	680'	250	CIRC	5-1/2"	4060'	250	2100'					4060' / 4060'
MCA UNIT 265	PROD	1416' FSL & 1224' FNL	20 1175 R32E	02-03-71	8-5/8"	700'	325	CIRC	5-1/2"	4100'	250	2700'					4100' / 4057'
MCA UNIT 266	PROD	1345' FSL & 2615' FNL	20 1175 R32E	03-08-71	8-5/8"	700'	325	CIRC	5-1/2"	4110'	250	2100'					4110' /
MCA UNIT 268	PROD	1345' FSL & 1345' FNL	28 1175 R32E	03-15-71	8-5/8"	910'	475	CIRC	5-1/2"	4155'	450	3100'					4155' / 4120'

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LEASE NAME & NO.---	TYPE	LOCATION-----	SPUD	PROD/INJ INTERVAL	-----CASING-----		-----CEMENT-----		-----CASING-----		-----CEMENT-----		-----CASING-----		-----CEMENT-----	
					SIZE	DEPTH	SACKS	TWC	SIZE	DEPTH	SACKS	TWC	SIZE	DEPTH	SACKS	TWC
MCA UNIT	269	PROD	1295' FSL & 1295' FEL	20 T17S R32E	03-04-71	3856'-4030'	8-5/8"	770'	400	CIRC	5-1/2"	4130'	300	2700'	4130'/4115'	
MCA UNIT	270	PROD	2615' FNL & 1345' FNL	29 T17S R32E	02-13-71	3747'-3993'	8-5/8"	740'	375	CIRC	5-1/2"	4130'	350	2100'	4130'/4102'	
MCA UNIT	274	PROD	1295' FNL & 1295' FEL	28 T17S R32E	03-19-71	3748'-4108'	8-5/8"	900'	375	CIRC	5-1/2"	4190'	300	2000'	4190'/4146'	
MCA UNIT	275	PROD	1345' FNL & 660'	33 T17S R32E	04-03-71	3945'-4184'	8-5/8"	1005'	500	CIRC	5-1/2"	4230'	300	2540'	4230'/4196'	
MCA UNIT	276	PROD	25' FSL & 1295' FEL	19 T17S R32E	03-24-71	3647'-3997'	8-5/8"	700'	375	CIRC	5-1/2"	4030'	150	2450'	4030'/4022'	
MCA UNIT	277	PROD	1295' FNL & 2615' FEL	29 T17S R32E	03-27-71	3745'-4033'	8-5/8"	750'	375	CIRC	5-1/2"	4083'	300	2450'	4083'/4080'	
MCA UNIT	278	PROD	2615' FNL & 1345' FEL	30 T17S R32E	11-28-71	3710'-3985'	8-5/8"	750'	400	CIRC	5-1/2"	4040'	300	2400'	4040'/4034'	
MCA UNIT	279	PROD	1295' FSL & 1295' FEL	19 T17S R32E	04-10-71	3707'-4005'	8-5/8"	700'	375	CIRC	5-1/2"	4050'	300	2650'	4050'/4031'	
MCA UNIT	280	PROD	2665' FNL & 1345' FEL	28 T17S R32E	04-11-71	3810'-4080'	8-5/8"	905'	450	CIRC	5-1/2"	4175'	300	2680'	4175'/4130'	
MCA UNIT	281	PROD	1295' FNL & 25' FNL	29 T17S R32E	04-17-71	3698'-4003'	8-5/8"	750'	375	CIRC	5-1/2"	4025'	370	2100'	4025'/4018'	
MCA UNIT	282	PROD	1295' FNL & 2615' FNL	27 T17S R32E	08-04-71	3806'-4037'	8-5/8"	900'	900	CIRC	5-1/2"	4185'	400	2100'	4185'/4136'	
MCA UNIT	284	PROD	2615' FNL & 1295' FNL	28 T17S R32E	06-09-71	3784'-4050'	8-5/8"	860'	475	CIRC	5-1/2"	4150'	300	1510'	4150'/4109'	
MCA UNIT	287	PROD	1395' FSL & 25' FEL	20 T17S R32E	06-27-71	3729'-4083'	8-5/8"	800'	275	CIRC	5-1/2"	4120'	300	2126'	4120'/4114'	
MCA UNIT	288	PROD	65' FNL & 1295' FNL	29 T17S R32E	05-15-71	3682'-3996'	8-5/8"	700'	400	CIRC	5-1/2"	4080'	300	2131'	4080'/4030'	
MCA UNIT	289	PROD	1165' FNL & 1345' FEL	30 T17S R32E	05-29-71	3675'-3993'	8-5/8"	700'	400	CIRC	5-1/2"	4025'	300	2200'	4025'/4013'	
MCA UNIT	290	PA'D	1295' FNL & 1295' FNL	29 T17S R32E	07-05-71		8-5/8"	770'	425	CIRC	5-1/2"	4080'	400	3500'	4090'/4073'	
MCA UNIT	292	PROD	1295' FNL & 1295' FNL	27 T17S R32E	11-06-71	3850'-4161'	8-5/8"	916'	475	CIRC	5-1/2"	4200'	300	2675'	4200'/4180'	

LEASE NAME & NO.---	TYPE	LOCATION-----	SPUD	PROD/INJ	INTERVAL	SIZE	DEPTH	SACKS	TOC	SIZE	DEPTH	SACKS	TOC	SIZE	DEPTH	SACKS	TOC	TD/PBTD	
						-----CASING-----			-----CEMENT-----	-----CASING-----			-----CEMENT-----	-----CASING-----			-----CEMENT-----		
MCA UNIT	293	PROD	1345' FSL & 1345' FWL	29 117S R32E	05-08-71	3844'-4128'	8-5/8"	825'	400	CIRC	5-1/2"	4185'	300	2280'				4185'/4140'	
MCA UNIT	294	PROD	1345' FSL & 2615' FWL	29 117S R32E	07-21-71	3856'-3990'	8-5/8"	900'	500	CIRC	5-1/2"	4147'	300	2200'				4150'/4125'	
MCA UNIT	295	PROD	1345' FSL & 25' FEL	30 117S R32E	11-17-71	3839'-3975'	8-5/8"	800'	300	CIRC	5-1/2"	4160'	300	2190'				4160'/4127'	
MCA UNIT	296	PROD	1400' FSL & 2615' FWL	28 117S R32E	06-16-71	3834'-4076'	8-5/8"	850'	450	CIRC	5-1/2"	4180'	300	1900'				4190'/4135'	
MCA UNIT	299	PROD	175' FNL & 1295' FWL	27 117S R32E	12-06-71	3865'-4130'	8-5/8"	850'	425	CIRC	5-1/2"	4200'	300	2300'				4200'/4170'	
MCA UNIT	300	PROD	800' FNL & 1850' FWL	33 117S R32E	12-16-71	3847'-4084'	8-5/8"	939'	325	CIRC	5-1/2"	4175'	300	2500'				4175'/4140'	
MCA UNIT	302	INJ	510' FSL & 510' FEL	27 117S R32E	11-26-72	4101'-4350'	8-5/8"	990'	550	CIRC	4-1/2"	4400'	400	2400'				4400'/4359'	
MCA UNIT	303	INJ	1980' FSL & 1830' FEL	20 117S R32E	03-13-59	3730'-3758'	13-3/8"	444'	350	CIRC	9-5/8"	4740'	2300	CIRC	7"	5578'	138	4775'	3965'/4390'
MCA UNIT	304	PROD	1345' FSL & 1295' FEL	30 117S R32E	01-01-72	3811'-3933'	8-5/8"	899'	425	CIRC	5-1/2"	4175'	275	2660'				4175'/4136'	
MCA UNIT	307	PROD	25' FNL & 1345' FEL	27 117S R32E	04-05-72	3832'-4042'	8-5/8"	850'	425	CIRC	5-1/2"	4140'	300	1850'				4140'/4070'	
MCA UNIT	308	PROD	1980' FNL & 1780' FEL	29 117S R32E	04-13-72	3739'-4049'	8-5/8"	784'	400	CIRC	5-1/2"	4100'	300	2540'				4100'/4075'	
MCA UNIT	314	PROD	2615' FNL & 1295' FWL	27 117S R32E	06-01-72	3832'-4035'	8-5/8"	946'	500	CIRC	5-1/2"	4250'	300	2100'				4250'/4250'	
MCA UNIT	315	PROD	1345' FSL & 1295' FWL	27 117S R32E	06-08-72	3962'-4190'	8-5/8"	995'	475	CIRC	5-1/2"	4260'	300	2140'				4260'/4249'	
MCA UNIT	316	PROD	1295' FSL & 1295' FWL	22 117S R32E	07-03-72	3816'-	8-5/8"	883'	450	CIRC	5-1/2"	4200'	300	2600'				4200'/4152'	
MCA UNIT	317	PROD	1295' FNL & 75' FWL	27 117S R32E	07-12-72	3814'-4110'	8-5/8"	884'	450	CIRC	5-1/2"	4200'	300	2100'				4200'/4175'	
MCA UNIT	318	PROD	25' FNL & 1295' FEL	28 117S R32E	07-22-72	3776'-4134'	8-5/8"	888'	450	CIRC	5-1/2"	4200'	300	2540'				4200'/4152'	
MCA UNIT	319	PROD	2615' FNL & 1345' FEL	29 117S R32E	07-30-72	3783'-4033'	8-5/8"	800'	400	CIRC	5-1/2"	4125'	350	2100'				4125'/4075'	

07-Dec-98 MCA CO2 AUTHORIZATION TO INJECT - REVIEW AREA WELLS

LEASE NAME & NO.	TYPE	LOCATION	SPUD	PROD/INJ		-----CASING-----		-----CEMENT-----		-----CASING-----		-----CEMENT-----		-----CASING-----		-----CEMENT-----	
				INTERVAL	SIZE	DEPTH	SACKS	TOC	SIZE	DEPTH	SACKS	TOC	SIZE	DEPTH	SACKS	TOC	TO/PRTD
MCA UNIT	321	PROD 1345' FSL & 75' FML	27 1175 R32E	08-30-72 3909'-4102'	8-5/8"	926'	450	CIRC	5-1/2"	4175'	300	1600'					4175'/4145
MCA UNIT	322	PROD 1880' FML & 560' FML	26 1175 R32E	08-14-72 3864'-4091'	8-5/8"	945'	500	CIRC	5-1/2"	4250'	300	1900'					4250'/4220
MCA UNIT	324	PROD 1345' FSL & 25' FML	28 1175 R32E	09-28-72 3833'-4081'	8-5/8"	889'	500	CIRC	5-1/2"	4170'	300	2250'					4170'/4127
MCA UNIT	325	PROD 1345' FSL & 1295' FEL	22 1175 R32E	09-06-72 3803'-4015'	8-5/8"	864'	450	CIRC	5-1/2"	4175'	300	1800'					4175'/4127
MCA UNIT	326	PROD 1245' FSL & 50' FEL	21 1175 R32E	10-06-72 3819'-4153'	8-5/8"	860'	450	CIRC	5-1/2"	4250'	300	2600'					4250'/4192
MCA UNIT	327	PROD 1225' FSL & 2615' FEL	22 1175 R32E	11-14-72 3804'-3953'	8-5/8"	850'	425	CIRC	5-1/2"	4200'	475	1770'					4200'/4164
MCA UNIT	328	PROD 950' FSL & 1650' FEL	21 1175 R32E	10-14-72 3807'-4107'	8-5/8"	850'	425	CIRC	5-1/2"	4200'	300	2800'					4200'/4107
MCA UNIT	332	PROD 25' FSL & 1345' FEL	28 1175 R32E	01-19-73 3932'-4173'	8-5/8"	958'	500	CIRC	5-1/2"	4225'	500	1550'					4225'/4189
MCA UNIT	333	PROD 1295' FSL & 1295' FEL	28 1175 R32E	01-27-73 3876'-4092'	8-5/8"	912'	470	CIRC	5-1/2"	4175'	500	2100'					4175'/4162
MCA UNIT	335	PROD 1345' FML & 1295' FEL	27 1175 R32E	02-13-73 3842'-4076'	8-5/8"	893'	450	CIRC	5-1/2"	4136'	425	2100'					4125'/4103
MCA UNIT	337	PROD 2615' FML & 25' FEL	27 1175 R32E	03-02-73 3974'-4210'	8-5/8"	900'	500	CIRC	5-1/2"	4200'	450	2300'					4280'/4225
MCA UNIT	341	PROD 100' FSL & 150' FEL	22 1175 R32E	07-17-73 3854'-4031'	8-5/8"	846'	450	CIRC	5-1/2"	4150'	350	2300'					4150'/4105
MCA UNIT	342	PA'D 1225' FML & 1295' FML	26 1175 R32E	07-26-73													
MCA UNIT	343	PROD 2565' FML & 2615' FML	26 1175 R32E	08-04-73 4073'-4179'	8-5/8"	930'	500	CIRC	5-1/2"	4375'	325	3106'					4375'/4320
MCA UNIT	346	PROD 55' FSL & 1200' FML	27 1175 R32E	09-07-73 4042'-4267'	8-5/8"	1010'	300	CIRC	5-1/2"	4425'	350	2525'					4425'/4393
MCA UNIT	347	PROD 1245' FML & 160' FEL	27 1175 R32E	09-16-73 3871'-4116'	8-5/8"	916'	425	CIRC	5-1/2"	4175'	350	2350'					4175'/4130
MCA UNIT	348	PROD 1345' FSL & 25' FEL	27 1175 R32E	09-25-73 4075'-4191'	8-5/8"	929'	500	CIRC	5-1/2"	4400'	430	2500'					4400'/4348

LEASE NAME & NO.	TYPE	LOCATION	SPUD	PROD/INJ	---CASING---		---CEMENT---		---CASING---		---CEMENT---		---CASING---		---CEMENT---	
					SIZE	DEPTH	SACKS	TOC	SIZE	DEPTH	SACKS	TOC	SIZE	DEPTH	SACKS	TOC
MCA UNIT 350	INJ	2615' FSL & 1295' FWL	26 1175 R32E	10-13-73	4024'-4244'	8-5/8"	920'	510	CIRC	5-1/2"	4350'	325	2500'			4350' / 4317
MCA UNIT 353	PROD	175' FSL & 2615' FWL	27 1175 R32E	11-08-73	4048'-4241'	8-5/8"	980'	550	CIRC	5-1/2"	4350'	450	2440'			4350' / 4300
MCA UNIT 358	PA'D	2500' FNL & 660' FEL	20 1175 R32E	01-16-80	16"	749'	755	CIRC	10-3/4"	3635'	3030	CIRC	7-5/8"	4149'	100	3545'
MCA UNIT 359	PA'D	426' FEL & 2366' FNL	20 1175 R32E	09-22-81	13-3/8"	762'	810	CIRC	8-5/8"	4150'	3320'	CIRC				4150' / 3170
MCA UNIT 360	PA'D	889' FEL & 2371' FNL	20 1175 R32E	11-27-80	13-3/8"	750'	810	CIRC	8-5/8"	4150'	3320'	CIRC				4150' / 3129
MCA UNIT 361	PA'D	2449' FSL & 891' FEL	20 1175 R32E	12-21-80	13-3/8"	750'	125	CIRC	8-5/8"	4150'	1325	CIRC				4150' / 3315
MCA UNIT 362	PA'D	2442' FEL & 432' FNL	20 1175 R32E	01-14-81	13-3/8"	750'	810	CIRC	8-5/8"	4150'	3320'	CIRC				4150' / 3514
MCA UNIT 363	PA'D	2487' FNL & 537' FEL	20 1175 R32E	05-22-81	8-5/8"	738'	411	CIRC	5-1/2"	4250'	1185'	CIRC				4250' / 4211
MCA UNIT 364	PA'D	2564' FSL & 544' FEL	20 1175 R32E	06-16-81	8-5/8"	760'	125	CIRC	5-1/2"	4325'	1325'	CIRC				4325' / 3510
MCA UNIT 365Y	PROD	1200' FNL & 1580' FEL	29 1175 R32E	12-19-84	16"	810'	625	CIRC	10-3/4"	2150'	1328'	CIRC	8-5/8"	4020'	525	CIRC
MCA UNIT 366	PROD	1225' FNL & 1245' FNL	26 1175 R32E	10-23-85	13-3/8"	817'	780	CIRC	8-5/8"	2405'	1920'	CIRC	5-1/2"	4250'	790	CIRC
MCA UNIT 369	PROD	1395' FNL & 1295' FNL	29 1175 R32E	02-11-87	13-3/8"	600'	520	CIRC	7-5/8"	4150'	1350'	CIRC				4150' / 4145
MCA UNIT 370	PROD	1425' FNL & 1462' FEL	33 1175 R32E	03-03-87	13-3/8"	403'	350	CIRC	8-5/8"	2316'	1110'	CIRC	5-1/2"	4396'	515	2100'
MCA UNIT 371	PROD	1355' FNL & 1330' FNL	33 1175 R32E	08-10-87	16"	1065'	910	CIRC	11-3/4"	2196'	1275'	CIRC	7"	4250'	2550	CIRC
MCA UNIT 372	PROD	1226' FSL & 1310' FEL	20 1175 R32E	08-27-87	16"	785'	680	CIRC	11-3/4"	1945'	930	CIRC	7"	4300'	2145	2500'
MCA UNIT 381	PROD	2515' FSL & 1720' FNL	30 1175 R32E	05-30-88	13-3/8"	1210'	750	CIRC	5-1/2"	4400'	2500	CIRC				4381' / 4350
MCA UNIT 382	PROD	2120' FSL & 519' FEL	28 1175 R32E	08-08-61	13-3/8"	360'	10	CIRC	8-5/8"	4576'	1800	40'				9680' / 4300

LEASE NAME & NO.----				TYPE	LOCATION-----	SPUD	PROD/INO	-----CASING-----	---CEMENT---	-----CASING-----	---CEMENT---	-----CASING-----	---CEMENT---	TD/PBITD		
							INTERVAL	SIZE	DEPTH	SACKS	TOC	SIZE	DEPTH	SACKS	TOC	
MCA UNIT	383	PROD	330' FNL &	330' FEL	33	11/16 R32E	12-07-61	3975'-4135'	11-3/4"	218'	50	CIRC	8-5/8"	4598'	1600	CIRC
4340' / 430																

AFFIDAVIT OF PUBLICATION

State of New Mexico,
County of Lea.

I, _____

George W. Moore

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 a supplement thereof for a period

of _____

One weeks.
Beginning with the issue dated

October 31, 19 88
and ending with the issue dated

October 31, 19 88

George W. Moore
Publisher.

Sworn and subscribed to before

me this 18 day of

November, 19 88

Vera Murphy
Notary Public.

My Commission expires _____

November 14, 19 92

(Seal)

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.

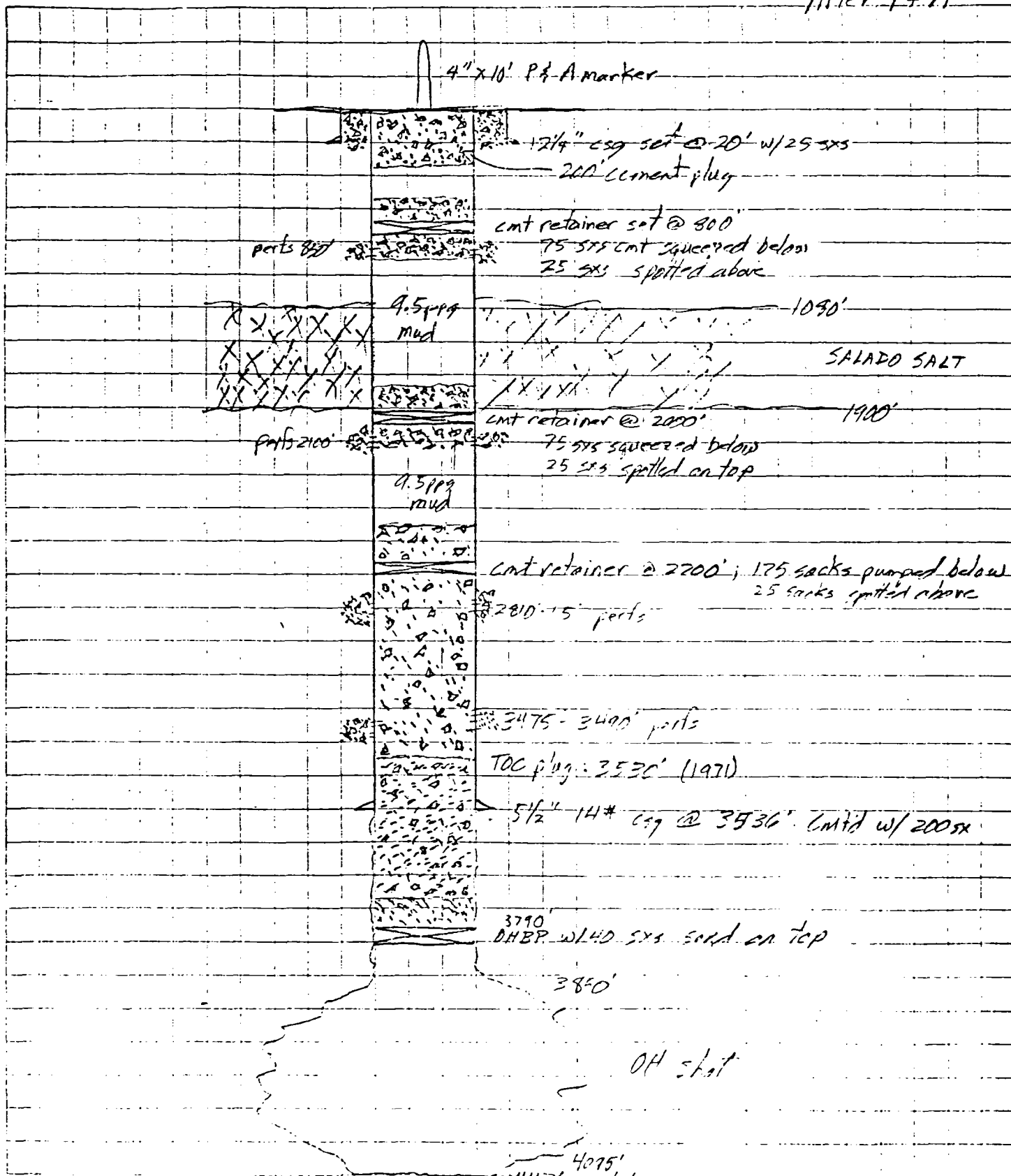
LEGAL NOTICE

October 31, 1988

**CONVERT WELLS TO
CO₂ INJECTION**

Conoco Inc., 726 E. Michigan, P.O. Box 460, Hobbs, NM, 88240, Mr. David L. Wacker, Division Manager of Exploration & Production, intends for the purpose of tertiary recovery, to convert certain wells located in Sections 20, 28, 29, and 33, T-17-S, R-32-E, Lea County, New Mexico to CO₂ Injection wells in the Maljamar Grayburg San Andres Oil Pool. Each well will inject approximately 1.25 MMCF CO₂ per day with surface pressure being approximately 2200 psi. Any objections to this intent or request for administrative approval by the New Mexico Oil Conservation Division must be filed with the New Mexico Oil Conservation Division, 310 Old Santa Fe Trail, Santa Fe, New Mexico, 87503 within 15 days from the date of this publication.

MCA No. 144
After P&A



Conoco Inc.
Calculation Sheet

Made By
Checked By
Date
Page

Job No

Field

State

Type

of

13 231 10 7-79

③

MCA No. 166 P&A'd wellbore

1980' FSL, 1980' FEL 30-17-32
Elev 3903 (GL)

8 5/8" 24# set @
365' w/ 50 SXS (CIRC)

90' cmt

②

Salt 950'-1850'

Retainer @ 2132, Sg below w/ 200 SXS

Sg. holes @ 2205-07

TOC 2500' est

pkc fluid

100' cmt

①

Retainer @ 3445

CIRP @ 3691

7" 20# set @

3412 w/ 100 SXS (TOC 2500')

leaks @ 3560

4.5" 9.5# set @

3719' w/ 300 SXS (TOC 1200 est)

TD 4066'

① Set retainer @ 3445'. Squeezed 3445'-3560' w/ 145 SXS CIRC. Left 100' cmt on top of retainer

② Shot squeeze holes 2205-07. Set retainer @ 2132. Squeeze w/ 200 SXS C w/ 18% salt. Cmt circulated out 4 1/2 x 7" annulus. Left 90' cmt on retainer & set surface plug

③ Squeezed down 8 5/8 x 7" annulus w/ 55 SXS.

Plugging complete 3/12/82

Made By PDB
Checked By
Date 12/3/88
Page of

Conoco Inc.
Calculation Sheet

Job No.

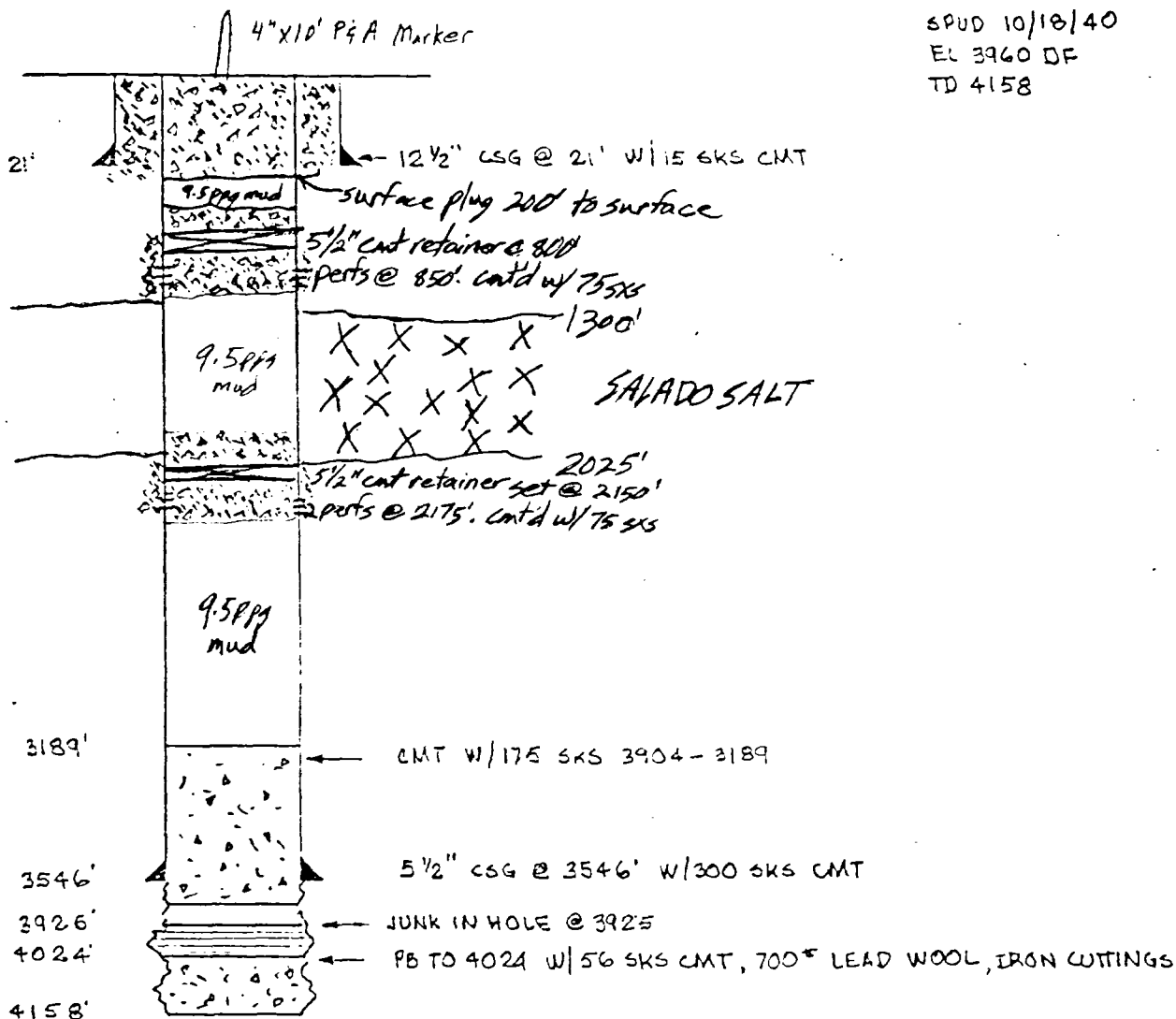
Field

P&A WELLBORE SKETCH

MCA 178
1980 FSL & 1980 FEL
SEC 28, T17S, R32E

TEMP. ABAND.
9/5/72

SPUD 10/18/40
EL 3960 DF
TD 4158



PAST HISTORY

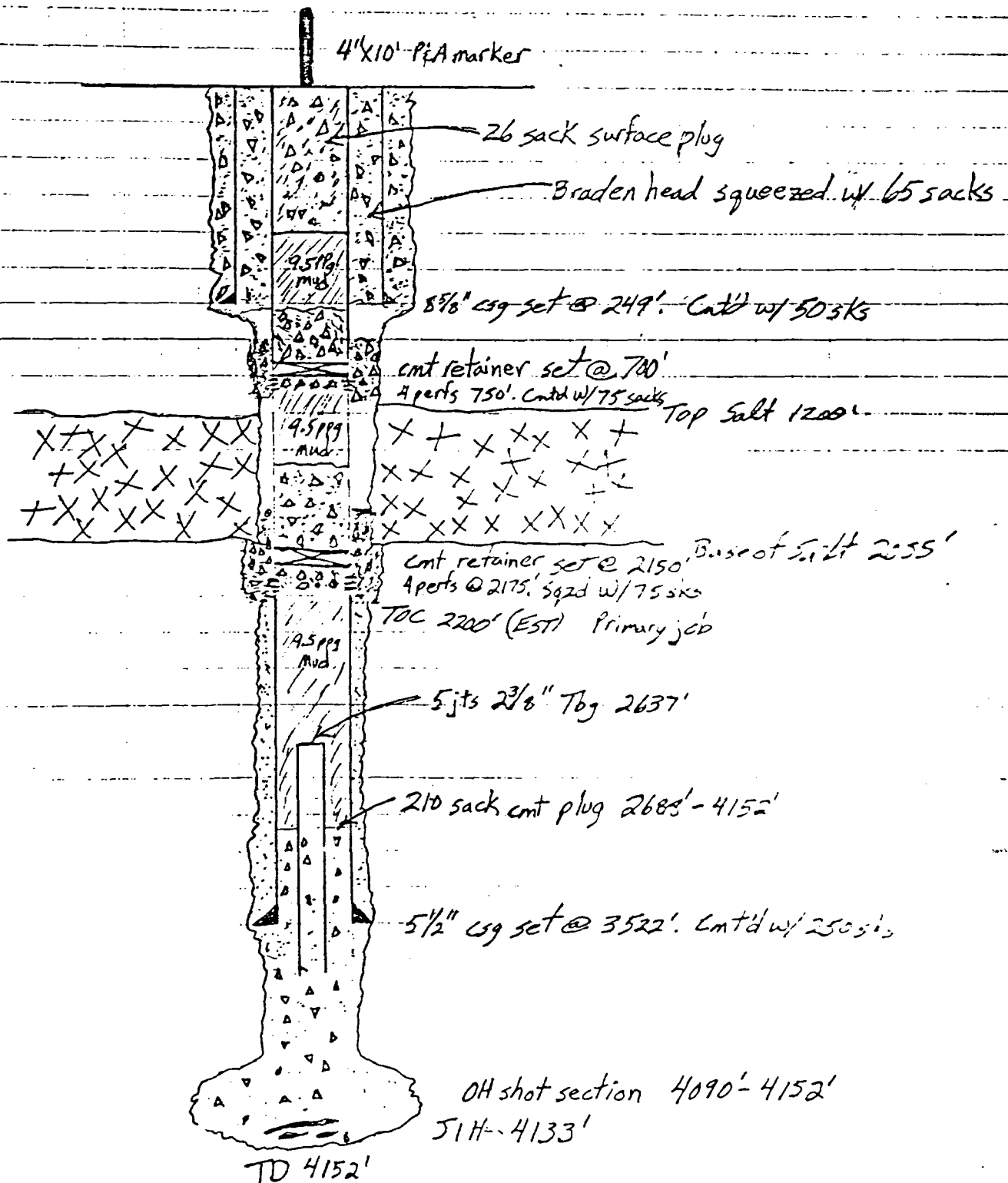
- 10/14/57 - SAND FRAC'ED
- 3/19/63 - PUMPING EQUIP. INSTALLED
- 12/22/66 - CO TO 4024, CONV'T TO INJECTION
- 4/16/69 - JUNK IN HOLE @ 3925: 3-3 1/2" DC'S AND BIT, PKR.
- 9/5/72 - TEMPORARILY ABANDONED SET 175 SKS CMT PLUG 3904 - 3189

GR

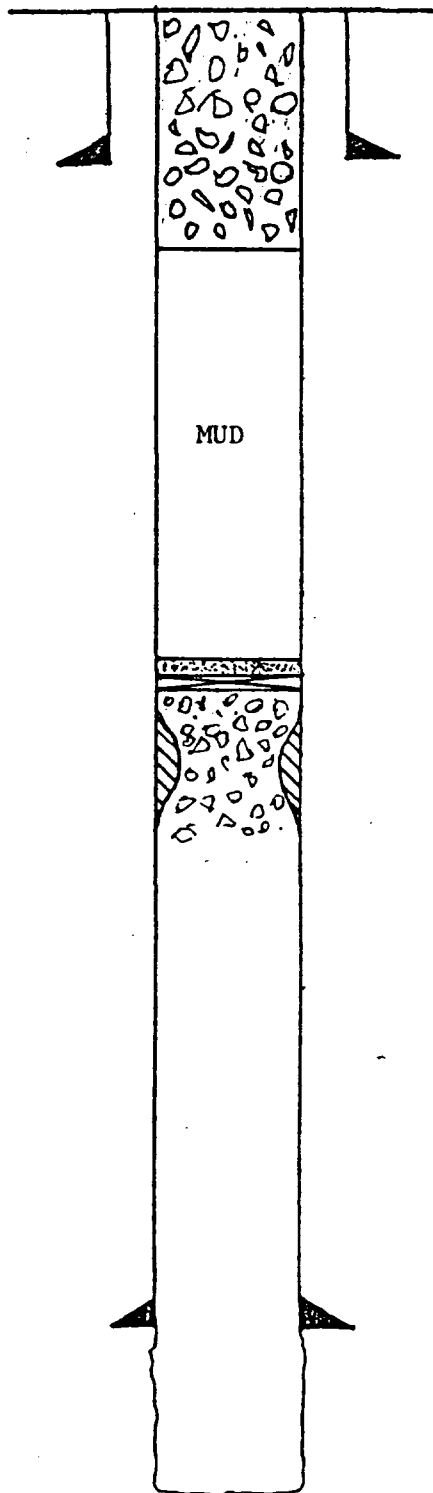
7/31/79

MCA No. 203

Proposed P&A



MCA NO. 208



660' FSL & 1980' FEL
Sec. 28, T-17S, R-32E

Plugged and abandoned-November 197
Completed-January 1941

8" Casing at 21' w/15 sx cement

140 sack cement plug ~~1250'~~ to surface

30 sx squeezed into holes @ 28'-30'

Salt zone approx. 1050'-2300'

Cement retainer at 2115' with *30* sx cement on top
Squeezed beneath retainer with 300 sx cement.
Collapse casing at 2200'

Junk in hole: two strings tools, top at 2200'

5-1/2" casing at 3595' w/300 sx cement
OH shot 400 qts. 3841' to 4000'

4000' TD

PRESENT WELLBORE

5-13-80

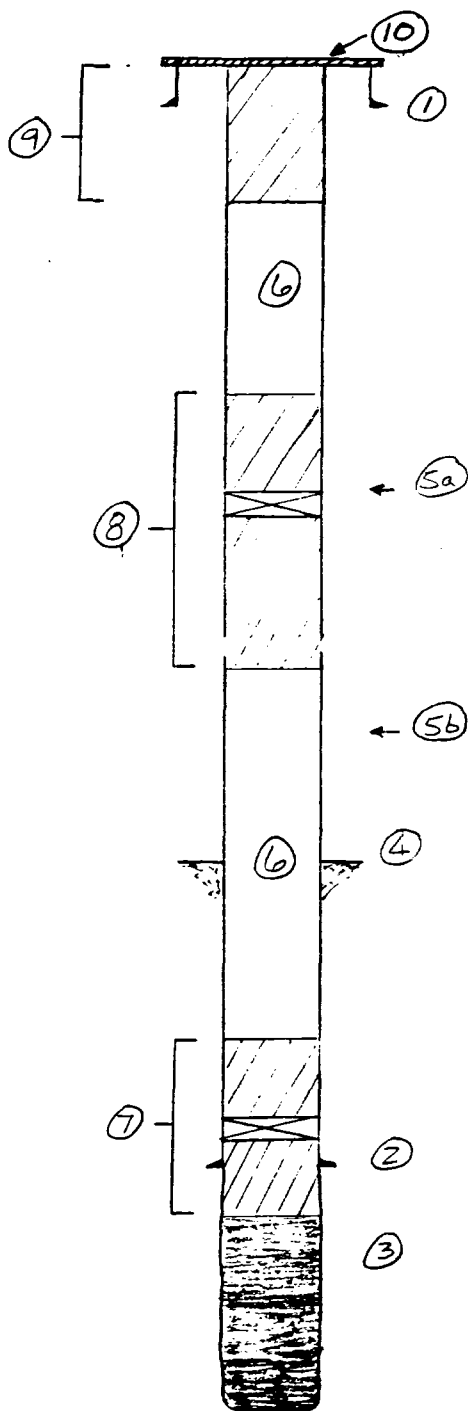
ENGINEERS CALCULATION SHEET

CO-189 1-51

FOR _____
 LOCATION _____
 SUBJECT _____

JOB OR AUTH. NO. _____
 PAGE _____
 DATE 4-8-85
 BY SRS

MCA NO. 210 - PROPOSED P&A'D WELLBORE

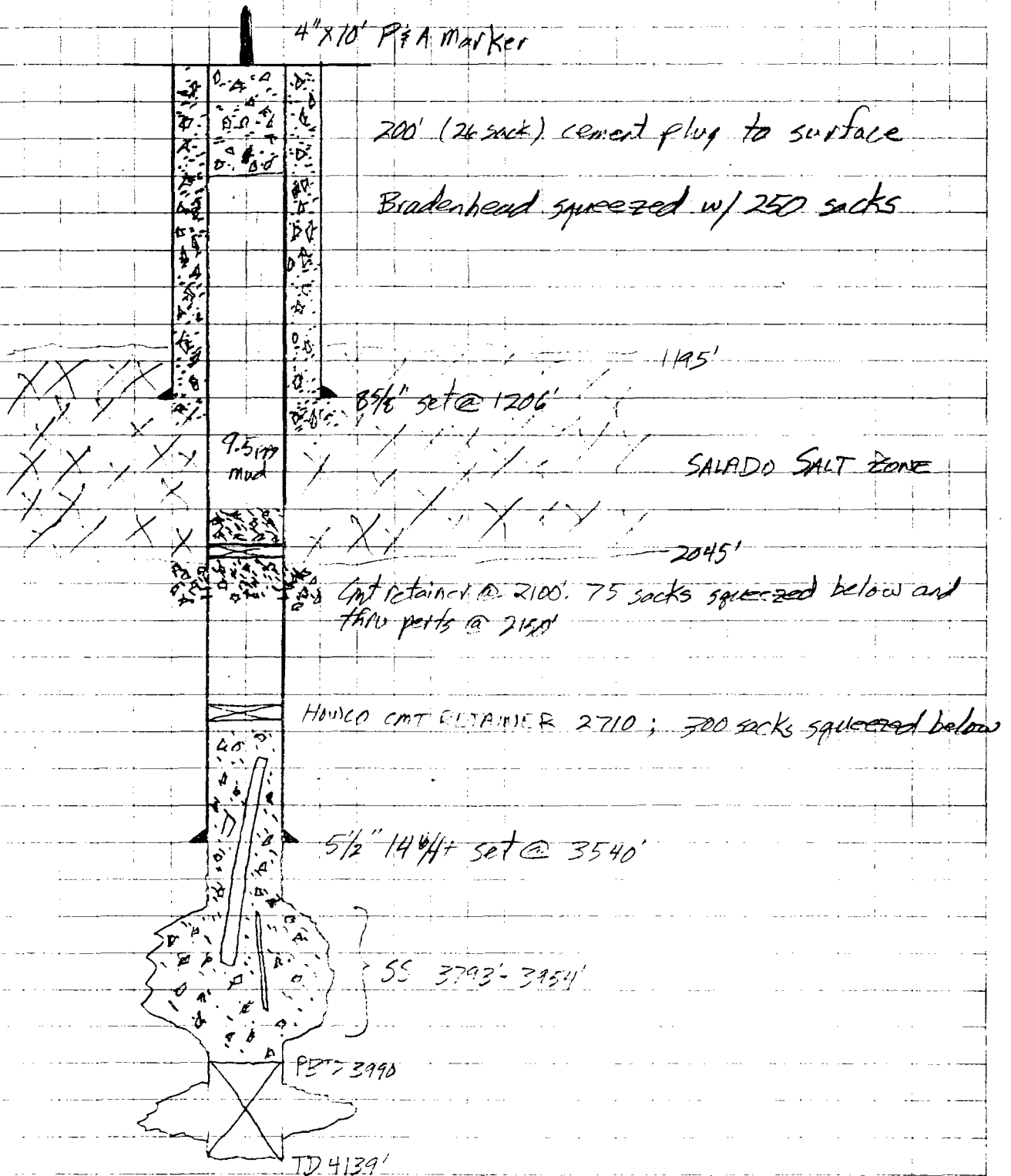


TD 3970'

- ① 12 1/2" CSG @ 22' CMTDW/15 SX
- ② 5 1/2" CSG @ 3563' CMTDW/300 SX
- ③ OH SHOT 3800'-3930 W/340 Gb.
 JUNK IN HOLE 3930-70 (40'-5" OD CABLE TOOLS)
 TOF C3857 (MEASURED 1-29-81)
 PLUG BACK W/ GRAVEL TO ± 3790'.
- ④ TOC-NR; CALC. ASSUMING 10" OHT ± 2700'.
- ⑤a TOP OF SALT @ 985'; ⑤b BASE @ 2020'
- ⑥ 10 PPG MUD
- ⑦ CEMENT RETAINER @ 3350':
 25 SX C1'C' OR 240' CEMENT PLUG ABOVE
 RETAINER. 50 SX C1'C' BELOW RETAINER.
- ⑧ CEMENT RETAINER @ 950':
 25 SX C1'C' OR 240' CEMENT PLUG ABOVE
 RETAINER. 200 SX C1'C' CEMENT BELOW
 RETAINER & SQUEEZED INTO HOLE @ 1518'.
- ⑨ 25 SX C1'C' OR 240' CEMENT PLUG
 FROM 240' TO SURFACE.
- ⑩ CUTOFF ALL CASING 3' BELOW GL.
 CEMENT CAP 4" THICK & 2' DIAMETER.

MCA No 221

Proposed P# A Sketch



Conoco Inc.
Calculation Sheet

Job No.

Made By
Checked By
Date

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of

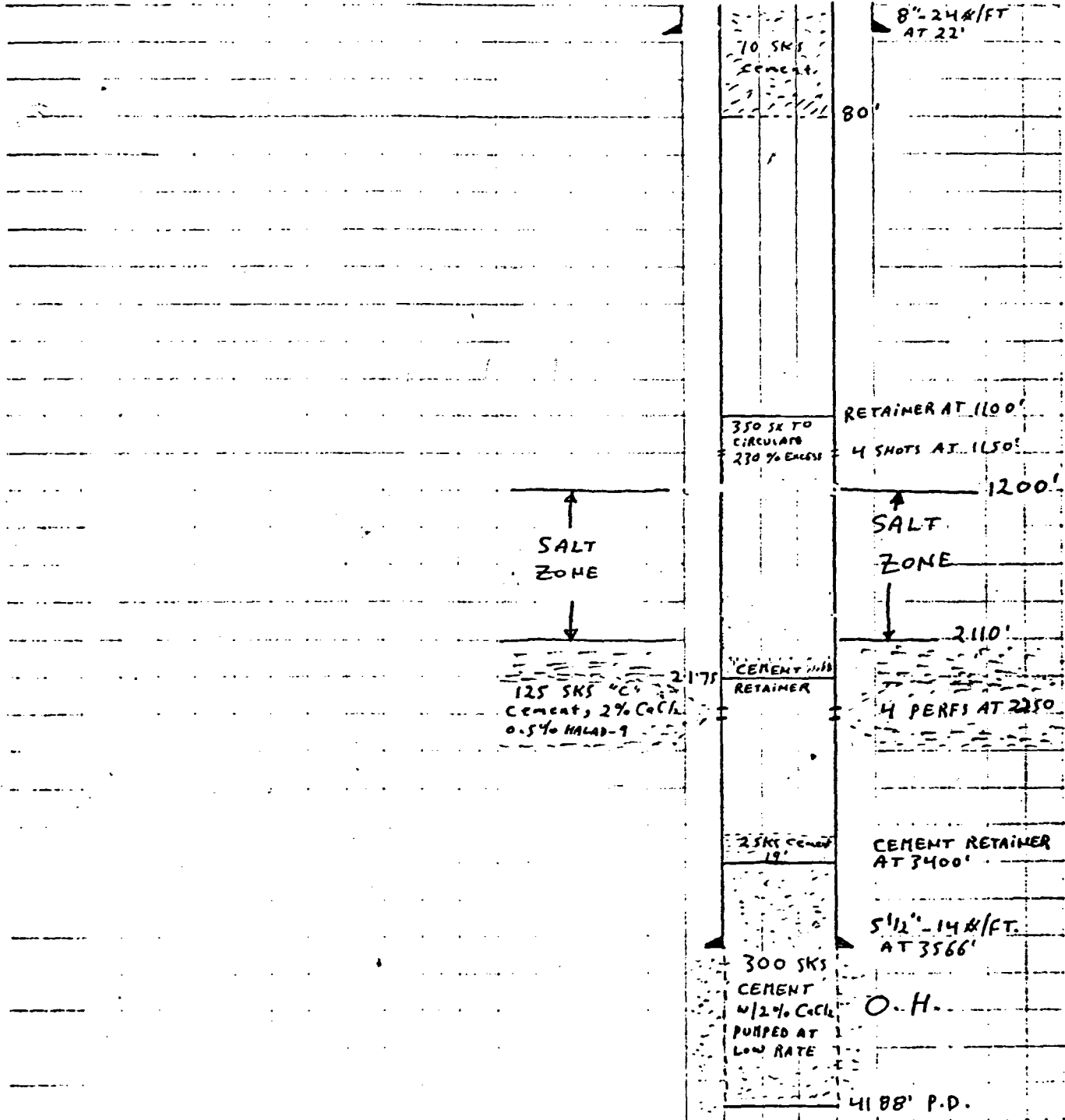
Title

State

MCA NO. 230 IW

0.1733 cu ft/lb behind casing

0.137 cu ft/lb in casing



Proposed P & A Wellbore

MCA No. 290

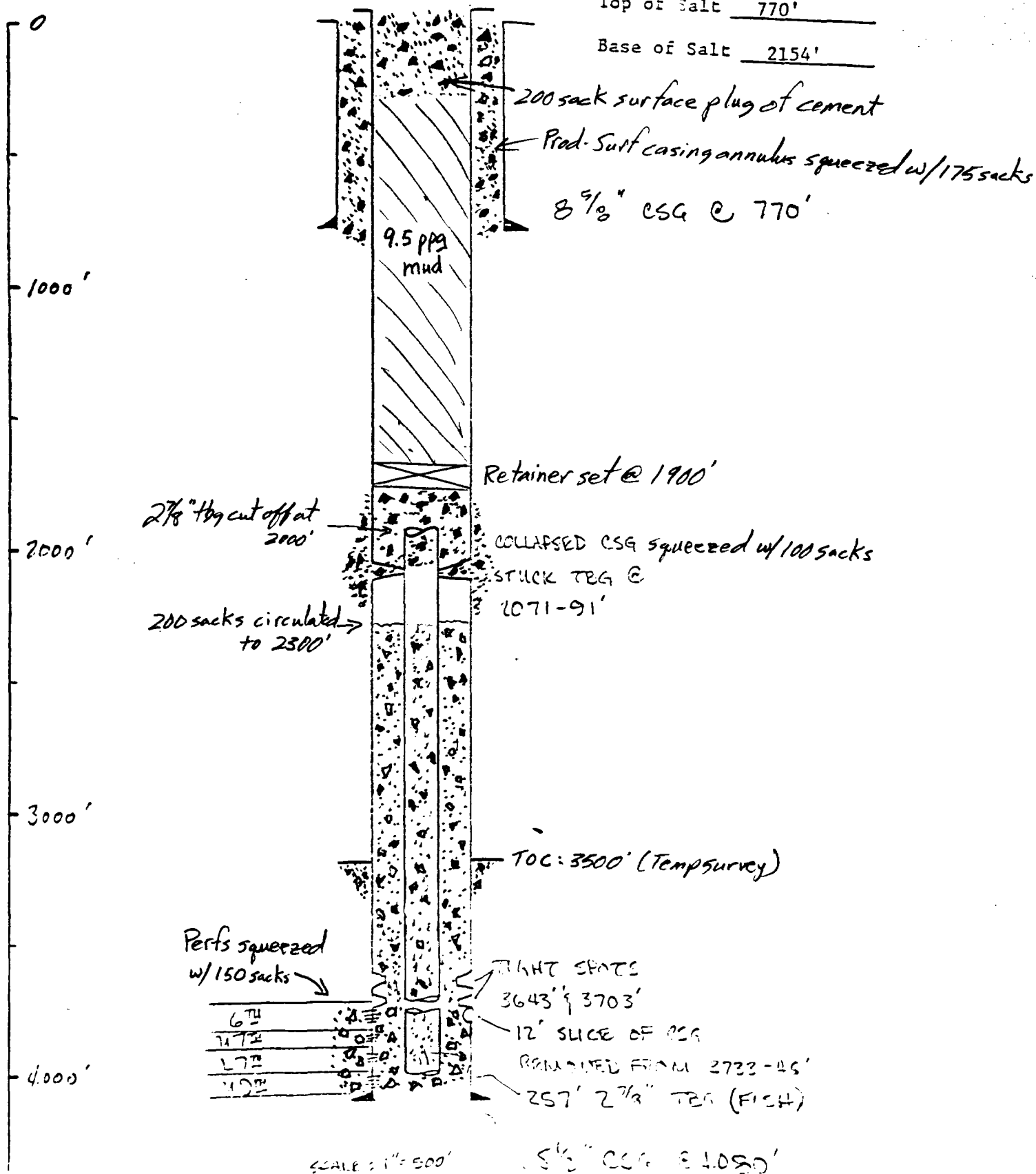
Location: 1295 'F NL & 1295 'F WL Sec. 29

T-17S R-32E ; Elevation 3948'

Measuring Datum 11' AGL

Top of Salt 770'

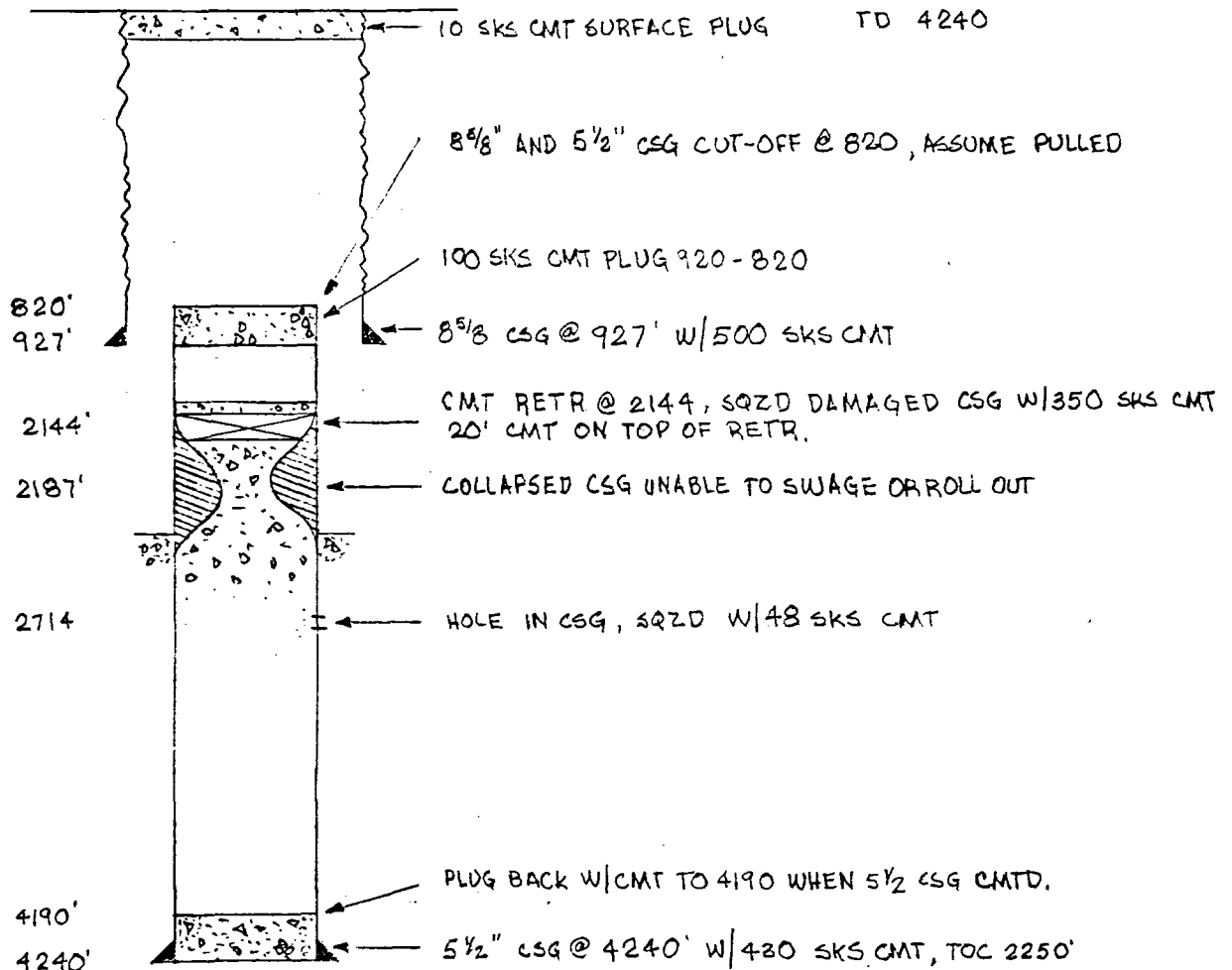
Base of Salt 2154'



MCA 342
1225 FNL & 1295 FWL
SEC. 26, T17S, R32E

PLUGGED AND
ABANDONED 12/20/76

SPUD 7/26/73
EL 3975 GL
TD 4240



PAST HISTORY

1976 - CSG LEAK @ 2714, SQZD W/ 48 SKS CMT, DRILLED OUT
FOUND BEND IN CSG @ 2187-2193, TBG WAS CORK SCREWING UNABLE
TO CORRECT.

12/21/76 - P&A: SET CMT RETR @ 2144 SQZD CSG W/ 350 SKS CMT, PERF @ 918-920 W/
2 JSPF, SQZD W/ 100 SKS CMT, TOC 820'. CUT-OFF 8 5/8 AND 5 1/2, SALVAGED
WELLHEAD. SPOTTED 10 SKS CMT SURFACE PLUG.

GR

8/2/79

vent Air -

Elevation 4150'
Zeno: 10' AGL

MCA # 358

640' FWH & 1600' FNL
SEC 20-T175-R32E

100' /
CEMENT
PLUG

← 16", 65#, H-40 set @ 749'
Circ w/ 755 SX

500
GEI

← 10 3/4", 51#, C-75 set @ 3635'
Circ w/ 3050 SX

← Arrow 7 7/8" Cnt Retainer @ 3616'

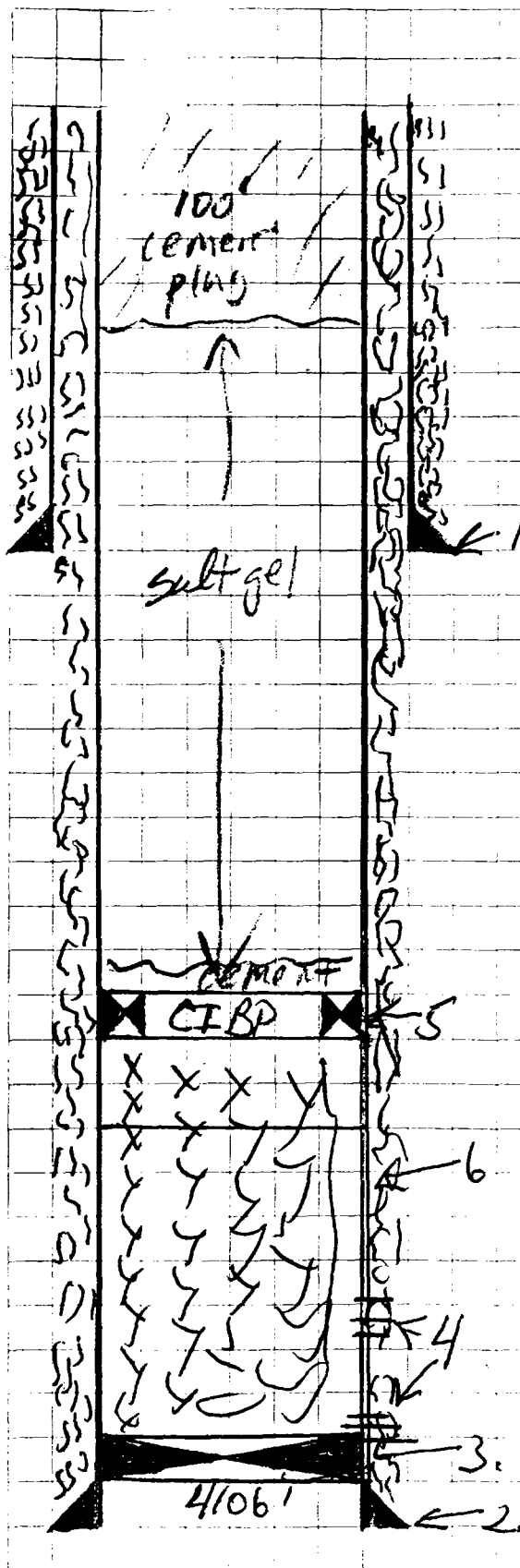
6 1/2" Zone Pnts 3682' - 3718'
Squeezed w/ 47 SX Class "C"

← BAKEN 7 7/8" PKA w/ Seal Assembly @ 3900'

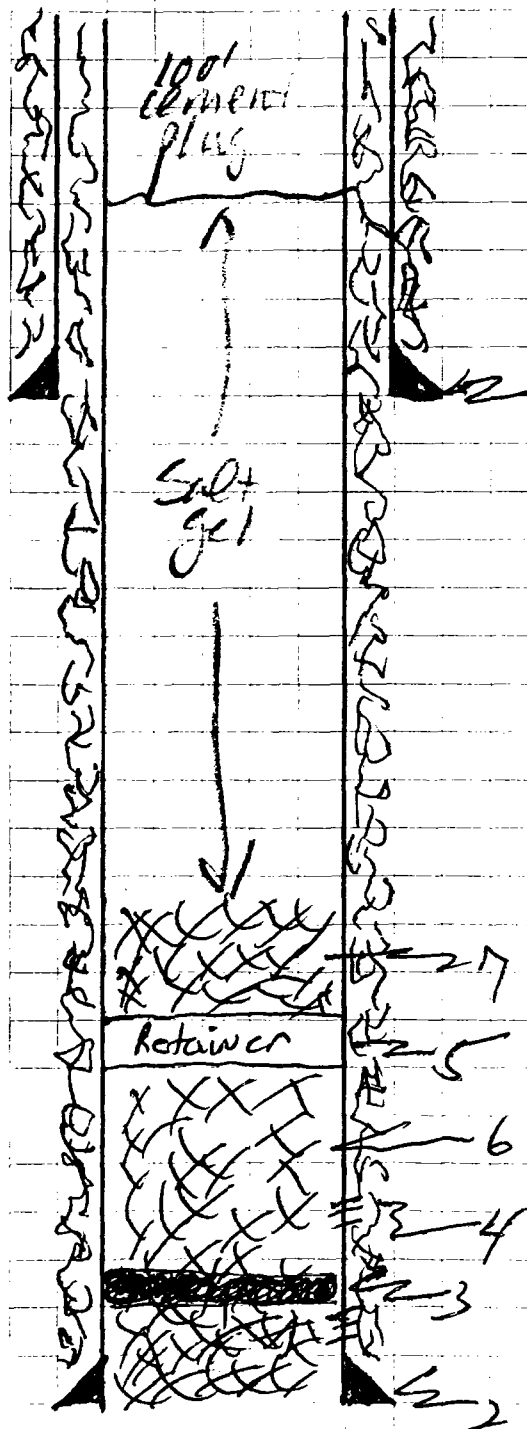
9 1/2" Zone Pnts 4022' - 4055'
Squeezed w/ 22 SX Class "C"

← 7 7/8", 33.7#, L-80 set @ 4148'

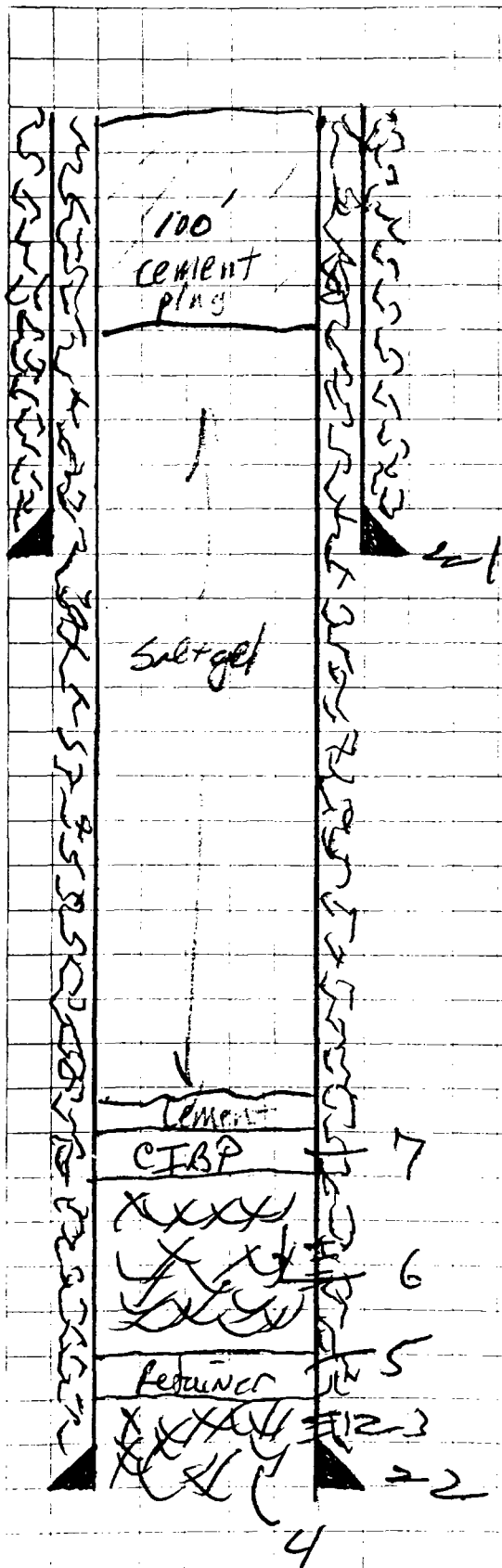
TD 4150' - PBD 4084'



- 1.) 13 3/8", K-55, 54# @ 762' w/ 810 SX cement circ.
- 2.) 8 5/8", K-55, 32# @ 4150' w/ 3320 SX cement circ.
- 3.) Permeant PKR pushed to Bttm
- 4.) perforation Grayburg, SA, 3692'-3726' 4039'-57'.
- 5.) CIBP @ 3170'
- 6.) 152 SX clots 'C' cut from 4071'-3174'.



- 1.) 13 1/8", K-55, 54# @ 750' w/ 810 sx
cmt. circ.
- 2.) 8 5/8", K-55, 32# @ 4150' w/ 3320 sx.
cmt circ.
- 3.) Permanent PKr @ 3500' w/ stringer
below 38 sx cmt squeezed below
- 4.) Perforations 3620-3711, 4014'-4046'
- 5.) cement retriever @ 3242'
- 6.) 60 sx class "C" cement.
- 7.) 30 sx class "C" cement



- 1.) 13 7/8", 54#, L-SS @ 250' w/ 010 SXS
cwt circ
- 2.) 8 5/8", 32#, L-SS @ 4150' w/ 3320 SXS
cwt circ.
- 3.) Penetrations 4025-4065'
- 4.) 45 SXS class "C" cement
- 5.) Penyo retainer @ 3891'
- 6.) 105 SXS class "C" cement
- 7.) CIBP @ 3574'.

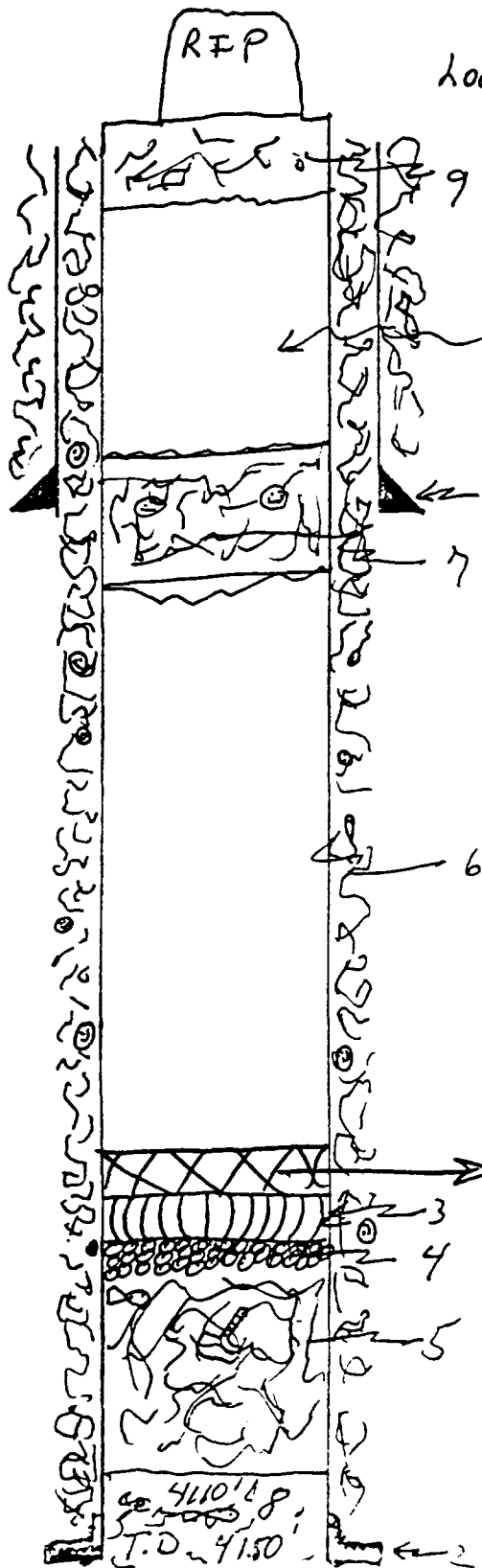
Made By **CDK**
 Checked By
 Date **3-29-88**
 Page **1** of **1**

Conoco Inc.
 Calculation Sheet

Title **NCA 362**
Karent wallbone

Job No.

Field **Barish - McGraw-Hill**
 State **NM**



Location - 900 FEL 22447 FSL, Sec 20, T-12S, R-32

- 1.) 13 3/8", 54# @ 250' cmt circ
- 2.) 8 5/8", 32#, K-55 @ 4150' cmt circ
- 3.) CIBP @ 3315'
- 4.) pea gravel 3320' to 3330'
- 5.) 150 sxs class "C" cement from 4110' to 3330'.
- 6.) 10 lb/gal mud 3315' to 800'
- 7.) Cement plug from 800' to 700'
- 8.) 10 lb/gal mud 3700' to 50'
- 9.) 50' cement plug w/ P & A marker

35' CMT ON CIBP. (SJS)

CORD

3-16-88

1

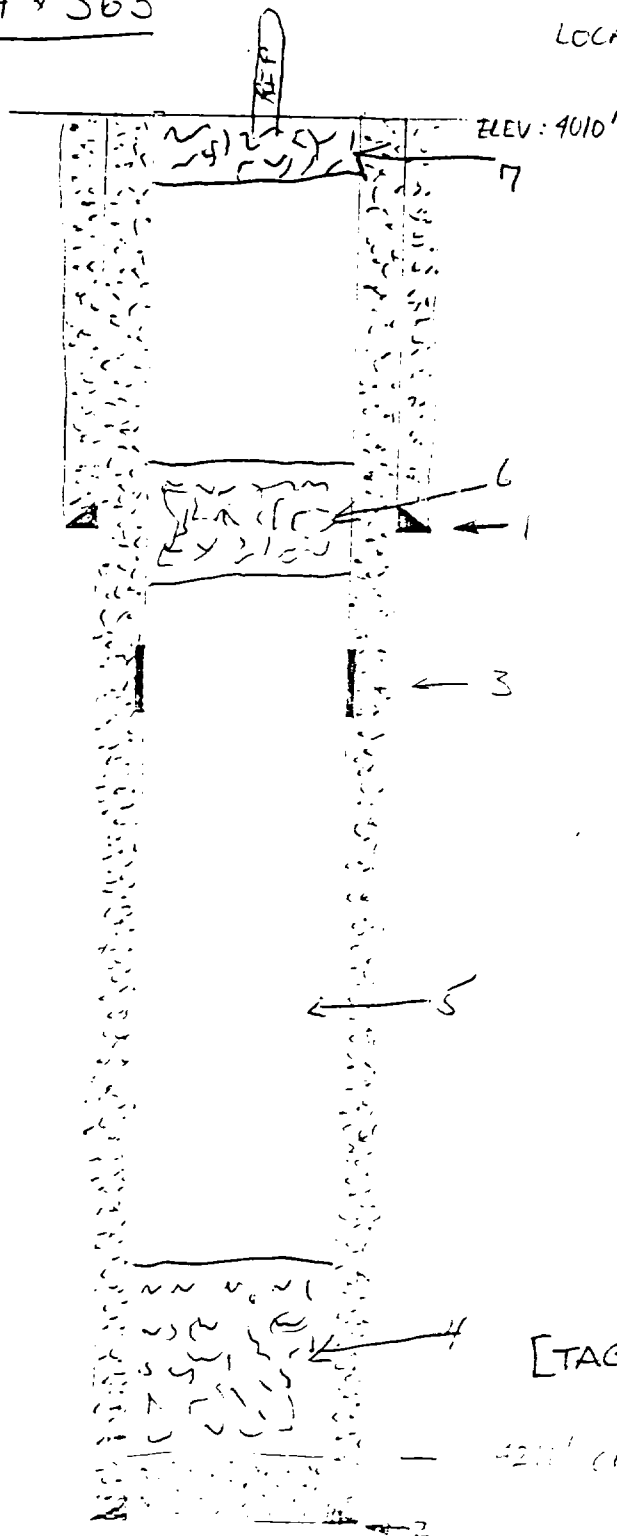
FICA 261 Proposed wellbore

62 25'

Leitch-Wagner-Pearson
New Mexico

CA # 363

LOCATION: 2487' FNL + 537' FEL S-20, T-17



1. 8 5/8", 28# CS6. @ 738' w/111 SX (ORG)
2. 5 1/2", 14# CS6. @ 4250' w/1185 SX (C) [2 STAGES]
3. DV TOOL @ 1940'
- 4.) Cement plug 4211 to 3500'
- 5.) 9.5 lb/gal mud 3500' - 838'
- 6.) Cement plug 838' - 650'
- 7.) 50' surface cement plug w/ para Marker.

[TAG] 53=

4211' (F.E.T.D.)

DATE: 7/1/00

REF

PRODUCED

MCA ~~3~~ 364

LOCATION: 10

REP

1

8

4

9

3510'

5 {

CMT. RETAINER

6

7

3

4215'

4280'

PEF GRAVEL

2

4325'

1. 8-5/8", 26#, 4-55 CSG SET @ 760'
W/450 SX [CIRC 125 SX]
2. 5 1/2", 14#, 4-55 CSG. SET @ 4325'
W/750 SX (1ST STAGE) + 575 SX (2ND STAGE)
[CIRC. 50 SX] - FLOAT COLLAR @ 426
3. 680' OF 5-1/2" FIBERGLASS CSG.
FROM 3400'-4270'. - BURST STRENGTH
= 2000 PSI, COLLAPSE = 2500 PSI. 4.8" DIA.
4. DV TOOL @ 2001'
5. 41 SX. CLASS "C" BALANCE FLUG FROM
3751' - 3512'.
6. ELDER 5 1/2", 14# CIER.
7. PERFORATIONS 3689' - 3705' (2 JSRF)
8. Cement plug from 860' - 700'
9. 9.5 LB/gallon mud from 3570 - 860'
10. 50' cement slurry plug w/ 1 + A mark

NOTES 1944-1945. 1946. 1947. 1948. 1949. 1950. 1951. 1952. 1953. 1954. 1955. 1956. 1957. 1958. 1959. 1960. 1961. 1962. 1963. 1964. 1965. 1966. 1967. 1968. 1969. 1970. 1971. 1972. 1973. 1974. 1975. 1976. 1977. 1978. 1979. 1980. 1981. 1982. 1983. 1984. 1985. 1986. 1987. 1988. 1989. 1990. 1991. 1992. 1993. 1994. 1995. 1996. 1997. 1998. 1999. 2000. 2001. 2002. 2003. 2004. 2005. 2006. 2007. 2008. 2009. 2010. 2011. 2012. 2013. 2014. 2015. 2016. 2017. 2018. 2019. 2020. 2021. 2022. 2023. 2024. 2025. 2026. 2027. 2028. 2029. 2030. 2031. 2032. 2033. 2034. 2035. 2036. 2037. 2038. 2039. 2040. 2041. 2042. 2043. 2044. 2045. 2046. 2047. 2048. 2049. 2050. 2051. 2052. 2053. 2054. 2055. 2056. 2057. 2058. 2059. 2060. 2061. 2062. 2063. 2064. 2065. 2066. 2067. 2068. 2069. 2070. 2071. 2072. 2073. 2074. 2075. 2076. 2077. 2078. 2079. 2080. 2081. 2082. 2083. 2084. 2085. 2086. 2087. 2088. 2089. 2090. 2091. 2092. 2093. 2094. 2095. 2096. 2097. 2098. 2099. 2100. 2101. 2102. 2103. 2104. 2105. 2106. 2107. 2108. 2109. 2110. 2111. 2112. 2113. 2114. 2115. 2116. 2117. 2118. 2119. 2120. 2121. 2122. 2123. 2124. 2125. 2126. 2127. 2128. 2129. 2130. 2131. 2132. 2133. 2134. 2135. 2136. 2137. 2138. 2139. 2140. 2141. 2142. 2143. 2144. 2145. 2146. 2147. 2148. 2149. 2150. 2151. 2152. 2153. 2154. 2155. 2156. 2157. 2158. 2159. 2160. 2161. 2162. 2163. 2164. 2165. 2166. 2167. 2168. 2169. 2170. 2171. 2172. 2173. 2174. 2175. 2176. 2177. 2178. 2179. 2180. 2181. 2182. 2183. 2184. 2185. 2186. 2187. 2188. 2189. 2190. 2191. 2192. 2193. 2194. 2195. 2196. 2197. 2198. 2199. 2200. 2201. 2202. 2203. 2204. 2205. 2206. 2207. 2208. 2209. 2210. 2211. 2212. 2213. 2214. 2215. 2216. 2217. 2218. 2219. 2220. 2221. 2222. 2223. 2224. 2225. 2226. 2227. 2228. 2229. 2230. 2231. 2232. 2233. 2234. 2235. 2236. 2237. 2238. 2239. 2240. 2241. 2242. 2243. 2244. 2245. 2246. 2247. 2248. 2249. 2250. 2251. 2252. 2253. 2254. 2255. 2256. 2257. 2258. 2259. 2260. 2261. 2262. 2263. 2264. 2265. 2266. 2267. 2268. 2269. 2270. 2271. 2272. 2273. 2274. 2275. 2276. 2277. 2278. 2279. 2280. 2281. 2282. 2283. 2284. 2285. 2286. 2287. 2288. 2289. 2290. 2291. 2292. 2293. 2294. 2295. 2296. 2297. 2298. 2299. 2300. 2301. 2302. 2303. 2304. 2305. 2306. 2307. 2308. 2309. 2310. 2311. 2312. 2313. 2314. 2315. 2316. 2317. 2318. 2319. 2320. 2321. 2322. 2323. 2324. 2325. 2326. 2327. 2328. 2329. 2330. 2331. 2332. 2333. 2334. 2335. 2336. 2337. 2338. 2339. 2340. 2341. 2342. 2343. 2344. 2345. 2346. 2347. 2348. 2349. 2350. 2351. 2352. 2353. 2354. 2355. 2356. 2357. 2358. 2359. 2360. 2361. 2362. 2363. 2364. 2365. 2366. 2367. 2368. 2369. 2370. 2371. 2372. 2373. 2374. 2375. 2376. 2377. 2378. 2379. 2380. 2381. 2382. 2383. 2384. 2385. 2386. 2387. 2388. 2389. 2390. 2391. 2392. 2393. 2394. 2395. 2396. 2397. 2398. 2399. 2400. 2401. 2402. 2403. 2404. 2405. 2406. 2407. 2408. 2409. 2410. 2411. 2412. 2413. 2414. 2415. 2416. 2417. 2418. 2419. 2420. 2421. 2422. 2423. 2424. 2425. 2426. 2427. 2428. 2429. 2430. 2431. 2432. 2433. 2434. 2435. 2436. 2437. 2438. 2439. 2440. 2441. 2442. 2443. 2444. 2445. 2446. 2447. 2448. 2449. 2450. 2451. 2452. 2453. 2454. 2455. 2456. 2457. 2458. 2459. 2460. 2461. 2462. 2463. 2464. 2465. 2466. 2467. 2468. 2469. 2470. 2471. 2472. 2473. 2474. 2475. 2476. 2477. 2478. 2479. 2480. 2481. 2482. 2483. 2484. 2485. 2486. 2487. 2488. 2489. 2490. 2491. 2492. 2493. 2494. 2495. 2496. 2497. 2498. 2499. 2500. 2501. 2502. 2503. 2504. 2505. 2506. 2507. 2508. 2509. 2510. 2511. 2512. 2513. 2514. 2515. 2516. 2517. 2518. 2519. 2520. 2521. 2522. 2523. 2524. 2525. 2526. 2527. 2528. 2529. 2530. 2531. 2532. 2533. 2534. 2535. 2536. 2537. 2538. 2539. 2540. 2541. 2542. 2543. 2544. 2545. 2546. 2547. 2548. 2549. 2550. 2551. 2552. 2553. 2554. 2555. 2556. 2557. 2558. 2559. 2560. 2561. 2562. 2563. 2564. 2565. 2566. 2567. 2568. 2569. 2570. 2571. 2572. 2573. 2574. 2575. 2576. 2577. 2578. 2579. 2580. 2581. 2582. 2583. 2584. 2585. 2586. 2587. 2588. 2589. 2590. 2591. 2592. 2593. 2594. 2595. 2596. 2597. 2598. 2599. 2600. 2601. 2602. 2603. 2604. 2605. 2606. 2607. 2608. 2609. 2610. 2611. 2612. 2613. 2614. 2615. 2616. 2617. 2618. 2619. 2620. 2621. 2622. 2623. 2624. 2

DATE: 7/17/08

MEP

ATTACHMENT 5

APPLICATION FOR AUTHORIZATION TO INJECT - PART VII

Stage I of the MCA CO₂ Project is designed to inject an average of 23 MMSCF per day of CO₂ into 16 injection wells. This translates into an average of 1.5 MMSCFPD per well. The maximum injection rate for stage I should not exceed 30 MMSCFPD in total and should not exceed 3 MMSCFPD in any one well.

The injection system will be a closed system. The CO₂ will be transported via pipeline, boosted to injection pressure and injected into the wells through two headers. The produced gas stream will in time contain too much CO₂ to be sold. At that time, the total produced gas stream will be compressed, dehydrated and reinjected along with the purchased CO₂.

The CO₂ injection system working pressure is designed as 2500 psi which will provide an average injection well pressure of about 2100 psi after distribution losses. The fracture gradient of the injection zones ranges from 0.97 psi/ft. to 1.13 psi/ft. based on fracture stimulation of recently drilled wells in the Unit. (See attached tables.) Assuming a 2100 psi wellhead injection pressure and an average CO₂ temperature of 80°F, it can be shown that the bottom hole injection pressures will in no case be within 100 psi of the minimum parting pressure. Under these expected operating conditions the average CO₂ gradient is 0.398 psi/ft.

The source of the purchased CO₂ will be the McElmo Dome CO₂ field in southwest Colorado. The CO₂ will be transported via the Cortez pipeline to Tatum, New Mexico, via the Llano pipeline (now owned and operated by Big 3) to Buckeye, New Mexico, and finally via the new pipeline now being installed by Big 3 to the MCA Unit.

As stated above, recycled CO₂ and hydrocarbon gas will supplement the purchased CO₂ stream.

After CO₂ injection has been completed, the project design calls for a post-flush waterflood. The injection water will be produced water supplemented with the fresh water supply which has served the MCA Unit in the past.

ATTACHMENT 5.1

TABLE 1. SIXTH ZONE ESTIMATED FRACTURE GRADIENTS FROM RECENT D&E WELLS

WELL	DATE	MID-PERF DEPTH ft. (gl)	ISIP SURFACE psi	ISIP MID-PERF psi	FRACTURE GRADIENT psi/ft
367	6-4-87	4003	2750	4490	1.12
368	5-15-87	3792	2230	3880	1.02
369	3-27-87	3755	2410	4050	1.08
370	5-1-87	3960	2200	3930	0.99
371	9-18-87	3939	2200	3920	1.00
373	10-16-87	3742	2450	4080	1.09
376	12-29-87	3983	3000	4740	1.19

Average fracture gradient

1.07

ATTACHMENT 5.2

TABLE 2. SEVENTH ZONE ESTIMATED FRACTURE GRADIENTS FROM RECENT D&E WELLS

WELL	DATE	MID-PERF DEPTH ft. (gl)	ISIP SURFACE psi	ISIP MID-PERF psi	FRACTURE GRADIENT psi/ft
<u>7th fractured separately</u>					
367	5-29-87	4131	2870	4670	1.13
368	5-12-87	3920	2725	4430	1.13
370	4-15-87	4119	1950	3980	0.97
373	10-12-87	3953	3100	4820	1.22

Average fracture gradient 1.11

<u>6th & 7th fractured together</u>					
374	11-11-87	3740	2500	4130	1.10
375	12-1-87	4027	2750	4500	1.12
377	1-6-88	3940	2700	4420	1.12

Average fracture gradient 1.11

TABLE 3. SURFACE CO2 INJECTION PRESSURES CORRESPONDING TO MINIMUM PARTING PRESSURES

ZONE	MID-PERF DEPTH FT	FRACTURE GRADIENT PSI/FT	BOTTOM HOLE PARTING PRESSURE PSIG	CO2 INJECTION SURFACE PARTING PRESSURE PSIG
6	3810	1.07	4080	2560
7	3960	1.11	4400	2800

APPLICATION FOR AUTHORIZATION TO INJECT - PART VIII

The MCA CO₂ Project will confine CO₂ injection to four Permian age reservoirs: the Grayburg 6th zone and the San Andres Upper 7th, Lower 7th and Upper 9th zones.

The lower member of the Grayburg is known as the 6th zone. The 6th zone is a dolomitic sandstone having an average gross thickness in the Stage I area of 150 feet and an average depth of 3775 feet.

The upper member of the San Andres dolomite is known as the 7th zone. In the MCA Unit, the 7th zone is separated into the upper and lower 7th zone by 20 to 50 feet of dense dolomite. The average gross thickness of the 7th zone is also 150 feet and the average depth is 3925 feet.

Below the 7th zone is a non-productive sandstone interval known as the 8th zone which averages 25 feet in thickness and 4075 feet in depth.

The 9th zone member of the San Andres is divided into two distinct zones known as the Upper 9th and the 9th Massive. Injection will be confined to the Upper 9th zone, since the 9th Massive zone extends well below the oil water contact which would compromise CO₂ flood efficiency. The Upper 9th averages 95 feet in gross thickness and 4100 feet in depth.

There are no known sources of drinking water at any depth underlying the MCA Unit.

ATTACHMENT 7

AFFIDAVIT OF PUBLICATION

State of New Mexico,
County of Lea.

I, _____

George W. Moore

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 a supplement thereof for a period

of _____

One weeks.
Beginning with the issue dated

October 31, 19 88
and ending with the issue dated

October 31, 19 88

George W. Moore
Publisher.

Sworn and subscribed to before

me this 18 day of

November, 19 88

Vera Murphy
Notary Public.

My Commission expires _____

November 14, 19 92

(Seal)

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.

LEGAL NOTICE
October 31, 1988
**CONVERT WELLS TO
CO2 INJECTION**
Conoco Inc., 726 E.
Michigan, P.O. Box 460,
Hobbs, NM, 88240, Mr.
David L. Wacker, Division
Manager of Exploration &
Production, intends for the
purpose of tertiary recovery,
to convert certain wells
located in Sections 20, 28,
29, and 33, T-17-S, R-32-E,
Lea County, New Mexico to
CO2 Injection wells in the
Maljamar Grayburg San
Andres Oil Pool. Each well
will inject approximately
1.25 MMCF CO2 per day
with surface pressure being
approximately 2200 psi.
Any objections to this intent
or request for administrative
approval by the New Mexico
Oil Conservation Division must
be filed with the New Mexico
Oil Conservation Division,
310 Old Santa Fe Trail,
Santa Fe, New Mexico,
87503 within 15 days from
the date of this publication.

LARGE FORMAT
EXHIBIT HAS
BEEN REMOVED
AND IS LOCATED
IN THE NEXT FILE