pWVJ0410357494 PMX-225 4/12/04

CBS OPERATING CORP.
P. O. BOX 2236, MIDLAND, TX 79702 432/685-0878 FAX 685-1945

February 19, 2004

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION EMNR
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Attention: Mr. Richard Ezeanyim
Mr. Will Jones

Re: CBS Operating Corp.
C-108 Applications
North Square Lake Unit
Eddy County, New Mexico

Gentlemen:

Since our last meeting, CBS Operating has drilled 10 new producing locations on the North Square Lake Unit. Although all 10 wells are not yet completed, CBS Operating is ready to finalize the C-108 Applications for the pressure maintenance wells needed for these new locations.

In our previous meeting, CBS Operating was charged with identifying the specific C-108 Applications that CBS would return to review with you and propose specific remedies for any problem wells previously identified within the area of review by Mr. Will Jones.

In preparation for that review, following is a list of 17 previously submitted C-108 Applications that CBS is considering as potential pressure maintenance wells for the 10 new locations. The list also identified the wells Mr. Will Jones indicated were problem wells within each specific C-108 wells area of review. In preparation for that meeting, could you please verify that this list of problem wells is complete. This data was derived from Mr. Jones' spreadsheet dated November 26, 2003.

C-108 WELL	AREA OF REVIEW PROBLEM WELL
1) NSLU #5	No problem wells within AOR
2) NSLU #12	NSLU #19
3) NSLU #15	NSLU #8
4) NSLU #16	NSLU #8, UL E, Sec. 21, NSLU #26, NSLU #27
5) NSLU #22	No problem wells within AOR
6) NSLU #23	No problem wells within AOR
7) NSLU #24	NSLU #26
8) NSLU #25	NSLU #26
9) NSLU #41	No problem wells within AOR
10) NSLU #42	NSLU #26
11) NSLU #43	NSLU #26, NSLU #27
12) NSLU #60	No problem wells within AOR
13) NSLU #61	NSLU #26
14) NSLU #62	NSLU #85
15) NSLU #83	NSLU #85
16) NSLU #85	Re-entry
17) NSLU #111	NSLU #85, NSLU #137

CBS Operating would like to meet with the NMOCD anytime within the next two weeks to finalize these C-108 Applications.

Please call if you need any additional information.

Sincerely,

M. A. Sirgo, III

MAS/pr

cc: Mr. Bill Carr

CBS Operating Corp
Feb-04

North Square Lake Unit
C - 108 Applications

	Potential C - 108 Well No	API # 30 - 015 -	Area of Review Problem Well	API # 30 - 015 -
1.)	NSLU # 5	10322	No problem wells within AOR	
2.)	NLSU # 12	4856	~~NSLU # 19~~	~~10469~~ 04924
3.)	NSLU # 15	4859	NSLU # 8	4864
4.)	NSLU # 16	4860	NSLU # 8	4864
			* ~~E-21-16-31~~	~~No data~~
			NSLU # 26	4897
			~~NSLU # 27~~	~~10549~~
5.)	NSLU # 22	4905	No problem wells within AOR	
6.)	NSLU # 23	4906	No problem wells within AOR	
7.)	NSLU # 24	4912	~~NSLU # 26~~	~~4897~~
8.)	NSLU # 25	4913	~~NSLU # 26~~	~~4897~~ OK
9.)	NSLU # 41	4907	No problem wells within AOR	
10.)	NSLU # 42	4908	~~NSLU # 26~~	~~4897~~
11.)	NSLU # 43	4909	~~NSLU # 26~~	~~4897~~
			~~NSLU # 27~~	~~10549~~
12.)	NSLU # 60	4914	No problem wells within AOR	
13.)	NSLU # 61	4903	~~NSLU # 26~~	~~4897~~
14.)	NSLU # 62	4892	~~NSLU # 85~~	~~4895~~
15.)	NSLU # 83	4915	~~NSLU # 85~~	~~4895~~
16.)	NSLU # 85	4895	Re-entry no problem wells within AOR	
17.)	NSLU # 111	4979	~~NSLU # 85~~	~~4895~~
			~~NSLU # 137~~	4971

* Could not find any data in NMOCD files or scout ticket data about this well.Field inspection of this location found no dry hole marker,

CBS OPERATING CORP.
P. O. BOX 2236, MIDLAND, TX 79702 432/685-0878 FAX 685-1945

August 19, 2003

State of New Mexico
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Attention: Mr. Richard Ezeanyim

Re: North Square Lake Unit
Eddy County, New Mexico
Transmittal of C-108 Application

Mr. Ezeanyim:

As per your request, enclosed please find 13 individual C-108 applications for certain wells located within the North Square Lake Unit.

Data common to all 13 wells has been presented only once and is located by section, and includes all sections except Section III, Section V and Section VI of the NMOCD Form C-108.

Section III is tabbed by each of the individual wells that are being applied for. A separate well data sheet is presented for each separate C-108 applicant well.

Section V is presented by each individual C-108 applicant well. The exhibit consists of an "Area of Review Map" for all wells located within a one-half mile radius of each C-108 applicant well.

Section VI is presented by each individual C-108 applicant well. There are two exhibits for each well. The first is a tabular summary of pertinent data for all wells located within a C-108 applicant well's "Area of Review". The second exhibit is a schematic diagram for each plugged well that is located within a C-108 applicant well's "Area of Review". This schematic reflects all known prior plugging operations, and reflects the location of the base of the red bed, top and base of the salt intervals in each plugged well.

Preparation of this C-108 application included CBS Operating Corp.'s contracting Ritter Environmental & Geotechnical Services, as well as R T. Hicks Consultants, Ltd. to specifically study the potential of any subsurface sources of drinking water located within the unit area. Additionally, Ritter reviewed the Salado section within the unit boundary to determine any potential issues resulting from the proposed pressure maintenance activity. The reports prepared by Ritter and Hicks are located in Section VIII of the application.

CBS Operating requests that once the Oil Conservation Division has had time to review the 13 applications, that CBS meet with the NMOCD to address any issues or questions that may arise.

If any additional information is needed prior to then, please do not hesitate to call. Your consideration of these applications is greatly appreciated.

Sincerely,

M. A. Sirgo, III

MAS/pr

Enclosures

North Square Lake Unit

Planned Injection Wells (Does not include the original 7 approved by R-11435-A, Bold is latest Request)

Loc	NSLU#	API	WELL NAME	NS FTG	EW FTG	UL	UL2	Sec	Tsp	Rge	Last	Comp Stat	PLUG DATE	TVD	OGRD	LT	WT	OrigTarget
NE	**15**	30-015-04859	**BAXTER A FEDERAL #001 (#15)**	**660S**	**1980E**	**O**	**O**	**20**	**16S**	**31E**	**10-1994**	**ZONE ABAN**	**1995-02-07**		**817**	**F**	**I**	
NE	**16**	30-015-04860	**BAXTER A FEDERAL #002 (#16)**	**660S**	**660E**	**P**	**P**	**20**	**16S**	**31E**	**05-1994**	**ZONE ABAN**	**1995-02-07**		**817**	**F**	**O**	
NE	**23**	30-015-04906	**GRIER FEDERAL #002 (#23)**	**810N**	**1980W**	**C**	**C**	**29**	**16S**	**31E**	**NONE**	**ZONE ABAN**	**1987-02-18**	**3445**	**8359**	**F**	**O**	**PLUGGED & ABANDON**
NE	**24**	30-015-04912	**NORTH SQUARE LAKE UNIT #024**	**660N**	**1980E**	**B**	**B**	**29**	**16S**	**31E**	**04-2003**	**ACTIVE**		**3509**	**216852**	**F**	**O**	
NE	**25**	30-015-04913	**NORTH SQUARE LAKE UNIT #025**	**810N**	**990E**	**A**	**A**	**29**	**16S**	**31E**	**04-2003**	**ACTIVE**		**3432**	**216852**	**F**	**O**	
NE	**41**	30-015-04907	**NORTH SQUARE LAKE UNIT #041**	**1980N**	**1980W**	**F**	**F**	**29**	**16S**	**31E**	**04-2003**	**ACTIVE**		**3491**	**216852**	**F**	**O**	
NE	**42**	30-015-04908	**BRUNING #003 (#42)**	**1980N**	**1980E**	**G**	**G**	**29**	**16S**	**31E**	**NONE**	**ZONE ABAN**	**1987-02-12**	**3376**	**8359**	**F**	**O**	**PLUGGED & ABANDON**
NE	**43**	30-015-04909	**NORTH SQUARE LAKE UNIT #043**	**1980N**	**660E**	**E**	**H**	**29**	**16S**	**31E**	**04-2003**	**ACTIVE**		**3415**	**216852**	**F**	**O**	
NE	**60**	30-015-04914	**NORTH SQUARE LAKE UNIT #060**	**1980S**	**1880E**	**J**	**J**	**29**	**16S**	**31E**	**04-2003**	**ACTIVE**		**3525**	**216852**	**F**	**O**	
NE	**61**	30-015-04903	**PRE-ONGARD WELL #005 (#61)**	**1980S**	**660E**	**I**	**I**	**29**	**16S**	**31E**	**NONE**	**NO COMPL**		**0**	**214263**		**O**	**YATES PET CORP /BRUNING UT**
SW	124	30-015-24580	NORTH SQUARE LAKE UNIT #124	1250N	1031W	C	C	31	16S	31E	04-2003	ACTIVE		3414	216852	F	O	
SW	126	30-015-04947	NORTH SQUARE LAKE UNIT #126	1980N	1980E	G	G	31	16S	31E	NONE	NO COMPL		0	214263		O	ANADARKO PET CORP /GRIER
SW	144	30-015-04941	NORTH SQUARE LAKE UNIT #144	1980S	1680W	K	K	31	16S	31E	04-2003	ACTIVE		3170	216852	F	O	
N	3	30-015-20183	NORTH SQUARE LAKE UNIT #3	1980S	1980E	J	J	19	16S	31E								
N	**5**	30-015-10322	**NORTH SQUARE LAKE UNIT #5**	**1650S**	**990W**	**L**	**L**	**20**	**16S**	**31E**								
N	**12**	30-015-04856	**NORTH SQUARE LAKE UNIT #12**	**660S**	**660E**	**P**	**P**	**19**	**16S**	**31E**								
N	20	30-015-04936	NORTH SQUARE LAKE UNIT #20	660N	1980E	B	B	30	16S	31E								
N	**22**	30-015-04905	**NORTH SQUARE LAKE UNIT #22**	**760N**	**560W**	**D**	**D**	**29**	**16S**	**31E**								
N	**62**	30-015-04892	**NORTH SQUARE LAKE UNIT #62**	**1980S**	**660W**	**L**	**L**	**28**	**16S**	**31E**								
N	**83**	30-015-04915	**NORTH SQUARE LAKE UNIT #83**	**550S**	**550E**	**P**	**P**	**29**	**16S**	**31E**								
N	**85**	30-015-04895	**NORTH SQUARE LAKE UNIT #85**	**560S**	**1880W**	**N**	**N**	**28**	**16S**	**31E**								
N	**111**	30-015-04979	**NORTH SQUARE LAKE UNIT #111**	**660N**	**1980E**	**B**	**B**	**33**	**16S**	**31E**								
N	162	30-015-24457	NORTH SQUARE LAKE UNIT #162	660S	1980E	O	O	31	16S	31E								

CBS OPERATING CORP.
NORTH SQUARE LAKE UNIT
AUGUST 2003 C-108 APPLICATION

VII. Data on proposed operation.

1. Proposed average injection rate: 150 BWPD per well
   Proposed maximum injection rate: 300 BWPD per well

2. The system will be a closed system.

3. Proposed average injection pressure: 500 psi
   Proposed maximum injection pressure: 600 psi (In no instance will the pressure exceed a .2 psi/ft gradient to the upper perf or top of the open hole interval).

4. The proposed injection fluid at this time is to be limited to produced water.

5. A chemical analysis of the formation water in the proposed injection horizon is attached.

Enviro-Chem, Inc.
WATER ANALYSIS REPORT

SAMPLE

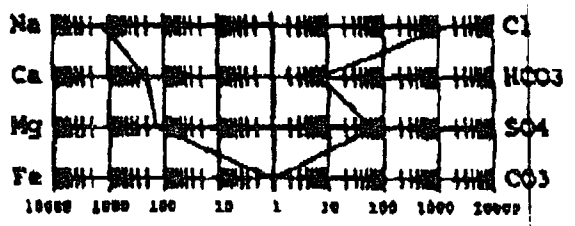
Oil Co. :
Lease : Grier
Well No. : Water Tank
Lab No. : 101698.001

Sample Loc. :
Date Analyzed: 16-October-1998
Date Sampled : 09-October-1998

ANALYSIS

1.	pH		7.030		
2.	Specific Gravity 60/60 F.		1.068		
3.	$CaCO_3$ Saturation Index	@ 80 F.	+0.603		
		@ 140 F.	+1.525		
	Dissolved Gasses		**MG/L**	**EQ. WT.**	***MEQ/L**
4.	Hydrogen Sulfide		Not Present		
5.	Carbon Dioxide		Not Determined		
6.	Dissolved Oxygen		Not Determined		
	Cations				
7.	Calcium	(Ca^{++})	4,168	/ 20.1 =	207.36
8.	Magnesium	(Mg^{++})	1,580	/ 12.2 =	129.51
9.	Sodium	(Na^{+}) (Calculated)	29,413	/ 23.0 =	1,278.30
10.	Barium	(Ba^{++})	Not Determined		
	Anions				
11.	Hydroxyl	(OH^{-})	0	/ 17.0 =	0.00
12.	Carbonate	($CO_3^{=}$)	0	/ 30.0 =	0.00
13.	Bicarbonate	(HCO_3^{-})	415	/ 61.1 =	6.79
14.	Sulfate	($SO_4^{=}$)	2,800	/ 48.8 =	59.43
15.	Chloride	(Cl^{-})	54,988	/ 35.5 =	1,548.96
16.	Total Dissolved Solids		93,483		
17.	Total Iron (Fe)		2	/ 18.2 =	0.08
18.	Total Hardness As $CaCO_3$		15,918		
19.	Resistivity @ 75 F. (Calculated)		0.101 Ω/cm.		

LOGARITHMIC WATER PATTERN
*meq/L.



Calcium Sulfate Solubility Profile

PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT.	X *meq/L	= mg/L.
$Ca(HCO_3)_2$	81.04	6.79	550
$CaSO_4$	68.07	59.43	4,045
$CaCl_2$	55.50	141.14	7,834
$Mg(HCO_3)_2$	73.17	0.00	0
$MgSO_4$	60.19	0.00	0
$MgCL_2$	47.62	129.51	6,167
$NaHCO_3$	84.00	0.00	0
$NaSO_4$	71.03	0.00	0
NaCl	58.46	1,278.30	74,730

*Milli Equivalents per Liter

This water is mildly corrosive due to the pH observed on analysis.
The corrosivity is increased by the content of mineral salts in solution.

CBS OPERATING CORP.
NORTH SQUARE LAKE UNIT
AUGUST 2003 C-108 APPLICATION

VIII. The injection interval is located in the Grayburg-San Andres formation. This Permian age horizon is nearly 1200' thick in this area. The top of the Grayburg formation is a depth of approximately 2800' with the base of the San Andres at a depth of about 4000'.

There are three known Quanternary age fresh water wells within one mile of the proposed unit. The pertinent information on these wells are:

Location	Depth	Chlorides
Section 24 T16S, R30E	45'	156 ppm
Section 33 T16S, R30E	385'	3780 ppm
Section 24 T16S, R30E	167'	66 ppm

There are no fresh water zones underlying the proposed injection zone.

WNERSHIP	DEPTH	WBF	DATECLTD	CLTR	USE	LOCATION	LEELEV	PT_CLTN	CHLORIDES	CONDUCT	TDS	TEMP	ADJ_DATA	CARD_DATE	SOURCE	DFN	METER	
	0	PSA	78/07/19	SEO	IRR	16S.26E.35.123411	0.00	YT	1130	5540	0	0		0186			0	
	0	PSA	85/08/27	SEO	IRR	16S.26E.35.123411	0.00	DP	304	2691	0	71		1185			0	
	0	PAT	88/10/21	SEO	STK	16S.27E.03.14121	0.00	DP	623	4685	0	69		0289			0	
	0	PAT	57/05/01	USG	STK	16S.27E.03.141212	3499.00	DP	695	4940	0	66	X	0685	U	15-05184	0	
	0	PAT	85/06/03	SEO	STK	16S.27E.03.141212	3499.00	DP	740	4946	0	73		0685		15-05184	0	
	0	PAT	88/10/21	SEO	STK	16S.27E.03.141212	3499.00	DP	623	4685	0	69		0689		15-05184	0	
	131	PAT	40/10/03	USG	STK	16S.27E.06.444424	3439.00	DP	435	4100	0	0	X	0685	U	15-05185	0	
	131	PAT	57/05/01	USG	STK	16S.27E.06.444424	3439.00	DP	455	4220	0	66	X	0685	U	15-05185	0	
	131	PAT	85/06/03	SEO	STK	16S.27E.06.444424	3439.00	DP	448	4143	0	72		0685		15-05185	0	
	131	PAT	88/10/25	SEO	STK	16S.27E.06.444424	3439.00	DP	514	4333	0	70		1188		15-05185	0	
	0	PSA	60/05/11	ONR	OIL	16S.27E.23.14000	0.00	BL2700	*******	0	0	0	X	0586	P		0	
	0	PAT	60/04/26	DLR	OIL	16S.27E.26.43200	0.00	BLR155	6880	21630	0	0		0382			0	
	60	PAT	57/05/01	USG	STK	16S.27E.36.212114	3454.00	DP	2540	11300	0	65	X	0685	U	15-05186	0	
	60	PAT	85/10/08	SEO	STK	16S.27E.36.212114	3454.00	DP	1240	7221	0	64		0186		15-05186	0	
	60	PAT	88/10/27	SEO	STK	16S.27E.36.212114	3454.00	DP	1564	8339	0	64		1188		15-05186	0	
	54	PAT	86/06/12	SEO	STK	16S.28E.12.22132	3580.00	DP	362	3764	0	68		0287			0	
TURKEY TRACK RANCH	54		90/09/14	SEO	STK	16S.28E.12.22132	3580.00	DP	790	4620	0	66		0191			0	
TURKEY TRACK RANCH	0	PAT	93/12/13	SEO	STK	16S.28E.12.22132A	3580.00	DP	714	3980	0	66		0694			0	
	0	DAL	86/06/12	SEO	STK	16S.28E.24.22423A	3568.00	DP	28	2413	0	70		0287		15-05188	0	
TURKEY TRACK RANCH	0	PAT	93/12/13	SEO	STK	16S.28E.24.22423A	3580.00	DP	136	2560	0	60		0694			0	
TURKEY TRACK RANCH	85		90/09/18	SEO	STK	16S.28E.25.33243	3577.00		214	3200	0	66		0191		15-05189	0	
TURKEY TRACK RANCH	45	DAL	93/12/13	SEO	STK	16S.28E.25.33243	3577.00	DP	0	4470	0	0		0694		15-05189	0	
	0	TRS	80/12/30	CEC		16S.30E.24.12233	0.00		101	0	0	0	X	1084	F		0	
	0	TRS	85/03/12	SEO	STK	16S.30E.24.12233	0.00	DP	140	899	0	0		0483			0	
	45		86/07/18	SEO	STK	16S.30E.25.33243	3577.00	DP	156	3081	0	68		0187		15-05189	0	
	385	TRS	86/04/25	SEO	NOT	16S.30E.33.42443	3729.00	TS8383	4330	14578	0	0		0586		15-05133	0	
NEWMONT OIL CO	385	TRS	90/09/18	SEO	NOT	16S.30E.33.42443	0.00	TS8383	3780	13570	0	0		0191		15-05133	0	
	433	TRS	58/11/26	ONR	SRG	16S.30E.33.44233	3727.00	DP	6730	0	0	0	X	0586	F	15-05134	0	
	433	TRS	86/04/25	SEO	NOT	16S.30E.33.44233	3727.00	TS8430	51000	92130	0	0		0586		15-05134	0	
BOGLE FARMS INC	320	TOS	48/12/09	USG	STK	16S.31E.02.12124	4416.00	DP	82	618	0	0	X	1276	U	15-71000	0	
BOGLE FARMS INC	320	TOS	76/12/21	SEO	STK	16S.31E.02.12124	4416.00	DP	82	758	0	58				15-71000	0	
BOGLE FARMS INC	320	TOS	79/10/26	SEO	STK	16S.31E.02.12124	4416.00	DP	74	682	0	66				15-71000	0	
BOGLE FARMS INC	320	TOS	84/12/04	SEO	STK	16S.31E.02.12124	4416.00	DP	95	819	0	0		0185		15-71000	0	
BOGLE FARMS	320	TOS	90/07/16	SEO	DOM	16S.31E.02.12124	4416.00	DP	115	833	0	0		1190		15-71000	0	
BOYLE FARMS INC	0	TOS	95/09/25	SEC	DOS	16S.31E.02.12124	4416.00	DP	95	720	0	0		0196		15-71000	0	
BOGLE FARMS	0	TOS	48/12/06	USG	STK	16S.31E.12.42300	4365.00	DP	14	612	0	0	X		U	15-12567	0	
BOGLE FARMS	0	TOS	76/12/21	SEO	STK	16S.31E.14.24444	4396.00	DP	19	458	0	69				15-71001	0	
BOGLE FARMS	0	TOS	79/11/13	SEO	STK	16S.31E.14.24444	4396.00	DP	36	527	0	67				15-71001	0	
BOGLE FARMS	0	TOS	84/12/04	SEO	STK	16S.31E.14.24444	4396.00	DP	21	461	0	65		0185		15-71001	0	
BOGLE FARMS	0	TOS	85/03/08	SEO	STK	16S.31E.14.24444	4396.00	DP	26	477	0	69		1285		15-71001	0	
BOGLE FARMS	0	TOS	90/07/16	SEO	STK	16S.31E.14.24444	4396.00	DP	64	525	0	72		1191		15-71001	0	
BOGLE FARMS	0	TOS	93/10/18	SEO	STK	16S.31E.14.24444	4396.00		27	516	0	0		0796		15-71001	0	
HOLMAN E B	167	TOS	81/09/29	SEO	STK	16S.31E.23.444321	4250.00	DP	72	679	0	69		0282		15-71002	0	
HOLMAN E B	167	TOS	81/09/29	SEO	STK	16S.31E.23.444321	4250.00	TANK	76	685	0	0		0292		15-71002	0	
HOLMAN E B	167	TOS	84/12/13	SEO	STK	16S.31E.23.444321	4250.00	DP	58	609	0	67		0185		15-71002	0	
HOLMAN E B	167	TOS	88/05/06	SEO	STK	16S.31E.23.444321	4250.00	DP	168	653	0	67		0385		15-71002	0	
ANDERSON W A	0	TOS	79/11/13	SEO	STK	16S.32E.03.344324	4315.00	DP	14	773	0	66				25-11050	0	
ANDERSON W A	0	TOS	84/10/11	SEO	STK	16S.32E.03.344324	4315.00	SBLR	32	960	0	0		1184		25-11050	0	
ANDERSON W A	0	TOS	79/11/13	SEO	STK	16S.32E.11.34140	4295.00	DP	56	410	0	65				25-11053	0	

RITTER ENVIRONMENTAL & GEOTECHNICAL SERVICES, INC.
2900 N. Big Spring, Midland, Texas 79705
Bus: (915) 682-7404 • (915) 570-REGS • Metro: (915) 570-6007 • Fax: (915) 682-7440

August 7, 2003

State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Re: C 108 Applications – CBS Operating Company – North Square Lake Unit – Lea County, New Mexico

I. Introduction

CBS Operating Company engaged the services of Ritter Environmental and Geotechnical Services, Inc. (Ritter) to study and evaluate the potential for groundwater impacts related to injection of produced water in the North Square Lake Unit (NSLU). Ritter has engaged the Hicks Consulting Firm, R. T. Hicks Consultants Ltd., to assist in certain aspects of the study and evaluation. Mr. Randal Hicks, his assistant Mr. Parker and I have reviewed and researched published information on the geology and hydrology of the region and local area. We obtained available research from the New Mexico State Engineer's Office as well as unpublished information for the Sandia National Lab and Roswell BLM Offices. A second report under Hick's letterhead accompanies these C 108 applications. The information contained herein will uniformly apply to all C 108 applications inside the North Square Lake Unit (NSLU).

II. Summary

The NSLU sets in the far northeast corner of Eddy County, north of the highway between Loco Hills and Maljamar, New Mexico. It is situated just west of the western limit of the Caprock of the high plains. It is located at the far east edge of the region where the topographic drainage is to the Pecos River.

Review of available groundwater information had determined that very little, if any, usable groundwater is present in the NSLU area. The nearest significant groundwater source to the

NSLU are water wells that are up on the Caprock, north and east of the unit. These wells produce from the Ogallala aquifer. The Ogallala is not present at the NSLU site.

The only potential sources of potable groundwater in the NSLU area are the near surface alluvium (generally less than 50 feet from the surface), the Dewey Lake and the lower Dockum (Santa Rosa) (from approximately 50 to 750 feet from the surface). The near surface alluvium consists primarily of un-compacted sands. The strata below the alluvium consists of interbedded sands, caliche (lime), anhydrites, red beds and shale. These comprise the Dewey Lake and Dockum Groups. These zones sit on top of the Rustler formation, which is an anhydrite setting on top of the Salado salt section. The Rustler formation is approximately 150 feet thick in the vicinity of the NSLU. The Salado salt section is impermeable and does not allow the recharge of any deeper zones with fresh water. The Salado in the vicinity of the NSLU is approximately 1000 feet thick.

No aquifer below the top of the Rustler in the NSLU is known to produce groundwater in sufficient quantity or quality to be usable for animal or human consumption or agricultural use.

Although the quality of groundwater in some windmills in the area is generally good, quantities of water have been insufficient for use except for sparse cattle watering. There are currently no fresh groundwater wells within the NSLU boundary. The nearest reported water wells were located in sections 24 and 25 T-16-S, R-30-E. One of these wells was reportedly completed at a depth of 45 feet and are now apparently abandoned.

Only two of the approximately 200 oil wells drilled inside the unit reported or tested any fresh water. One oil well, located on the far west side of the unit, NSLU #3, (Sec 25 T-16-S R-30-E) tested five bailers per hour at a depth of 450 feet which is in the red beds of the Dewey Lake. The only other well to test water was on the south central part of the unit NSLU #129 (Sec 32 T-16-S R-31-E). This well bailed one-half bailer per hour from a depth of 450 feet which is also in the Dewey Lade red beds.

In the 1960's, approximately 16 oil wells were drilled on the northeast and east side of the unit with permission from the OCD to drill to the top of the salt (or anhydrite) and test for fresh water. If no groundwater was found, a shallow surface casing was allowed to be set (less than 100 feet) and a cement plug was to be set at the top of the salt, behind the production string. Apparently, none of these wells encountered freshwater. Of the 16 wells that were allowed to set shallow surface casing less than 100 feet, those that were completed as oil wells were either two stage cemented with a DV tool from the top of the Rustler anhydrite or cement grouted behind the production string with a one-inch trim line from the top of the anhydrite. Those that were later plugged and abandoned were cemented with a plug to protect the fresh water zone above the Rustler. Thus, no well within the Area of Review for the NSLU is currently unprotected in the potential fresh water strata above the Rustler.

Geologic e-log cross-sections across the NSLU field fail to confirm the development of any continuous sandstone units capable of being significant sources of groundwater above the

Rustler. Approximately 11 wells were drilled in the township due south of the NSLU specifically looking for a water source. All of these test wells were dry.

Chemical analysis of wells in the area of the NSLU indicate that, where present, the water quality is generally good with Chloride levels ranging from approximately 100 to 150 mg/L and Conductivity ranging from approximately 300 to 3100 mg/L. Some of these water samples were taken from wells that are reportedly completed in the shallow alluvium and not in the Dewey Lake red beds.

Conclusions:

1. The R.T. Hicks Consulting, Ltd. hydrogeological study concluded that the only potential sources of protectable groundwater would be the Dewey Lake and Dockum Groups, that neither of these geological units are capable of providing appreciable amounts of groundwater and that surface pipe already in place is sufficient to protect any groundwater present in these units from the proposed injection in the NSLU.

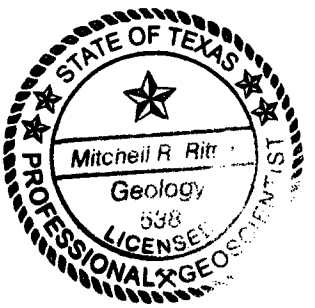
2. Evaluation of fresh water usage and sources in the vicinity of NSLU has identified only minimal use due to the lack of groundwater aquifers in this area. Only a relative few windmills exist or once existed in this area. Those wells were minimal at best and some are now abandoned. The nearest fresh water well is located one mile northwest. It is now abandoned. Stock tank windmills are located to the north but productivity is low. Wells drilled to test for fresh water to the south of the NSLU were all dry.

3. Generally, the oil wells drilled in the NSLU are surface cased through the top of the Rustler formation. Only two of two hundred wells encountered and tested fresh water. The amounts of fresh water tested in these two were between ½ and 5 bailers per hour. Sixteen wells on the northeast side of the unit were drilled with out surface casing below 100 feet; however, these wells were allowed by the OCD to cement behind the production string back to the surface from the Rustler. We have found no wells where the surface zones from the Rustler back to the top is not protected.

4. E Log review has not confirmed the existence of any major fresh water aquifers in the NSLU area. In fact, the cities of Loco Hills and Maljamar are dependant on an aqueduct that draws water from the Ogallala on the Caprock to the east for their municipal water supplies.

5. No usable fresh water exists below the top of the Rustler formation, which in this area is an anhydrite. The Rustler ranges from a depth of approximately 300 feet on the west end of the unit to approximately 700 feet on the east end of the unit. The top of the Rustler established the lower most protectable strata for the protection of potential fresh water zones in the NSLU.

6. The proposed pressure maintenance project by CBS Operating Company should not adversely impact any fresh water aquifer in the vicinity of the NSLU. All well bores are properly protected by pipe and cement plugs. CBS will carefully monitor wells for any abnormality that may relate to down hole issues that could potentially impact that fresh water zone.



Mitchell Ritter
Licensed Professional Geologist Number #538
Registered Environmental Manager (REM) Number #11402

MR/lr

RITTER ENVIRONMENTAL & GEOTECHNICAL SERVICES, INC.
2900 N. Big Spring, Midland, Texas 79705
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August 19, 2003

Mr. Richard Ezeanyim, P.E.
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Re: North Square Lake Unit (NSLU) Area-Salado Salt Discussion

Dear Mr. Ezeanyim,

Attached to this letter is an exerpt from a publication from the USGS, the New Mexico Bureau of Mines and the State Engineer's office. This publication is authored by G.E. Hendrickson and is titled "Geology and Groundwater Resources of Eddy County, New Mexico". This report addresses the specifics of the geology and groundwater in the vicinity of North Square Lake Unit area. In relation to groundwater and the salt section known as the Salado formation, the report states on page 73, "Occurrence of Groundwater-The Salt of the Salado is impermeable, primarily because the weight of the over burden is sufficient to cause plastic flow of the salt and hence prevent the development of cracks and crevices through which water might move." Based on this information, it is not feasible that the salt section of the Salado is leachable and therefore not an issue of concern for casing leaks that might encounter the salt section.

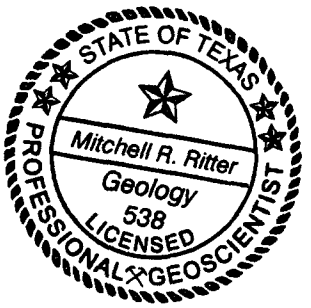
To date, over 48,000,000 barrels of produced water have been injected into this field. It is logical to assume that any casing leaks associated with the salt section would have manifested themselves by this time. Review of records of the existing wells in this field revealed no high pressure casing leaks in the salt section.

The most recent well drilled was Well #106, which was drilled in 1986. This well did not encounter water in the salt section or have any indication of a pressured salt section. This was long after the injection of the majority of water in this field.

The proposed project is designed as a pressure maintenance project, not a full flood with high pressures. The water being injected is produced water, which is expected to be chemically

compatible with the salt section. Even if it were in contact with the salt, leaching of the salt is not anticipated.

We therefore conclude that cement protection of the salt section in the vicinity of the North Square Lake Unit is not warranted. Retrofit of wells with cement over the salt section does not appear to be a prudent use of funds in this particular area.



Mitchell Ritter
Licensed Professional Geologist Number #538
Registered Environmental Manager (REM) Number #11402

MR/ts

GROUND-WATER REPORT 3

Geology and Ground-Water Resources of Eddy County, New Mexico

by G. E. HENDRICKSON, *Geologist*
and R. S. JONES, *Geologist*
UNITED STATES GEOLOGICAL SURVEY

Prepared cooperatively by
The United States Geological Survey,
New Mexico Bureau of Mines & Mineral Resources,
and the State Engineer of New Mexico

1952

STATE BUREAU OF MINES AND MINERAL RESOURCES
NEW MEXICO INSTITUTE OF MINING & TECHNOLOGY
CAMPUS STATION SOCORRO, NEW MEXICO

108 feet. The south well is reported to be 100 feet deep and to yield a small supply of soft water. The reported depth to water in this well is 75 feet.

In the outcrop area of the Chalk Bluff formation north of Lake McMillan water can also be obtained from wells at depths generally less than 200 feet, but the water is likely to be more highly mineralized than that in the area farther south. The limestone of the Chalk Bluff formation grades into gypsum and anhydrite to the north, and as a result the water in that area contains a comparatively high concentration of sulfate. Water from well 17.27.11.110 (see table 3), about 8 miles east of Artesia, contained 1,780 parts per million of sulfate but only 33 parts per million of chloride.

Water in the Chalk Bluff also becomes more highly mineralized to the east. East of the outcrop area of the Chalk Bluff formation the Whitehorse group, the subsurface equivalent of the Chalk Bluff formation, probably contains water of quality similar to that in the Rustler formation.

The Castile formation, overlying the Whitehorse group and overlain by the Salado formation in the Delaware basin in the southeastern part of Eddy County, is absent north and west of the buried reef front. The extent of the Delaware basin in Eddy County is shown in the sketch map (fig. 4). The Castile formation probably is not a source of ground water anywhere in the county east of the Pecos.

Salado and Rustler formations

Character, extent, and thickness.—The Salado formation, consisting chiefly of halite and small amounts of anhydrite, polyhalite, and red sandy shale, does not crop out in Eddy County, but it underlies most of the area east of the Pecos.

The top of the salt of the Salado is an irregular surface, owing chiefly to solution and removal of the salt by ground water moving in the basal beds of the Rustler. The local relief on top of the Salado is as much as 300 feet in 1 mile. Over much of Nash Draw and parts of Clayton Basin the surface depressions coincide with relatively low parts of the surface of the salt. Figure 5 is a map of the potash-mines area showing contours on top of the salt of the Salado formation. This map is based on records of potash core tests that were made available by R. H. Allport, Regional Engineer of the Conservation Branch, U. S. Geological Survey, at Carlsbad. The depth to the top of the salt in any given spot can be determined by subtracting the altitude of the top of the salt from that of the land surface.

The Rustler formation consists of anhydrite, gypsum, interbedded sandy clay and shale, and irregular beds of dolomite. It unconformably overlies the Salado formation in most of the area east of the Pecos River and ranges in thickness from about 200 feet in northern Eddy County

to about 500 feet southeast of Carlsbad. Indicated on plate 1 is the approximate area of outcrop of the Rustler formation, including places where the Rustler is mantled by the wind-laid so-called Mescalero sands.

Occurrence of ground water.—The salt of the Salado is impermeable, primarily because the weight of the overburden is sufficient to cause plastic flow of the salt and hence prevent the development of cracks and crevices through which water might move. The extensive potash mines in this formation, although several hundred feet below the water table, are entirely dry except where water enters the shafts through the overlying Rustler formation. The Salado formation is important, however, as the lower confining strata to the basal aquifer in the overlying Rustler formation.

The Rustler formation, throughout most of its outcrop area, is the only possible source of ground water. Water may be obtainable from the underlying Whitehorse group in a small area in the northeast part of the outcrop area. Where the Rustler is underlain by the Salado, drilling below the Rustler for potable water would be useless.

Several water-bearing zones in the Rustler have been penetrated in the numerous potash test holes drilled into the underlying Salado formation. The basal beds of the Rustler consist of porous gypsum in a large part of Nash Draw and southwest to Malaga Bend. These beds, which are in contact with the underlying salt of the Salado formation in some places and separated from it by a few feet of clay in others, contain a brine saturated with sodium chloride, as shown by a number of samples taken during drilling (Robinson and Lang, 1938, pp. 87, 88). The brine in this aquifer moves southwest in Nash Draw past Salt Lake (Laguna Grande de la Sal) to discharge into the Pecos River at Malaga Bend. Calculations based on the increase in chloride content of the Pecos River water in the vicinity of Malaga Bend show that the brine aquifer probably discharges about 340 tons of salt a day to the river (Theis, Sayre, and others, 1942, p. 69).

The most important aquifer above the basal brine aquifer in the Rustler is the 35-foot unit of dolomitic limestone at the top of the lower part of the Rustler as defined by Lang. This limestone unit yields water to most wells penetrating it in the potash mines area (Theis, Sayre, and others, 1942, p. 67). However, a test hole at the site of the No. 2 shaft of the International Minerals and Chemical Corp., 22.29.11, on Quahada Ridge found no water in the Rustler above the basal brine aquifer.

Water is generally confined in the limestone aquifer where it is overlain by the upper beds of the Rustler. Water in it is under water-table conditions where the limestone is near the surface, as in the lower part of Nash Draw and in the vicinity of Salt Lake. This limestone aquifer is the chief source of the water in the shafts of the potash mines. (See p. 76.)

R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW Suite 142 Albuquerque, New Mexico 87104 505.266.5004 Fax: 505.246.1818

August 10, 2003

Mr. Mitch Ritter
Ritter Environmental
2900 N. Big Spring
Midland, Texas 79705

RE: Hydrogeology of North Square Lake Unit Area

Dear Mr. Ritter:

My firm researched published documents, we examined the records of the New Mexico Office of the State Engineer (OSE), we obtained unpublished information from Sandia National Laboratories and the Roswell BLM office, and we visited the site. In addition, we examined site-specific data including several gamma and gamma/neutron logs of the shallow subsurface, driller's logs, and NMOCD on-line data. We believe we have evaluated all applicable information on the geology and ground water resources of the general area of the North Square Lake Unit (NSLU). Below, we list our conclusions. We list the facts that support our conclusions and provide the source for all of these facts.

If you have any questions concerning the attachment, please contact me.

Sincerely,
R.T. Hicks Consultants, Ltd.

Randall T. Hicks
Principal

Hydrogeology of North Square Lake Unit, Eddy County, New Mexico

Conclusions:

1. Only the near-surface alluvium, Dewey Lake and Dockum Group redbeds could contain ground water with a total dissolved solids (TDS) concentration of less than 10,000 mg/L
2. The preponderance of evidence allows us to conclude that none of these units produce sufficient quantity of water to encourage their development as a water supply (stock, agriculture, or domestic).
3. Cemented oil well surface casing can effectively protect any undiscovered ground water in the redbeds from brine intrusion due to enhanced oil recovery operations in the NSLU.

Facts:

Geology

- Figure 1, which is a stratagraphic column of southeast New Mexico, shows the relative position of water-bearing and low permeability units (Sattler, 2003).
- Figure 2 is a geologic map of the area (Anderson and others, 1997). The sections that comprise the NSLU are outlined on this map. Erosion removed the Ogallala Aquifer in the area of the NSLU, but is present to the east of the NSLU. As the figure suggests, the surface geology is Quaternary eolian and pediment deposits (Qe/Qp), which is underlain by the redbeds of the Dockum Group and the Santa Rosa Sandstone. Kelley (1971) suggests that Late Permian/Early Triassic erosion removed the Dewey Lake Formation northwest of the NSLU and he maps the Santa Rosa Sandstone unconformably overlying the Rustler Formation. Figure 2, which used the mapping of Kelley as a source, shows this relationship north and west of the NSLU.
- The three large-scale cross-sections generated by the geologist for CBS Operating Company (attached) show that evaporates (anhydrite and salt) underlie the redbeds (Dewey Lake, Santa Rosa Sandstone, and Upper Dockum Group).
- Gamma logs that characterize the Dockum Group, Santa Rosa and Dewey Lake Redbeds are available for some oil and gas wells within the NSLU. Although Kelley mapped the Santa Rosa Sandstone unconformably overlying the Rustler Formation northwest of the NSLU, the gamma logs confirm the presence of about 200 feet of the Dewey Lake within the unit. Figure 3 presents the gamma log for NSLU 60 (API 3001504914), which is typical of many available logs for the area. We interpreted a low gamma

activity section between 218 and 270 feet below surface as the Santa Rosa Sandstone horizon. The lack of contrast of the gamma log suggests that this horizon may contain fine-grained clay in addition to sand/silt. Continuous coarser-grained units (low gamma activity) above or below the Santa Rosa Sandstone horizon are very difficult to trace between wells.

- Figure 4 from McGowen and others (1977) show the erosional/depositional edge of the Lower Dockum Group in the area of the NSLU. The thickness of the Lower Dockum Group is zero west of the NSLU and 600-800 feet at the Eddy/Lea County line. Figure 5 (McGowen and others, 1977) confirms that the Lower Dockum Group (including the Santa Rosa Sandstone horizon) is very fine grained. In and near the NLSU, the Lower Dockum Group contains less than 20% sandstone.
- Figure 6 is a schematic northwest to southeast section of the Dewey Lake and Dockum Group redbeds. In this figure, which we generated from gamma log data, the Santa Rosa Sandstone is yellow.

Regional Ground Water Resources

- The BLM determined that the limestone units of the Rustler Formation are saline and are not protected by surface casing on Federal lands in the general area (John Simitz, BLM Roswell, personal communication, 2003).
- In west Texas, the Santa Rosa Sandstone (lower Dockum Group) yields sufficient quantities of ground water for a small community supply wells. The municipalities of Happy, Hereford, and Tulia obtain some or all of their water from the lower Dockum Group (Dutton and Simpkins, 1986)
- The Santa Rosa Sandstone is not employed extensively as a water supply source in New Mexico. The Santa Rosa Sandstone is a secondary source of water for the City of Las Vegas, New Mexico, where the well field is located adjacent to the outcrop (Lazarus and Drakos, 2002).
- Thin, discontinuous sandstones in the Dockum Group and Dewey Lake Redbeds, which may provide water to windmills for several years or a decade or more, often contain relatively poor quality ground water (Dutton and Simpkins, 1986; Hendrickson and Jones, 1952).
- Where present the Ogallala Aquifer supplies water to municipal supply wells, agriculture, and industry. For example, Maljamar and Loco Hills derive their water via pipeline from wells completed in the Ogallala Aquifer east of the area of interest.

Ground Water Quantity and Quality within the NSLU Area

- Sixteen oil and gas wells, drilled with cable tools in the 1960's, explored for useable quantities of ground water in these redbeds in the NSLU. These wells, which are distributed primarily on the northeast side of the unit, did not detect meaningful quantities of water. Also, several wells were drilled specifically for fresh water in the township due south of the unit did not find

any water in any well.(CBS Operating Company, personal communication, 2003).

- Despite the large number of oil and gas wells drilled in and adjacent to the NSLU, no water supply wells draw water from the redbeds within or near the North Square Lake Unit (NSLU). Throughout New Mexico, producers recomplete abandoned oil and gas wells as shallow water wells for the benefit of the surface owner. Figure 7 plots the location of all water supply wells from the Office of the State Engineer (OSE, 2003) database. Note that no wells exist within the NSLU.
- The closest water well is an abandoned windmill located about 3 miles north of the site. This well (Figure 8) probably tapped water associated with the dune sands in this closed depression
- The total dissolved solids (TDS) content of water in the Santa Rosa Sandstone in the area of North Square Lake Unit (NSLU) may exhibit TDS content greater than 5,000 mg/L (Figure 9; Dutton and others, 1986). However, the lower Dockum Group contains brine near Amarillo, Texas (Wilson and Esparza, 2002) and ground water could be of similar quality within the area of interest.
- The volume of anhydrite in the Rustler Formation and the mass of underlying salt permit us to concur with the BLM's conclusion that permeable units below the Dewey Lake Redbeds contain brine and are not suitable for domestic or agricultural use.

References

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Dutton, A., and Simpkins, W.W., 1986, Hydrogeochemistry and Water Resources of the Triassic Lower Dockum Group: in the Texas panhandle and Eastern New Mexico; Report of Investigations No. 161, Bureau of Economic Geology, Austin, Texas.

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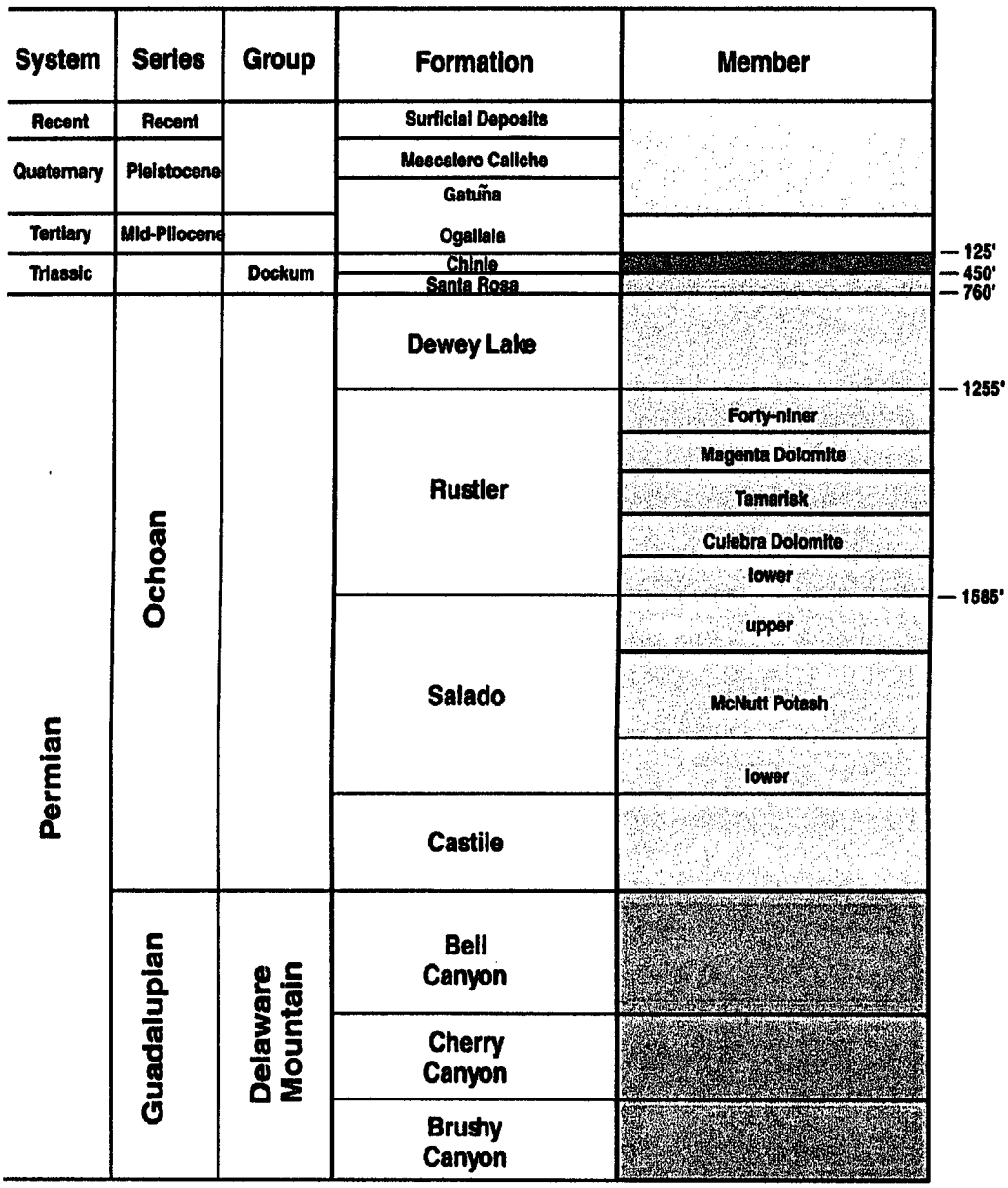
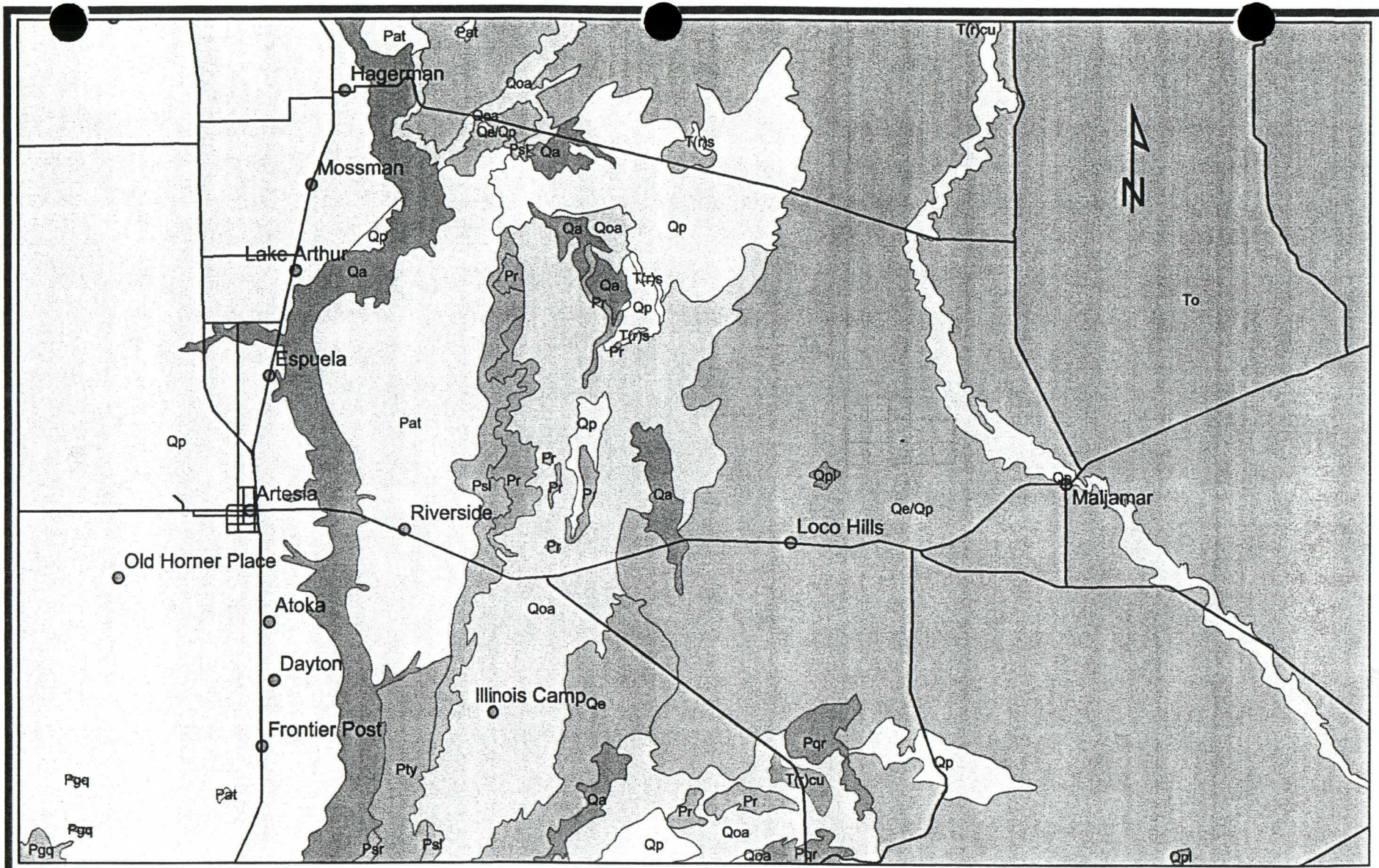
Sattler, A., and Fant, J, 2003, Assessment of Water Resources in Dewey Lake and Santa Rosa Formations, Lea County, New Mexico (a proposal); in New Mexico Forum on Reclaiming Produced/Brackish Water for Beneficial Uses, Hobbs, New Mexico, July 22-23, 2003

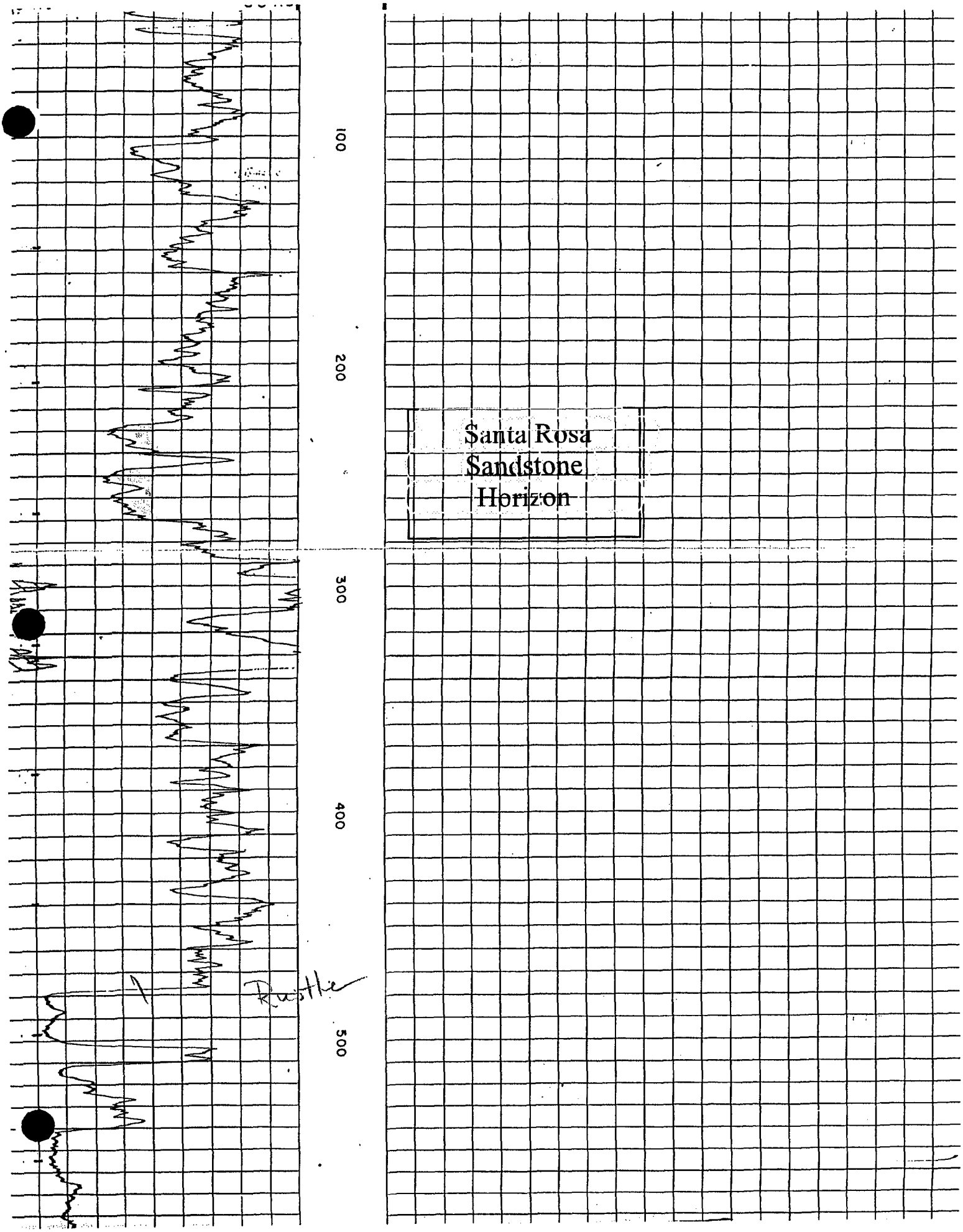
Wilson, L., and Esparza, L.E., 2002, Lake Meredith Salinity Control Project: in Water Issues of Eastern New Mexico, 42nd annual New Mexico Conference, (http://wrri.nmsu.edu/publish/watcon/proc/proc42/wilson.html).

Figure 1. Geologic Column





R.T. Hicks Consultants, LLC 219 Central NW, Suite 266 Albuquerque, NM 87102 Ph: 505.266.5004	Geologic Map (Source: Anderson and others, 1997)	Figure 2
	CBS Operating Company: North Square Lake Unit	August 2003


100
200
300
400
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Santa Rosa
Sandstone
Horizon
Rustler

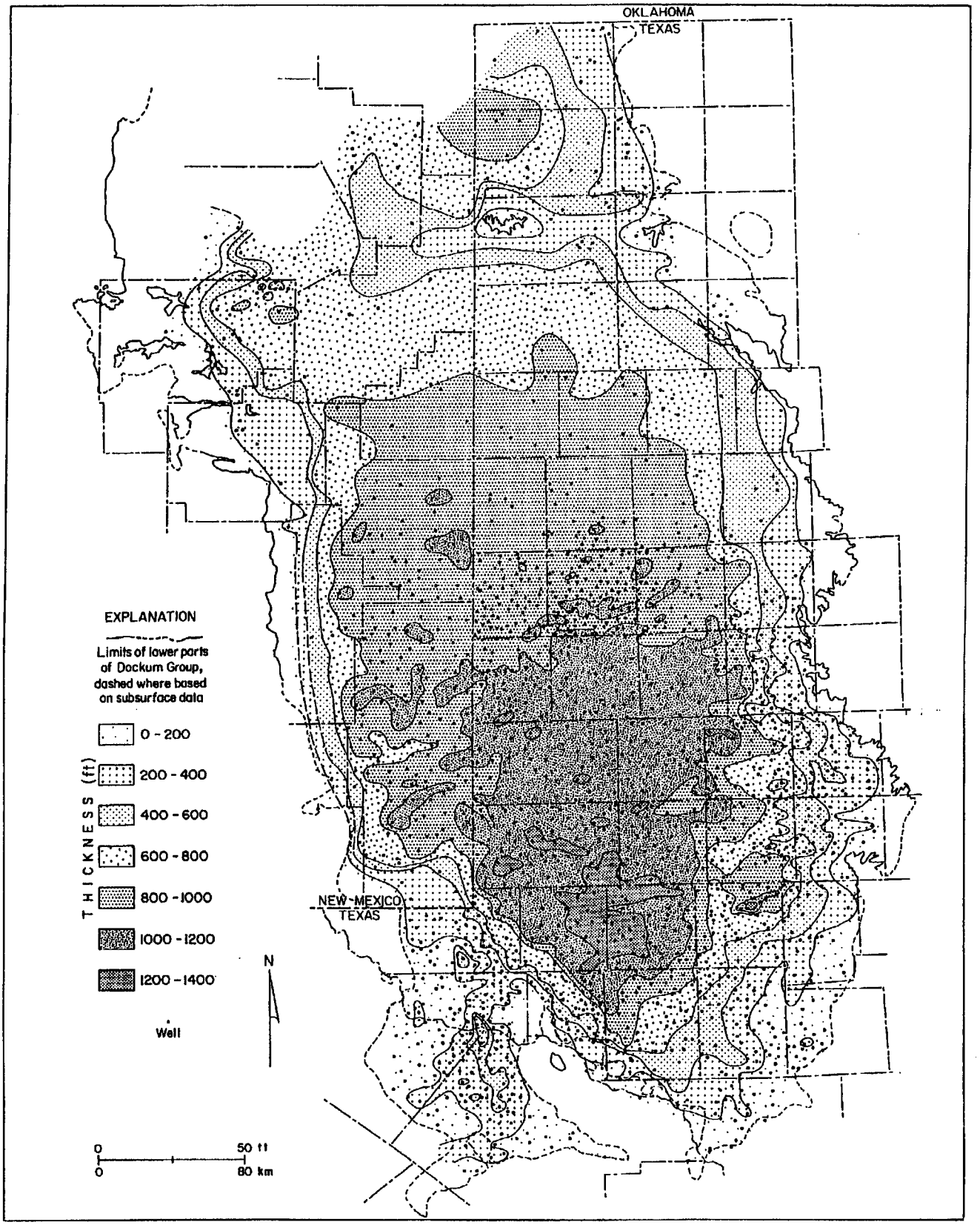


Figure 4: Isopach map of the Lower Dockum Group (McGowen and others, 1977).

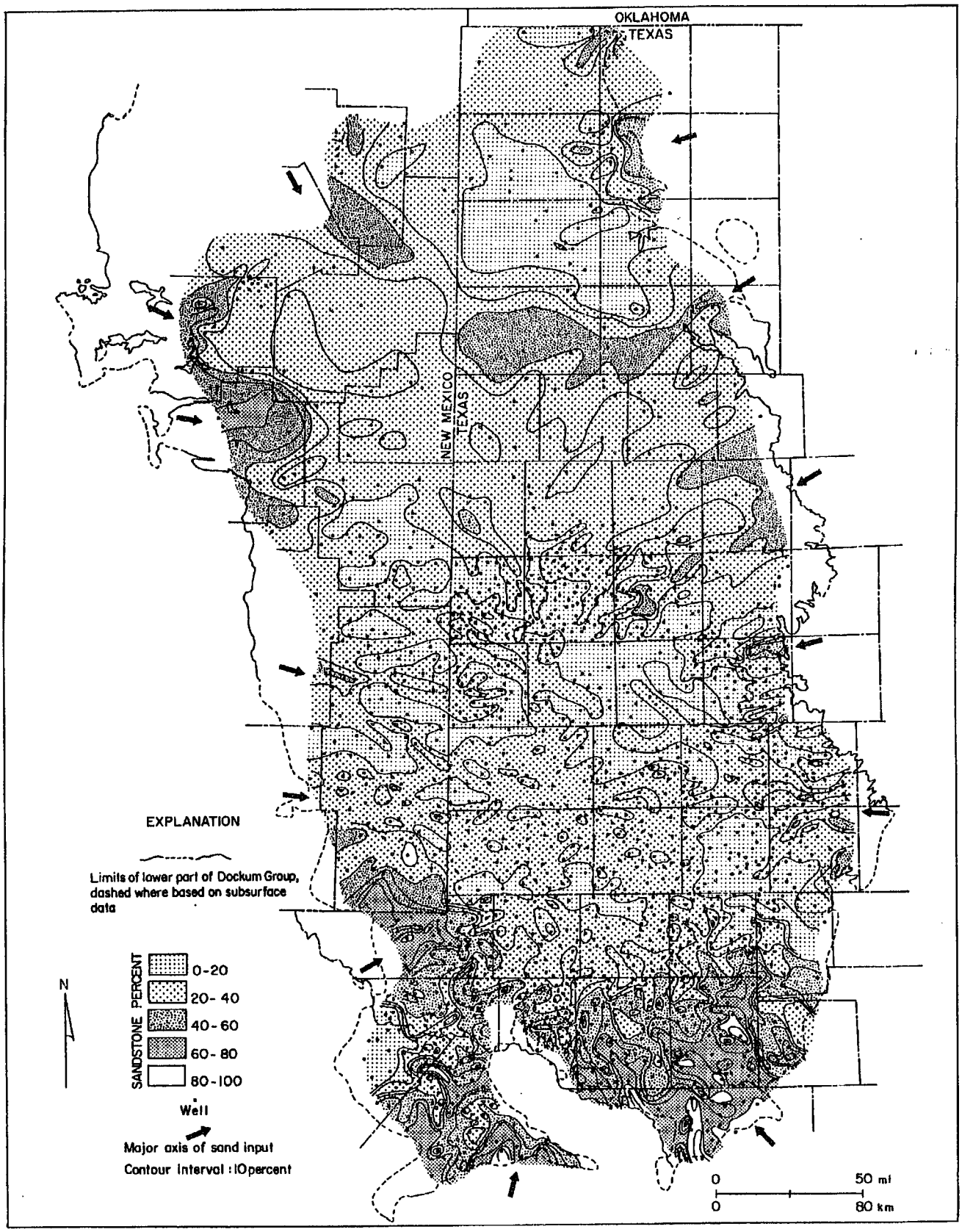
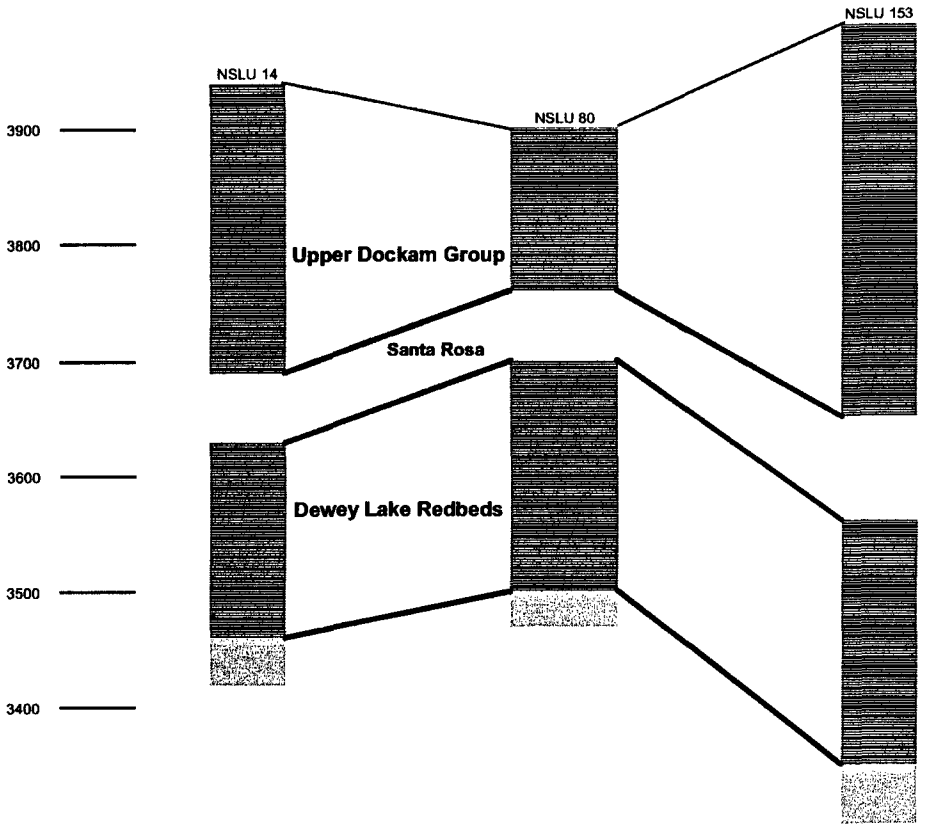
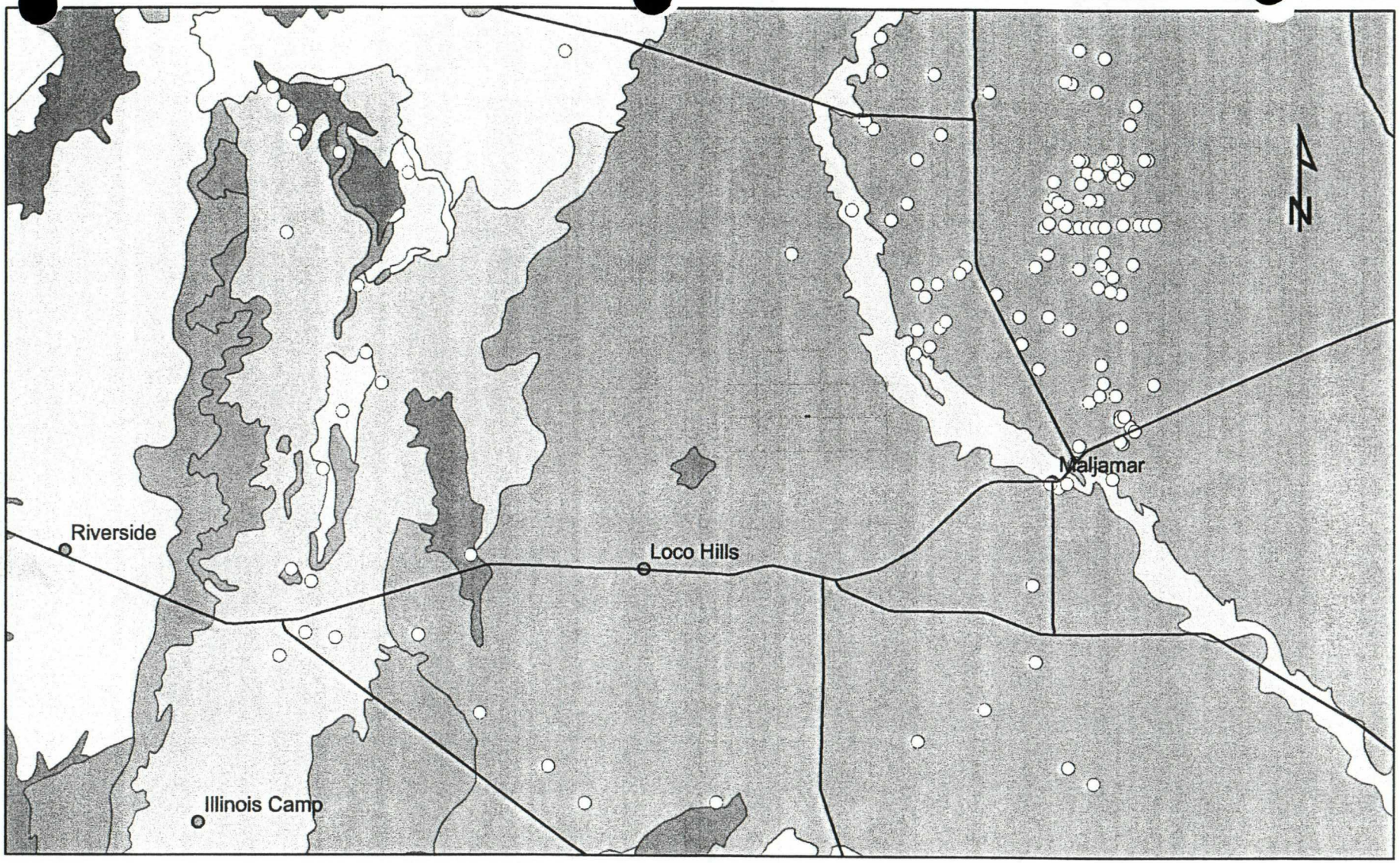


Figure 5: Regional map of percent sandstone in the Lower Dockum Group (McGowen and others, 1977).

Figure 6: Schematic Northwest-Southeast Stratagraphic Cross Section NSLU





R.T. Hicks Consultants, LLC 219 Central NW, Suite 266 Albuquerque, NM 87102 Ph: 505.266.5004	Location of wells from the New Mexico Office of the State Engineer database	Figure 7
	CBS Operating Company: North Square Lake Unit	August 2003

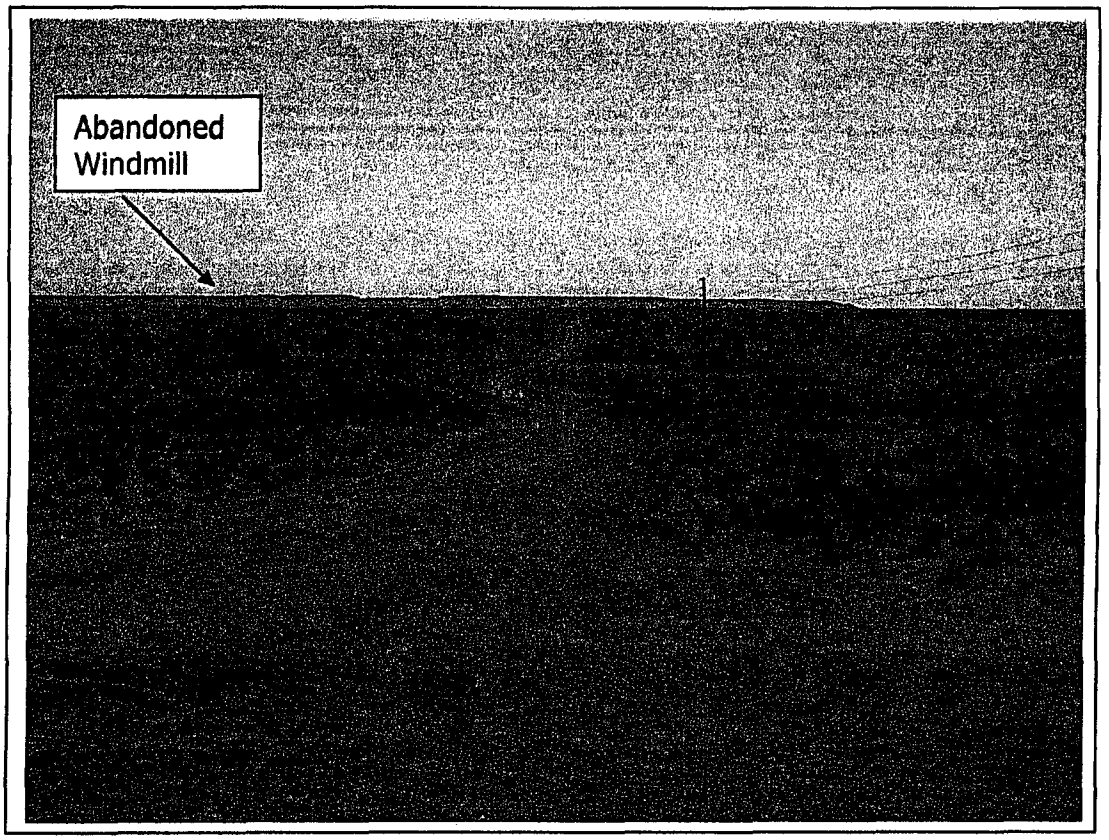


Figure 8: Abandoned Windmill North of NSLU

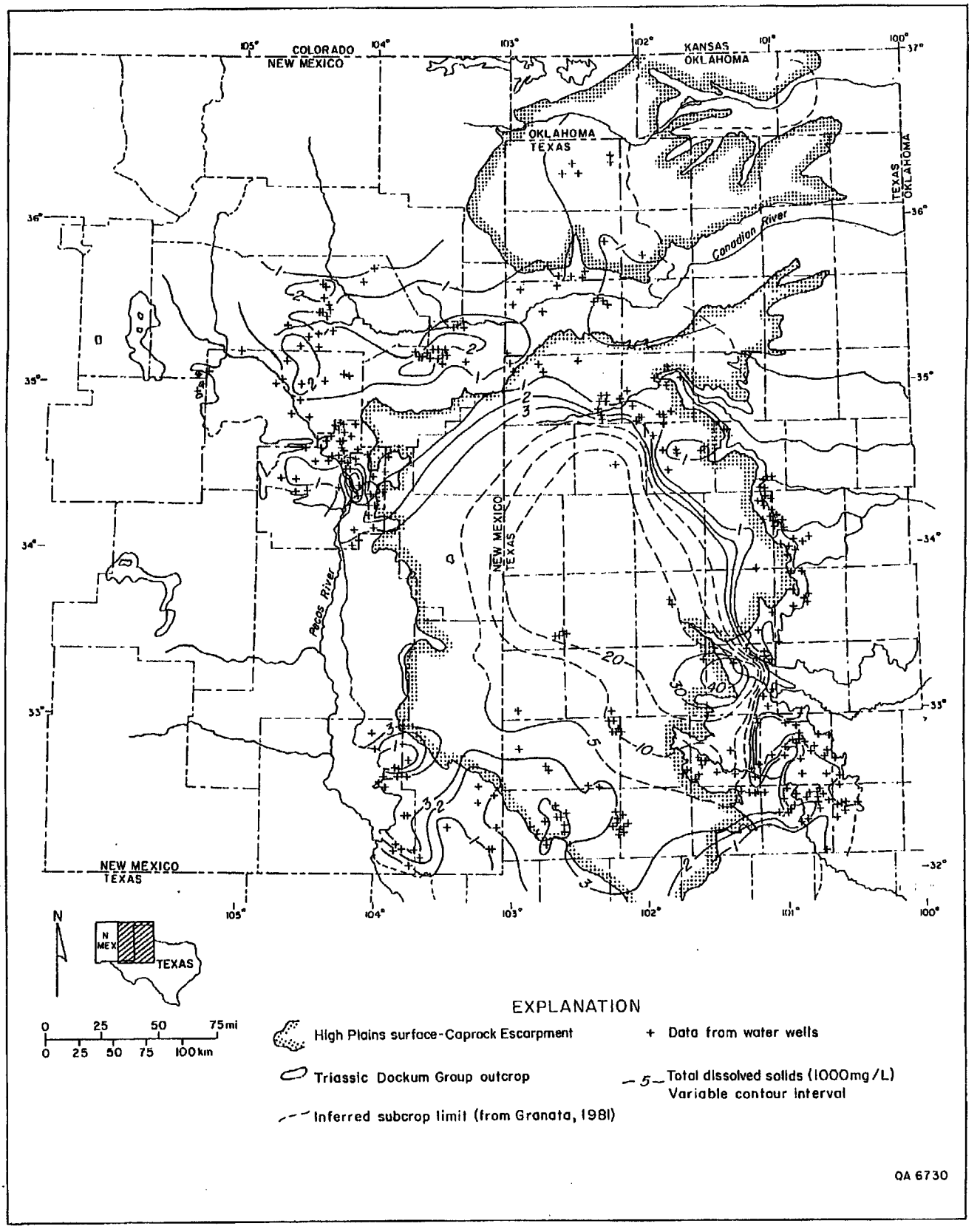


Figure 9: Total dissolved solids in Lower Dockum Group ground water.

CBS OPERATING CORP.
NORTH SQUARE LAKE UNIT
AUGUST 2003 C-108 APPLICATION

IX. Stimulation in the applied for injection wells will consist of small acid clean up jobs of 15% HCl ranging in volume from 500-1000 gallons per well.

CBS OPERATING CORP.
NORTH SQUARE LAKE UNIT
AUGUST 2003 C-108 APPLICATION

X. Logs have previously been submitted to the OCD.

CBS OPERATING CORP.
NORTH SQUARE LAKE UNIT
AUGUST 2003 C-108 APPLICATION

XI. Analysis of the fresh water in the area is attached.

Enviro-Chem, Inc.
WATER ANALYSIS REPORT

SAMPLE

Oil Co. :
Lease : Grimr
Well No. : Fresh Water
Lab No. : 101896.001

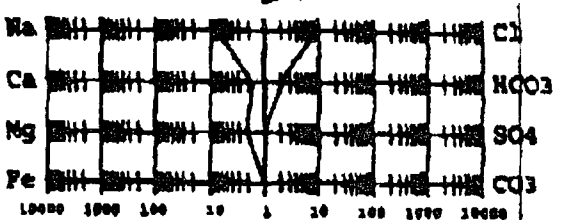
Sample Loc. :
Date Analyzed: 16-October-1996
Date Sampled : 09-October-1996

ANALYSIS

1.	pH		8.460	
2.	Specific Gravity 60/60 F.		1.003	
3.	$CaCO_3$ Saturation Index	@ 80 F.	+0.960	
		@ 140 F.	+1.580	

			MG/L	EQ. WT.	*MEQ/L
Dissolved Gasses					
4.	Hydrogen Sulfide		Not Present		
5.	Carbon Dioxide		Not Determined		
6.	Dissolved Oxygen		Not Determined		
Cations					
7.	Calcium	(Ca^{++})	31	/ 20.1 =	1.54
8.	Magnesium	(Mg^{++})	28	/ 12.2 =	2.304
9.	Sodium	(Na^{+}) (Calculated)	177	/ 23.0 =	7.70
10.	Barium	(Ba^{++})	0	/ 68.7 =	0.00
Anions					
11.	Hydroxyl	(OH^{-})	0	/ 17.0 =	0.00
12.	Carbonate	(CO_3^{--})	19	/ 30.0 =	0.633
13.	Bicarbonate	(HCO_3^{-})	177	/ 61.1 =	1.551
14.	Sulfate	(SO_4^{--})	66	/ 48.8 =	0.766
15.	Chloride	(Cl^{-})	300	/ 35.5 =	8.45
16.	Total Dissolved Solids		695		
17.	Total Iron	(Fe)	2	/ 18.2 =	0.08
18.	Total Hardness As $CaCO_3$		182		
19.	Resistivity @ 75 F. (Calculated)		2.802	/cm.	

LOGARITHMIC WATER PATTERN
*meq/L.



Calcium Sulfate Solubility Profile

PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT.	X *meq/L	= mg/L.
$Ca(HCO_3)_2$	81.04	1.54	125
$CaSO_4$	68.07	0.00	0
$CaCl_2$	55.50	0.00	0
$Mg(HCO_3)_2$	73.17	0.37	27
$MgSO_4$	60.19	0.92	56
$MgCl_2$	47.62	0.75	36
$NaHCO_3$	84.00	0.00	0
$NaSO_4$	71.03	0.00	0
NaCl	58.46	7.70	450

*Milli Equivalents per Liter

This water is slightly corrosive due to the pH observed on analysis. The corroeivity is increased by the content of mineral salts in solution.

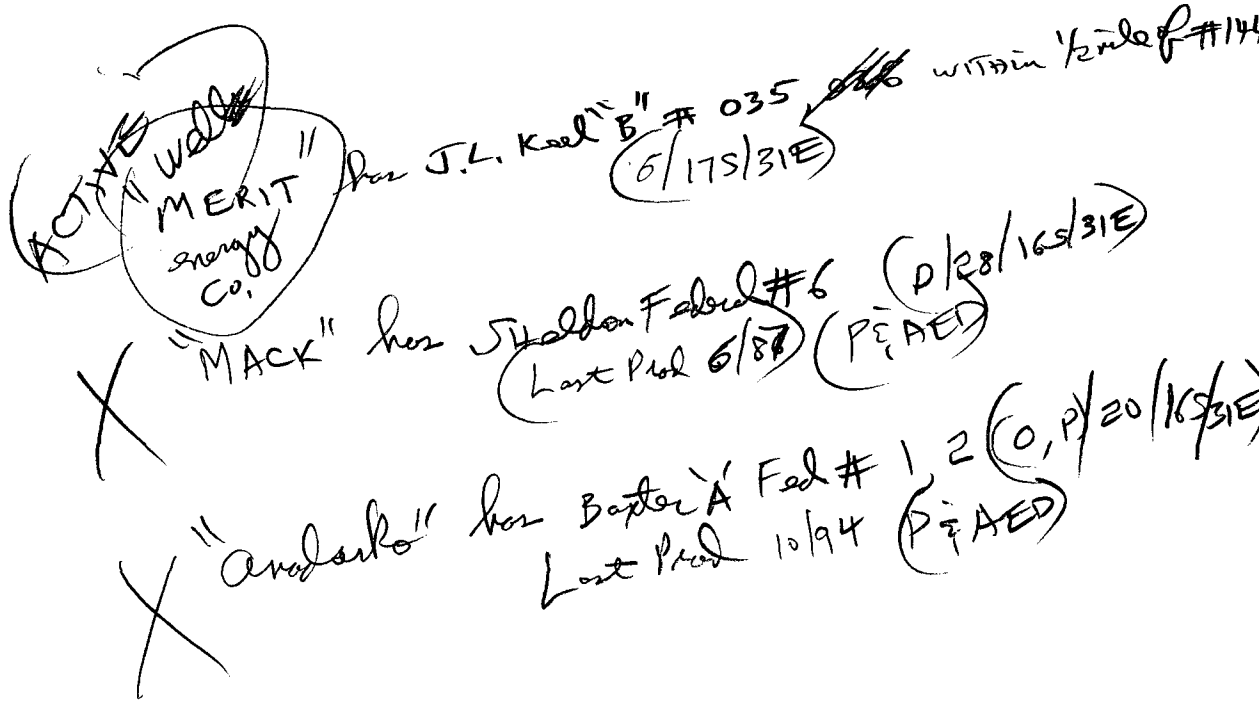
XII. An examination of this area has determined there are no open faults or other hydrologic connection between the disposal zone and any potential underground sources of drinking water.

CBS OPERATING CORP.
NORTH SQUARE LAKE UNIT
AUGUST 2003 C-108 APPLICATION

XIII. PROOF OF NOTICE

Thompson Petroleum Corp., leasehold operator, has been furnished by certified mail a copy of the C-108 application as they are within the one-half mile radius of North Square Lake Unit Well No. 144.

Copy of Publication and Affidavit of Publication from the Artesia Daily Press, a daily newspaper, is attached. This legal advertisement was published in Eddy County, New Mexico on August 17, 2003.



CBS OPERATING CORP.
P. O. BOX 2236, MIDLAND, TX 79702 432/685-0878 FAX 685-1945

August 19, 2003

THOMPSON PETROLEUM CORP.
325 North St. Paul, Suite 4300
Dallas, Texas 75201

Dear Mr. Thompson:

Enclosed is CBS Operating Corp.'s C-108 Application to Inject on the North Square Lake Unit. Copies are being furnished to you, as you are a leasehold operator located one-half mile of a proposed injection well within this application.

As required by statue, should you have any objections to the enclosed applications, you must file with the Oil Conservation Division, EMNRD, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505 with 15 days of receipt.

Should you have any questions or need additional information, please contact me at 432/685-0878.

Sincerely,

M. A. Sirgo, III
Engineer

MAS/pr

Enclosure

Affidavit of Publication

NO. 18183

STATE OF NEW MEXICO

County of Eddy:

Gary D. Scott being duly sworn,says: That he is the **Publisher** of The Artesia Daily Press, a daily newspaper of general circulation, published in English at Artesia, said county and county and state, and that the here to attached

Legal Notice

was published in a regular and entire issue of the said Artesia Daily Press,a daily newspaper duly qualified for that purpose within the meaning of Chapter 167 of the 1937 Session Laws of the state of New Mexico for 1 consecutive weeks/days on the same day as follows:

First Publication August 17 2003

Second Publication

Third Publication

Fourth Publication

Fifth Publication

Gary D. Scott

Subscribed and sworn to before me this 19th day of August 2003

Notary Public, Eddy County, New Mexico

My Commission expires September 23, 2003

Copy of Pul

INJECTION WELLS
CBS Operating Corp.
P.O. Box 2236
Midland, TX 79702
M.A. Sirgo, III
432-685-0878
CBS Operating Corp. has filed a Form C-108 Application to Inject with the State of New Mexico Oil Conservation Division.
The Application covers the following pressure maintenance water injection wells located in the North Square Lake Unit, Eddy County, New Mexico.
The wells covered in the application are as follows and located as described:
NSLU WELL NO. 15, SEC. 20 (0) T16S,R313
NSLU WELL NO. 16, SEC. 20 (P) T16S, R31
NSLU WELL NO. 23, SEC. 29 (C) T-16S, R31E
NSLU WELL NO. 24, SEC. 29 (B) T16S, R31E
NSLU WELL NO. 25, SEC. 29 (A) T16S, R31E
NSLU WELL NO. 41, SEC. 29 (F) T16S, R31E
NSLU WELL NO 42, SEC. 29 (G) T16S, R31E
NSLU WELL NO. 43, SEC. 29 (H) T16S, R31E
NSLU WELL NO. 60, SEC. 29 (J) T16S, R31E
NSLU WELL NO. 61, SEC., 29, (I) T16S, R31E
NSLU WELL NO. 124, SEC. 31, (C) T16S, R31E

Legal Notice

NSLU WELL NO. 126, SEC. 31, (G) T16S, R31E
NSLU WELL NO. 144, SEC. 31, (K) T16S, R31E

The above wells' purpose is to inject water in the Grayburg-San Andres formation for pressure maintenance purposes located at an average depth of approximately 3400'. Maximum expected per well injection rates are 300 barrels of water per day at an expected maximum injection pressure of 600 psi. (in no instance will the pressure exceed a .2 psi/ft. gradient to the upper perforation of the injection interval).
Any interested party must file an objection or request for hearing with the Oil Conservation Division, 2040 South Pacheco, Santa Fe, New Mexico 87505 within 15 days of this notice.
Published in the Artesia Daily Press, Artesia, N.M. August 17, 2003.
Legal 18183

CBS OPERATING CORP.
P. O. BOX 2236, MIDLAND, TX 79702 432/685-0878 FAX 685-1945

RECEIVED
SEP 0 8 2003
OIL CONSERVATION DIVISION

September 2, 2003 VIA FAX 505/476-3462

STATE OF NEW MEXICO
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Attention: Mr. William Jones

Re: Affidavit of Notice
CBS Operating Corp.
North Square Lake Unit
C-108 Application
Eddy County, New Mexico

Mr. Jones,

As per your request, please find attached an Affidavit of Notice reflecting an additional public notice run on August 29, 2003 for the referenced C-108 Application. This second notice was posted to correct the address for third party notices to the New Mexico Oil Conservation Division.

If you have any additional questions or comments, please do not hesitate to call.

Sincerely,

M. A. Sirgo, III

MAS/pr

Attachment

Affidavit of Publication

NO. 18200

STATE OF NEW MEXICO

County of Eddy:

Gary D. Scott being duly

sworn,says: That he is the **Publisher** of The

Artesia Daily Press, a daily newspaper of general

circulation, published in English at Artesia, said county

and county and state, and that the here to attached

Legal Notice

was published in a regular and entire issue of the said

Artesia Daily Press,a daily newspaper duly qualified

for that purpose within the meaning of Chapter 167 of

the 1937 Session Laws of the state of New Mexico for

1 consecutive weeks/days on the same

day as follows:

First Publication August 29 2003

Second Publication

Third Publication

Fourth Publication

Fifth Publication

Gary D. Scott

Subscribed and sworn to before me this

29th day of August 2003

Barbara Ann Brooks

Notary Public, Eddy County, New Mexico

My Commission expires September 23, 2003

Copy of Public

CBS Operating Corp.
P.O. Box 2236
Midland, TX 79702
M.A. Sirgo, III
432-685-0878

CBS Operating Corp. has filed a Form C-108 Application to Inject with the State of New Mexico Oil Conservation Division.

The Application covers the following pressure maintenance water injection wells located in the North Square Lake Unit, Eddy County, New Mexico.

The wells covered in the application are as follows and located as described:

NSLU WELL NO. 15, SEC. 20 (O) T16S,R313
NSLU WELL NO. 16, SEC. 20 (P) T16S, R31
NSLU WELL NO. 23, SEC. 29 (C) T-16S, R31E
NSLU WELL NO. 24, SEC. 29 (B) T16S, R31E
NSLU WELL NO. 25, SEC. 29 (A) T16S, R31E
NSLU WELL NO. 41, SEC. 29 (F) T16S, R31E
NSLU WELL NO 42, SEC. 29 (G) T16S, R31E
NSLU WELL NO. 43, SEC. 29 (H) T16S, R31E
NSLU WELL NO. 60, SEC. 29 (J) T16S, R31E
NSLU WELL NO. 61, SEC. 29, (I) T16S, R31E
NSLU WELL NO. 124, SEC. 31, (C) T16S, R31E
NSLU WELL NO. 126, SEC. 31, (G) T16S, R31E
NSLU WELL NO. 144, SEC. 31, (K) T16S, R31E

The above wells' purpose is to inject water in the Grayburg-San Andres formation for pressure maintenance purposes located at an average depth of approximately 3400'. Maximum expected per well injection rates are 300 barrels of water per day at an expected maximum injection pressure of 600 psi. (In no instance will the pressure exceed a .2 psi/ft. gradient to the upper perforation of the injection interval).

Any interested party must file an objection or request for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505 within 15 days of this notice.

Published in the Artesia Daily Press, Artesia, N.M. August 29, 2003.

Legal 18200

LEGAL NOTICE

CBS OPERATING CORP.
P. O. BOX 2236, MIDLAND, TX 79702 432/685-0878 FAX 685-1945

FACSIMILE MESSAGE

TO: Mr William Jones 505-476-3462

LOCATION: Santa Fe OCD

FROM: Manny Lujo

DATE: Sept 2 2003

MESSAGE: Original will be mailed today.

NUMBER OF PAGES TO BE TRANSMITTED - INCLUDING TOP SHEET: 3

IF ANY ERROR WHEN TRANSMITTING, PLEASE CALL (915) 685-0878

CBS OPERATING CORP.
P. O. BOX 2236, MIDLAND, TX 79702 432/685-0878 FAX 685-1945

September 2, 2003

VIA FAX 505/476-3462

STATE OF NEW MEXICO
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Attention: Mr. William Jones

Re: Affidavit of Notice
CBS Operating Corp.
North Square Lake Unit
C-108 Application
Eddy County, New Mexico

Mr. Jones,

As per your request, please find attached an Affidavit of Notice reflecting an additional public notice run on August 29, 2003 for the referenced C-108 Application. This second notice was posted to correct the address for third party notices to the New Mexico Oil Conservation Division.

If you have any additional questions or comments, please do not hesitate to call.

Sincerely,

M. A. Sirgo, III

MAS/pr

Attachment

Affidavit of Publication

NO. 18200

STATE OF NEW MEXICO

County of Eddy:

Gary D. Scott being duly

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Legal Notice

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Artesia Daily Press,a daily newspaper duly qualified

for that purpose within the meaning of Chapter 167 of

the 1937 Session Laws of the state of New Mexico for

1 consecutive weeks/days on the same

day as follows:

First Publication August 29 2003

Second Publication

Third Publication

Fourth Publication

Fifth Publication

Gary D. Scott

Subscribed and sworn to before me this

29th day of August 2003

Barbara Ann Bassett

Notary Public, Eddy County, New Mexico

My Commission expires September 23, 2003

Copy of Public

CBS Operating Corp.
P.O. Box 2236
Midland, TX 79702
M.A. Sirgo, III
432-685-0878

CBS Operating Corp. has filed a Form C-108 Application to Inject with the State of New Mexico Oil Conservation Division.

The Application covers the following pressure maintenance water injection wells located in the North Square Lake Unit, Eddy County, New Mexico.

The wells covered in the application are as follows and located as described:

NSLU WELL NO. 15, SEC. 20 (O) T16S,R31E
NSLU WELL NO. 16, SEC. 20 (P) T16S, R31
NSLU WELL NO. 23, SEC. 29 (C) T-16S, R31E
NSLU WELL NO. 24, SEC. 29 (B) T16S, R31E
NSLU WELL NO. 25, SEC. 29 (A) T16S, R31E
NSLU WELL NO. 41, SEC. 29 (F) T16S, R31E
NSLU WELL NO 42, SEC. 29 (G) T16S, R31E
NSLU WELL NO. 43, SEC. 29 (H) T16S, R31E
NSLU WELL NO. 60, SEC. 29 (J) T16S, R31E
NSLU WELL NO. 61, SEC. 29, (I) T16S, R31E
NSLU WELL NO. 124, SEC. 31, (C) T16S, R31E
NSLU WELL NO. 126, SEC. 31, (G) T16S, R31E
NSLU WELL NO. 144, SEC. 31, (K) T16S, R31E

The above wells' purpose is to inject water in the Grayburg-San Andres formation for pressure maintenance purposes located at an average depth of approximately 3400'. Maximum expected per well injection rates are 300 barrels of water per day at an expected maximum injection pressure of 900 psi. (In no instance will the pressure exceed a .2 psi/ft. gradient to the upper perforation of the injection interval).

Any interested party must file an objection or request for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505 within 15 days of this notice.

Published in the Artesia Daily Press, Artesia, N.M. August 29, 2003.
Legal 18200

LEGAL NOTICE

CBS OPERATING CORP.
P. O. BOX 2236, MIDLAND, TX 79702 432/685-0878 FAX 685-1945

FACSIMILE MESSAGE

TO: William Jones 505-476-3462

LOCATION: OCD Santa Fe

FROM: Manny Sirgo

DATE: Sept 3 2003

MESSAGE: Letter to Merit Energy mailed today.

NUMBER OF PAGES TO BE TRANSMITTED - INCLUDING TOP SHEET: 3

IF ANY ERROR WHEN TRANSMITTING, PLEASE CALL (915) 685-0878

CBS OPERATING CORP.
P. O. BOX 2236, MIDLAND, TX 79702 432/685-0878 FAX 685-1945

September 3, 2003

MERIT ENERGY COMPANY
13727 Noel Road, Suite 500
Dallas, Texas 75240

Dear Sir or Madam:

Enclosed is CBS Operating Corp.'s C-108 Application to Inject on the North Square Lake Unit. Copies are being furnished to you, as you are a leasehold operator located one-half mile of a proposed injection well within this application.

As required by statue, should you have any objections to the enclosed applications, you must file with the Oil Conservation Division, EMNRD, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505 within 15 days of receipt.

Should you have any questions or need additional information, please contact me at 432/685-0878.

Sincerely,

M. A. Sirgo, III
Engineer

MAS/pr

Enclosure

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

MERIT ENERGY CO
13727 NOEL RD STE 500
DALLAS TX 75240

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7002 2410 0001 5839 8114

PS Form 3811, August 2001 Domestic Return Receipt 102595-02-M-1035

7002 2410 0001 5839 8114

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

CERTIFIED MAIL™

7002 2410 0001 5839 8114

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®

OFFICIAL USE

Postage	$ 1.98
Certified Fee	2.30
Return Receipt Fee (Endorsement Required)	1.75
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$ 6.03

MIDLAND, TX DOWNTOWN STA
SEP 3 2003
USPS

Sent To MERIT ENERGY CO
Street, Apt. No.; or PO Box No. 13727 NOEL RD STE 500
City, State, ZIP+4 DALLAS TX 75240

PS Form 3800, June 2002 See Reverse for Instructions

CBS OPERATING CORP.
NORTH SQUARE LAKE UNIT
OCTOBER 2003 C-108 APPLICATION

XIII. PROOF OF NOTICE

Merit Energy Corp., leasehold, operator, has been furnished by certified mail a copy of the C-108 application, as they are within the one-half mile radius of the North Square Lake Unit Well No. 162.

A "Copy of Publications and Affidavit of Publication" from the Artesia Daily Press, a daily newspaper is attached. This legal advertisement was published in Eddy County, New Mexico on September 21, 2003.

CBS OPERATING CORP.
P. O. BOX 2236, MIDLAND, TX 79702 432/685-0878 FAX 685-1945

October 3, 2003

MERIT ENERGY COMPANY
13727 Noel Road, Suite 500
Dallas, Texas 75240

Re: North Square Lake Unit #162
Eddy County, New Mexico

Dear Sir or Madam:

Enclosed is CBS Operating Corp.'s C-108 Application to Inject on the North Square Lake Unit. Copies are being furnished to you, as you are a leasehold operator located one-half mile of a proposed injection well within this application.

As required by statue, should you have any objections to the enclosed application, you must file with the Oil Conservation Division, EMNRD, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505 within15 days of receipt.

Should you have any questions or need additional information, please contact me at 432/685-0878.

Sincerely,

M. A. Sirgo, III
Engineer

MAS/pr

Enclosure

Affidavit of Publication

Copy of I

NO. 18217

STATE OF NEW MEXICO

County of Eddy:

Gary D. Scott being duly sworn,says: That he is the **Publisher** of The Artesia Daily Press, a daily newspaper of general circulation, published in English at Artesia, said county and county and state, and that the here to attached

Legal Notice

was published in a regular and entire issue of the said Artesia Daily Press,a daily newspaper duly qualified for that purpose within the meaning of Chapter 167 of the 1937 Session Laws of the state of New Mexico for 1 consecutive weeks/days on the same day as follows:

First Publication September 21 2003

Second Publication

Third Publication

Fourth Publication

Gary D. Scott

Subscribed and sworn to before me this

22nd Day September 2003

Barbara Lowe Dixon

Notary Public, Eddy County, New Mexico

My Commission expires September 23, 2007

LEGAL NOTICE

CBS Operating Corp.
P.O. Box 2236
Midland, TX 79702
M.A. Sirgo, III
432-685-0878

CBS Operating Corp. has filed a Form C-108 Application to Inject with the State of New Mexico Oil Conservation Division.

The Application covers the following pressure maintenance water injection wells located in the North Square Lake Unit, Eddy County, New Mexico.

The wells covered in the application are as follows and located as described:

NSLU WELL NO. 3, SEC. 19 (J) T16S,R313
NSLU WELL NO. 5, SEC. 20 (L) T16S, R31
NSLU WELL NO. 12, SEC. 19 (P) T-16S, R31E
NSLU WELL NO. 20, SEC. 30 (B) T16S, R31E
NSLU WELL NO. 22, SEC. 29 (D) T16S, R31E
NSLU WELL NO. 62, SEC. 28 (L) T16S, R31E
NSLU WELL NO 83, SEC. 29 (P) T16S, R31E
NSLU WELL NO. 85, SEC. 28 (N) T16S, R31E
NSLU WELL NO. 111, SEC., 33, (B) T16S, R31E
NSLU WELL NO. 162, SEC. 31, (O) T16S, R31E

The above wells' purpose is to inject water in the Grayburg-San Andres formation for pressure maintenance purposes located at an average depth of approximately 3400'. Maximum expected per well injection rates are 300 barrels of water per day at an expected maximum injection pressure of 600 psi. (in no instance will the pressure exceed a .2 psi/ft. gradient to the upper perforation of the injection interval).

Any interested party must file an objection or request for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., , Santa Fe, New Mexico 87505 within 15 days of this notice.

Published in the Artesia Daily Press, Artesia, N.M. September 21, 2003.

Legal 18217

CBS OPERATING CORP.
NORTH SQUARE LAKE UNIT
OCTOBER 2003 C-108 APPLICATION

XI. Analysis of the fresh water in the area is attached.

Enviro-Chem, Inc.
WATER ANALYSIS REPORT

SAMPLE

Oil Co. :
Lease : Grimr
Well No. : Fresh Water
Lab No. : 101898.001

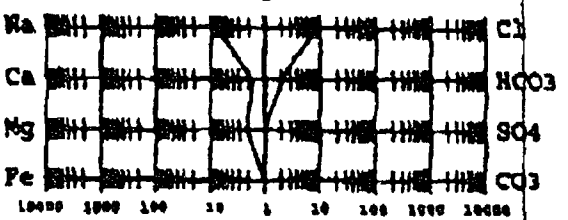
Sample Loc. :
Date Analyzed: 16-October-1998
Date Sampled : 09-October-1998

ANALYSIS

1.	pH		8.460	
2.	Specific Gravity 60/60 F.		1.003	
3.	$CaCO_3$ Saturation Index	@ 80 F.	+0.960	
		@ 140 F.	+1.580	

			MG/L	EQ. WT.	*MEQ/L
Dissolved Gasses					
4.	Hydrogen Sulfide		Not Present		
5.	Carbon Dioxide		Not Determined		
6.	Dissolved Oxygen		Not Determined		
Cations					
7.	Calcium	(Ca^{++})	31	/ 20.1 =	1.54
8.	Magnesium	(Mg^{++})	25	/ 12.2 =	2.05
9.	Sodium	(Na^{+}) (Calculated)	177	/ 23.0 =	7.70
10.	Barium	(Ba^{++})	0	/ 68.7 =	0.00
Anions					
11.	Hydroxyl	(OH^{-})	0	/ 17.0 =	0.00
12.	Carbonate	($CO_3^{=}$)	19	/ 30.0 =	0.63
13.	Bicarbonate	(HCO_3^{-})	117	/ 61.1 =	1.91
14.	Sulfate	($SO_4^{=}$)	46	/ 48.8 =	0.94
15.	Chloride	(Cl^{-})	300	/ 35.5 =	8.45
16.	Total Dissolved Solids		695		
17.	Total Iron	(Fe)	2	/ 18.2 =	0.08
18.	Total Hardness As $CaCO_3$		182		
19.	Resistivity @ 75 F. (Calculated)		2.802	Ohm/cm.	

LOGARITHMIC WATER PATTERN
*meq/L.



Calcium Sulfate Solubility Profile

PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT.	X *meq/L	= mg/L.
$Ca(HCO_3)_2$	81.04	1.54	125
$CaSO_4$	68.07	0.00	0
$CaCl_2$	55.50	0.00	0
$Mg(HCO_3)_2$	73.17	0.37	27
$MgSO_4$	60.19	0.92	56
$MgCL_2$	47.62	0.75	36
$NaHCO_3$	84.00	0.00	0
$NaSO_4$	71.03	0.00	0
NaCl	58.46	7.70	450

*Milli Equivalents per Liter

This water is slightly corrosive due to the pH observed on analysis.
The corroeivity is increased by the content of mineral salts in solution.

CBS OPERATING CORP.
NORTH SQUARE LAKE UNIT
OCTOBER 2003 C-108 APPLICATION

XII. An examination of this area has determined there are no open faults or other hydrologic connection between the disposal zone and any potential underground sources of drinking water.

TYPICAL TOPS IN THIS AREA

Geol Tops per/BGX

Salado	
BX	525
TRUS	1360
Queen	1810
Grayburg	2415
San Andres	2833
	3133

FORMATION RECORD

FROM	TO	THICKNESS IN FEET	FORMATION
0	30		Sand
30	280		Red Bed
280	460		Anhydrite
460	465		Water Sand
465	1320		Salt
1320	2370		Anhydrite
2370	2400		Red Sand
2400	2781		Anhydrite
2781	3012		Lime
3012	3018		Sand
3018	3040		Lime

TYPICAL
Cable Tool
RECORDS

Jones, William V

From: Jones, William V

Sent: Tuesday, December 02, 2003 5:01 PM

To: 'MASTRES@aol.com'

Cc: Ezeanyim, Richard

Subject: RE: CBS Operating Corp. - C-108 Applications

Manny:
Please don't work on the previous list...
Based on discussion yesterday, we have narrowed the list of problem wells as shown on the attached EXCEL file.

1 well needs casing/P&A information and possible work.
1 well needs a cement bond log and possible work.
The rest need to be replugged.

Please review for accuracy and if you still desire, supply reasons to Richard that this work should not be required. If we do not agree with your reasons or solution and this gets set to hearing by the Division, the application will likely include required fixes on all wells plugged prior to 1955 within the AOR of your intended injection wells or subset thereof.

Within bounds of our other work, we are now ready to issue an order permitting all the remaining C-108 application wells - with stipulations to fix these problem wells.

Please look at the latest hearing order and note all discrepancies and/or misconceptions from what was intended. Forward your notes to Richard and he will get the attorneys to look at it.

Regards,
Will Jones

North Square Lake Unit

Sections 25, 36, T16S, R30E
Sections 19 - 31, T16S, R31E

Notes on the North Square Lake Unit:
The latest Divison Order is R-11435-A approving a Pressure Maintenance Project on 5/30/2002. This approved 7 injection wells and required 6 wells to be replugged. The latest operator, CBS, does not want to replug these wells.
Many hearing orders over the years pertain to this area: R-5065, R-2752(A), R-1110(A,B,C,D), R-2977(A,B), R-3677, ETC
Most hearing orders required periodic operations reports, the latest orders have also, who has these?
Many Waterflood Expansion Administrative Orders also apply: WFX-291,473,320,490, etc
Later (early 1960's) consisted of installing waterfloods and sometimes drilling out and running 4" FJ liners on bottom.
This area has been at an advanced state of depletion since the 1960s.
This area has been waterflooded long before the SDWA and the UIC program limited pressures and ensured confinement to zone.
Typical stratigraphic section here: Sand and Red bed to 450 feet, Anhydrite and Salt to 1400 feet, Yates, Queen, Grayburg, then San Andres at TD.
Some shallow sands above the red beds and some windmills, but this area generally believed to not have appreciable ground water sands.
The formations targeted here for producing and waterflooding are the Premier (Grayburg) and the Lovington (San Andres) usually from 3300 to 3600 feet.
In some early cases, the Grayburg was flooded down the annulus and the San Andres down the tubing.
Many wells drilled and plugged in the mid 1940s.
Operators have changed MANY times for this area since the 1940's.
This is BLM surface. Also many records show the BLM supervising and regulating plugging and casing fixes.
Earlier casing designs consisted of setting surface pipe to 500 feet with some cement, running temporary 7 inch thru the yates, drilling out and running 51/2 inch to TD, pulling most of the 7 inch, and cementing the 5 1/2 inch only on the bottom.
Most surface pipes are not cemented to surface.
Most long strings are not cemented even up to the base of the salt.
Therefore the surface of the hole with any possible water sands and the salt have OLD casing over them but no sheaths of cement.
Pinholes and other corrosion common in upper wellbore, surface pipe.
Many remedial operations consist of replacing numerous joints of surface pipe or long string pipe.
Many wells have had casing leaks from 140 feet to 2250 feet - both in the red beds above the salt, in the salt, and below the salt in the yates and queen formations.
In some cases, casing has collapsed opposite the Queen or the Yates formations - above the cement top.
Many wells have had water flows while cementing, or remedial cementing that have taken time to stop.
In some cases, 2 7/8" casing has been run inside existing casing in order to preserve mechanical integrity, this will likely have to be done more often.
Many P&A operations have found numerous casing leaks and water flows.
Older P&As usually pulled all casing possible.
All of the plugged wells that are questionable are from the early 1950s and before.
Latest casing design consists of circulating cement on the surface pipe and the long string - intermediates normally not needed. This took 4000 sacks of cement on a recent well.
P&A should consist of verifiable cement plugs of adequate thickness (in and out of pipe) above the producing zone, above the Queen, at the base of the salt, above the salt, and at the surface.
All bradenheads in this area should be tested on a frequent basis.
The presence of the salt section, the evidence of corrosion, the age of existing casing, and the lack of cement all indicate that extensive waterflow problems will likely exist in this area, especially if waterflooding is aggressively persued.
In the AOR for the first 13 well PMX application, there are 24 P&A wellbores and 44 other wells.

Wells with Questionable Cement/Plugging/Data

List of Problem AOR wells within the AORs of the 23 planned injection wells submitted for approval in August and October, 2003.

Group	NSLU#	API	WELL NAME	NS FTG	EW FTG	UL	Sec	Tsp	Rge	Action Item	Near Wells	AOR Feet	LT	WT	Last	Comp Stat	PLUG DATE
SW	NA	30-015-04029	Welch State #1	660N	660E	A	36	16S	30E	Replug	**124**	**1790**	S	O	NONE	NO COMPL	P&A
NE	8	30-015-04864	NSLU #8	1980S	660E	I	20	16S	31E	Run CBL or Prove Cmt Top	**15,16**	**1866, 1320**	F	I	11-2002	SHUT IN WIW	
NE	26	30-015-04897	NSLU #26	660N	660W	D	28	16S	31E	Replug	**16, 25**	**1867, 1657**	F	O		ZONE ABAN	P&A
New	NA	30-015-04924	Etz #2	310N	1666W	C	30	16S	31E	Replug	**12**	**1596**			NONE	NO COMPL	1900-01-01
SW	103	30-015-04940	Grier #009 (#103	660N	660E	A	31	16S	31E	Replug	**126**	**1866**		O	NONE	NO COMPL	P&A
SW	NA	30-015-04950	Grier #003	660S	512W	M	31	16S	31E	Replug	**144**	**1762**		O	NONE	NO COMPL	P&A1948
SW	NA	30-015-04952	Grier #5	1980S	660E	I	31	16S	31E	Replug	**126, 162**	**1866, 1867**		O	NONE	NO COMPL	
SW	NA	30-015-05975	Grier #007	NA	NA	H	31	16S	31E	Get Csg/Cmt data	**126**	**500**		I	NONE	NO COMPL	

Form C-102

NEW MEXICO OIL CONSERVATION COMMISSION

SANTA FE, NEW MEXICO

MISCELLANEOUS NOTICES

Submit this notice in triplicate to the Oil Conservation Commission or its proper agent before the work specified is to begin. A copy will be returned to the sender on which will be given the approval, with any modifications considered advisable, or the rejection by the Commission or agent, of the plan submitted. The plan as approved should be followed, and work should not begin until approval is obtained. See additional instructions in the Rules and Regulations of the Commission.

Indicate nature of notice by checking below:

NOTICE OF INTENTION TO TEST CASING SHUT-OFF		NOTICE OF INTENTION TO SHOOT OR CHEMICALLY TREAT WELL	
NOTICE OF INTENTION TO CHANGE PLANS		NOTICE OF INTENTION TO PULL OR OTHERWISE ALTER CASING	
NOTICE OF INTENTION TO REPAIR WELL		NOTICE OF INTENTION TO PLUG WELL	X
NOTICE OF INTENTION TO DEEPEN WELL			

Artesia, New Mexico (Place) February 25, 1949 (Date)

OIL CONSERVATION COMMISSION,
Santa Fe, New Mexico.

Gentlemen:

Following is a notice of intention to do certain work as described below at the

V.S. Welch (Company or Operator) State (Lease) Well No. 1 in NE¼ NE¼

of Sec. 36, T. 16, R. 30, N. M. P. M., Square Lake Field

Eddy County.

FULL DETAILS OF PROPOSED PLAN OF WORK

FOLLOW INSTRUCTIONS IN THE RULES AND REGULATIONS OF THE COMMISSION

Expect to fill with mud to bottom of 7 inch. Set plug and cement with 20 sacks. Knock off 7 inch above where cemented and pull 7 inch. Fill with mud to 510 feet. Cement with 10 sacks and pull 8 inch. Fill with mud to surface and set regulation marker.

30-015-04029

Approved FEB 28 1949, 19
except as follows:

OIL CONSERVATION COMMISSION,

By [signature]

Title ARTESIA REPRESENTATIVE

V.S. Welch
Company or Operator

By [signature]

Position Auditor

Send communications regarding well to

Name V.S. Welch

Address Box 1056

Artesia, New Mexico

Form C-103

OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

MISCELLANEOUS REPORTS ON WELLS

Submit this report in triplicate to the Oil Conservation Commission or its proper agent within ten days after the work specified is completed. It should be signed and sworn to before a notary public for reports on beginning drilling operations, results of shooting well, results of test of casing shut-off, result of plugging of well, and other important operations, even though the work was witnessed by an agent of the Commission. Reports on minor operations need not be signed and sworn to before a notary public. See additional instructions in the Rules and Regulations of the Commission.

Indicate nature of report by checking below:

REPORT ON BEGINNING DRILLING OPERATIONS		REPORT ON REPAIRING WELL	
REPORT ON RESULT OF SHOOTING OR CHEMICAL TREATMENT OF WELL		REPORT ON PULLING OR OTHERWISE ALTERING CASING	
REPORT ON RESULT OF TEST OF CASING SHUT-OFF		REPORT ON DEEPENING WELL	
REPORT ON RESULT OF PLUGGING OF WELL	X		

Artesia, New Mexico (Place) June 13, 1949 (Date)

OIL CONSERVATION COMMISSION,
SANTA FE, NEW MEXICO.
Gentlemen:

Following is a report on the work done and the results obtained under the heading noted above at the

V.S. Welch (Company or Operator) State (Lease) Well No. 1 in the

NE¼ NE¼ of Sec. 36, T. 16, R. 30, N. M. P. M.,

Square Lake Field, Eddy County.

The dates of this work were as follows: March 1, 1949

Notice of intention to do the work was (~~was not~~) submitted on Form C-102 on February 25 19 49

and approval of the proposed plan was (~~was not~~) obtained. (Cross out incorrect words.)

DETAILED ACCOUNT OF WORK DONE AND RESULTS OBTAINED

Filled hole with mud to bottom of 7 inch. Set plug and cemented with 20 sacks cement. Knocked off 7 inch above where cemented and pulled 1570' of 7". Filled with mud to 510 feet. Cemented with 10 sacks cement and pulled 200' of 8 inch. Filled with mud to surface and set regulation marker.

30-015-04029

Witnessed by F.W. Marshall (Name) V.S. Welch (Company) Supt. (Title)

Subscribed and sworn before me this 13 day of June, 19 49

Lucile Bigler
Notary Public

My commission expires June 6, 1953

I hereby swear or affirm that the information given above is true and correct.

Name

Position Auditor

Representing V.S. Welch (Company or Operator)

Address Box 1056

Remarks:

Name

Title

OIL AND GAS INSP.

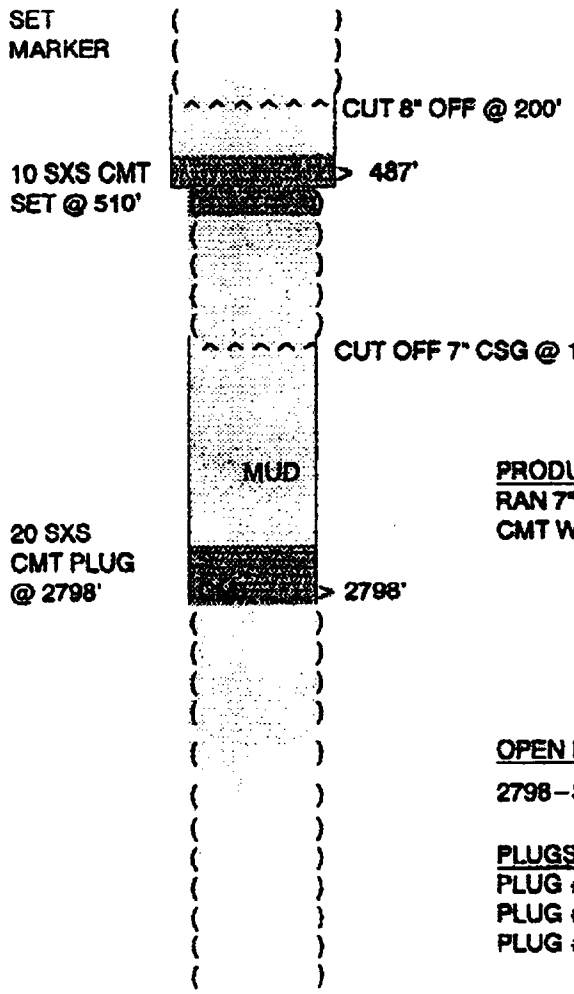
GP II E .GY, INC.

P & A WELLBORE DIAGRAM

.ELL: STATE B #1
FIELD: SQUARE LAKE
INTERVAL: GB–SA

LOCATION:
660' FNL & 660' FEL
SEC 36, T–16–S, R–30–E
EDDY COUNTY, NEW MEXICO

30-015-04029



TD: 3119'

SURFACE CASING:
RAN 8 1/4" CSG, SET @ 487'
CMT. W/ 50 SXS., TOC @ 313' (CALC.)

PRODUCTION CASING:
RAN 7" CSG, SET @ 2798'.
CMT W/ 100 SXS, TOP OF CEMENT @ 2112' (CALC.)

OPEN HOLE

2798–3119'

PLUGS:
PLUG #1– 20 SXS CMT @ 2798'
PLUG #2– 10 SXS CMT @ 510'
PLUG #3– FILL HOLE WITH MUD & SET REGULATION MARKER

GP II, Inc. 2122

04–Dec–98

NSL

Plugged & Abandoned Wells Located

Well No.:	NSLU # 26
API No.:	30-015-04897
Location :	660' FNL & 660' FWL
Sec-Twn-Rng :	Sec. 28, T16S, R31E
Field :	Square Lake
Interval:	Grayburg - San Andres

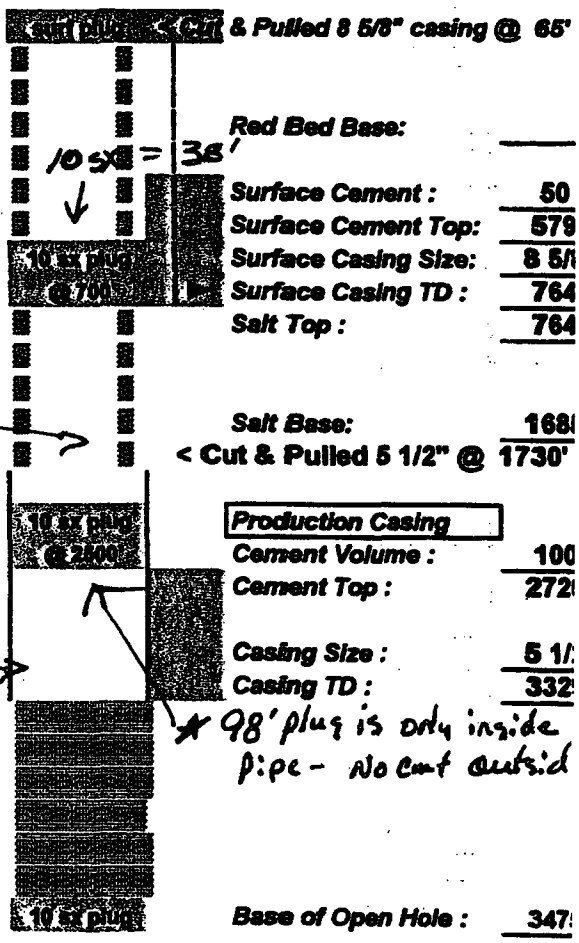
115' plug 0'-115' - Tag

100' plug 714'-814' - Tag

100' plug 1400'-1500' - (Yates plug)

150' plug 1630'-1780' - Tag

25 Sx plug @ 3329' - Tag



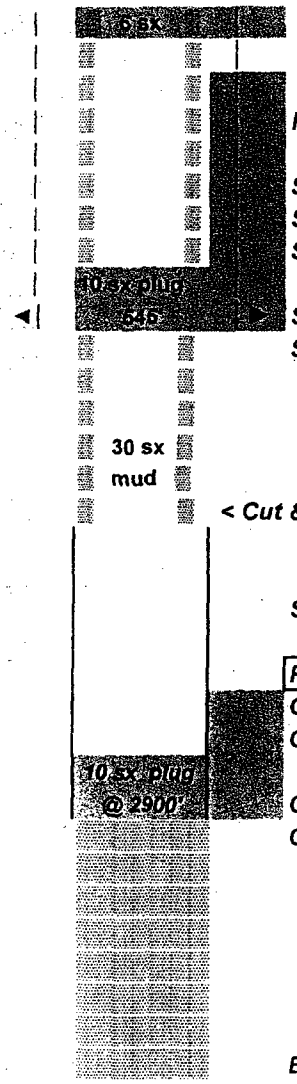
Type Well @ Abandonment :	Producer
Date Well Abandoned :	12/1951
Operator that Plugged Well :	D. D. Thomas
Date Well Drilled :	4 / 1945
Original Well Type :	Producer

CBS Operating Corp.

Sep-03

9/63

Well No.:	George Etz # 2
API No.:	30-015-04924
Location :	810' FNL & 1666' FWL
Sec-Twn-Rng :	Sec. 30, T16S, R31E
Field :	Square Lake
Interval:	Grayburg - San Andres



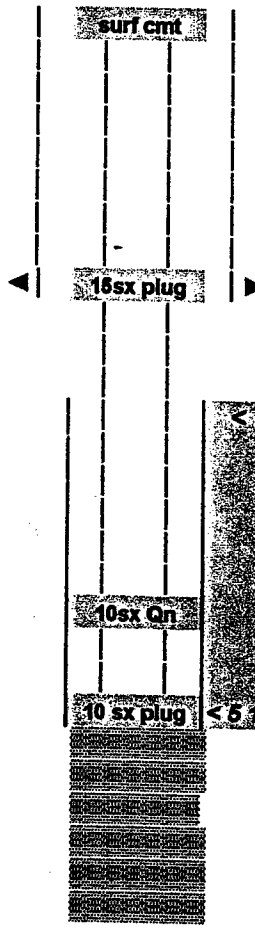
Red Bed Base:	390 e	*ft.*
Surface Cement :	50	*sx.*
Surface Cement Top:	342	*ft.*
Surface Casing Size:	8 5/8	*in.*
Surface Casing TD :	547	*ft.*
Salt Top :	600 e	*ft.*

< Cut & Pulled 5 1/2" casing @ 1950'

Salt Base:	1520 e	*ft.*
Production Casing		
Cement Volume :	100	*sx.*
Cement Top :	2311	*ft.*
Casing Size :	5 1/2	*in.*
Casing TD :	2920	*ft.*
Base of Open Hole :	3095	*ft.*

Type Well @ Abandonment :	Producer
Date Well Abandoned :	Sep-48
Operator that Plugged Well :	Brewer Drlng.
Date Well Drilled :	Nov-44
Original Well Type :	Producer

Well No.:	NSLU # 103
API No.:	30-015-04940
Location :	660' FNL & 660' FEL
Sec-Twn-Rng :	Sec. 31, T16S, R31E
Field :	Square Lake
Interval:	Grayburg - San Andres



Red Bed Base: _____ ft.

Surface Cement : 25 sx.
Surface Cement Top: 492e ft.
Surface Casing Size: 8 1/4 in.
Surface Casing TD : 579 ft.

Salt Top : 657e ft.

< Cut & Pulled 7" @ 1305'

Salt Base: 1421e ft.

Production Casing
Cement Volume : 100 sx.
Cement Top : 1796e ft.

Casing Size : 7 in.
Casing TD : 2482 ft.

< 5 1/2 "csng ran 10/'48 inside 7"to 3051 cmt'd with 100sx

Base of Open Hole : 3404 ft.

Type Well @ Abandonment :	Producer
Date Well Abandoned :	2 / 1949
Operator that Plugged Well :	Nay Hightower Inc.
Date Well Drilled :	9 / 1942
Original Well Type :	Producer

GP II E[illegible]GY, INC.

P & A WELLBORE DIAGRAM

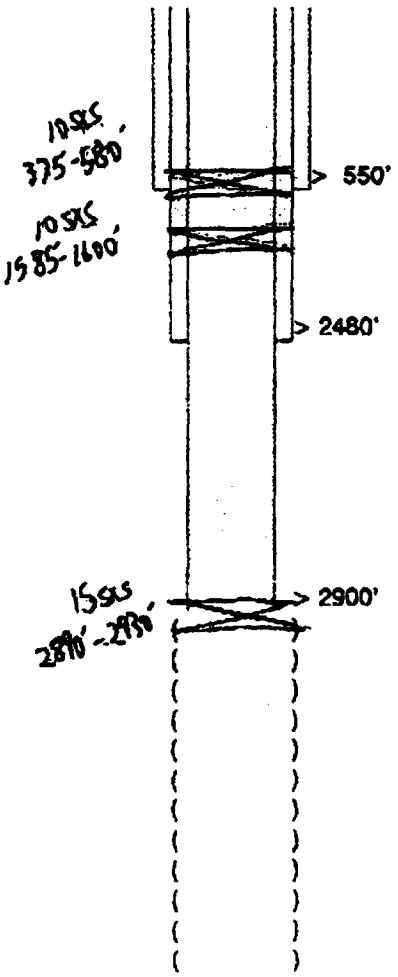
VELL: GRIER #3
FIELD: SQUARE LAKE
INTERVAL: GB-SA

LOCATION: 512
660' FSL & ~~660'~~ FWL
SEC 31, T-16-S, R-31-E
EDDY COUNTY, NEW MEXICO

APPROXIMATE

30-015-04950

NO PLUGGING REPORT AVAILABLE



SURFACE CASING:
RAN 8" CSG, SET @ 550'
CMT. W/ 50 SXS., TOC @ 376' (CALC.)

INTERMEDIATE CASING:
RAN 7" CSG, SET @ 2480'
CMT. W/ 15 SXS., TOC @ 2377' (CALC.)

PRODUCTION CASING:
RAN 5 1/2" CSG, SET @ 2900'.
CMT W/ 100 SXS, TOP OF CEMENT @ 2291' (CALC.)

OPEN HOLE
2900 - 3158'

PLUGS:

04-Dec-98

GP II, Inc. 2132

uare Lake Unit , Eddy Cty., New Mexico
plication Well : NSLU # 126

Ref Csg. @ 60'- Place 60' of cmt inside & outside of csg. 0'-60'- T&S

144' plug 530'-674'- T&S

100' plug -1410'-1510'- T&S

100' plug 2800'-2900'- T&S

Well No.:	Grier # 5
API No.:	30-015-04952
Location :	1980' FSL & 660' FEL
Sec-Twn-Rng :	Sec. 31, T16S, R31E
Field :	Square Lake
Interval:	Grayburg - San Andres

Red Bed Base:		ft.
Surface Cement :	50	sx.
Surface Cement Top:	439	ft.
Surface Casing Size:	8 5/8	in.
Salt Top :	580	ft.
Surface Casing TD :	624	ft.
Salt Base:	1410	ft.

Well Drilled to 3465 and Plugged

Type Well @ Abandonment :	Dryhole-Junked
Date Well Abandoned :	3 / 1944
Operator that Plugged Well :	McDonald & Williams
Date Well Drilled :	3 / 1944
Original Well Type :	Dryhole-Junked

Injection Well Data Sheet

New Mexico Oil Conservation Division C-108 Application

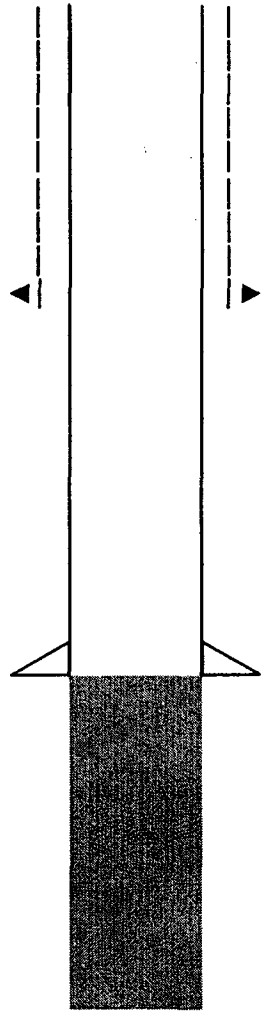
Operator : *CBS Operating Corp.*

Well Name & Number: *North Square Lake Unit #* 12 API # 30-015-04856

Well Location: 660' FSL & 660' FEL (Footage Location) | P (Unit Letter) | 19 (Section) | *16-South* (Township) | *31-East* (Range) | *Eddy* (County)

Current Wellbore Schematic

Type Well : Active Producer



Red Bed Base:	452	*ft.*
Surface Cement Top:	391	*ft.*
Surface Pipe TD :	596	*ft.*
Salt Top :	590	*ft.*
Salt Base:	1435	*ft.*
Production Casing Cement Top :	2456	*ft.*
Production Casing	3065	*ft.*
Top of Pay :	3100	*ft.*
Bottom of Pay :	3308	*ft.*
Open Hole Total Depth:	3338	*ft.*

Wellbore Construction Data

Surface Casing

Hole Size: | Casing Size: 8 5/8 "
Cemented with: 50 sx. *or* cu.ft.
Top of Cement: *391* ft. | Method Determined: *calculated*

Intermediate Casing

Hole Size: | Casing Size:
Cemented with: sx. *or* cu.ft.
Top of Cement: | Method Determined:

Production Casing

Hole Size: | Casing Size: 5 1/2 "
Cemented with: 100 sx. *or* cu.ft.
Top of Cement: 2456 ft. | Method Determined: *calculated*

Liner

Hole Size: | Casing Size:
Cemented with: sx. *or* cu.ft.
Top of Cement: | Method Determined:
Top of Liner : | TD of Liner :

Injection Interval

Perforations : Top | Bottom
Open Hole : Top 3065 ft. | Bottom 3338

Injection Well Data Sheet

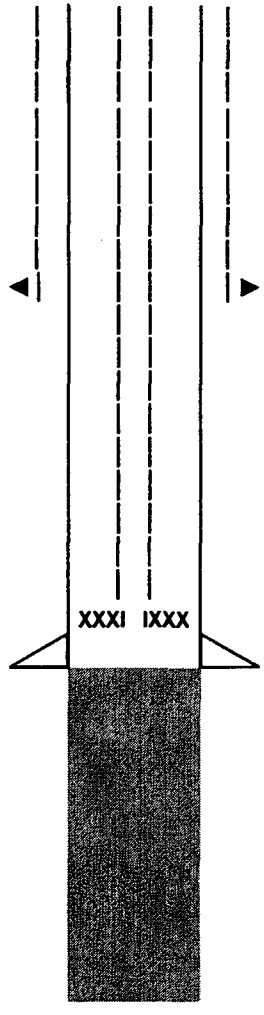
New Mexico Oil Conservation Division C-108 Application

Well Name & Number: North Square Lake Unit # 12

API # 30-015-04856

Proposed Wellbore Schematic

Type Well : Active Injector



Red Bed Base:	452	ft.
Surface Cement Top:	391	ft.
Surface Pipe TD :	596	ft.
Salt Top :	590	ft.
Salt Base:	1435	ft.
Production Casing Cement Top :	2456	ft.
Packer Setting Depth:	3000	ft.
Production Casing	3065	ft.
Top of Pay :	3100	ft.
Bottom of Pay :	3308	ft.
Open Hole Total Depth:	3338	ft.

Tubing Data

Tubing Size : 2 3/8 " Lining: plastic coating

Type of Packer: AD - 1

Packer Setting Depth: 3000 ft.

Additional Data

1.) Is this a new well drilled for Injection ? ____ Yes X No

If No original purpose well was drilled ? original D & C 9 / 1944 as producer to 3195':1/1947 dpn - 3338'

2.) Name of Injection Interval ? Grayburg-Loco Hills,Metex,& Premier San Andres-Lovington

3.) Name of Pool ? Square Lake

4.) Has this well ever been perforated in any other zones ? ____ Yes X No

If yes,following is perforating and plugging detail :

5.) Give the name and depths of any oil or gas zones underlying or overlying the proposed injection interval in this area:

None

6.) If this well was previously an injection well in same proposed interval the following data is provided:

Date injection occurred: Start: n/a Last:

Cumulative barrels of water injected in this well in the proposed injection interval: n/a bbls.

NMOCD Authorization: Order No. n/a Issue Date:

Injection Well Data Sheet

New Mexico Oil Conservation Division C-108 Application

August-03

Operator : *CBS Operating Corp.*

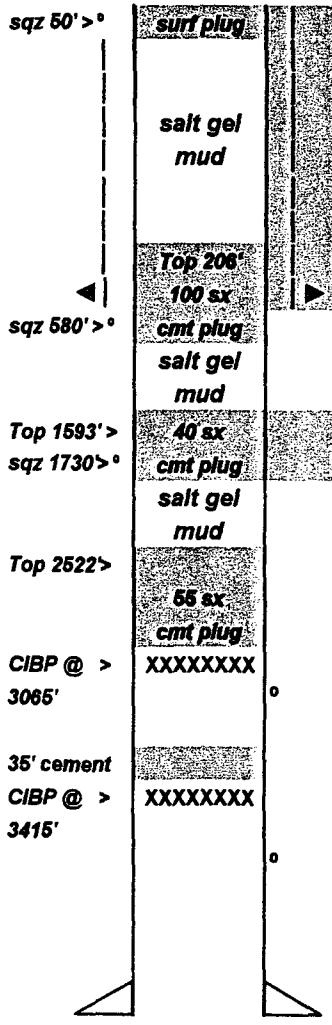
Well Name & Number: *North Square Lake Unit #* 15

API # 30-015-04859

Well Location:	*1980' FEL & 660' FSL*	*O*	*20*	*16-South*	*31-East*	*Eddy*
	Footage Location	Unit Letter	Section	Township	Range	County

Current Wellbore Schematic

Type Well : *Plugged & Abandoned Injection Well*



Surface Cement Top:	surface	*ft.*
Red Bed Base:		*ft.*
Surface Pipe TD :	272	*ft.*
Salt Top :	630	*ft.*
Salt Base:	1630	*ft.*
Production Casing Cement Top :	2263	*ft.*
Top Perforation :	3356	*ft.*
Bottom Perforation :	3506	*ft.*
Production Casing TD :	3517	*ft.*

Wellbore Construction Data

Surface Casing

Hole Size:			Casing Size:	8 5/8"
Cemented with:	200	sx. *or*		cu.ft.
Top of Cement:	*circ.*		Method Determined:	*reported*

Intermediate Casing

Hole Size:			Casing Size:	
Cemented with:		sx. *or*		cu.ft.
Top of Cement:			Method Determined:	

Production Casing

Hole Size:			Casing Size:	5 1/2"
Cemented with:	175	sx. *or*		cu.ft.
Top of Cement:	2263		Method Determined:	*calculated*

Liner

Hole Size:			Casing Size:	
Cemented with:		sx. *or*		cu.ft.
Top of Cement:			Method Determined:	
Top of Liner :			TD of Liner :	

Injection Interval

Perforations :	Top	3356	Bottom	3506
Open Hole :	Top		Bottom	

Injection Well Data Sheet

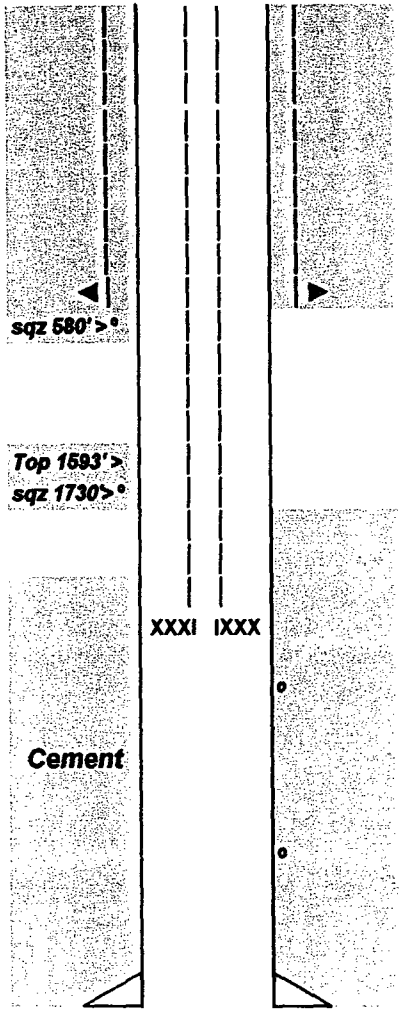
New Mexico Oil Conservation Division C-108 Application

Well Name & Number: North Square Lake Unit #

API # 30-015-04859

Proposed Wellbore Schematic

Type Well : Active Injector



Surface Cement Top:	surface	ft.
Red Bed Base:		ft.
Surface Pipe TD :	272	ft.
Salt Top :	630	ft.
Salt Base:	1630	ft.
Production Casing Cement Top :	2263	ft.
Packer Setting Depth:	3256	ft.
Top Perforation :	3356	ft.
Bottom Perforation :	3506	ft.
Production Casing TD :	3517	ft.

Tubing Data

Tubing Size : 2 3/8" Lining: plastic coated

Type of Packer: AD-1

Packer Setting Depth: 3256'

Additional Data

1.) Is this a new well drilled for Injection ? ____Yes X No

If No original purpose well was drilled ? original D&C 1/1961 as producer ,convert to injector 11/1975 Plugged 2/1995

2.) Name of Injection Interval ? Grayburg-Loco Hills,Metex,& Premier San Andres-Lovington

3.) Name of Pool ? Square Lake

4.) Has this well ever been perforated in any other zones ?

X Yes ____ No

If yes,following is perforating and plugging detail : Sqz hole top & base of salt :580' & 1730'

5.) Give the name and depths of any oil or gas zones underlying or overlying the proposed injection interval in this area:

None

6.) If this well was previously an injection well in same proposed interval the following data is provided:

Date injection occurred: Start: Nov-75

Cumulative barrels of water injected in this well in the proposed injection interval: 508,436 bbls.

NMOCD Authorization: Order No. R-5065 Issue Date: Jul-75

Injection Well Data Sheet

New Mexico Oil Conservation Division C-108 Application

August-03

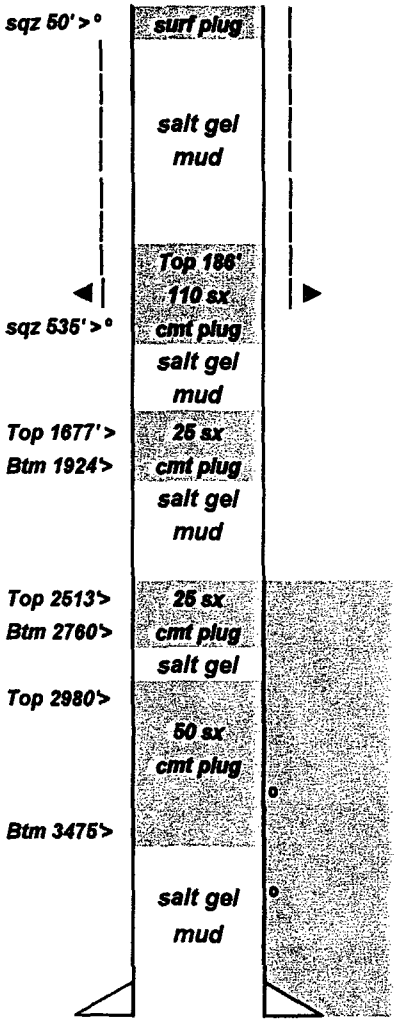
Operator : *CBS Operating Corp.*

Well Name & Number: *North Square Lake Unit #* 16 **API #** 30-015-04860

Well Location: *660' FSL & 660' FEL* (Footage Location) | *P* (Unit Letter) | *20* (Section) | *16-South* (Township) | *31-East* (Range) | *Eddy* (County)

Current Wellbore Schematic

Type Well : *Plugged & Abandoned Producing Well*



Red Bed Base: ____ ft.

Surface Cement Top: surface ft.

Surface Pipe TD : 275 ft.

Salt Top : 685 ft.

Salt Base: 1680 ft.

Production Casing Cement Top : 2516 ft.

Note: When plugging shot 4 sqz holes @ 1780' and could not break down so spotted plug @ 1677' Also shot 4 sqz holes @ 635' could not break down so moved up to 535' for sqz holes

Top Perforation : 3354 ft.

Bottom Perforation : 3562 ft.

Production Casing TD : 3582 ft.

Wellbore Construction Data

Surface Casing

Hole Size: ____ Casing Size: 8 5/8"
Cemented with: 275 sx. *or* ____ cu.ft.
Top of Cement: *circ.* Method Determined: *reported*

Intermediate Casing

Hole Size: ____ Casing Size: ____
Cemented with: ____ sx. *or* ____ cu.ft.
Top of Cement: ____ Method Determined: ____

Production Casing

Hole Size: ____ Casing Size: 5 1/2"
Cemented with: 175 sx. *or* ____ cu.ft.
Top of Cement: 2516 Method Determined: *calculated*

Liner

Hole Size: ____ Casing Size: ____
Cemented with: ____ sx. *or* ____ cu.ft.
Top of Cement: ____ Method Determined: ____
Top of Liner : ____ TD of Liner : ____

Injection Interval

Perforations : Top 3354 Bottom 3562
Open Hole : Top ____ Bottom ____

Injection Well Data Sheet

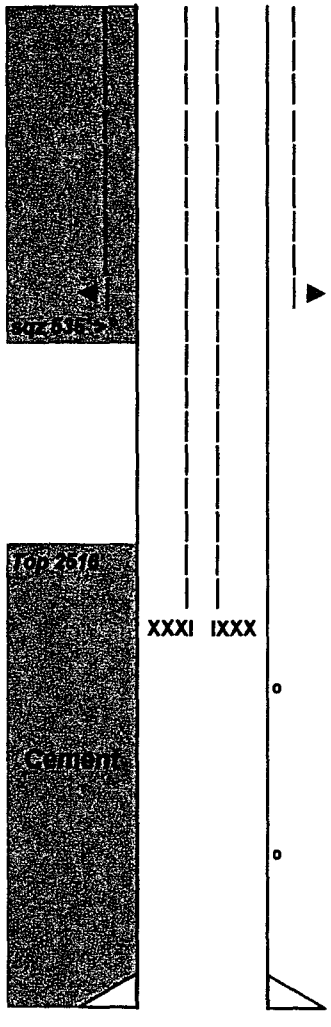
New Mexico Oil Conservation Division C-108 Application

Well Name & Number: North Square Lake Unit #

API # _____

Proposed Wellbore Schematic

Type Well : Active Injector



Red Bed Base:	_____	*ft.*
Surface Cement Top:	surface	*ft.*
Surface Pipe TD :	275	*ft.*
Salt Top :	685	*ft.*
Salt Base:	1680	*ft.*
Production Casing Cement Top :	2516	*ft.*
Packer Setting Depth:	3254	*ft.*
Top Perforation :	3354	*ft.*
Bottom Perforation :	3562	*ft.*
Production Casing TD :	3582	*ft.*

Tubing Data

Tubing Size : 2 3/8" **Lining:** *plastic coated*

Type of Packer: AD-1

Packer Setting Depth: 3254'

Additional Data

1.) Is this a new well drilled for Injection ? ____Yes __X__ No

If No original purpose well was drilled ? *original D&C 5/1961 as producer , and plugged 2/1995*

2.) Name of Injection Interval ? *Grayburg-Loco Hills,Metex,& Premier San Andres-Lovington*

3.) Name of Pool ? *Square Lake*

4.) Has this well ever been perforated in any other zones ?

__X__ Yes _____ No

If yes,following is perforating and plugging detail : Sqz holes top of salt @ 535'

5.) Give the name and depths of any oil or gas zones underlying or overlying the proposed injection interval in this area: _____

None

6.) If this well was previously an injection well in same proposed interval the following data is provided:

Date injection occurred: Start: _____

Cumulative barrels of water injected in this well in the proposed injection interval: _____ bbls.

NMOCD Authorization: Order No. _____

Injection Well Data Sheet

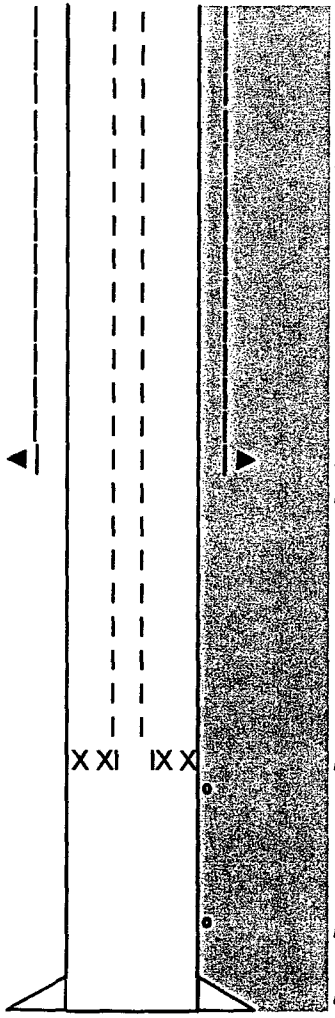
New Mexico Oil Conservation Division C-108 Application

Well Name & Number: North Square Lake Unit # 124

API # 30-015-24580

Proposed Wellbore Schematic

Type Well : *Active Injector*



Surface Cement Top:	circ	ft.
Red Bed Base:	290	ft.
Salt Top :	520	ft.
Salt Base:	1350	ft.
Surface Pipe TD :	1560	ft.
Production Casing Cement Top :	circ	ft.
Packer Setting Depth:	~~2900~~ 2950	ft.
Top Perforation :	3040	ft.
Bottom Perforation :	3270	ft.
Production Casing TD	3401	ft.

Tubing Data

Tubing Size : 2 3/8" Lining: plastic coated

Type of Packer:

Packer Setting Depth: 2900'

Additional Data

1.) Is this a new well drilled for Injection ? ____Yes X No

If No original purpose well was drilled ? orig D & C 10/ 1983 as a producer

2.) Name of Injection Interval ? Grayburg-Loco Hills,Metex,& Premier San Andres-Lovington

3.) Name of Pool ? Square Lake

4.) Has this well ever been perforated in any other zones ?

____Yes X No

If yes,following is perforating and plugging detail :

5.) Give the name and depths of any oil or gas zones underlying or overlying the proposed injection interval in this area:

None

6.) If this well was previously an injection well in same proposed interval the following data is provided:

Date injection occurred: Start: na Last: na

Cumulative barrels of water injected in this well in the proposed injection interval: na bbls.

NMOCD Authorization: Order No. na Issue Date: na

Injection Well Data Sheet

New Mexico Oil Conservation Division C-108 Application

August-03

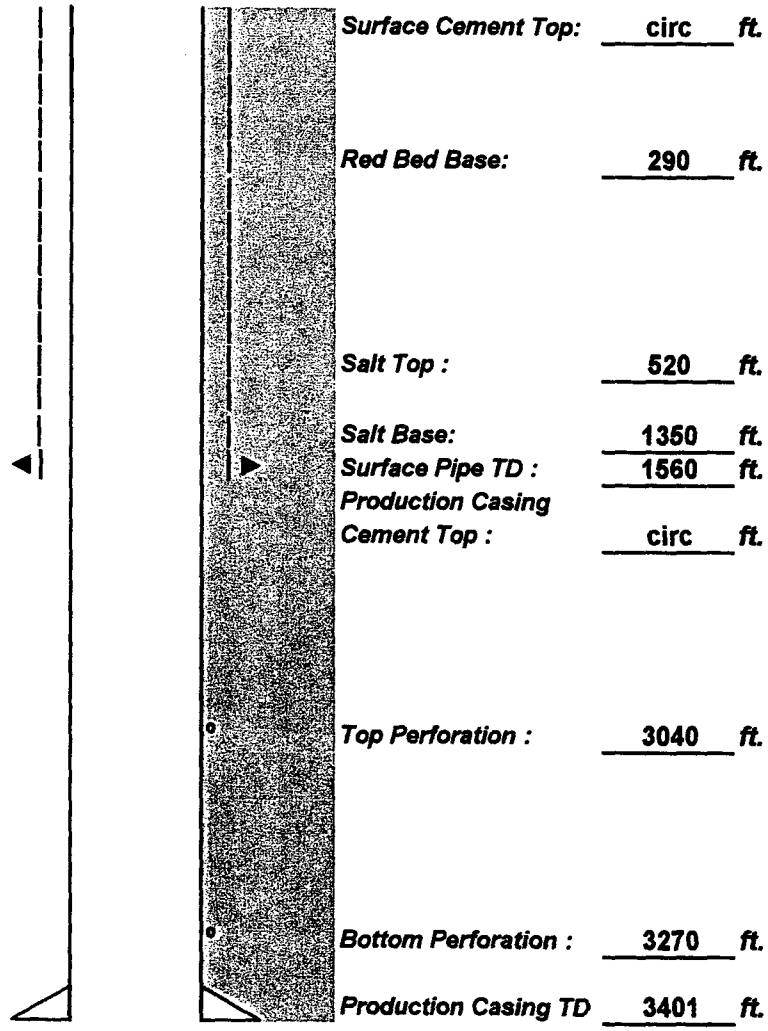
Operator : *CBS Operating Corp.*

Well Name & Number: *North Square Lake Unit #* 124 API # 30-015-24580

Well Location:	~~1980' FSL & 1680' FWL~~	~~K~~ C	31	16-South	31-East	Eddy
	Footage Location	Unit Letter	Section	Township	Range	County

Current Wellbore Schematic

Type Well : *Active Producer*



Surface Cement Top:	circ	ft.
Red Bed Base:	290	ft.
Salt Top :	520	ft.
Salt Base:	1350	ft.
Surface Pipe TD :	1560	ft.
Production Casing Cement Top :	circ	ft.
Top Perforation :	3040	ft.
Bottom Perforation :	3270	ft.
Production Casing TD	3401	ft.

Wellbore Construction Data

Surface Casing

Hole Size: *10 in. e* Casing Size: *8 5/8"*
Cemented with: *975* sx. *or* ____ cu.ft.
Top of Cement: *circ* Method Determined: *calc*

Intermediate Casing

Hole Size: ____ Casing Size: ____
Cemented with: ____ sx. *or* ____ cu.ft.
Top of Cement: ____ Method Determined: ____

Production Casing

Hole Size: *7 7/8 in e* Casing Size: *5 1/2"*
Cemented with: *750* ~~sx.~~ *or* ____ cu.ft.
Top of Cement: *circ* (100' BY Temp Survey) Method Determined: *calc*

Liner

Hole Size: ____ Casing Size: ____
Cemented with: ____ sx. *or* ____ cu.ft.
Top of Cement: ____ Method Determined: ____
Top of Liner : ____ TD of Liner : ____

Injection Interval

Perforations : Top *3040'* Bottom *3270'*
Open Hole : Top ____ Bottom ____

Injection Well Data Sheet

New Mexico Oil Conservation Division C-108 Application

August-03

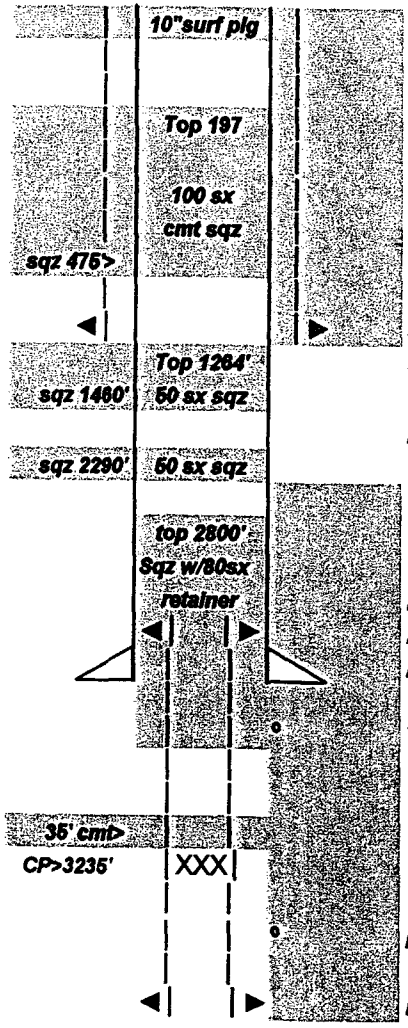
Operator : *CBS Operating Corp.*

Well Name & Number: *North Square Lake Unit #* 126 API # 30-015-04947

Well Location:	*1980' FNL & 1980' FEL*	*G*	*31*	*16-South*	*31-East*	*Eddy*
	Footage Location	Unit Letter	Section	Township	Range	County

Current Wellbore Schematic

Type Well : Plugged & Abandoned Producer



Surface Cement Top:	surf	*ft.*
Red Bed Base:	225	*ft.*
Salt Top :	525	*ft.*
Surface Pipe TD :	538	*ft.*
Salt Base:	1360	*ft.*
Production Casing Cement Top :	2299	*ft.*
Liner Top:	2933	*ft.*
Liner Cement Top :	2933	*ft.*
Production Casing TD	2985	*ft.*
Top Perforation :	3129	*ft.*
Bottom Perforation :	3311	*ft.*
Liner TD :	3334	*ft.*

Wellbore Construction Data

Surface Casing

Hole Size:				Casing Size:	*10"*
Cemented with:	*50*	sx. *or*		cu.ft.	
Top of Cement:	*circ*		Method Determined:		*calc*

Intermediate Casing

Hole Size:				Casing Size:	
Cemented with:		sx. *or*		cu.ft.	
Top of Cement:			Method Determined:		

Production Casing

Hole Size:				Casing Size:	*7"*
Cemented with:	*100*	sx. *or*		cu.ft.	
Top of Cement:	*2299*		Method Determined:		*calc*

Liner

Hole Size:				Casing Size:	*4 1/2"*
Cemented with:	*100*	sx. *or*		cu.ft.	
Top of Cement:	*2933*		Method Determined:		*calc*
Top of Liner :	*2933'*		TD of Liner :		*3334'*

Injection Interval

Perforations :	Top	*3129'*		Bottom	*3311'*
Open Hole :	Top			Bottom	

Injection Well Data Sheet

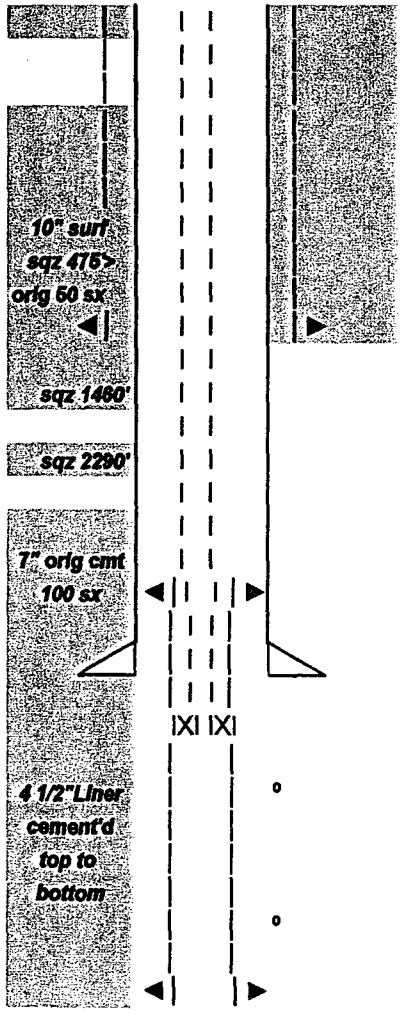
New Mexico Oil Conservation Division C-108 Application

Well Name & Number: North Square Lake Unit # 126

API # 30-015-04947

Proposed Wellbore Schematic

Type Well : *Active Injector*



Surface Cement Top:	surf	ft.
Red Bed Base:	225	ft.
Salt Top :	525	ft.
Surface Pipe TD :	538	ft.
Salt Base:	1360	ft.
Production Casing Cement Top :	2299	ft.
Liner Top:	2933	ft.
Liner Cement Top :	2933	ft.
Production Casing TD	2985	ft.
Packer Setting Depth:	3030	ft.
Top Perforation :	3129	ft.
Bottom Perforation :	3311	ft.
Liner TD :	3334	ft.

Tubing Data

Tubing Size : 2 3/8" **Lining:** plastic coated

Type of Packer: AD-1

Packer Setting Depth: 3030'

Additional Data

1.) Is this a new well drilled for injection ? ____ Yes X No

If No original purpose well was drilled ? Aug-42

, P & A'd 8/1988

2.) Name of Injection Interval ? Grayburg-Loco Hills,Metex,& Premier San Andres-Lovington

3.) Name of Pool ? Square Lake

4.) Has this well ever been perforated in any other zones ?

X Yes ____ No

If yes,following is perforating and plugging detail : Sqz holes top & base of salt @ 475' & 1460' : Queen @ 2290'

5.) Give the name and depths of any oil or gas zones underlying or overlying the proposed injection interval in this area:

None

6.) If this well was previously an injection well in same proposed interval the following data is provided:

Date injection occurred: Start: ____

Cumulative barrels of water injected in this well in the proposed injection interval: ____ bbls.

NMOCD Authorization: Order No. ____

Injection Well Data Sheet

New Mexico Oil Conservation Division C-108 Application

August-03

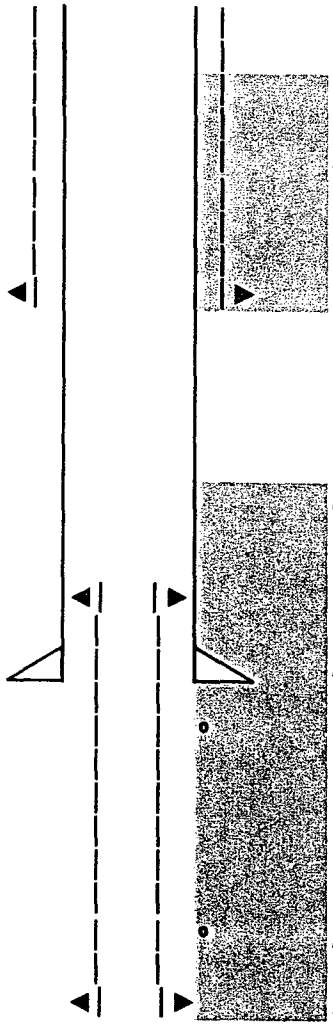
Operator : *CBS Operating Corp.*

Well Name & Number: *North Square Lake Unit #* 144 API # 30-015-04941

Well Location:	*1980' FSL & 1680' FWL*	*K*	*31*	*16-South*	*31-East*	*Eddy*
	Footage Location	Unit Letter	Section	Township	Range	County

Current Wellbore Schematic

Type Well : *Active Producer*



Surface Cement Top:	320	ft.
Red Bed Base:	475	ft.
Surface Pipe TD :	502	ft.
Salt Top :	510	ft.
Salt Base:	1330	ft.
Production Casing Cement Top :	2152	ft.
Liner Top:	2782	ft.
Liner Cement Top :		ft.
Production Casing TD	2838	ft.
Top Perforation :	3032	ft.
Bottom Perforation :	3232	ft.
Liner TD :	3244	ft.

Wellbore Construction Data

Surface Casing

Hole Size: Casing Size: *8 1/2"*
Cemented with: *50* sx. *or* cu.ft.
Top of Cement: *320'* Method Determined: *calc*

Intermediate Casing

Hole Size: Casing Size:
Cemented with: sx. *or* cu.ft.
Top of Cement: Method Determined:

Production Casing

Hole Size: Casing Size: *7"*
Cemented with: *100* sx. *or* cu.ft.
Top of Cement: *2152'* Method Determined: *calc*

Liner

Hole Size: Casing Size: *4"*
Cemented with: sx. *or* cu.ft.
Top of Cement: *2782'* Method Determined: *calc*
Top of Liner : *2782'* TD of Liner : *3244'*

Injection Interval

Perforations : Top *3032'* Bottom *3232'*
Open Hole : Top Bottom

Injection Well Data Sheet

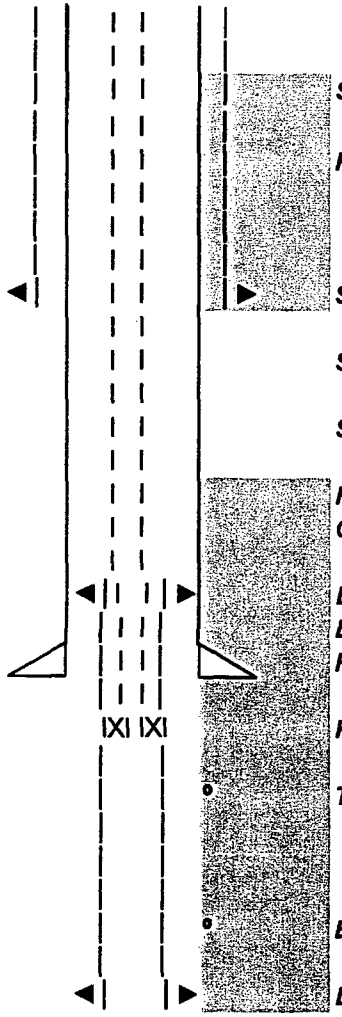
New Mexico Oil Conservation Division C-108 Application

Well Name & Number: North Square Lake Unit # 144

API # 30-015-04941

Proposed Wellbore Schematic

Type Well : *Active Injector*



Surface Cement Top:	320	ft.
Red Bed Base:	475	ft.
Surface Pipe TD :	502	ft.
Salt Top :	510	ft.
Salt Base:	1330	ft.
Production Casing Cement Top :	2152	ft.
Liner Top:	2900	ft.
Liner Cement Top :		ft.
Production Casing TD	2838	ft.
Packer setting depth:	3265	ft.
Top Perforation :	3032	ft.
Bottom Perforation :	3232	ft.
Liner TD :	3244	ft.

Tubing Data

Tubing Size : 2 3/8" Lining: plastic coated

Type of Packer: AD-1

Packer Setting Depth: 2900'

Additional Data

1.) Is this a new well drilled for Injection ? ____Yes X No

If No original purpose well was drilled ? orig D & C 1942 as a producer

2.) Name of Injection Interval ? Grayburg-Loco Hills,Metex,& Premier San Andres-Lovington

3.) Name of Pool ? Square Lake

4.) Has this well ever been perforated in any other zones ?

____Yes X No

If yes,following is perforating and plugging detail :

5.) Give the name and depths of any oil or gas zones underlying or overlying the proposed injection interval in this area:

None

6.) If this well was previously an injection well in same proposed interval the following data is provided:

Date injection occurred: Start: _____

Cumulative barrels of water injected in this well in the proposed injection interval: _____ bbls.

NMOCD Authorization: Order No. _____

Injection Well Data Sheet

New Mexico Oil Conservation Division C-108 Application

August-03

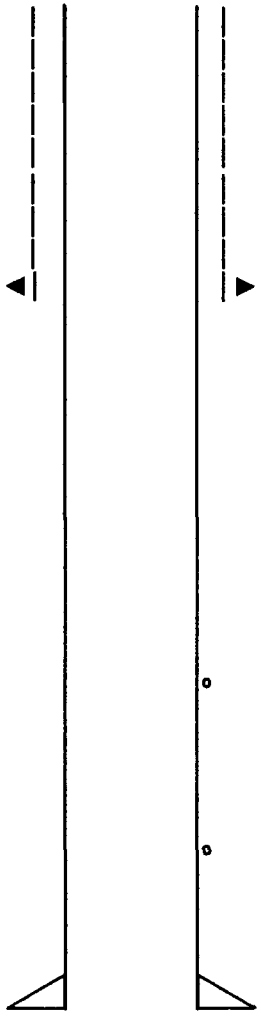
Operator : *CBS Operating Corp.*

Well Name & Number: *North Square Lake Unit #* 162 API # 30-015-24457

Well Location:	660' FSL & 1980' FEL Footage Location	O Unit Letter	31 Section	16-South Township	31-East Range	Eddy County

Current Wellbore Schematic

Type Well : Active Producer



Red Bed Base:	307	ft.
Surface Cement Top:	circ.	ft.
Surface Pipe TD :	520	ft.
Salt Top :	520	ft.
Salt Base:	1376	ft.
Production Casing Cement Top :	circ	ft.
Top Perforation :	3084	ft.
Bottom Perforation :	3320	ft.
Production Casing TD :	3424	ft.

Wellbore Construction Data

Surface Casing

Hole Size: — Casing Size: 8 5/8 "
Cemented with: 400 sx. *or* — cu.ft.
Top of Cement: *circ* Method Determined: *reported*

Intermediate Casing

Hole Size: — Casing Size: —
Cemented with: — sx. *or* — cu.ft.
Top of Cement: — Method Determined: —

Production Casing

Hole Size: — Casing Size: 5 1/2"
Cemented with: 4100 sx. *or* — cu.ft.
Top of Cement: circ ft. Method Determined: *reported*

Liner

Hole Size: — Casing Size: —
Cemented with: — sx. *or* — cu.ft.
Top of Cement: — Method Determined: —
Top of Liner : — TD of Liner : —

Injection Interval

Perforations : Top 3084 Bottom 3320
Open Hole : Top — Bottom —

Injection Well Data Sheet

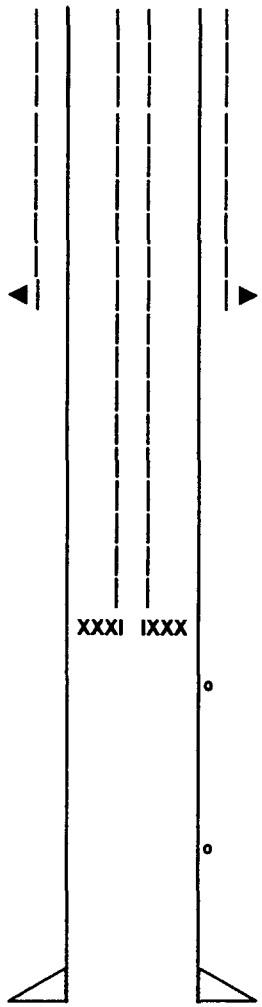
New Mexico Oil Conservation Division C-108 Application

Well Name & Number: North Square Lake Unit # 162

API # 30-015-24457

Proposed Wellbore Schematic

Type Well : Active Injector



Red Bed Base:	307	ft.
Surface Cement Top:	circ.	ft.
Surface Pipe TD :	520	ft.
Salt Top :	520	ft.
Salt Base:	1376	ft.
Production Casing Cement Top :	circ	ft.
Packer Setting Depth:	2984	ft.
Top Perforation :	3084	ft.
Bottom Perforation :	3320	ft.
Production Casing TD :	3424	ft.

Tubing Data

Tubing Size : 2 3/8 " Lining: plastic coating

Type of Packer: AD - 1

Packer Setting Depth: 2984 ft.

Additional Data

1.) Is this a new well drilled for Injection ? ____Yes X No

If No original purpose well was drilled ? original D & C

6 / 1983 as producer

2.) Name of Injection Interval ? Grayburg-Loco Hills,Metex,& Premier San Andres-Lovington

3.) Name of Pool ? Square Lake

4.) Has this well ever been perforated in any other zones ?

____Yes X No

If yes,following is perforating and plugging detail :

5.) Give the name and depths of any oil or gas zones underlying or overlying the proposed injection interval in this area:

None

6.) If this well was previously an injection well in same proposed interval the following data is provided:

Date injection occurred: Start: n/a Last:

Cumulative barrels of water injected in this well in the proposed injection interval: n/a bbls.

NMOCD Authorization: Order No. n/a Issue Date:

NSLU # 12 WELLS IN THE AREA OF REVIEW

LEASE NAME (Original)	WELL #	NSLU well no.	API # 30-015	S-T-R	LOC'N.	CURRENT STATUS	SPUD DATE	COMP DATE	TD/ PBTD	CASING PROGRAM	TOC	FORM.	COMP. ZONE	STIMULATION	IP
Rowley Federal	2	5	10322	20L-16-31	1650' FSL 990' FNL	Active Producer	2/18/1964	3/26/1964	3491'/ 3490	5 1/2" Csg set @ 3490' w/150 sxs	2576'	GB-SA	3291-3440	44 MGAL & 39.5 M#	44 BOPD
Grier	3	13	04858	20M-16-31	330' FSL 510' FWL	P&A WIW	11/29/1944	1/24/1945	3237'	8 1/4" Csg set @ 590' w/ 50 sxs 5 1/2" Csg set @ 3115' w/100 sxs	416' 2506'	GB-SA	2574-3237'	220 qts. Nitro	75 BOPD
Vickers	2	21	04934	30A-16-31	660' FNL 660' FEL	P&A WIW	2/1/1944	4/1/1944	3205'/ 3205'	8 5/8" Csg set @ 617' w/ 100 sxs 5 1/2" Csg set @ 3030' w/ 100 sxs	208' 2421'	GB-SA	3030-205 (OH)	NA	150 BOPD
Grier	1	22	04905	29D-16-31	760' FNL 560' FWL	Inactive Producer	11/29/1943	1/15/1944	3230'	8 5/8" Csg set @ 570' w/ 50 sx 5 1/2" Csg set @ 3055' w/ 100 sxs	396' 2451'	GB-SA	3055-3230 (OH)	120 qts. Nitro	90 BOPD
Vickers	1	39	04933	30H-16-31	1980' FNL 660' FEL	Active Producer	11/7/1943	1/21/1944	3326'/ 3326'	8 5/8" Csg set @ 550' w/ 50 sxs 5 1/2" Csg set @ 3100' w/ 100 sxs	346' 2491'	GB-SA	3100-3326 (OH) In 4/71 add 3108-3309	NA 15 MGAL & 15 M#	86 BOPD
Etz	4	3	20183	19J-16-31	1980' FSL 1980'FEL	Active Producer	11/14/1968	12/17/1968	3322'/ 3321'	8 5/8" Csg set @ 476' w/ 450 sxs. 4 1/2" Csg set @ 3321' w/ 300 sxs.	Circ. 1953'	GB-SA	3145-3263	30 MGAL & 30 M#	30 BOPD
Etz	3	4	20127	19I-16-31	1650' FSL 990' FEL	Active Injector	3/13/1968	4/1/68	3350	8 5/8" Csg set @ 468' w/ 150 sxs. 4 1/2" Csg set @ 3350' w/ 300 sxs.	Circ. 1982'	GB-SA	3170-3305	30 MGAL & 30 M#	61 BOPD
Etz	2	10	04853	19N-16-31	660' FSL 1668' FWL	Active Producer	2/15/1945	4/30/1945	3362'/ 3362	10 3/4" Csg set @ 400' w/ 50 sxs. 7" Csg set @ 2975' w/ 100 sxs.	Circ. 2289'	GB-SA	2975-3362' (OH)	290 qts. Nitro @ 3175-3300	65 BOPD
Vickers	6	11	04857	19O-16-31	660' FSL 1980' FEL	Active Producer	8/25/1965	9/20/1965	3288	8 5/8" Csg set @ 566' w/ 50 sxs. 5 1/2" Csg set @ 3015' w/ 150 sxs. 4 1/2" Lnr ?????? w/ ??? sxs Liner set 9/65	361' 2102'	GB-SA	3060-257' (OH) 3060-3257 Perfs.	200 qts. Nitro Acidize w/1400 gal Frac w/77.2Mg & 48M#	68 BOPD 38 BWPD
H J Loe	3	19	10469	30C-16-31	330' FNL 1995' FWL	P & A'd	2/17/1965	3/29/1965	3275'	13" Csg set @ 30' w/ 20 sxs. 5 1/2" Csg set @ 3274' w/ 250 sxs. plus 50 sxs. @ 400'	surf 1751'	GB-SA	3037-3230	19 MGAL & 19 M#	25 BOPD
Vickers	4	20	04936	30B-16-31	660' FNL 1980' FEL	Active Producer	5/10/1944	7/9/1944	3267'/ 3258'	8 5/8" Csg set @ 560' w/ 50 sxs 5 1/2" Csg set @ 3004' w/ 100 sxs 4 1/2" Lnr 2892-3267 w/75 sxs Lnr ran 12/65	355' 2395'	GB-SA	3004-3267 (OH) 3111-256	NATURAL 40 MGAL & 38 M#	160 BOPD
Etz	7	38	4937	30G-16-31	1345' FNL 1345' FEL	Inactive Producer	4/28/1956	6/10/1956	3207'	10 3/4" Csg set @ 416' w/ 325 sxs. 5 1/2" Csg set @ 3076' w/ 100 sxs.	surf 2467'	GB-SA	3076-3207 (OH)	not recorded	11 BOPD

3,358 – 3506 interval

NSLU #15 WELLS IN THE AREA OF REVIEW

LEASE NAME (Original)	WELL #	NSLU well no.	API # 30-015	S-T-R	LOC'N.	CURRENT STATUS	SPUD DATE	COMP DATE	TD/ PBTD	CASING PROGRAM	TOC	FORM.	COMP. ZONE	STIMULATION	IP
Rowley Federal	2	5	10322	**20L-16-31**	1650' FSL 990' FNL	Active Producer	2/18/1964	3/26/1964	3491'/ 3490	5 1/2" Csg set @ 3490' w/150 sxs	2576'	GB-SA	3291-3440	44 MGAL & 39.5 M#	44 BOPD
Rowley Federal	1	6	10206	**20K-16-31**	1650' FSL 1980' FWL	P&A	1/9/1964	2/5/1964	3513'/ 3499'	5 1/2" Csg set @ 3511' w/150 sxs	2597'	GB-SA	3322-469	Frac w/40 M gal & 48 M#	50 BOPD
Grier	13	7	04863	**20J-16-31**	1980' FSL 1980' FEL	Active Producer	9/23/1961	11/13/1961	3535'/ 3533'	10" Csg set @ 548' w/ 75 sxs 5 1/2" Csg set @ 3535' w/ 76 sxs	105' 3072'	GB-SA	3502-24	11.2 GAL & 6 M#	184 BOPD
Grier	14	8	04864	**20I-16-31**	1980' FSL 660' FEL	WIW	11/8/1961	1/31/1962	3610'	10 3/4" Csg set @ 574' w/ 75 sxs 5 1/2" Csg set @ 3610' w/ 75 sxs	Circ. 3153'	GB-SA	3562-3576	15 MGAL & 30 M#	19 BOPD
Grier	4	14	10343	**20N-16-31**	990' FSL 1980' FWL	Active Producer	4/8/1964	5/8/1964	3505'/ 3499	5 1/2" Csg set @ 3504' w/ 150 sxs	2591'	GB-SA	3250-3461	70 M gal & 70 M#	292 BOPD
Baxter "A"	2	16	04860	**20P-16-31**	660' FSL 660' FEL	P&A	5/6/1961	6/30/1961	3582'/ 3582'	8 5/8" Csg set @ 349' w/ 275 sxs 5 1/2" Csg set @ 3582' w/ 175 sxs	Circ. 2516'	GB-SA	3354-3562	30 M gal & 54 M#	55 BOPD
Grier	2	23	04906	**29C-16-31**	810' FNL 1980' FWL	P& A WIW	8/4/1944	9/29/1944	3296'	8 5/8" Csg set @ 595' w/50 sxs 5 1/2" Csg set @ 3150' w/100 sxs	390' 2541'	GB-SA	3150-3296 (OH)	50 qts. Nitro	100 BOPD
J. N. Fidel "A"	3	24	04912	**29B-16-31**	660' FNL 1980' FEL	Active Producer	8/1/1944	11/17/1944	3342'	8 5/8" Csg set @ 690' w/50 sxs 5 1/2" Csg set @ 3260' w/ 100 sxs 4 1/2" Lnr 3158-514 W/35 sxs Lnr ran 5/62	486' 2651'	GB-SA	3260-3342 (OH) 3269-3358	160 Qts nitro 26 MGAL & 38.5 M#	
J. N. Fidel "A"	4	25	04913	**29A-16-31**	810' FNL 990' FEL	Active Producer	12/5/1944	2/5/1945	3563'	8 1/4" Csg set @ 708' w/ 50 sx 5 1/2" Csg set @ 3247' w/ 100 sxs 4 1/2" Lnr 3253-3563 W/50 sxs Lnr ran 10/62	534' 2638'	GB-SA	3297-432 (OH) 3311-3514	200 QTS. NITRO 45 MGAL & 39 M#	

3354—3562

NSLU #16 WELLS IN THE AREA OF REVIEW

LEASE NAME (Original)	WELL #	NSLU well no.	API # 30-015	S-T-R	LOC'N.	CURRENT STATUS	SPUD DATE	COMP DATE	TD/ PBTD	CASING PROGRAM	TOC	FORM.	COMP. ZONE	STIMULATION	IP
Grier	13	7	04863	**20J-16-31**	1980' FSL 1980' FEL	Active Producer	9/23/1961	11/13/1961	3535'/ 3533'	10" Csg set @ 548' w/ 75 sxs 5 1/2" Csg set @ 3535' w/ 76 sxs	105' 3072'	GB-SA	3502-24	11.2 GAL & 6 M#	184 BOPD
Grier	14	8	04864	**20I-16-31**	1980' FSL 660' FEL	WIW	11/8/1961	1/31/1962	3610'	10 3/4" Csg set @ 574' w/ 75 sxs 5 1/2" Csg set @ 3610' w/ 75 sxs	Circ. 3153'	GB-SA	3562-3576	15 MGAL & 30 M#	19 BOPD
Grier	4	14	10343	**20N-16-31**	990' FSL 1980' FWL	Active Producer	4/8/1964	5/8/1964	3505'/ 3499	5 1/2" Csg set @ 3504' w/ 150 sxs	2591'	GB-SA	3250-3461	70 M gal & 70 M#	292 BOPD
Baxter "A"	1	15	04859	**20O-16-31**	660' FSL 1980' FEL	P & A	12/19/1960	1/14/1961	3517'/ 3505'	8 5/8" Csg set @ 262' w/ 200 sxs 5 1/2" Csg set @ 3517' w/ 175 sxs	Circ. 2451'	GB-SA	3356-3500	35 M gal & 48 M#	64 BOPD
J. N. Fidel "A"	3	24	04912	**29B-16-31**	660' FNL 1980' FEL	Active Producer	8/1/1944	11/17/1944	3342'	8 5/8" Csg set @ 690' w/50 sxs 5 1/2" Csg set @ 3260' w/ 100 sxs 4 1/2" Lnr 3158-514 W/35 sxs Lnr ran 5/62	486' 2651'	GB-SA	3260-3342 (OH) 3269-3358	160 Qts nitro 26 MGAL & 38.5 M#	
J. N. Fidel "A"	4	25	04913	**29A-16-31**	810' FNL 990' FEL	Active Producer	12/5/1944	2/5/1945	3563'	8 1/4" Csg set @ 708' w/ 50 sx 5 1/2" Csg set @ 3247' w/ 100 sxs 4 1/2" Lnr 3253-3563 W/50 sxs Lnr ran 10/62	534' 2638'	GB-SA	3297-432 (OH) 3311-3514	200 QTS. NITRO 45 MGAL & 39 M#	
Sheldon	3 (6)	Twin to 26	04901	**28D-16-31**	660' FNL 330' FWL	P & A	10/18/1961	3/20/1962	3625'/ 3530'	8 5/8" Csg set @ 490' w/200 sxs 5 1/2" Csg set @ 3625' w/200 sxs	Circ. 2407'	GB-SA	3407-3580	Frac w/20 M gal & 26 M#	43 BOPD
Kennedy	3	27	10549	**28C-16-31**	660' FNL 1650' FWL	P&A	8/17/1965	10/6/1965	3670'/ 3663'	13 3/8" Csg set @ 30' w/25 sxs 4 1/2" Csg set @ 3670' w/150 sxs	Circ. 2986'	GB-SA	3419-622	Frac w/60 M gal	37 BOPD
Bruning	4	43	04909	**29H-16-31**	1980' FNL 660' FEL	Active Producer	8/20/1944	10/10/1944	3415'	8" Csg set @ 685' w/50 sxs 5" Csg set @ 3252' w/100 sxs	511' 2652'	GB-SA	3252-3415 (OH)	160 qts. Nitro	50 BOPD
Federal A	3	na	4865	**21M-16-31**	660' FSL 660' FWL	P&A	11/1/1961	1/1/1962	3615'	8 5/8" Csg set @ 359' w/250 sxs 4 1/2" Csg set @ 3615' w/160 sxs	circ 3115	GB-SA	3439-45 3593-97	A/ 1000g	35 BOPD
Sheldon		26	4897	**28D-16-31**	660' FNL 660' FWL	P&A	4/1/1945		3475	8 5/8" Csg set @ 764' w/50 sxs 5 1/2" Csg set @ 3329' w/100 sxs	579 2720	GB-SA	3329 - 3475(OH)		

NSLU #124 WELLS IN THE AREA OF REVIEW

LEASE NAME (Original)	WELL #	NSLU well no.	API # 30-015	S-T-R	LOC'N.	CURRENT STATUS	SPUD DATE	COMP DATE	TD/ PBTD	CASING PROGRAM	TOC	FORM.	COMP. ZONE	STIMULATION	IP
LOE	9	72	20554	30M-16-31	990' FSL 330' FWL	Active Producer	1/1/1972	1/23/1972	3260'/ 3238'	8 5/8" Csg set @ 425' w/ 185 sxs 5 1/2" Csg set @ 3260' w/ 300 sxs	Circ. 1433'	GB-SA	3038-3224	30 M gal & 30 M#	75 BOPD 30 BWPD
Grier	1	73	04926	30M-16-31	660' FSL 660' FWL	P&A	2/16/1942	5/10/1942	3100'/ 3055'	8 1/4" Csg set @ 495' w/50 sxs 7" Csg set @ 2491' w/15 sxs 5 1/2" Csg set @ 2977' w/100 sxs	321' 2388' 2368'	GB-SA	NA	NA	185 BOPD
LOE	11	75	20839	30N-16-31	660' FSL 1346' FWL	Active Producer	5/1/1973	5/25/1973	3162'/ 3158'	8 5/8" Csg set @ 439' w/ 185 sxs 5 1/2" Csg set @ 3300' w/ 300 sxs	Circ. 1393'	GB-SA	3092-3142	15 M gal & 15 M#	45 BOPD 80 BWPD
Grier	1	76	04931	30N-16-31	660' FSL 1980' FWL	P&A	4/22/1942	6/23/1942	3157'/ 3157	8 1/4" Csg set @ 508' w/55 sxs 5 1/2" Csg set @ 2957' w/100 sxs	317' 2348'	GB-SA	2957-3157	NA	250 BOPD
State "H"	3	96	04031	36A-16-30	810' FNL 600' FEL	Active Producer	12/27/1953	3/31/1954	3555'/ 3555'	10" set @ 482' w/ 100 sxs 7" set @ 2815' w/ 100 sxs. 4 1/2" Lnr 2706-3252 Liner set 2/71	Circ. 2189'	GB-SA	2815-3555' (OH) 3012-217'	Acidize w/ 9000 gal Acidize w/ 1000 gal Frac w 62 Mgal & 58 M#	30 BOPD
Grier	1	97	04942	31D-16-31	660' FNL 660' FWL	Active Producer	6/16/1941	11/28/1941	3358'/ 3358'	10 " Csg set @ 468' w/50 sxs 5 1/2" Cst set @ 2955' w/100 sxs 4 1/2" Lnr 2891-3358 w/ ??? sxs Lnr ran 2/68	187' 2346'	GB-SA	2955-3247 (OH) 3058-3247	?? Qts. of nitro Frac w/ 70 Mgal & 86 M#	90 BOPD
Grier	3	99	04944	31C-16-31	660' FNL 1980' FWL	Active Producer	5/22/1942	7/24/1942	3340'/ 3338'	10 3/4" Csg set @ 459' w/ 50 sxs 6 5/8" Csg set @ 2982" w/ 100 sxs my records show a liner check files	Circ. 2036'	GB-SA	2989-3252 (OH)	60 qts. Nitro 2247-57	640 BOPD
Grier	15	100	10752	31B-16-31	10' FNL 2630' FEL	Active Injector	12/16/1965	1/10/1966	3660'/ 3660'	13 3/8" Csg set @ 30' w/ 30 sxs 5 1/2" Csg set @ 3313" w/ 375 sxs 4 1/2" Lnr ???? w/ ??? sxs Lnr ran ????	Circ. 1029'	GB-SA	3112-3289	750 GAL. ACID Frac w/ 10 Mgal & 5 M#	WIW
Grier	11	101	04946	31B-16-31	660' FNL 1980' FEL	Active Producer	10/10/1943	12/15/1943	3380'/ 3380'	10" Csg set @ 550' w/ 50 sxs 5 1/2" Csg set @ 2988' w/ 100 sxs 4 1/2" Lnr 2942-3380 w/ 250 sxs Lnr ran 2/67	255' 2379'	GB-SA	2988-3297 (OH) 3166-3336	NA Frac w/ 37.17 Mgal & 22.5 M#	NA
Dess	1	121	21747	36G-16-30	1650' FNL 1650' FEL	Active Producer		10/49	3276'/ 3274	8 5/8" Csg set @ 499' w/100 sxs 4 1/2" Lnr set @ 3276' w/200 sxs Liner set 11/72		GB-SA	3128-48 (OH) 3013-3085' Perfs.	80 qts. Nitro Acidize w/2000 gal 2/77 Frac w/26.5 M gal & 37.5 M#	20 BOPD 33 BWPD
Tellyer State	1	122	NA	36H-16-30	1980' FNL 660' FEL	P&A	12/28/1941	3/18/1942	3114'/ 3114	8 1/4" Csg set @ 498' w/50 sxs 5 1/2" Csg set @ 2800' w/150 sxs	324' 1886'	GB-SA	2800-3114	NA	60 BOPD
Grier	2	123	04943	31E-16-31	1980' FNL 660' FWL	Active Producer	3/29/1942	5/18/1942	3265'/ 3257'	10 3/4 " Csg set @ 482' w/50 sxs 7" Csg set @ 2952' w/100 sxs 4 1/2" Lnr 2863-3257 w/ ??? sxs Lnr run 4/69	201' 2266'	GB-SA	3092-3240 (OH) 3050-3240	NA Frac w/ 40 Mgal & 26 M#	410 BOPD
Grier	4X	125	04945	31F-16-31	1980' FNL 1950' FWL	Active Producer	8/7/1942	11/19/1942	3297'/ 3297'	10" Csg set @ 512' w/ 50 sxs 7" Csg set @ 2965' w/ 100 sxs 4 1/2" Lnr 2802-3260 w/ ??? sxs Lnr run 12/69	Circ. 2279'	GB-SA	2965-3270 (OH) 3076-3265	NA Frac w/ 38 Mgal & 24 M#	500 BOPD 240 BOPD
Grier	5	126	04947	31G-16-31	1980' FNL 1980' FEL	P&A	6/9/1942	8/5/1942	3333'/ 3333'	10 3/4" Csg set @ 538' w/ 50 sxs 7" Csg set @ 2985' w/ 100 sxs 4 1/2" Lnr 2933-3333 w/ 100 sxs Lnr run 9/68	Circ. 2299'	GB-SA	2985-3333 (OH) 3129-3311	NA Frac w/ 30 Mgal & 27 M#	NA NA
Grier	16	142	20184	31E-16-31	2630' FNL 10' FWL	Active Injector	11/30/1968	1/16/1969	3254'/ 3252'	8 5/8" Csg set @ 433' w/ 150 sxs 4 1/2" Csg set @ 3252' w/ 1000 sxs	Circ. Circ.	GB-SA	3037-3222	2000 GAL. ACID	WIW
Grier A	1	143	04938	31L-16-31	1980' FSL 511' FWL	P&A	11/30/1942	1/21/43/	3060'	8 1/4" Csg set @ 557' w/50 sxs 5 1/2" Csg set @ 2955' w/400 sxs	383' 519'	GB-SA	2985-3060	170 qts. Nitro	75 BOPD
Grier "A"	1	144	04941	31K-16-31	1980' FSL 1680' FWL	Active Producer	6/30/1942	9/14/1942	3244'/ 3244'	8 5/8" Csg set @ 525' w/ 50 sxs 7" Csg set @ 2838' w/ 100 sxs 4 1/2" Lnr 2782-3244 w/ ??? sxs Lnr run 4/69	320' 2152'	GB-SA	2838-3170 (OH) 3032-3232	60 qts. Nitro 60 MGAL &50 M#	85 BOPD
Grier	6	145	04948	31J-16-31	1980' FSL 1980' FEL	Active Injector	6/30/1942	4/43	3338'/ 3338'	8 5/8" Csg set @ 545' w/ 50 sxs 5 1/2" Csg set @ 2980' w/ 100 sxs	341' 2371'	GB-SA	2988-3338 (OH)	NA	WIW
Grier "B"	2	159	24706	31L-16-31	1370' FSL 977' FWL	Active Producer	12/23/1983	2/2/1984	3370'/ 3369'	8 5/8" Csg set @ 514' w/ 425 sxs 5 1/2" Csg set @ 3356' w/ 1320 sxs	Circ. Circ.	GB-SA	3062-3169	34.3 MGAL & 69 M#	112 BOPD 83 BWPD
State "H"	4	185	10863	36A-16-30	10' FNL 10' FEL	Active Injector	5/18/1966	8/15/1966	3250'/ 3241'	13 3/8" set @ 44' w/ 50 sxs 4 1/2" set @ 3250' w/ 350 sxs.	Circ. 1654'	GB-SA	3022-3220	Acidize w/ 2000 gal	WIW

3040'-3270'

NSLU #126 WELLS IN THE AREA OF REVIEW

LEASE NAME (Original)	WELL #	NSLU well no.	API # 30-015	S-T-R	LOC'N.	CURRENT STATUS	SPUD DATE	COMP DATE	TD/ PBTD	CASING PROGRAM	TOC	FORM.	COMP. ZONE	STIMULATION	IP
Grier	1	76	04931	30N-16-31	660' FSL 1980' FWL	P&A	4/22/1942	6/23/1942	3157'/ 3157	8 1/4" Csg set @ 508' w/55 sxs 5 1/2" Csg set @ 2957' w/100 sxs	317' 2348'	GB-SA	2957-3157	NA	250 BOPD
Grier	10	77	04927	30O-16-31	660' FSL 1980' FEL	P&A	7/16/1942	10/6/1942	3307'/ 3307'	8 1/4" Csg set @ 575' w/ 25 sxs 5 1/2" Csg set @ 3053' w/ 100 sxs	488' 2444'	GB-SA	3053-3307 (OH)	320 QTS, OF NITRO	NA
Grier	1	97	04942	31D-16-31	660' FNL 660' FWL	Active Producer	6/16/1941	11/28/1941	3358'/ 3358'	10 " Csg set @ 468' w/50 sxs 5 1/2" Cst set @ 2955' w/100 sxs 4 1/2" Lnr 2891-3358 w/ ??? sxs Lnr ran 2/68	187' 2346'	GB-SA	2955-3247 (OH) 3058-3247	?? Qts. of nitro Frac w/ 70 Mgal & 86 M#	90 BOPD
Grier	3	99	04944	31C-16-31	660' FNL 1980' FWL	Active Producer	5/22/1942	7/24/1942	3340'/ 3338'	10 3/4" Csg set @ 459' w/ 50 sxs 6 5/8" Csg set @ 2982" w/ 100 sxs my records show a liner check files	Circ. 2036'	GB-SA	2989-3252 (OH)	60 qts. Nitro 2247-57	640 BOPD
Grier	15	100	10752	31B-16-31	10' FNL 2630' FEL	Active Injector	12/16/1965	1/10/1966	3660'/ 3660'	13 3/8" Csg set @ 30' w/ 30 sxs 5 1/2" Csg set @ 3313" w/ 375 sxs 4 1/2" Lnr ???? w/ ??? sxs Lnr ran ????	Circ. 1029'	GB-SA	3112-3289	750 GAL. ACID Frac w/ 10 Mgal & 5 M#	WIW
Grier	11	101	04946	31B-16-31	660' FNL 1980' FEL	Active Producer	10/10/1943	12/15/1943	3380'/ 3380'	10" Csg set @ 550' w/ 50 sxs 5 1/2" Csg set @ 2988' w/ 100 sxs 4 1/2" Lnr 2942-3380 w/ 250 sxs Lnr ran 2/67	255' 2379'	GB-SA	2988-3297 (OH) 3166-3336	NA Frac w/ 37.17 Mgal & 22.5 M#	NA
Grier	17	102	20185	31A-16-31	330' FNL 660' FEL	Active Injector	12/12/1968	1/21/1969	3420'/ 3396'	8 5/8" Csg set @ 504' w/ 250 sxs 4 1/2" Csg set @ 3420' w/ 400 sxs	Circ. 1596'	GB-SA	3132-3338	30 MGAL & 26 M#	22 BOPD
Grier	9	103	04940	31A-16-31	660' FNL 660' FEL	P&A	7/7/1942	9/26/1942	3256'	8 1/4" Csg set @ 579' w/25 sxs 7" Csg set @ 2482' w/100 sxs	492' 1796'	GB-SA	2482-3256	180 qts. Nitro	18 BOPD
Grier	2	123	04943	31E-16-31	1980' FNL 660' FWL	Active Producer	3/29/1942	5/18/1942	3265'/ 3257'	10 3/4 " Csg set @ 482' w/50 sxs 7" Csg set @ 2952' w/100 sxs 4 1/2" Lnr 2863-3257 w/ ??? sxs Lnr run 4/69	201' 2266'	GB-SA	3092-3240 (OH) 3050-3240	NA Frac w/ 40 Mgal & 26 M#	410 BOPD
Grier	20	124	24580	31C-16-31	1250' FNL 1031' FWL	Active Producer	9/15/1983	11/6/1983	3414'/ 3370'	8 5/8" Csg set @ 1560' w/ 975 sxs 5 1/2" Csg set @ 3401' w/ 750 sxs	Circ. Circ.	GB-SA	3040-270	Acidize w/ 2500 gal Frac w/ 75 Mgal & 142 M#	20 BOPD 211 BWPD
Grier	4X	125	04945	31F-16-31	1980' FNL 1950' FWL	Active Producer	8/7/1942	11/19/1942	3297'/ 3297'	10" Csg set @ 512' w/ 50 sxs 7" Csg set @ 2965' w/ 100 sxs 4 1/2" Lnr 2802-3260 w/ ??? sxs Lnr run 12/69	Circ. 2279'	GB-SA	2965-3270 (OH) 3076-3265	NA Frac w/ 38 Mgal & 24 M#	500 BOPD 240 BOPD
Grier	7X	127	04949	31H-16-31	1980' FNL 660' FEL	Inactive Injector	6/22/1943	10/4/1943	3376'/ 3376'	10" Csg set @ 350' w/ 50 sxs 5 1/2" Csg set @ 3055' w/ 100 sxs 4 1/2" Lnr 2996-3376 w/ 200 sxs Lnr run 2/67	55' 2446'	GB-SA	3055-3376 (OH) 3198-3367	170 qts. Nitro 3199-3285 Frac w/ 37.6 Mgal & 23.5 M#	240 BOPD NA
Grier "A"	1	144	04941	31K-16-31	1980' FSL 1680' FWL	Active Producer	6/30/1942	9/14/1942	3244'/ 3244'	8 5/8" Csg set @ 525' w/ 50 sxs 7" Csg set @ 2838' w/ 100 sxs 4 1/2" Lnr 2782-3244 w/ ??? sxs Lnr run 4/69	320' 2152'	GB-SA	2838-3170 (OH) 3032-3232	60 qts. Nitro 60 MGAL &50 M#	85 BOPD
Grier	6	145	04948	31J-16-31	1980' FSL 1980' FEL	Active Injector	6/30/1942	4/43	3338'/ 3338'	8 5/8" Csg set @ 545' w/ 50 sxs 5 1/2" Csg set @ 2980' w/ 100 sxs	341' 2371'	GB-SA	2988-3338 (OH)	NA	WIW

3129'-3311'

NSLU #144 WELLS IN THE AREA OF REVIEW 3032 – 3,232'

LEASE NAME (Original)	WELL #	NSLU well no.	API # 30-015	S-T-R	LOC'N.	CURRENT STATUS	SPUD DATE	COMP DATE	TD/ PBTD	CASING PROGRAM	TOC	FORM.	COMP. ZONE	STIMULATION	IP
Grier	3	99	04944	31C-16-31	660' FNL 1980' FWL	Active Producer	5/22/1942	7/24/1942	3340'/ 3338'	10 3/4" Csg set @ 459' w/ 50 sxs 6 5/8" Csg set @ 2982" w/ 100 sxs my records show a liner check files	Circ. 2036'	GB-SA	2989-3252 (OH)	60 qts. Nitro 2247-57	640 BOPD
Tellyer State	1	122	NA	36H-16-30	1980' FNL 660' FEL	P&A	12/28/1941	3/18/1942	3114'/ 3114	8 1/4" Csg set @ 498' w/50 sxs 5 1/2" Csg set @ 2800' w/150 sxs	324' 1886'	GB-SA	2800-3114	NA	60 BOPD
Grier	2	123	04943	31E-16-31	1980' FNL 660' FWL	Active Producer	3/29/1942	5/18/1942	3265'/ 3257'	10 3/4 " Csg set @ 482' w/50 sxs 7" Csg set @ 2952' w/100 sxs 4 1/2" Lnr 2863-3257 w/ ??? sxs Lnr run 4/69	201' 2266'	GB-SA	3092-3240 (OH) 3050-3240	NA Frac w/ 40 Mgal & 26 M#	410 BOPD
Grier	20	124	24580	31C-16-31	1250' FNL 1031' FWL	Active Producer	9/15/1983	11/6/1983	3414'/ 3370'	8 5/8" Csg set @ 1560' w/ 975 sxs 5 1/2" Csg set @ 3401' w/ 750 sxs	Circ. Circ.	GB-SA	3040-270	Acidize w/ 2500 gal Frac w/ 75 Mgal & 142 M#	20 BOPD 211 BWPD
Grier	4X	125	04945	31F-16-31	1980' FNL 1950' FWL	Active Producer	8/7/1942	11/19/1942	3297'/ 3297'	10" Csg set @ 512' w/ 50 sxs 7" Csg set @ 2965' w/ 100 sxs 4 1/2" Lnr 2802-3260 w/ ??? sxs Lnr run 12/69	Circ. 2279'	GB-SA	2965-3270 (OH) 3076-3265	NA Frac w/ 38 Mgal & 24 M#	500 BOPD 240 BOPD
Grier	5	126	04947	31G-16-31	1980' FNL 1980' FEL	P & A	6/9/1942	8/5/1942	3333'/ 3333'	10 3/4" Csg set @ 538' w/ 50 sxs 7" Csg set @ 2985' w/ 100 sxs 4 1/2" Lnr 2933-3333 w/ 100 sxs Lnr run 9/68	Circ. 2299'	GB-SA	2985-3333 (OH) 3129-3311	NA Frac w/ 30 Mgal & 27 M#	NA NA
Grier	16	142	20184	31E-16-31	2630' FNL 10' FWL	Active Injector	11/30/1968	1/16/1969	3254'/ 3252'	8 5/8" Csg set @ 433' w/ 150 sxs 4 1/2" Csg set @ 3252' w/ 1000 sxs	Circ. Circ.	GB-SA	3037-3222	2000 GAL. ACID	WIW
Grier A	1	143	04938	31L-16-31	1980' FSL 511' FWL	P&A	11/30/1942	1/21/43/	3060'	8 1/4" Csg set @ 557' w/50 sxs 5 1/2" Csg set @ 2955' w/400 sxs	383' 519'	GB-SA	2985-3060	170 qts. Nitro	75 BOPD
Grier	6	145	04948	31J-16-31	1980' FSL 1980' FEL	Active Injector	6/30/1942	4/43	3338'/ 3338'	8 5/8" Csg set @ 545' w/ 50 sxs 5 1/2" Csg set @ 2980' w/ 100 sxs	341' 2371'	GB-SA	2988-3338 (OH)	NA	WIW
H. J. LOE	5	158	24920	31M-16-31	660' FSL 330' FWL	Active Producer	8/2/1984	9/4/1984	3350'/ 3330'	8 5/8" Csg set @ 497' w/ 450 sxs 5 1/2" Csg set @ 3346' w/ 3250 sxs	Circ. Circ.	GB-SA	3025-3104	30 MGAL & 78 M#	40 BOPD
Grier "B"	2	159	24706	31L-16-31	1370' FSL 977' FWL	Active Producer	12/23/1983	2/2/1984	3370'/ 3369'	8 5/8" Csg set @ 514' w/ 425 sxs 5 1/2" Csg set @ 3356' w/ 1320 sxs	Circ. Circ.	GB-SA	3062-3169	34.3 MGAL & 69 M#	112 BOPD 83 BWPD
Grier	4	161	04951	31N-16-31	660' FSL 1864' FWL	P&A	10/01/48		3574'/ 3305'	8 1/4" Csg set @ 591' w/50 sxs 7" Csg set @ 2492' 5 1/2" Csg set @ 2947' w/100 sxs		GB-SA	3017-3118		
Grier	18	162	24457	31O-16-31	660' FSL 1980' FEL	Active Producer	5/1/1983		3425'/ 3411'	8 5/8" Csg set @ 520' w/400 sxs 5 1/2" Csg set @ 3424' w/1600 sxs	Circ. Circ.	GB-SA	3084-3320	7800 gal Acid 38 M Gal + 35 M#	72 bopd
H J Loe	1	160	4953	31M-16-31	330' FSL 1357' FWL	Active Producer	May-57		3206'	8 5/8" Csg set @ 1439' w/900 sxs 5 1/2" Csg set @ 3149' w/350 sxs	Circ. 1017 calc	GB-SA	2974-3132 OH/3160 to 3206	40 Mgal + 80 M#	25 bopd
Averton State	9		04025	36I-16-30	1980' FSL 660' FEL	P&A	6/30/1942	6/19/1943	3100'	8 5/8" Csg set @ 500' w/50 sxs 5 1/2" Csg set @ 2840' w/100 sxs	295' 2231'	GB-SA	2840-3100	NA	100 BOPD

NSLU # 162 WELLS IN THE AREA OF REVIEW

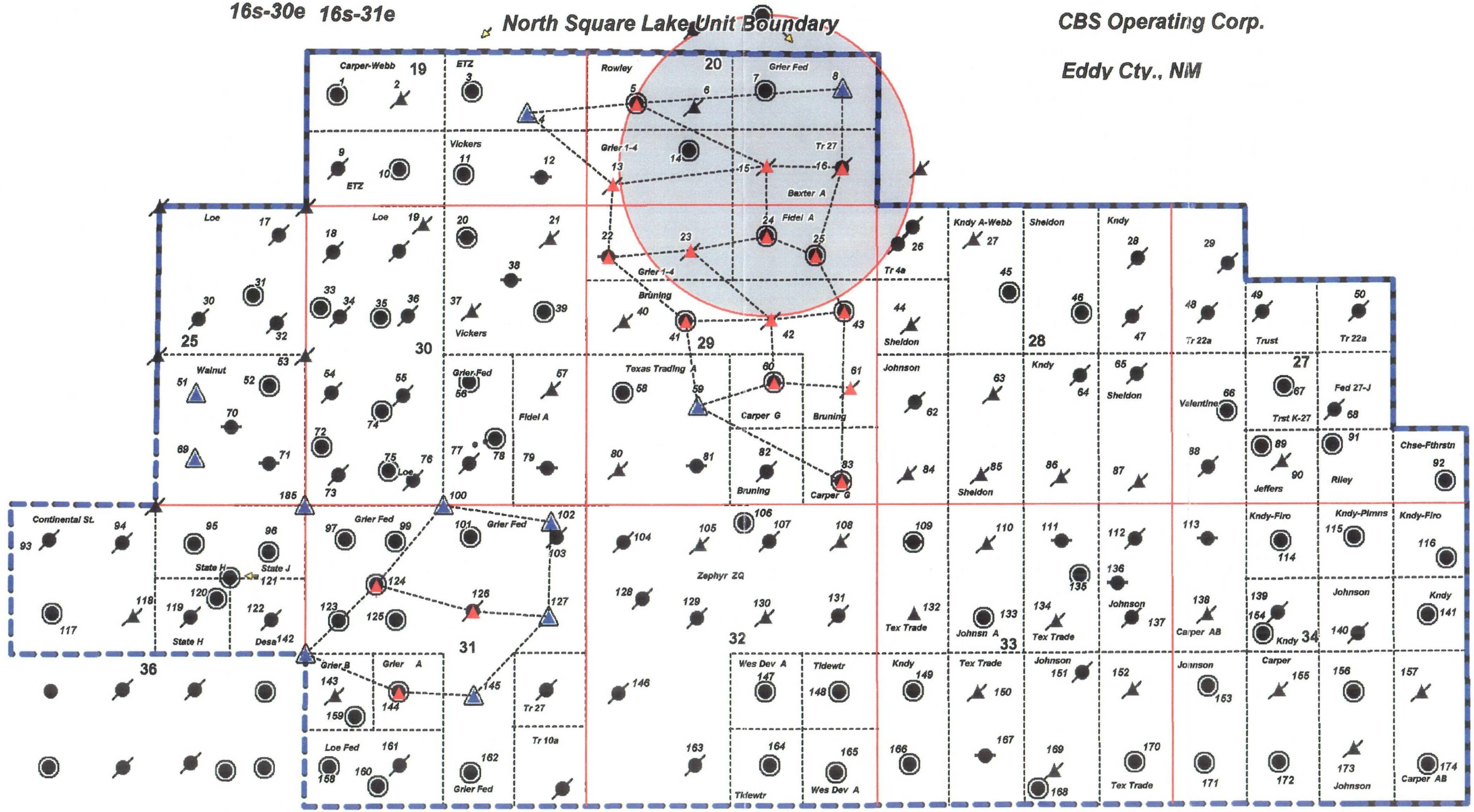
LEASE NAME (Original)	WELL #	NSLU well no.	API # 30-015	S-T-R	LOC'N.	CURRENT STATUS	SPUD DATE	COMP DATE	TD/ PBTD	CASING PROGRAM	TOC	FORM.	COMP. ZONE	STIMULATION	IP
Grier	6	145	04948	31J-16-31	1980' FSL 1980' FEL	Active Injector	6/30/1942	4/43	3338'/ 3338'	8 5/8" Csg set @ 545' w/ 50 sxs 5 1/2" Csg set @ 2980' w/ 100 sxs	341' 2371'	GB-SA	2988-3338 (OH)	NA	WIW
H. J. LOE	5	158	24920	31M-16-31	660' FSL 330' FWL	Active Producer	8/2/1984	9/4/1984	3350'/ 3330'	8 5/8" Csg set @ 497' w/ 450 sxs 5 1/2" Csg set @ 3346' w/ 3250 sxs	Circ. Circ.	GB-SA	3025-3104	30 MGAL & 78 M#	40 BOPD
Grier "B"	2	159	24706	31L-16-31	1370' FSL 977' FWL	Active Producer	12/23/1983	2/2/1984	3370'/ 3369'	8 5/8" Csg set @ 514' w/ 425 sxs 5 1/2" Csg set @ 3356' w/ 1320 sxs	Circ. Circ.	GB-SA	3062-3169	34.3 MGAL & 69 M#	112 BOPD 83 BWPD
Grier	4	161	04951	31N-16-31	660' FSL 1864' FWL	P&A	10/01/48		3574'/ 3305'	8 1/4" Csg set @ 591' w/50 sxs 5 1/2" Csg set @ 2947' w/100 sxs	419' 2338'	GB-SA	3017-3118		
H J Loe	1	160	4953	31M-16-31	330' FSL 1357' FWL	Active Producer	May-57		3206'	8 5/8" Csg set @ 1439' w/900 sxs 5 1/2" Csg set @ 3149' w/350 sxs	Circ. 1017 calc	GB-SA	2974-3132 OH/3160 to 3206	40 Mgal + 80 M#	25 bopd
Grier "A"	1	144	04941	31K-16-31	1980' FSL 1680' FWL	Active Producer	6/30/1942	9/14/1942	3244'/ 3244'	8 5/8" Csg set @ 525' w/ 50 sxs 7" Csg set @ 2838' w/ 100 sxs 4 1/2" Lnr 2782-3244 w/ ??? sxs Lnr run 4/69	320' 2152'	GB-SA	2838-3170 (OH) 3032-3232	60 qts. Nitro 60 MGAL &50 M#	85 BOPD
JL Keel B Merit Energy	32	NA	24694	6/17/1931	660' FNL 1980' FEL	Active Injector	12/23/1983	1/1/1984	3650'	8 5/8" Csg set @ 550' w/ 350 sxs 5 1/2" Csg set @ 3650' w/ 2300 sxs	Circ. Circ.	GB-SA	3003-3418	Acid w/10 m gal Frac 20m Gal + 66M#	26 BOPD 23 MCF 71 BW
JL Keel B Merit Energy	33	NA	25446	6/17/1931	860' FNL 860' FEL	Active Producer	12/27/1985	1/28/1986	3553'/ 3465	13 3/8" Csg set @ 415' w/ 900 sxs 9 5/8" Csg set @ 2704' w/ 1375 sxs 7 " Csg set @ 3553' w/ 550 sxs	Circ. Circ.	GB-SA	3100-3291	Acid w/ 3.2 m gal	31 bofpd 384 bw
JL Keel B Merit Energy	35	NA	25448	6/17/1931	635' FNL 1586' FWL	Active Injector	1/20/1986	3/12/1986	3550'	13 3/8" Csg set @ 414' w/ 650 sxs 9 5/8" Csg set @ 2700' w/ 1415 sxs 7 " Csg set @ 3550' w/ 650 sxs	Circ. Circ. Circ.	GB-SA	2952-3425	Acid w/ 2.2 m gal Frac 41m Gal + 144M#	48 BOPD 37 MCF 129 BW
JL Keel B Merit Energy	59	NA	28101	6/17/1931	1280' FNL 1070' FWL	Active Producer	12/1/1994	3/1/1995	3979'	8 5/8" Csg set @ 438' w/ 415 sxs 5 1/2" Csg set @ 3979' w/ 1500 sxs	Circ. Circ.	GB-SA	2994-3474	Acid w/ 5.6 m gal	31 BOPD 188 BW
JL Keel B Merit Energy	60	NA	28223	6/17/1931	1300' FNL 2450' FWL	Active Producer	1/24/1995	4/2/1995	4014'	8 5/8" Csg set @ 462' w/ 500 sxs 5 1/2" Csg set @ 4014' w/ 1075 sxs	Circ. Circ.	GB-SA	2856-3896	Frac 37m Gal + 120M#	71 BOPD
JL Keel B Merit Energy	61	NA	28292	6/17/1931	1410' FNL 150' FEL	Active Producer	6/1/1995	7/1/1995	4069'	8 5/8" Csg set @ 434' w/ 430 sxs 5 1/2" Csg set @ 4069' w/ 1300 sxs	Circ. Circ.	GB-SA	2975-4030	Frac 33m Gal + 102M#	62 BOPD
JL Keel B Merit Energy	79	NA	28488	6/17/1931	1380' FNL 1453' FEL	Active Producer	6/1/1995	7/1/1995	4024'	8 5/8" Csg set @ 444' w/ 815 sxs 5 1/2" Csg set @ 4024' w/ 1225 sxs	Circ. Circ.	GB-SA	2903-3736	Frac 26m Gal + 94M#	84 BOPD 124 bw
JL Keel B Merit Energy	1	NA	5083	6/17/1931	554' FNL 554' FWL	Active Injector	3/1/1943	4/1/1943	3364	10 3/4" Csg set @ 600' w/ 50 sxs 7 " Csg set @ 2950' w/ 100 sxs 4 1/2" surf to 3364' w/400sx	400' 2345' 490'	GB-SA	2936-3264	unknown	

16s-30e 16s-31e

North Square Lake Unit Boundary

CBS Operating Corp.

Eddy Cty., NM



August 2003

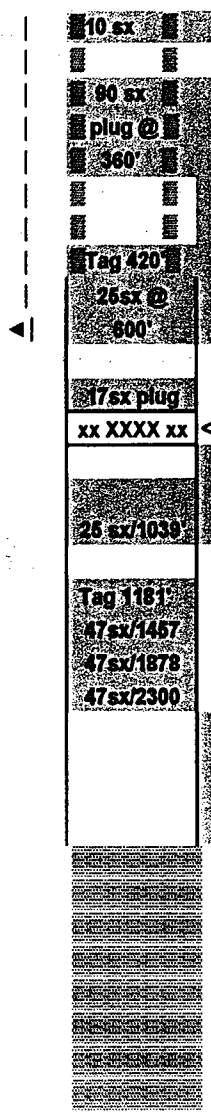
Scale: 1 : 22,400 Zoom Level: 13-2 Datum: WGS84 Map Rotation: 0° Magnetic Declination: 9.0°E

1,000 ft

Well No.: NSLU # 13
API No.: 30-015-04858

Location : 330' FSL & 510' FWL
Sec-Twn-Rng : Sec. 20, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base: 390 ft.
Surface Cement : 50 sx.
Surface Cement Top: 416 ft.
Surface Casing Size: 8 1/4 in.
< Cut & Pulled 5 1/2" casing @ 542'
Surface Casing TD : 590 ft.
Salt Top : 600 ft.
< Stuck Packer from 1990 work @780'
< in 1990 sqz'd 925 sx of cement trying to repair casing leak from 975' to 1039'
Salt Base: 1520 ft.

Production Casing
Cement Volume : 100 sx.
Cement Top : 2506 ft.
Casing Size : 5 1/2 in.
Casing TD : 3115 ft.

Base of Open Hole : 3428 ft.

Type Well @ Abandonment : Injector
Date Well Abandoned : 4 / 1990
Operator that Plugged Well : Yates Petr. Corp.

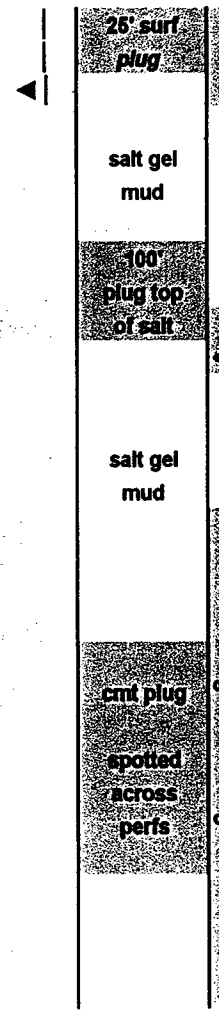
Date Well Drilled : 1 / 1945
Original Well Type : Producer

Cum Water Injected in this Well : 414000 BBL

Well No.: NSLU # 19
API No.: 30-015-10469
Old Loe Fed # 3

Location : 330' FNL & 1995' FWL
Sec-Twn-Rng : Sec. 30, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Surface Casing Size: 13 in.
Surface Casing TD : 30 ft.
Red Bed Base: 300 e ft.
Surface Cement : 20 sx.
Surface Cement Top: surf ft.
Salt Top : 400 ft.
< 50 sx primary cmt 1"'d @ 400'
Salt Base: 1330 e ft.

Production Casing
Cement Volume : 300 sx.
Cement Top : 1448 ft.
Top Perforation : 3037 ft.
Bottom Perforation : 3230 ft.

Production Casing
Casing Size : 5 1/2 in.
Casing TD : 3275 ft.

Type Well @ Abandonment : Injector
Date Well Abandoned : May-78
Operator that Plugged Well : Arwood Ltd.

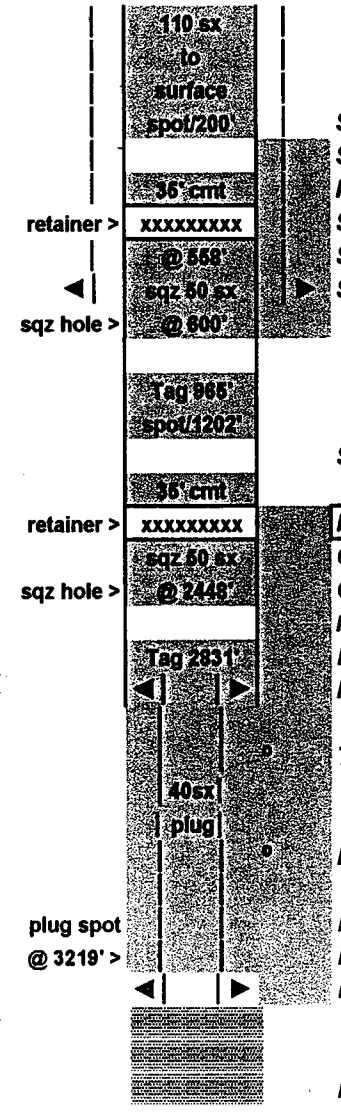
Date Well Drilled : Feb-65
Original Well Type : Producer

Cum Water Injected in this Well : 813000 BBL

Well No.: NSLU # 21
API No.: 30-015-04934

Location : 660' FNL & 660' FEL
Sec-Twn-Rng : Sec. 30, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Surface Cement : 100 sx.
Surface Cement Top: 208 ft.
Red Bed Base: 370 ft.
Surface Casing Size: 8 5/8 in.
Salt Top : 592 ft.
Surface Casing TD : 617 ft.
Salt Base: 1440 ft.

Production Casing
Cement Volume : 100 sx.
Cement Top : 2421 ft.
Prod Casing Size: 5 1/2 in.
Liner Top: 2966 ft.
Production Casing TD 3030 ft.
Top Perforation : 3095 ft.
Bottom Perforation : 3176 ft.
Liner Cement Volume: 35 sx.
Liner Size : 4 in.
Liner TD : 3229 ft.

Base of Open Hole : 3316 ft.

Type Well @ Abandonment : Injector
Date Well Abandoned : 12 / 1991
Operator that Plugged Well : Yates Petr. Corp.

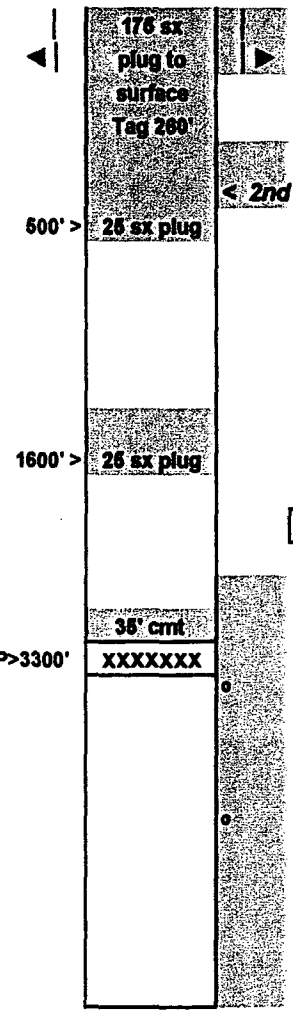
Date Well Drilled : 3 / 1944
Original Well Type : Producer

Cum Water Injected in this Well : 1518000 BBL

Well No.: NSLU # 6
API No.: 30-015-10206

Location : 1650' FSL & 1980' FWL
Sec-Twn-Rng : Sec. 20, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Surface Casing TD : 27 ft.
Surface Cement : 21 sx.
Surface Cement Top : surf ft.
Surface Casing Size : 13 3/8 in.
< 2nd stage primary cmt 50sx @ 480'
Red Bed Base : 501 ft.

Salt Top : 630 ft.

Salt Base: 1600 ft.

Production Casing
Cement Volume : 150 sx.
Cement Top : 2597 ft.

Top Perforation : 3322 ft.

Bottom Perforation : 3474 ft.

Casing Size : 5 1/2 in.
Casing TD : 3511 ft.

Type Well @ Abandonment : Injector
Date Well Abandoned : 10 / 1991
Operator that Plugged Well : Kennedy Oil Co.

Date Well Drilled : 2 / 1964
Original Well Type : Producer

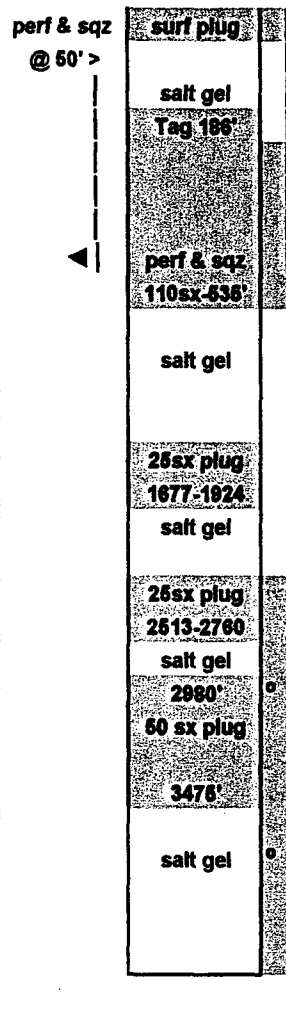
Cum Water Injected in this Well : 568,000 BBL

C-108 Application Well

Well No.: NSLU # 16
API No.: 30-015-04860

Location : 660' FSL & 660' FEL
Sec-Twn-Rng : Sec. 20, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Surface Cement : 275 sx.
Surface Cement Top: surf ft.
Surface Casing Size: 8 5/8 in.
Surface Casing TD : 351 ft.

Red Bed Base: 560 ft.
Salt Top : 685 ft.

Salt Base: 1680 ft.

Production Casing
Cement Volume : 175 sx.
Cement Top : 2516e ft.

Top Perforation : 3354 ft.

Bottom Perforation : 3562 ft.

Casing Size : 5 1/2 in.
Casing TD : 3582 ft.

Type Well @ Abandonment : Producer
Date Well Abandoned : 2 / 1995
Operator that Plugged Well : Anadarko Petr.

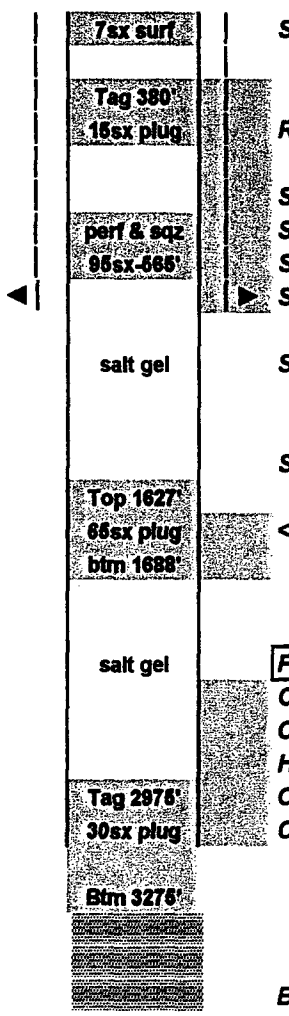
Date Well Drilled : 5 / 1961
Original Well Type : Producer

C-108 Application Well

Well No.: NSLU # 23
API No.: 30-015-04906

Location : 810' FNL & 1980' FWL
Sec-Twn-Rng : Sec. 29, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Surface Hole Size: ____ in.

Red Bed Base: 465 ft.

Surface Cement : 50 sx.
Surface Cement Top: 390e ft.
Surface Casing Size: 8 5/8 in.
Surface Casing TD : 595 ft.

Salt Top : 615 ft.

Salt Base: 1545 ft.

< sqz & perf 130sx @ 1650'

Production Casing
Cement Volume : 100 sx.
Cement Top : 2541e ft.
Hole Size : ____ in.
Casing Size : 5 1/2 in.
Casing TD : 3150 ft.

Base of Open Hole : 3445 ft.

Type Well @ Abandonment : Injector
Date Well Abandoned : 2 / 1987
Operator that Plugged Well : Yates Petr Corp.

Date Well Drilled : 9 / 1944
Original Well Type : Producer

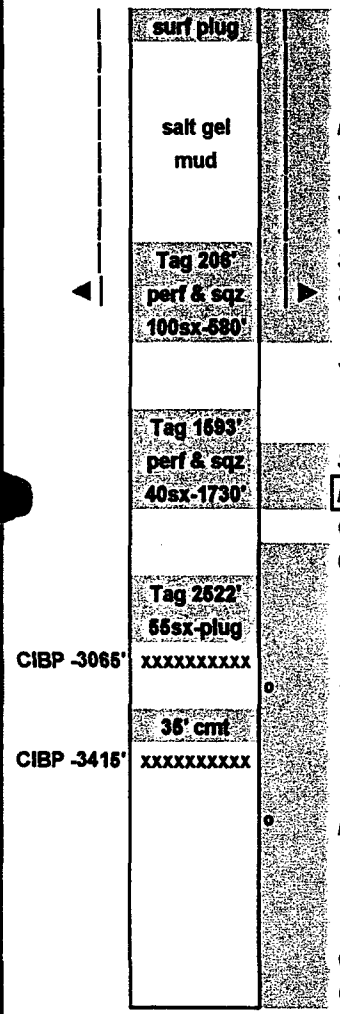
Cum Water Injected in this Well : 821000 BBL

C-108 Application Well

Well No.: NSLU # 15
API No.: 30-015-04859

Location : 1980' FEL & 660' FSL
Sec-Twn-Rng : Sec. 20, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base:		ft.
Surface Cement :	200	sx.
Surface Cement Top:	surf	ft.
Surface Casing Size:	8 5/8	in.
Surface Casing TD :	272	ft.
Salt Top :	630	ft.
Salt Base:	1630	ft.
Production Casing		
Cement Volume :	175	sx.
Cement Top :	2263e	ft.
Top Perforation :	3356	ft.
Bottom Perforation :	3506	ft.
Casing Size :	5 1/2	in.
Casing TD :	3517	ft.

Type Well @ Abandonment : Injector
Date Well Abandoned : 2 / 1995
Operator that Plugged Well : Anadarko Petr.

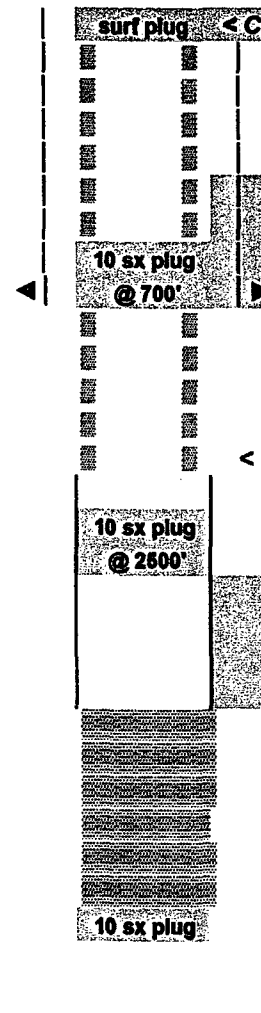
Date Well Drilled : 1 / 1961
Original Well Type : Producer

Cum Water Injected in this Well : 508436 BBL

Well No.: NSLU # 26
API No.: 30-015-04897

Location : 660' FNL & 660' FWL
Sec-Twn-Rng : Sec. 28, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base:		ft.
Surface Cement :	50	sx.
Surface Cement Top:	579	ft.
Surface Casing Size:	8 5/8	in.
Surface Casing TD :	764	ft.
Salt Top :	764	ft.
Salt Base:	1685	ft.
< Cut & Pulled 5 1/2" @	1730'	
Production Casing		
Cement Volume :	100	sx.
Cement Top :	2720	ft.
Casing Size :	5 1/2	in.
Casing TD :	3329	ft.
Base of Open Hole :	3475	ft.

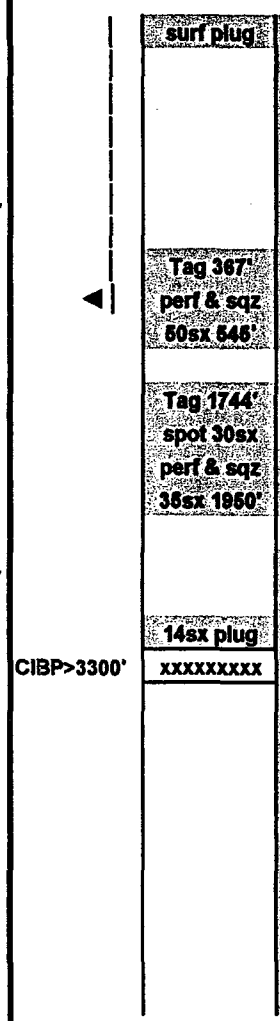
Type Well @ Abandonment : Producer
Date Well Abandoned : 12/1951
Operator that Plugged Well : D. D. Thomas

Date Well Drilled : 4 / 1945
Original Well Type : Producer

Well No.: Sheldon #6 (offset NSLU#26)
API No.: 30-015-04901

Location : 660' FNL & 330' FWL
Sec-Twn-Rng : Sec. 28, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base:	425	ft.
Surface Cement :	200	sx.
Surface Cement Top:	surf	ft.
Surface Casing Size:	8 5/8	in.
Surface Casing TD :	495	ft.
Salt Top :	510	ft.
Salt Base:	1850	ft.
Production Casing		
Cement Volume :	200	sx.
Cement Top :	2407	ft.
Top Perforation :	3408	ft.
Bottom Perforation :	3572	ft.
Production Casing		
Casing Size :	5 1/2	in.
Casing TD :	3632	ft.

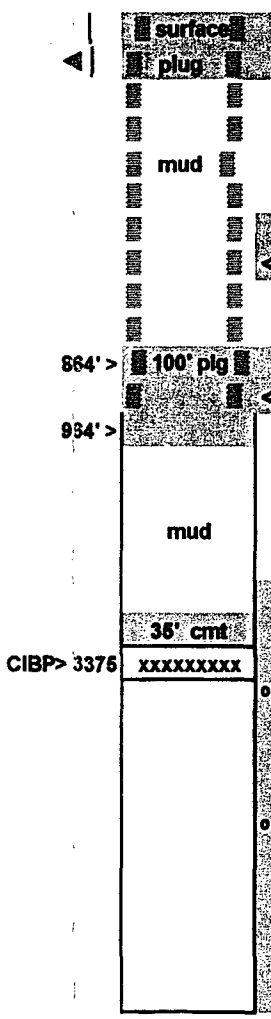
Type Well @ Abandonment : Producer
Date Well Abandoned : 6 / 1995
Operator that Plugged Well : Mack Energy

Date Well Drilled : 11 / 1961
Original Well Type : Producer

Well No.: NSLU # 27
API No.: 30-015-10549

Location : 660' FNL & 1650' FWL
Sec-Twn-Rng : Sec. 28, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Surface Hole Size:	20	in.
Surface Casing TD :	29	ft.
Surface Cement :	25	sx.
Surface Cement Top :	surf	ft.
Surface Casing Size :	13 3/8	in.
Red Bed Base :		ft.
< 2nd stage primary cmt 50sx @ 570'		
Salt Top :	737	ft.
< Cut & Pulled 4 1/2"casing @ 914'		
Salt Base:	1727	ft.
Production Casing		
Cement Volume :	150	sx.
Cement Top :	2986	ft.
Top Perforation :	3419	ft.
Bottom Perforation :	3622	ft.
Hole Size :	7 7/8	in.
Casing Size :	4 1/2	in.
Casing TD :	3670	ft.

Type Well @ Abandonment : Injector
Date Well Abandoned : 7 / 1975
Operator that Plugged Well : Kennedy Oil Co.

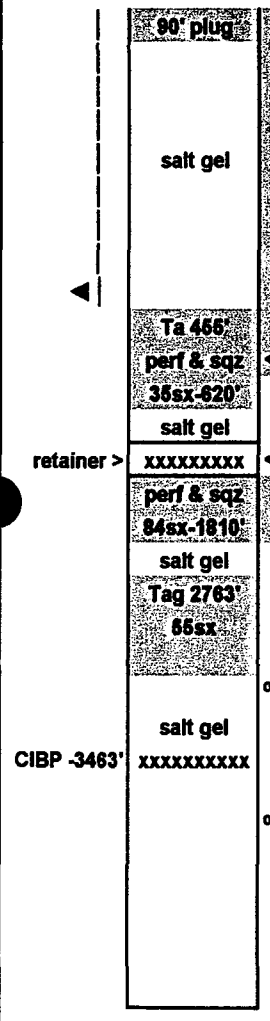
Date Well Drilled : 9 / 1965
Original Well Type : Producer

Cum Water Injected in this Well : 72410 BBL thru 12/69

Well No.: Federal A # 3
API No.: 30-015-04865

Location : 660' FSL & 660' FWL
Sec-Twn-Rng : Sec. 21, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base: 585 ft.

Surface Cement : 250 sx.
Surface Cement Top: surf ft.
Surface Casing Size: 8 5/8 in.
Surface Casing TD : 359 ft.

< 60sx 2nd stage from orig D & C

Salt Top : 690 ft.

< 1666'

Salt Base: 1710 ft.

Production Casing
Cement Volume : 100 sx.
Cement Top : 3115 ft.
Top Perforation : 3439 ft.

Bottom Perforation : 3597 ft.

Production Casing

Casing Size : 4 1/2 in.
Casing TD : 3615 ft.

Type Well @ Abandonment : Injector
Date Well Abandoned : 10/1/1985
Operator that Plugged Well : Anadarko Petr.

Date Well Drilled : 11 / 1961
Original Well Type : Producer

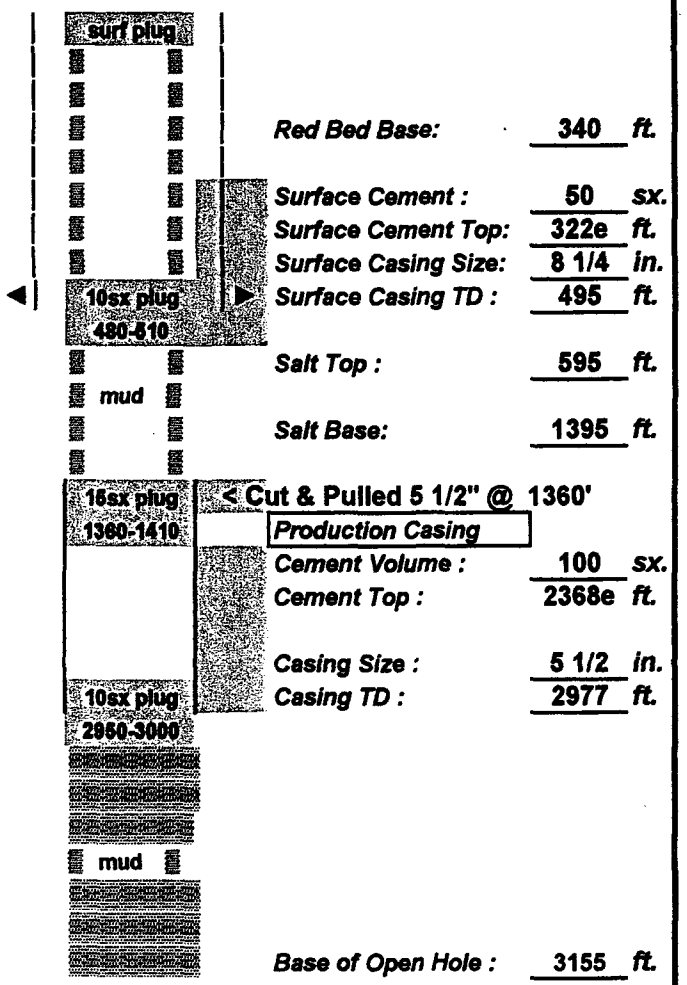
Cum Water Injected in this Well : 27000 BBL

CBS Operating Corp.
Aug-03

Plugged & Abandoned Wells Located Within Area of Review

North Square Lake Unit , Eddy Cty., New Mexico
C-108 Application NSLU # 124

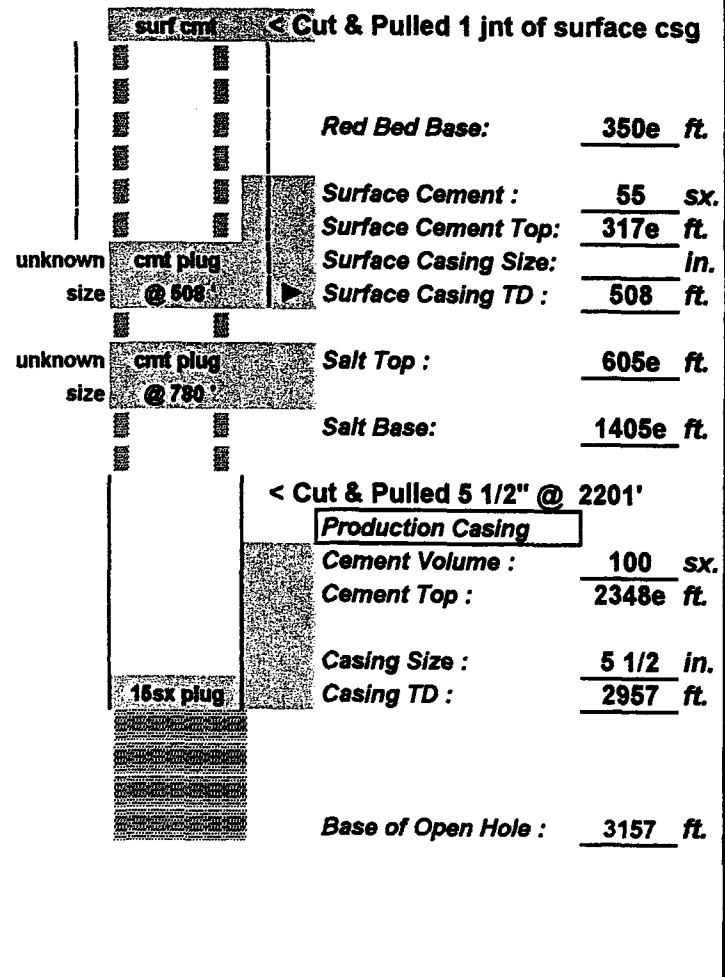
Well No.:	NSLU # 73
API No.:	30-015-04926
Location :	660' FSL & 660' FWL
Sec-Twn-Rng :	Sec. 30, T16S, R31E
Field :	Square Lake
Interval:	Grayburg - San Andres



Red Bed Base:	340 ft.
Surface Cement :	50 sx.
Surface Cement Top:	322e ft.
Surface Casing Size:	8 1/4 in.
Surface Casing TD :	495 ft.
Salt Top :	595 ft.
Salt Base:	1395 ft.
< Cut & Pulled 5 1/2" @	1360'
Production Casing	
Cement Volume :	100 sx.
Cement Top :	2368e ft.
Casing Size :	5 1/2 in.
Casing TD :	2977 ft.
Base of Open Hole :	3155 ft.

Type Well @ Abandonment :	Producer
Date Well Abandoned :	11 / 1948
Operator that Plugged Well :	Boyd - Plemmons
Date Well Drilled :	4 /1942
Original Well Type :	Producer

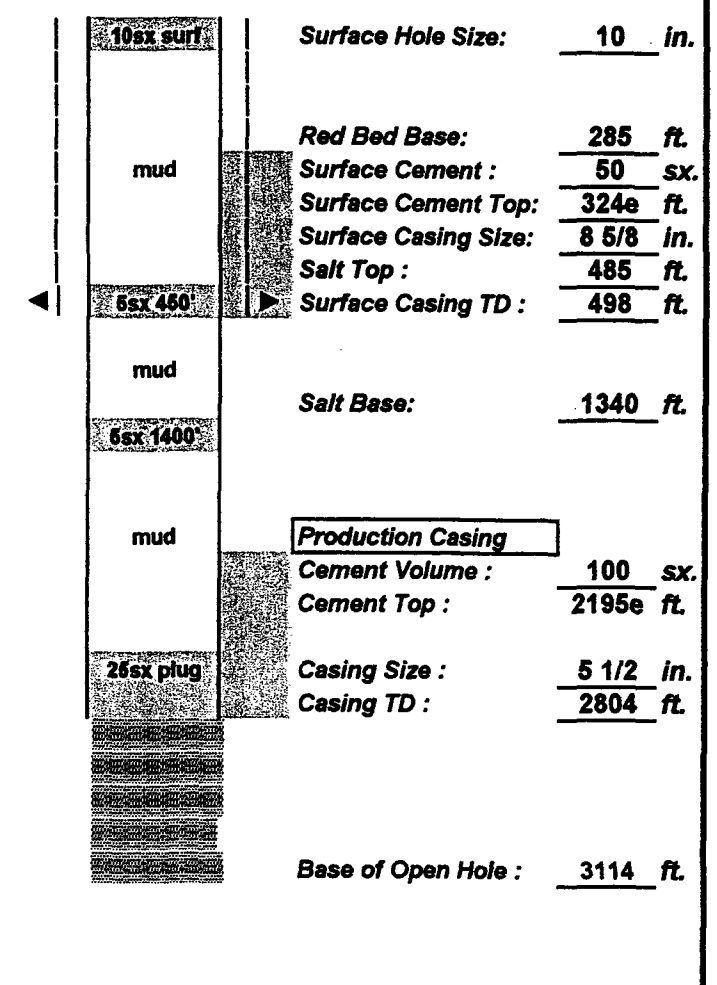
Well No.:	NSLU # 76
API No.:	30-015-04931
Location :	660' FSL & 1980' FWL
Sec-Twn-Rng :	Sec. 30, T16S, R31E
Field :	Square Lake
Interval:	Grayburg - San Andres



< Cut & Pulled 1 jnt of surface csg	
Red Bed Base:	350e ft.
Surface Cement :	55 sx.
Surface Cement Top:	317e ft.
Surface Casing Size:	in.
Surface Casing TD :	508 ft.
Salt Top :	605e ft.
Salt Base:	1405e ft.
< Cut & Pulled 5 1/2" @	2201'
Production Casing	
Cement Volume :	100 sx.
Cement Top :	2348e ft.
Casing Size :	5 1/2 in.
Casing TD :	2957 ft.
Base of Open Hole :	3157 ft.

Type Well @ Abandonment :	Producer
Date Well Abandoned :	3 / 1948
Operator that Plugged Well :	David Saikin
Date Well Drilled :	6 / 1942
Original Well Type :	Producer

Well No.:	NSLU # 122
API No.:	30-015-04015
Location :	1980' FNL & 660' FEL
Sec-Twn-Rng :	Sec. 30, T16S, R30E
Field :	Square Lake
Interval:	Grayburg - San Andres

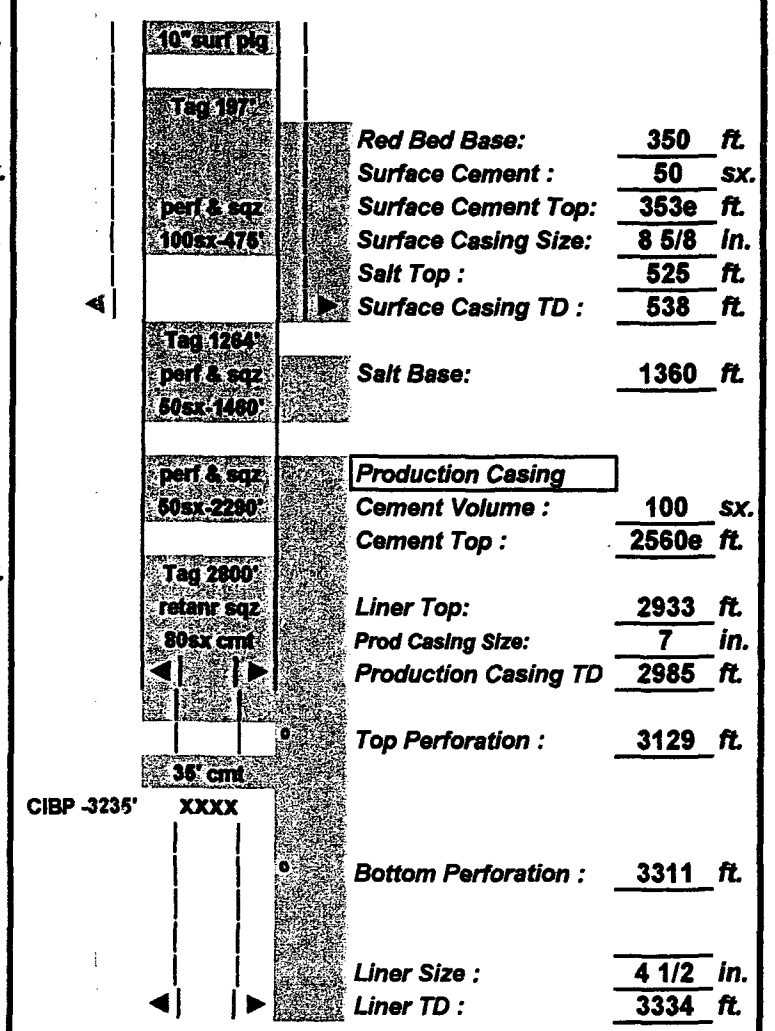


Surface Hole Size:	10 in.
Red Bed Base:	285 ft.
Surface Cement :	50 sx.
Surface Cement Top:	324e ft.
Surface Casing Size:	8 5/8 in.
Salt Top :	485 ft.
Surface Casing TD :	498 ft.
Salt Base:	1340 ft.
Production Casing	
Cement Volume :	100 sx.
Cement Top :	2195e ft.
Casing Size :	5 1/2 in.
Casing TD :	2804 ft.
Base of Open Hole :	3114 ft.

Type Well @ Abandonment :	Producer
Date Well Abandoned :	12 / 1948
Operator that Plugged Well :	John M. Kelly
Date Well Drilled :	3 / 1942
Original Well Type :	Producer

C-108 Application Well

Well No.:	NSLU # 126
API No.:	30-015-04947
Location :	1980' FNL & 1980' FEL
Sec-Twn-Rng :	Sec. 31, T16S, R31E
Field :	Square Lake
Interval:	Grayburg - San Andres



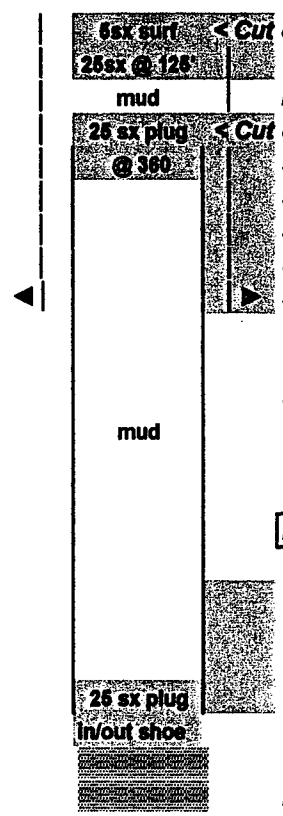
Red Bed Base:	350 ft.
Surface Cement :	50 sx.
Surface Cement Top:	353e ft.
Surface Casing Size:	8 5/8 in.
Salt Top :	525 ft.
Surface Casing TD :	538 ft.
Salt Base:	1360 ft.
Production Casing	
Cement Volume :	100 sx.
Cement Top :	2560e ft.
Liner Top:	2933 ft.
Prod Casing Size:	7 in.
Production Casing TD	2985 ft.
Top Perforation :	3129 ft.
Bottom Perforation :	3311 ft.
Liner Size :	4 1/2 in.
Liner TD :	3334 ft.

Type Well @ Abandonment :	Producer
Date Well Abandoned :	8/1/1988
Operator that Plugged Well :	Anadarko Petr.
Date Well Drilled :	9 / 1968
Original Well Type :	Producer

Well No.: NSLU # 143
API No.: 30-015-04938

Location : 1980' FSL & 511' FWL
Sec-Twn-Rng : Sec. 31, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Type Well @ Abandonment : Injector
Date Well Abandoned : 5/1/1972
Operator that Plugged Well : Newmont Oil Co

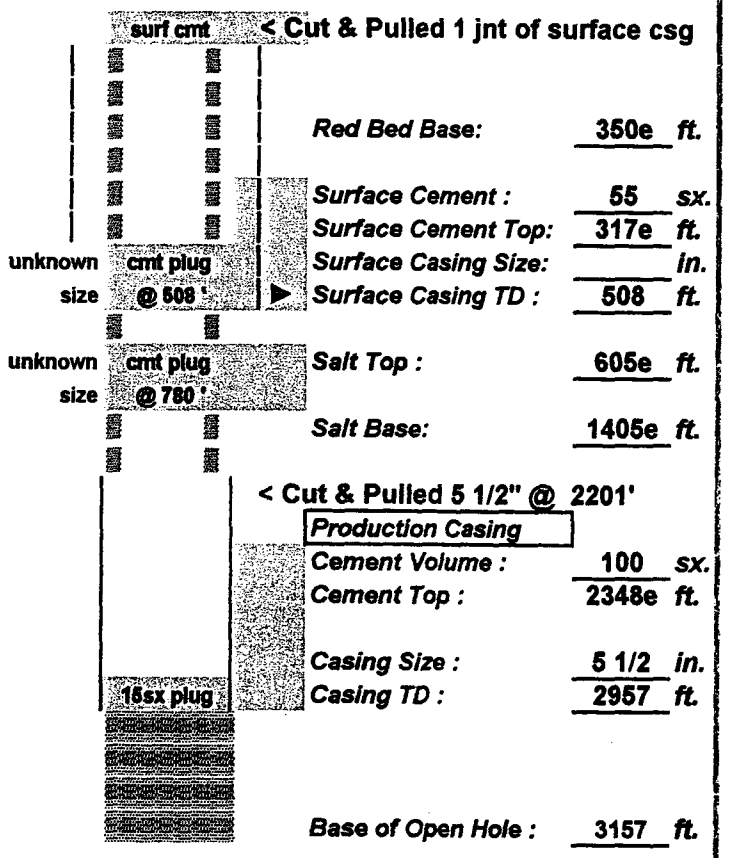
Date Well Drilled : 1/1/1945
Original Well Type : Producer

Cum Water Injected in this Well : 2259000 BBL

Well No.: NSLU # 76
API No.: 30-015-04931

Location : 660' FSL & 1980' FWL
Sec-Twn-Rng : Sec. 30, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base: 350e ft.
Surface Cement : 55 sx.
Surface Cement Top: 317e ft.
Surface Casing Size: in.
Surface Casing TD : 508 ft.
Salt Top : 605e ft.
Salt Base: 1405e ft.

< Cut & Pulled 5 1/2" @ 2201'

Production Casing
Cement Volume : 100 sx.
Cement Top : 2348e ft.
Casing Size : 5 1/2 in.
Casing TD : 2957 ft.

Base of Open Hole : 3157 ft.

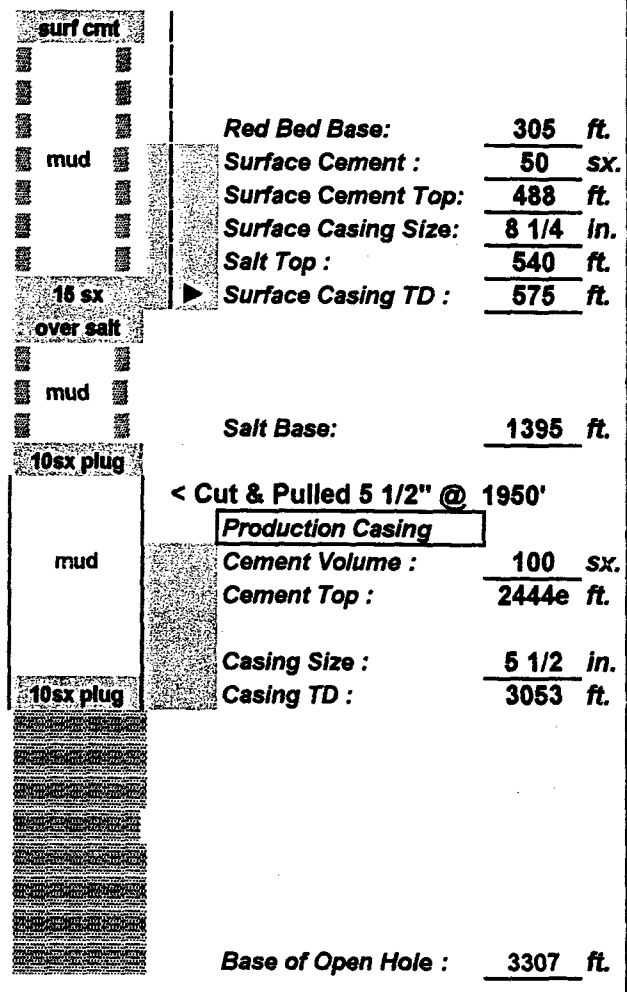
Type Well @ Abandonment : Producer
Date Well Abandoned : 3 / 1948
Operator that Plugged Well : David Saikin

Date Well Drilled : 6 / 1942
Original Well Type : Producer

Well No.: NSLU # 77
API No.: 30-015-04927

Location : 660' FSL & 1980' FEL
Sec-Twn-Rng : Sec. 30, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base: 305 ft.
Surface Cement : 50 sx.
Surface Cement Top: 488 ft.
Surface Casing Size: 8 1/4 in.
Salt Top : 540 ft.
Surface Casing TD : 575 ft.
Salt Base: 1395 ft.

< Cut & Pulled 5 1/2" @ 1950'

Production Casing
Cement Volume : 100 sx.
Cement Top : 2444e ft.
Casing Size : 5 1/2 in.
Casing TD : 3053 ft.

Base of Open Hole : 3307 ft.

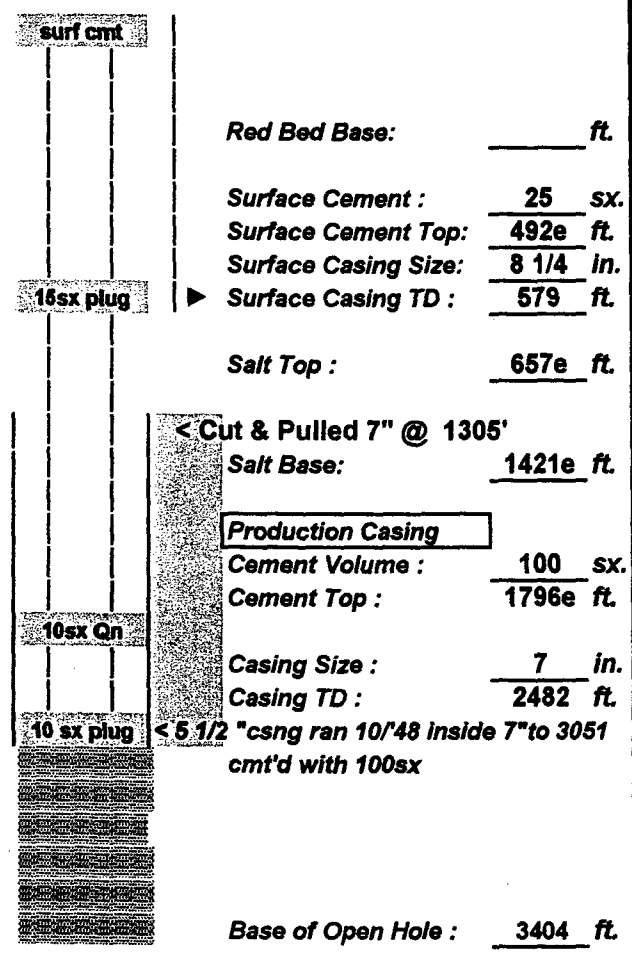
Type Well @ Abandonment : Producer
Date Well Abandoned : 3 / 1949
Operator that Plugged Well : Nay Hightower Inc.

Date Well Drilled : 11 / 1942
Original Well Type : Producer

Well No.: NSLU # 103
API No.: 30-015-04940

Location : 660' FNL & 660' FEL
Sec-Twn-Rng : Sec. 31, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base: ft.
Surface Cement : 25 sx.
Surface Cement Top: 492e ft.
Surface Casing Size: 8 1/4 in.
Surface Casing TD : 579 ft.
Salt Top : 657e ft.

< Cut & Pulled 7" @ 1305'

Salt Base: 1421e ft.

Production Casing
Cement Volume : 100 sx.
Cement Top : 1796e ft.
Casing Size : 7 in.
Casing TD : 2482 ft.

< 5 1/2 "csng ran 10/'48 inside 7"to 3051 cmt'd with 100sx

Base of Open Hole : 3404 ft.

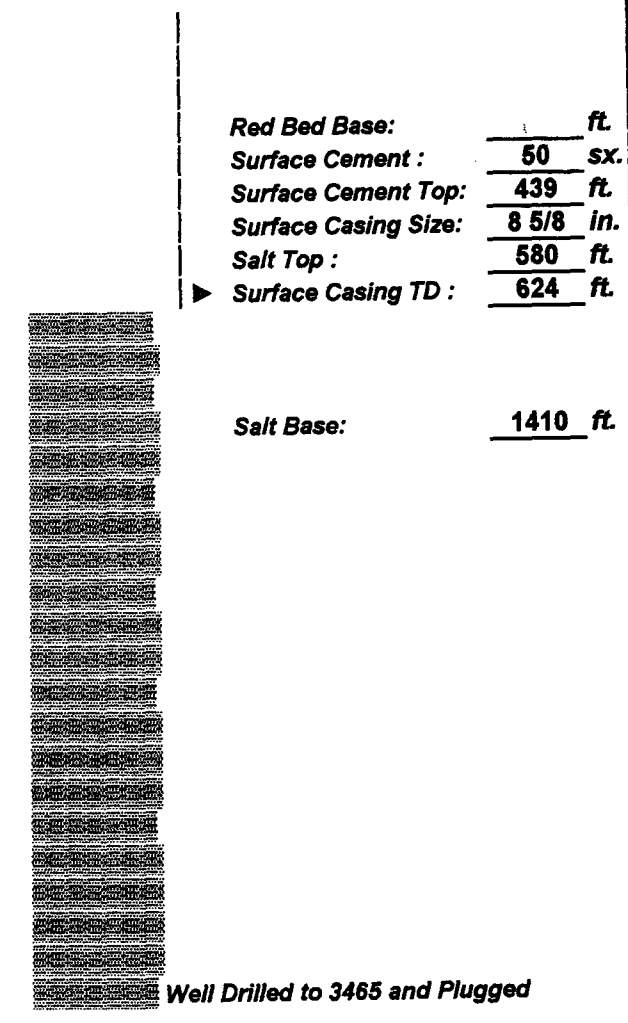
Type Well @ Abandonment : Producer
Date Well Abandoned : 2 / 1949
Operator that Plugged Well : Nay Hightower Inc.

Date Well Drilled : 9 / 1942
Original Well Type : Producer

Well No.: Grier # 5
API No.: 30-015-04952

Location : 1980' FSL & 660' FEL
Sec-Twn-Rng : Sec. 31, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base: ft.
Surface Cement : 50 sx.
Surface Cement Top: 439 ft.
Surface Casing Size: 8 5/8 in.
Salt Top : 580 ft.
Surface Casing TD : 624 ft.
Salt Base: 1410 ft.

Well Drilled to 3465 and Plugged

Type Well @ Abandonment : Dryhole-Junked
Date Well Abandoned : 3 / 1944
Operator that Plugged Well : McDonald & Williams

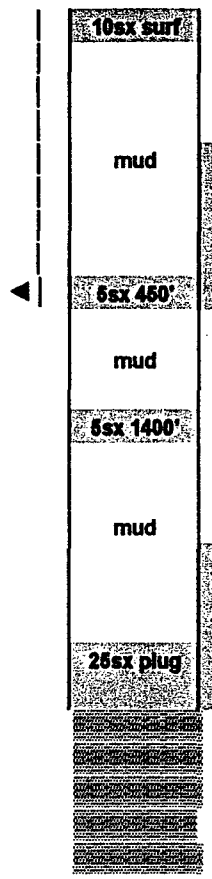
Date Well Drilled : 3 / 1944
Original Well Type : Dryhole-Junked

Well No.: NSLU # 122

API No.: 30-015-04015

Location : 1980' FNL & 660' FEL
Sec-Twn-Rng : Sec. 30, T16S, R30E

Field : Square Lake
Interval: Grayburg - San Andres



Surface Hole Size:	10	in.
Red Bed Base:	285	ft.
Surface Cement :	50	sx.
Surface Cement Top:	324e	ft.
Surface Casing Size:	8 5/8	in.
Salt Top :	485	ft.
Surface Casing TD :	498	ft.
Salt Base:	1340	ft.
Production Casing		
Cement Volume :	100	sx.
Cement Top :	2195e	ft.
Casing Size :	5 1/2	in.
Casing TD :	2804	ft.
Base of Open Hole :	3114	ft.

Type Well @ Abandonment : Producer
Date Well Abandoned : 12 / 1948
Operator that Plugged Well : John M. Kelly

Date Well Drilled : 3 / 1942
Original Well Type : Producer

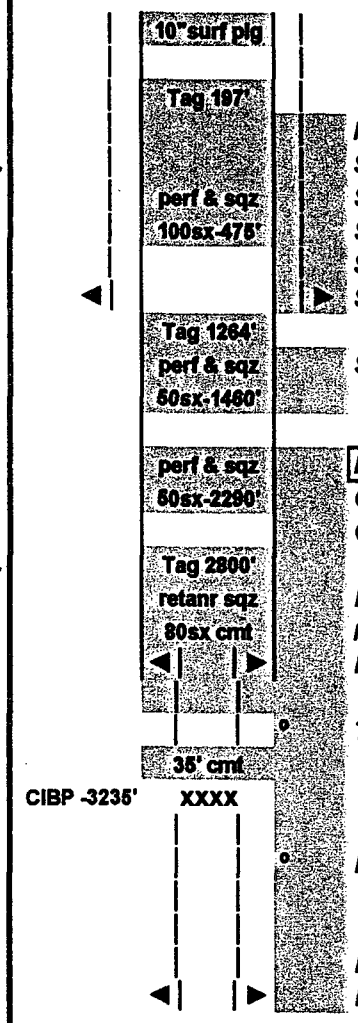
C-108 Application Well

Well No.: NSLU # 126

API No.: 30-015-04947

Location : 1980' FNL & 1980' FEL
Sec-Twn-Rng : Sec. 31, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base:	350	ft.
Surface Cement :	50	sx.
Surface Cement Top:	353e	ft.
Surface Casing Size:	8 5/8	in.
Salt Top :	525	ft.
Surface Casing TD :	538	ft.
Salt Base:	1360	ft.
Production Casing		
Cement Volume :	100	sx.
Cement Top :	2560e	ft.
Liner Top:	2933	ft.
Prod Casing Size:	7	in.
Production Casing TD	2985	ft.
Top Perforation :	3129	ft.
Bottom Perforation :	3311	ft.
Liner Size :	4 1/2	in.
Liner TD :	3334	ft.

Type Well @ Abandonment : Producer
Date Well Abandoned : 8/1/1988
Operator that Plugged Well : Anadarko Petr.

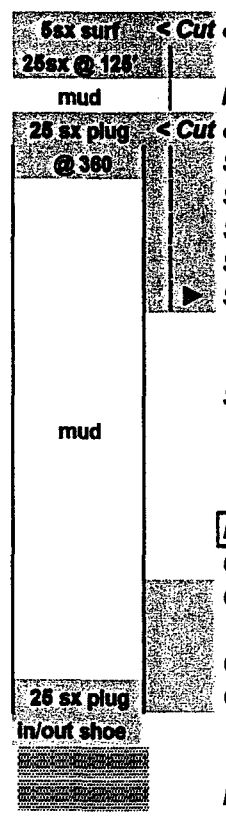
Date Well Drilled : 9 / 1968
Original Well Type : Producer

Well No.: NSLU # 143

API No.: 30-015-04938

Location : 1980' FSL & 511' FWL
Sec-Twn-Rng : Sec. 31, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Cut & Pulled 8 1/4" casing @	60'	
Red Bed Base:	280	ft.
Cut & Pulled 5 1/2" casing @	301'	
Surface Cement :	50	sx.
Surface Cement Top:	335	ft.
Surface Casing Size:	8 1/4	in.
Salt Top :	550	ft.
Surface Casing TD :	557	ft.
Salt Base:	1330	ft.
Production Casing		
Cement Volume :	100	sx.
Cement Top :	2346	ft.
Casing Size :	5 1/2	in.
Casing TD :	2955	ft.
Base of Open Hole :	3060	ft.

Type Well @ Abandonment : Injector
Date Well Abandoned : 5/1/1972
Operator that Plugged Well : Newmont Oil Co

Date Well Drilled : 1/1/1945
Original Well Type : Producer

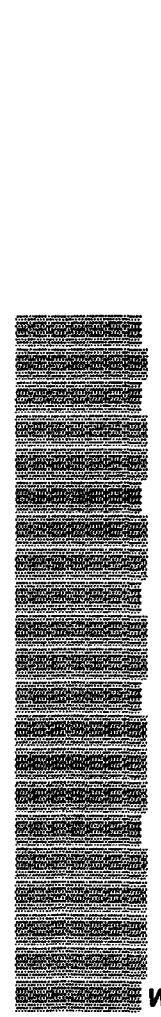
Cum Water Injected in this Well : 2259000 BBL

Well No.: Grier # 5

API No.: 30-015-04952

Location : 1980' FSL & 660' FEL
Sec-Twn-Rng : Sec. 31, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres



Red Bed Base:		ft.
Surface Cement :	50	sx.
Surface Cement Top:	439	ft.
Surface Casing Size:	8 5/8	in.
Salt Top :	580	ft.
Surface Casing TD :	624	ft.
Salt Base:	1410	ft.

Well Drilled to 3465 and Plugged

Type Well @ Abandonment : Dryhole-Junked
Date Well Abandoned : 3 / 1944
Operator that Plugged Well : McDonald & Williams

Date Well Drilled : 3 / 1944
Original Well Type : Dryhole-Junked

Well No.: NSLU # 161
API No.: 30-015-04951

Location : 660' FSL & 1864' FWL
Sec-Twn-Rng : Sec. 31, T16S, R31E

Field : Square Lake
Interval: Grayburg - San Andres

< Cut & Pulled 1 jnt of surface csg

Red Bed Base:	455	ft.
Surface Cement :	50	sx.
Surface Cement Top:	419	ft.
Surface Casing Size:	8 1/4	in.
Surface Casing TD :	591	ft.
Salt Top :	660	ft.
Salt Base:	1365	ft.

< Cut & Pulled 5 1/2" @ 1578'

Production Casing

Cement Volume :	100	sx.
Cement Top :	2338	ft.
Casing Size :	5 1/2	in.
Casing TD :	2947	ft.
Base of Open Hole :	3574	ft.

Type Well @ Abandonment :	Producer
Date Well Abandoned :	10 / 1948
Operator that Plugged Well :	Boyd - Plemons
Date Well Drilled :	7 / 1943
Original Well Type :	Producer

Well No.: Overton # 9
API No.: 30-015-04025

Location : 1980' FSL & 660' FEL
Sec-Twn-Rng : Sec. 36, T16S, R30E

Field : Square Lake
Interval: Grayburg - San Andres

Red Bed Base:	310	ft.
Surface Cement :	50	sx.
Surface Cement Top:	295	ft.
Surface Casing Size:	8 5/8	in.
Surface Casing TD :	500	ft.
Salt Top :	500	ft.

< Cut & Pulled 5 1/2" @ 875'

Salt Base:	1470	ft.

Production Casing

Cement Volume :	100	sx.
Cement Top :	2231	ft.

< collapsed casing @ 2340'

Casing Size :	5 1/2	in.
Casing TD :	2840	ft.
Base of Open Hole :	3315	ft.

Type Well @ Abandonment :	Producer
Date Well Abandoned :	11 / 1974
Operator that Plugged Well :	Newmont Oil
Date Well Drilled :	6 / 1943
Original Well Type :	Producer