8/27/03 LR SWD DRC PLR0323951008

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

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

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: _____Secondary Recovery _____Pressure Maintenance __X__Disposal _____Storage
Application qualifies for administrative approval? __X__Yes _____No

II. OPERATOR: Southwestern Energy Production Company

ADDRESS: 2350 N. Sam Houston Pkwy, E, Suite 300, Houston, TX 77032

CONTACT PARTY: LEE I. WILLIAMS, Production Engineer PHONE: 281 618 4788

III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? _____Yes __X__No
If yes, give the Division order number authorizing the project: _____

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).

*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: LEE I. WILLIAMS TITLE: Production Engineer

SIGNATURE: L. I. Williams DATE: 8-11-2003

E-MAIL ADDRESS: liwilliams@swn.com

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: _____

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

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

(1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

(1) The name, address, phone number, and contact party for the applicant;

(2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;

(3) The formation name and depth with expected maximum injection rates and pressures; and,

(4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

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

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

Appendix for Application For Authorization To Inject
Corbin-Abo SWD #G-31

Southwestern Energy Production Company
Corbin-Abo SWD #G-31
Sec. 31, T17S, R33E
1,980' FNL, 1,980' FEL
Lea County, New Mexico

1. Documentation for Form C-108 item "V".
   i. *Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.*

   a-1. **V-1** Land map showing all wells within a two mile radius and within a 0.5 mile radius of the Corbin-Abo SWD #G-31.

   a-2. **V-2** Land map showing all wells within Sections 30, 31, and 31 of Township 17 South and Range 33 East. The circle representing a 0.5 mile radius from the Corbin-Abo SWD #G-31 is marked on the map.

2. Documentation for Form C-108 item "VI".
   i. *Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.*

   a. See attachment "Appendix Item #VI-1".

   b-1. See attachment "Appendix Item #VI-2" for the plugging detail schematic of the Carper-State #1, API #: 30025013540000.

   b-2. See attachment "Appendix Item #VI-3" for the plugging detail schematic of the Carper-Lion #1, aka the Wyatt #1, API #: 30025083400001.

   b-3. See attachment "Appendix Item #VI-4" for history and documentation on the Miller B #1, API #: 30025228740000. This well is listed as P&A'd but was re-entered and re-named. This well is not P&A'd.

   b-4. See attachment "Appendix Item #VI-5" for the plugging detail schematic of the Federal MA "C" #1, API #: 30025015560000.

3. Documentation for Form C-108 item "VII".
   i. *Attach data on the proposed operation, including:*
      1. *Proposed average and maximum daily rate and volume of fluids to be injected.*
      2. *Whether the system is open or closed.*
      3. *Proposed average and maximum injection pressure.*
      4. *Sources and appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,*

5. *If injection is for disposal purposes into a zone not production of oil and gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc).*

a-1. Proposed average daily injection rate: 700 bwpd

a-2. Proposed maximum daily injection rate: 1,000 bwpd

a-3. Proposed volume of fluid to be injected: 255,500 bblsw per year
5,110,000 bblsw over 20 years

b-1. The Corbin-Abo SWD #G-31 is part of a closed SWD system. Southwestern Energy Production Company will operate and be the only user of system. The only water injected into the system will be from the Southwestern Energy Production Company-operated Denius Federal lease, located in Sections 33 & 34, T17S, R33E.

c-1. Proposed average injection pressure: 800 psi surface injection pressure

c-2. Proposed maximum injection pressure: 1,500 psi SIP

d-1. Source of proposed injection fluid: Abo Reef

The source of the proposed injection water is the Abo Reef formation. The proposed injection fluid will be Abo Reef-produced water from the Denius Federal lease in Sections 33 and 34, Township 17 South, Range 33 East, Lea County, New Mexico.

e-1. See attachment "Appendix Item #VII-1" for a chemical analysis of the Abo Reef produced water from the Denius Federal #1.

4. Documentation for Form C-108 item "VIII".
   i. *Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.*

   a. See attachment "Appendix Item #VIII-1" for the geologic data tabulation for the Corbin-Abo SWD #G-31.

5. Documentation for Form C-108 item "IX".
   i. *Describe the proposed stimulation program, if any.*

   a. At this time, it is proposed that the Corbin-Abo SWD #G-31 be stimulated with 630 gal of mutual solvent, 50 gal of speciality demulsifier, and 3,500 gal of BJ Services' One Shot Acid "Plus" acid consisting of 800 gpt of HCl acid and 200 gpt of toluene. The solvent, demulsifier, and toluene are required for

clearing of hydrocarbon buildup in the existing injection interval (4,530'-6,375').

6. Documentation for Form C-108 item "X".
   i. *Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).*

   a. See attachment "Appendix Item X-1" for the cement bond log for the Corbin-Abo SWD #G-31 (Baker Atlas, 26 July 2003).

   b. See attachment "Appendix Item X-2" for the lateralog-gamma ray-neutron log for the Fee MA #1-B, aka the Corbin-Abo SWD #G-31 (Schlumberger Well Surveying Corporation, 28 February 1960).

   c. See attachment "Appendix Item X-3" for the induction-electrical log for the Fee MA #1-B, aka the Corbin-Abo SWD #G-31 (Schlumberger Well Surveying Corporation, 28 February 1960).

7. Documentation for Form C-108 item "XI".
   i. *Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken).*

   a-1. There are not any fresh water wells currently producing within a 1-mile radius of the Corbin-Abo SWD #G-31. Three water wells were found but all three were inactive and were not producing.

   a-2. RA 09192, Caviness Ranch, Sec. 29, T17S, R33E, SW SE SE, Not Active.

   a-3. RA 09196, Caviness Ranch, Sec. 29, T17S, R33E, SW SE SE, Not Active.

   a-4. RA 09195, Caviness Ranch, Sec. 32, T17S, R33E, NW NE NE, Not Active.

8. Documentation for Form C-108 item "XII".
   i. *Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.*

   a. The available geologic and engineering data have been examined and I have found no evidence of open faults or any hydrologic connection between the disposal zone and any underground sources of drinking water.

L. I. Williams 8-8-2003

Lee I. Williams
Production Engineer
Southwestern Energy Production Company

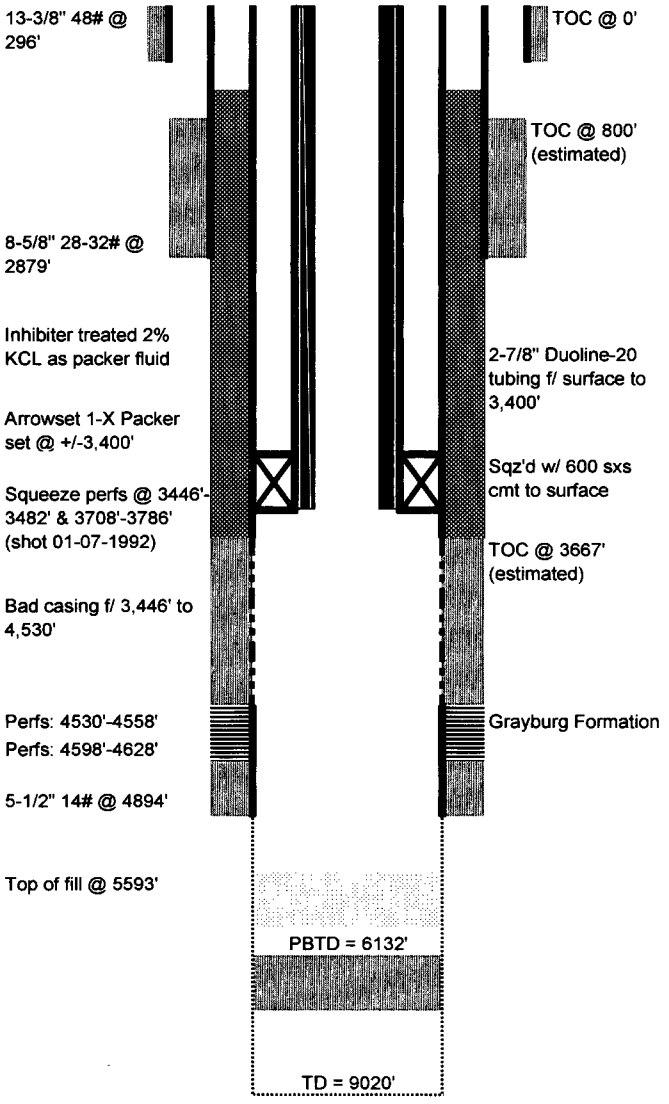
9. Documentation for Form C-108 item "XIII".
    i. *Applicants must complete the "Proof of Notice" section on the reverse side of this form.*

    a. See attachment "Appendix Item XIII-1" for the Proof of Notice documentation.

Southwestern Energy
Production Company

Well Bore Diagram
Corbin-Abo SWD #G-31 (Proposed)

Williams, Lee I.
Production Engineer



Casing

1 13-3/8" 48# @ 296' w/ 225 sxs cmt to surface (17-1/2" hole)
2 8-5/8" 28-32# @ 2879' w/ 650 sxs cmt (est. TOC @ 800') (12-1/2" hole)
3 5-1/2" 14# J-55 @ 4894' w/ 175 sxs cmt (est. TOC @ 3667'--original cmt; Sqz'd w/ 600 sxs in 1992 to surface, CBL shows good bond) (7-7/8" hole)

Tubing

	# jts	Footage	Size	Description
		feet	*inches*	
1	110	3,400.0	2 7/8	Duoline 20-lined tubing
	Total:	**3,400.0**		

Perforations & Openhole Intervals

	Top	Bottom	Footage	Description
	ft	*ft*	*ft*	
1	4,530	4,558	28	Grayburg perfs
2	4,598	4,628	30	Grayburg perfs
3	4,894	6,375	1,481	San Andres openhole
		Total:	1,511	

Information

Well: Corbin-Abo SWD #G-31
Field: Maljamar Prospect: Corbin-Abo
Location: 1980' FNL & 1980' FEL, Sec. 31, T17S, R33E
Lea County, New Mexico
Elevation: GL = 3983', KB = 3994.8'
Operator: Southwestern Energy Production Company
API #: 35-025-01337
Spud Date: 12-27-1959 Completed: 12-10-1968
Engineer: Lee I. Williams
Updated: 08-09-2003

Formation Record

	Top	Bottom	Footage	Description
	ft	*ft*	*ft*	
1	-	1,310	1,310	Red beds
2	1,310	1,490	180	Anhydrite
3	1,490	2,517	1,027	Salt
4	2,517	4,648	2,131	Dolomite & anhy w/ sndstn
5	4,648	6,378	1,730	Dolomite
6	6,378	8,792	2,414	Lmstn & Dol w/ chert & ss
7	8,792	8,960	168	Dolomite
8	8,960	9,020	60	Dolomite & shale

Formations

	Top	Bottom	Description
	ft	*ft*	
1	1,310		Anhydrite
2	1,490	2,517	Salt
3	2,683		Yates
4	3,772		Queen
5	4,648		San Andres
6	6,378		Glorieta
7	8,792		Abo

Well Data

Lease name et al

1. Lease: Corbin-Abo SWD
2. Well No.: G-31
3. Section: 31
4. Township: 17 South
5. Range: 33 East
6. Footage: 1980' FNL, 1980' FEL

Casing data

1. 13-3/8" 48# @ 296' w/ 225 sxs cmt to surface (17-1/2" hole)
2. 8-5/8" 28-32# @ 2879' w/ 650 sxs cmt (est. TOC @ 800'). (12-1/2" hole).
3. 5-1/2" 14# J-55 @ 4894' w/ 175 sxs cmt (TOC @ surface—circulated to surface during squeeze job in 1992). (7-7/8" hole). Sqz'ed w/ 600 sxs cmt to surface.
4. Open hole section f/ 4,894' to 9,020'. Cmt plug @ 6,132'. Fill tagged at 5,593'.

Tubing data

1. 2-7/8" 6.5# Rice Engineering Duoline 20-lined tubing, will be run from surface to the packer (packer will be set at ± 3,400').

Packer data

1. 5-1/2" (14.0#) Rice Engineering Duoline 20-lined Weatherford Arrowset I-XS injection packer, will be set at ± 3,400'.

Injection Data

1. The Corbin-Abo SWD #G-31 is currently permitted to inject into the San Andres from 4,530' to 6,375'; would like to extend our injection into the Seven Rivers and Queen, as well as the current San Andres, from 3,100' to 6,375'.

2. The Corbin-Abo SWD #G-31 is currently injecting into Grayburg perforations from 4,530' to 4,558' and 4,598' to 4,628' and into San Andres openhole from 4,894' to 6,132'. The proposed injection interval is into openhole/casing holes from 3,446' to 6,132'.

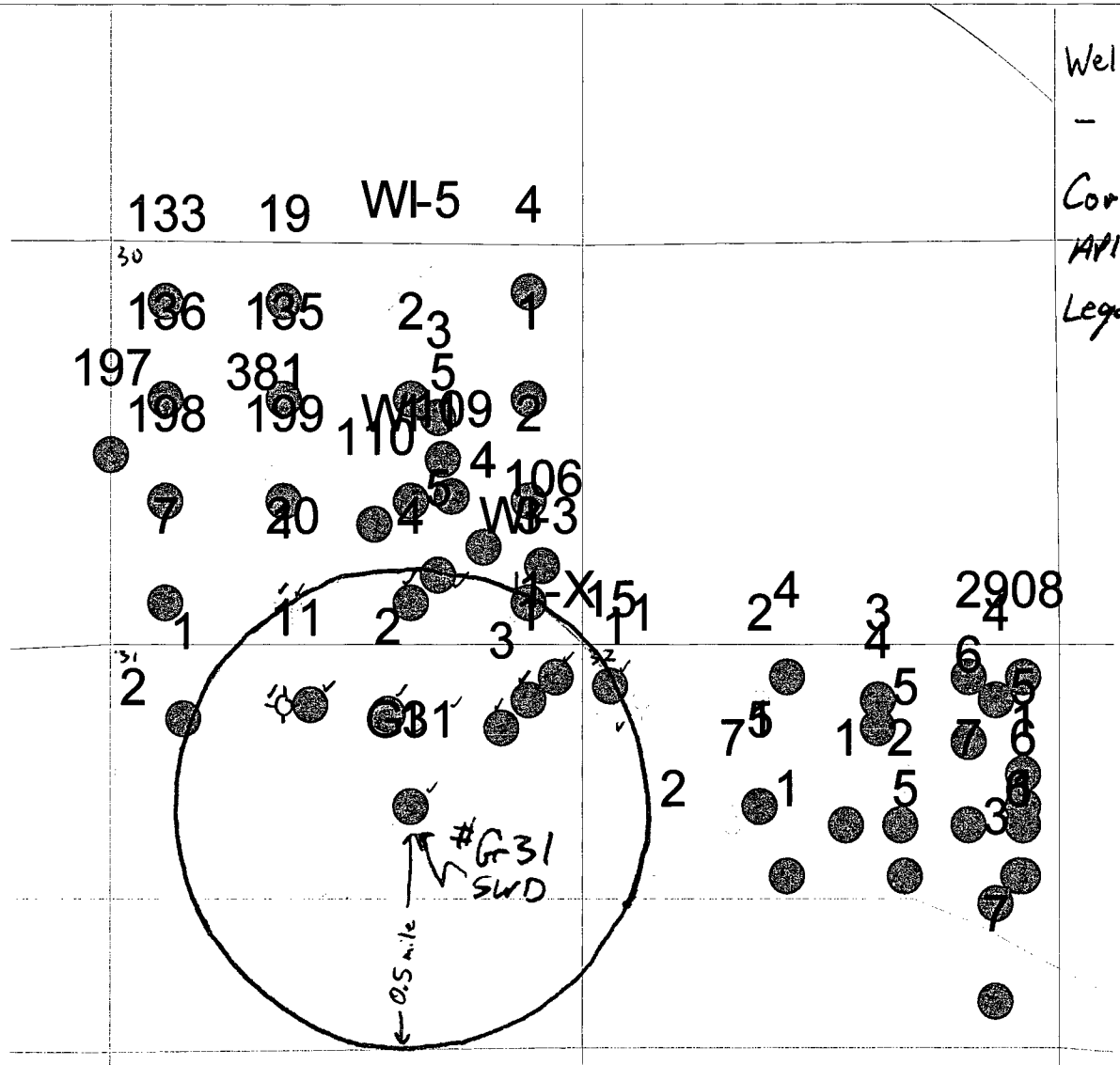
3. This well was originally drilled and completed as an oil producer, the Fee MA #1-B. It was renamed the Corbin-Abo SWD #G-31 and permitted and converted to a salt water disposal well in 1969.

4. Perforations:
   a. Squeeze perfs: 3,446'-3,482' Sqz'd to surface w/ 600 sxs cmt
   b. Squeeze perfs: 3,708'-3,786' Sqz'd to surface w/ 600 sxs cmt
   c. Delaware perfs: 4,720'-4,740' Sqz'd w/ unknown volume of cmt
   d. Delaware perfs: 4,750'-4,780' Sqz'd w/ unknown volume of cmt
   e. Grayburg perfs: 4,530'-4,558' Current injection perfs
   f. Graybrug perfs: 4,598'-4,628' Current injection perfs
   g. San Andres openhole: 4,894'-6,132' Current injection openhole section

5. Next higher and lower oil or gas zone in area
   a. Glorieta 6,378' Top of formation depth
   b. Nothing productive at a more shallow depth

Date: 7/30/2003
Time: 2:36 PM

PI/Dwights PLUS on CD Map Report



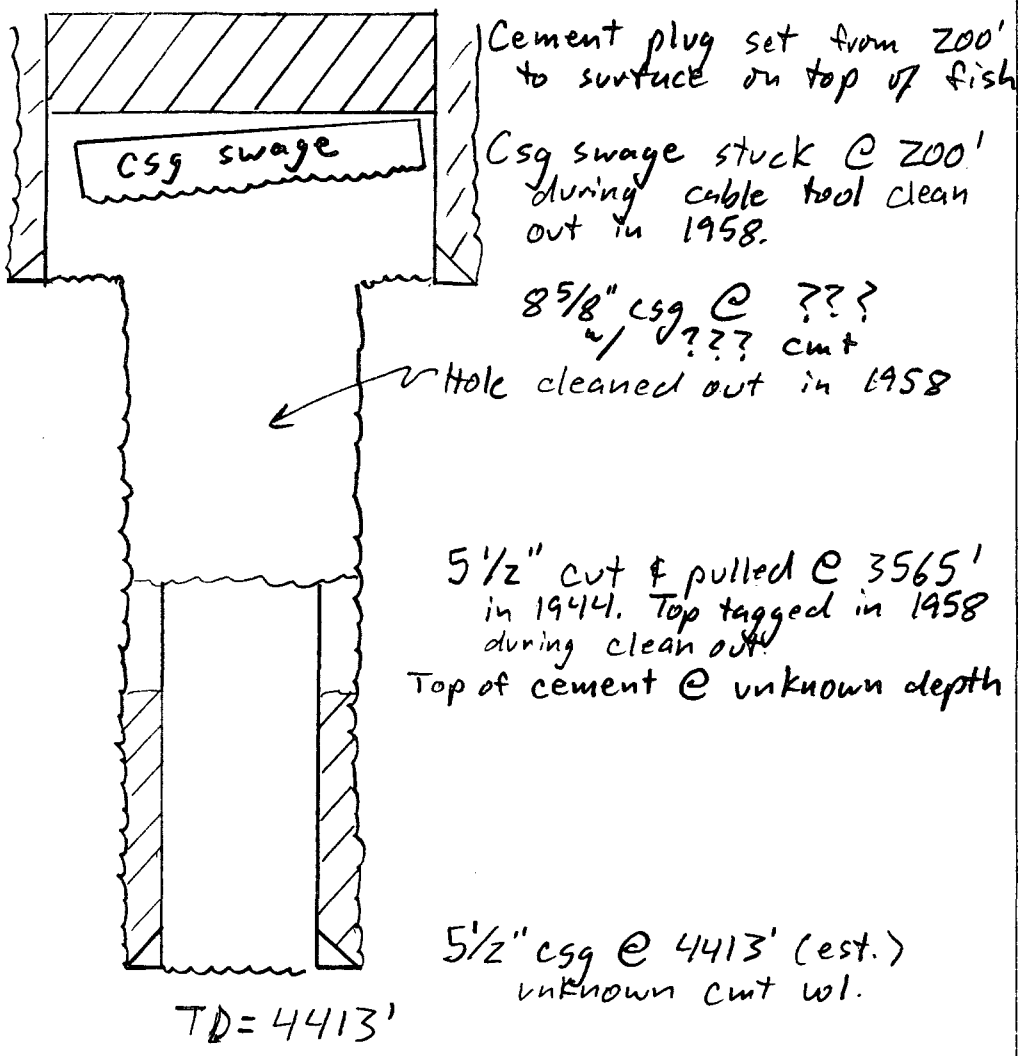
Wells with ½-mile radius

—

Corbin-Abo SWD #G-31
API # 30025013370001
Legal: T17S R33E
Sec. 31
1980'FNL, 1980'FEL
Lea County, NM

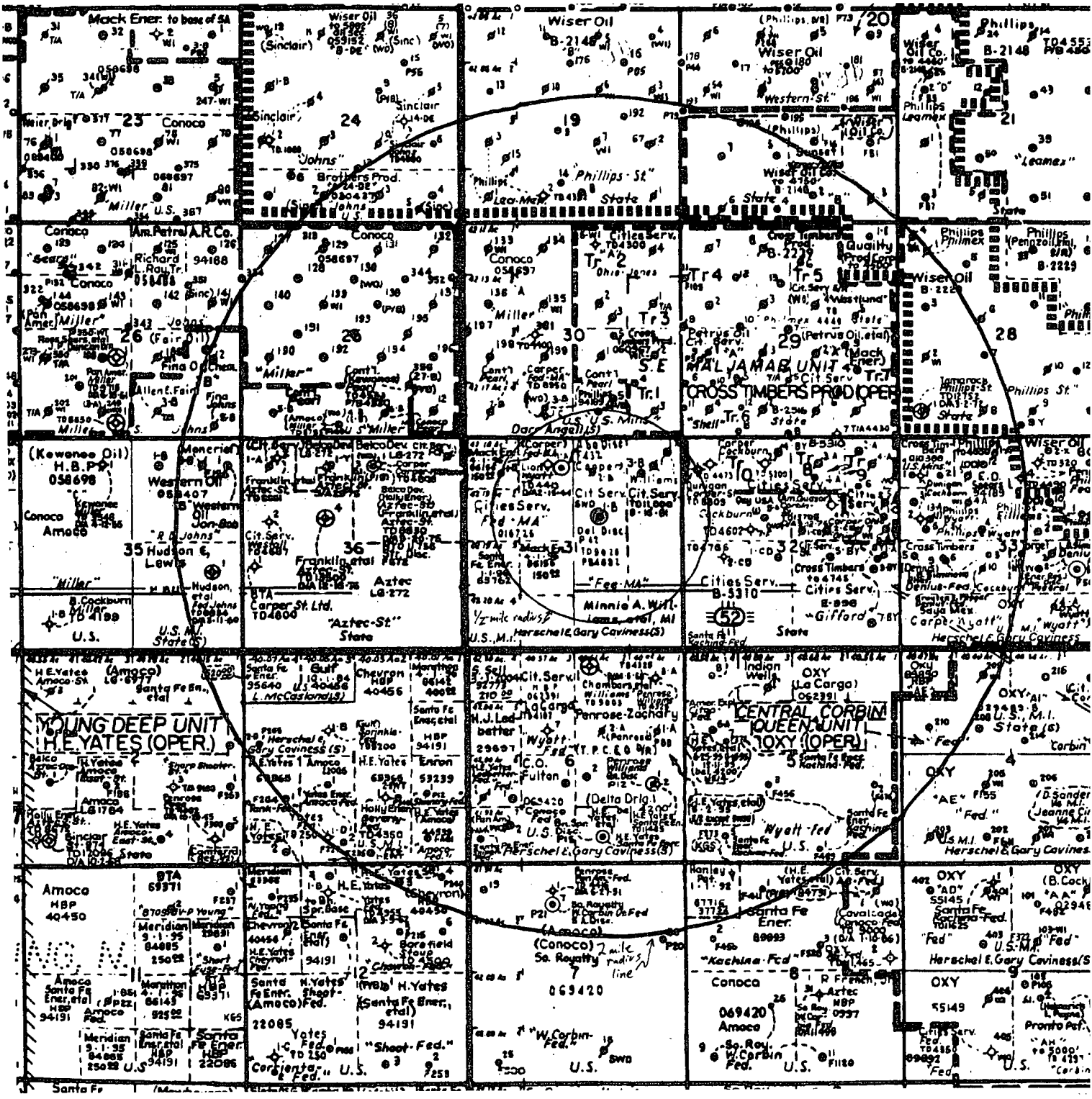
"V-2"

Well: Carper-Lion #1, aka Wyatt #1
Operator: Carper Drilling Company
API No.: 30025083400001
Legal: Sec. 31, T17S, R33E, 660' FNL, 1980' FWL
Spud Date: 11-2-1943
P&A date: 8-29-1958 (Junked & Abandoned); 2-15-1944 (P&A'd)

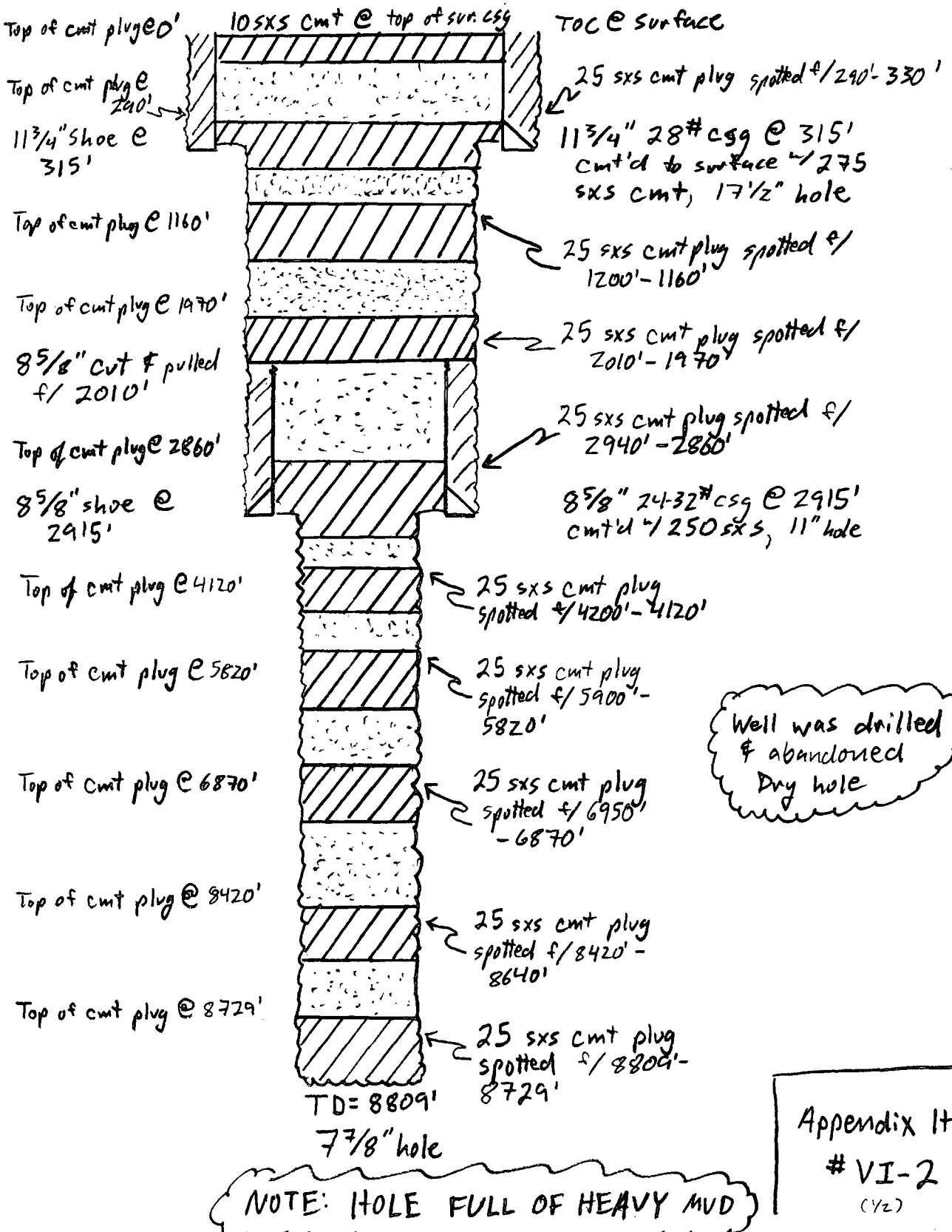


Note: Well was drilled & P&A'd in 1943/1944. Well was re-entered & Junked & abandoned in 1958.

Appendix Item # VI-3 (1/2)


Corbin-Abo SWD #G-31
API # 30025013370001
Legal: T17S R33E Sec. 31
1980'FNL, 1980'FEL
Lea County, New Mexico
Operator: Southwestern Energy Production Company
Note: The Blue Circle is the 2 mile radius
The Red Circle is the ½-mile radius
"V-1"

Well: Carper-State #1-D
Operator: James P. Dunigan
API No.: 3002501354000
Legal: Sec. 32, T17S, R33E, 777' FNL, 330' FWL



Well was drilled & abandoned Dry hole

NOTE: HOLE FULL OF HEAVY MUD

Appendix Item # VI-2 (1/2)

Well: Carper-State #1-D
Operator: James P. Dunigan
API No.: 3002501354000O
Legal: Sec. 32, T17S, R33E, 777'FNL, 330'FWL
Spud Date: 6-12-1961

Casing, Cement, & HOLE Detail:

1. 11 3/4" 28# csg @ 315', cmt'd to surface w/ 275 sxs cmt, 17½" hole
2. 8 5/8" 24-32# csg @ 2915', cmt'd w/ 250 sxs, 11" hole. Cut & pulled @ 2010'
3. 7 7/8" hole drilled to 8809'. Dry hole - no csg run.

Plugging Detail:

	Top of Plug, ft	Bottom of Plug, ft	Cmt. Plug Vol. # of sxs	Hole Size inch
1.	8729'	8809'	25	7 7/8"
2.	8420'	8610'	25	7 7/8"
3.	6870'	6950'	25	7 7/8"
4.	5820'	5900'	25	7 7/8"
5.	4120'	4200'	25	7 7/8"
6.	2860'	2940'	25	7 7/8" - 8 5/8"
7.	1970'	2010'	25	11"
8.	1160'	1200'	25	11"
9.	290'	330'	25	17½"
10.	0'		10	17½"

Appendix Item #VI-2 (2/2)

Well: Carper-Lion #1, aka Wyatt #1
Operator: Carper Drilling Company
API No.: 30025083400001
Legal: Sec. 31, T17S, R33E, 660' FNL, 1980' FWL
Spud date: 11-2-1943;
P&A date: 8-29-1958 (Junked & Abandoned); 2-15-1944 (P&A'd)

Casing, Cement, & Hole Detail:

1. 8 5/8" (unknown weight) @ (unknown depth) cmt'd w/ (unknown cement volume to unknown top of cement). unknown hole size.

2. 5 1/2" (unknown weight & grade) @ 4,413' (estimated, 4413' was TD of well) w/ (unknown cement volume to unknown top of cement). Unknown hole size. The 5 1/2" csg was cut & pulled f/ 3565' when the well was plugged & abandoned in 1944.

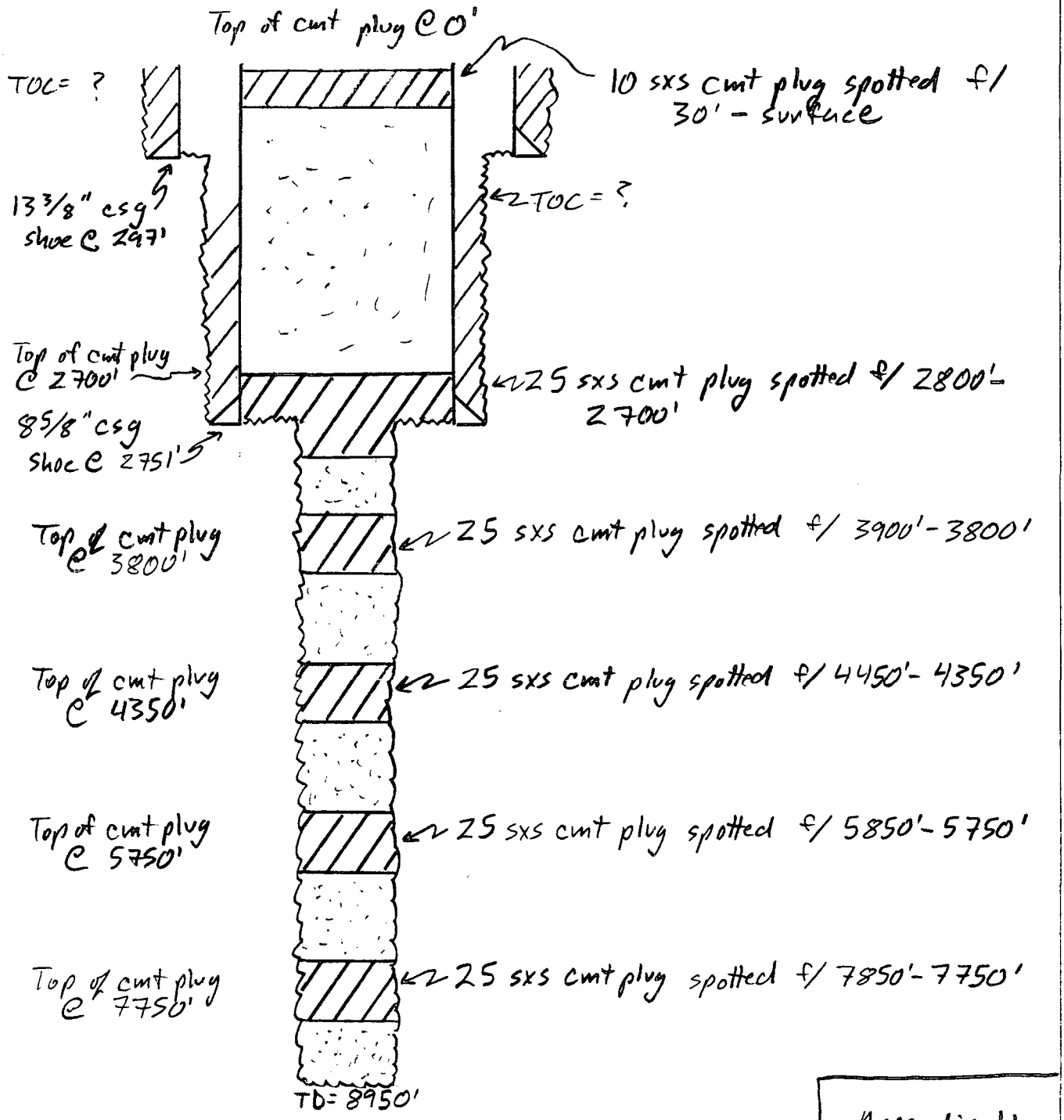
* Note: Casing depths, grades, & weights and cement info is unknown due to incomplete data. The NMOCC Scout Report on file w/ the NMOCD is marked ILLEGIBLE & most information is illegible on the report.

Plugging Detail:

	Top of Plug, ft	Bottom of Plug, ft	Cmt Plug Vol # of SXS	Hole Size inch
1.	0'	200'	unknown	8 5/8"
2.	200'	unknown	Fish (csg swage)	8 5/8"

Appendix Item #VI-3 (2/2)

Well: Federal MA "C" #1
Operator: Carper-Drilling Company
API No.: 30-025-01556-0000
Legal: Sec. 30, T17S, R33E, 555'FSL, 1980'FWL, Lea Co., NM
Spud date: 3-15-1960
P&A date: 4-29-1960



Note: 10.2# mud between plugs

Appendix Item #VI-5 (1/2)

Well: Federal MA "C" #1
Operator: Carper Drilling Company
API No.: 30-025-01556-0000
Legal: Sec. 30, T17S, R33E, 555' FSL, 1980' FWL, Lea Co., NM
Spud date: 3-15-1960
P&A date: 4-29-1960

Casing, Cement, & Hole Detail:

1. 13 3/8" csg @ 297' w/ 200 sxs cmt. Hole size is unknown.
2. 8 5/8" csg @ 2,751' w/ 950 sxs cmt. Hole size is unknown.
3. Unknown hole size drilled to 8950'. Dry hole. No csg.

Plugging Detail

	Top of Plug, ft	Bottom of Plug, ft	Cmt. Plug Vol # of sxs	Hole size inches
1.	7750'	7850'	25	???
2.	5750'	5850'	25	???
3.	4350'	4450'	25	???
4.	3800'	3900'	25	???
5.	2700'	2800'	25	???
6.	0'	30'	10'	8 5/8"

Note: 10.2# mud used between plugs.

Appendix Item
#VI-5
(2/2)

Well: Miller B #20
Operator: John Cockburn
API No.: 3002508338
Legal: Sec. 30, T17S, R33E, 685' FSL, 2050' FWL, Lea Co., NM
Spud date: 7-17-1947
P&A date: 1-15-1948

* Note: This well was re-entered in 1969 and completed in the Grayburg f/ 4450' to 4370'. The well was re-named at the time it was re-entered. The well was converted to an injection well on 5 July 1973. Injection perfs were added f/ 4200' to 4350'. The well was shut in due to high injection pressure on 7-14-1986.

WELL IS ACTIVE!!!
P&A'd well was re-entered & renamed

CURRENT WELL DATA:

Well: Pearl B #3
Operator: ConocoPhillips Co.
API #: 3002508338
Legal: Sec. 30, T17S, R33E, 685' FSL, 2050' FWL, Lea County, New Mexico
Status: TA'd injection well.

Appendix Item #VI-4 (1/1)

Southwestern Energy Production Company
Corbin-Abo SWD #G-31
Salt Water Disposal Application

Williams, Lee I.
Production Engineer

Operator	Lease Name	Well Number	API Number	Current Status (Dwight's)	Well Location		Spud Date	Driller TD	Surface			Intermediate			Production			Completion Information			
									Size, in	Shoe Depth, ft	Cement, sxs	Size, in	Shoe Depth, ft	Cement, sxs	Size, in	Shoe Depth, ft	Cement, sxs	Top Perf, ft	Bttm Perf, ft	Formation	Completion
					Legal	County															
CARPER DRLG CO	FEDERAL MA C	1	30025015560000	D&A-O	T17S R33E Sec.30 555 FSL & 1980 FWL	Lea	3/15/1960	8950	13 3/8	297	200	8 5/8	2,751	950							Dry hole
CITIES SERV OIL CO	SMGSAU TR 1	WI-3	30025083350001	W-INJW	T17S R33E Sec.30 660 FSL & 660 FEL	Lea	12/15/1981	4355	8	1,235	550	5 1/2	3,965	250	4	3,666	75	3,965	4,324	Grayburg-San Andres	5,000 gal acid
COCKBURN JOHN*	MILLER B*	20	30025083380000	D&A	T17S R33E Sec.30 685 FSL & 2050 FWL	Lea	7/17/1947	4860	10	20	15	7	3,986	200							Dry hole
PHILLIPS PET ET AL	US MINERALS	4	30025228740000	OIL	T17S R33E Sec.30 660 FSL & 1980 FEL	Lea	1/15/1969	4381	9 5/8	355	350				4 1/2	4,381	125	4,250	4,350	Grayburg	500 gal acid & 31,500 gal / 22,000# sand frac
PHILLIPS PET ET AL	US MINERALS	5	30025266680000	OIL	T17S R33E Sec.30 990 FSL & 1650 FEL	Lea	3/17/1980	4500	8 5/8	1,265	570				5 1/2	4,449	950	4,226	4,425	Grayburg-San Andres	7,500 gal acid & 13,000 gal / 27,000# sand frac
CARPER DRLG CO	FEDERAL MA D	1	30025013350000	OIL	T17S R33E Sec.31 860 FNL & 810 FWL	Lea	7/11/1960	8904	13 3/8	296	225	8 5/8	2,779	950	5 1/2	8,901	1,200	8,642	8,687	Abo Reef	15,000 gal acid
CARPER DRLG CO	WYATT	1	30025083400001	J&AW	T17S R33E Sec.31 660 FNL & 1980 FWL	Lea	1/1/1958	4413	8 5/8						5 1/2	4,413					Dry hole. P&A'd, re-entered and then junked & abandoned.
CITIES SERV OIL CO	FEDERAL MA A	1	30025013390000	OIL	T17S R33E Sec.31 710 FNL & 2310 FWL	Lea	10/17/1959	10015	13 3/8	279	200	8 5/8	2,785	450	5 1/2	8,998	1,195	8,582	8,748	Abo Reef	10,500 gal acid
CITIES SERV OIL CO	FEDERAL MA B	2	30025013380000	OIL	T17S R33E Sec.31 800 FNL & 2156 FEL	Lea	5/10/1960	8935	13 3/8	297	225	8 5/8	2,799	950	5 1/2	8,930	1,195	8,654	8,692	Abo Reef	2,000 gal acid
CITIES SERV OIL CO	FEDERAL MA B	3	30025013360000	OIL	T17S R33E Sec.31 950 FNL & 990 FEL	Lea	1/1/1961	8870	13 3/8	297	250	8 5/8	2,799	950	5 1/2	8,869	1,175	8,668	8,722	Abo Reef	15,000 gal acid
COLLIER R D	WILLIAMS	1-X	30025015650000	OIL	T17S R33E Sec.31 330 FNL & 330 FEL	Lea	4/1/1950	4314	8 5/8	1,340	150				7	4,015	100	4,015	4,312	Grayburg-San Andres	Openhole frac
WILLIAMS OIL COMPANY	WILLIAMS	1	30025013340000	OIL	T17S R33E Sec.31 660 FNL & 660 FEL	Lea	9/30/1943	4328	8	1,274	75				7	4,050	100	4,050	4,305	Grayburg-San Andres	Openhole frac
CROSS TIMBERS OPR CO	SOUTHEST MALJAMAR (GBSA) UNIT	15	30025336150000	OIL	T17S R33E Sec.32 500 FNL & 330 FWL	Lea	11/12/1996	4510	8 5/8	416	275				5 1/2	4,509	1,350	4,322	4,395	Grayburg-San Andres	1,800 gal acid & 18,000 gal / 60,000# sand frac
DUNIGAN JAMES P INC	CARPER-STATE	1	30025013540000	D&A	T17S R33E Sec.32 777 FNL & 330 FWL	Lea	6/11/1961	8805	11 3/4	300	275	8 5/8	2,915	250							Dry hole

*Note: The Miller B #20, API #: 30025083380000, Sec. 30, T17S, R33E, 685' FSL, 2050' FWL is listed as Plugged and Abandoned in the Dwight's/PI database. However, examination of the New Mexico OCD well files shows that this well was re-entered and re-named. The well is now named the Pearl B #3, API # 3002508338 and is operated by ConocoPhillips as an injection well.

Appendix Item #VI-1

Pro-Kem Inc.

WATER ANALYSIS REPORT

SAMPLE

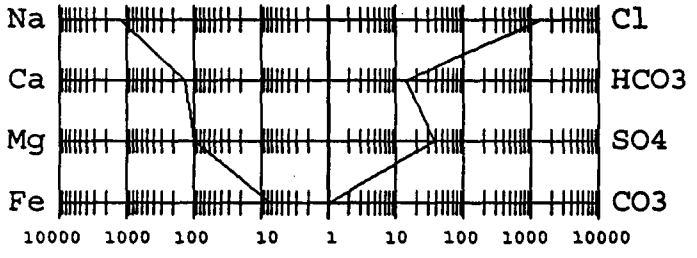
Oil Co. : **Southwestern Energy**
Lease : **Denius Fed.**
Well No.: **#1**
Lab No. : **F:\ANALYSES\Feb0102.001**

Sample Loc. :
Date Analyzed: **01-February-2002**
Date Sampled :

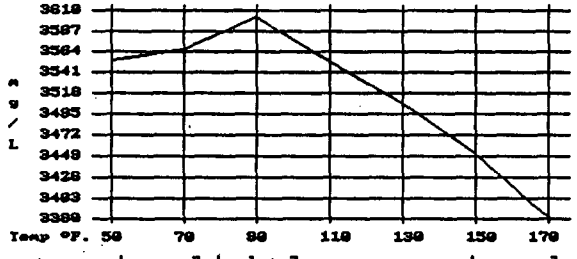
ANALYSIS

1.	pH		6.400		
2.	Specific Gravity 60/60 F.		1.058		
3.	$CaCO_3$ Saturation Index @ 80 F.		-0.036		
	@ 140 F.		+0.889		
	Dissolved Gasses		**MG/L**	**EQ. WT.**	***MEQ/L**
4.	Hydrogen Sulfide		300		
5.	Carbon Dioxide		100		
6.	Dissolved Oxygen		Not Determined		
	Cations				
7.	Calcium	(Ca^{++})	2,585	/ 20.1 =	128.61
8.	Magnesium	(Mg^{++})	1,192	/ 12.2 =	97.70
9.	Sodium	(Na^{+}) (Calculated)	27,703	/ 23.0 =	1,204.48
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^{-})	844	/ 61.1 =	13.81
14.	Sulfate	($SO_4^{=}$)	1,750	/ 48.8 =	35.86
15.	Chloride	(Cl^{-})	48,989	/ 35.5 =	1,379.97
16.	Total Dissolved Solids		83,063		
17.	Total Iron (Fe)		125	/ 18.2 =	6.87
18.	Total Hardness As $CaCO_3$		11,362		
19.	Resistivity @ 75 F. (Calculated)		0.117 /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	13.81	1,119
$CaSO_4$	68.07	35.86	2,441
$CaCl_2$	55.50	78.93	4,381
$Mg(HCO_3)_2$	73.17	0.00	0
$MgSO_4$	60.19	0.00	0
$MgCL_2$	47.62	97.70	4,653
$NaHCO_3$	84.00	0.00	0
$NaSO_4$	71.03	0.00	0
NaCl	58.46	1,203.33	70,347

***Milli Equivalents per Liter**

3 water is slightly corrosive due to the pH observed on analysis.
ıe corrosivity is increased by the content of mineral salts, and the presence of H_2S, CO_2 in solution.

Well: Corbin-Abo SWD #G-31
Operator: Southwestern Energy Production Company
API No.: 30-025-01337
Legal: Sec. 31, T17S, R33E, 1,980' FNL, 1,980' FEL, Lea County, New Mexico

Fresh Water Zones

	Formation	Formation Top *ft*	Formation Bottom *ft*
1.	Surface Alluvium	0	80
2.	Santa Rosa Formation	850	1,100

Note: The bottom depth of the surface alluvium and the top and bottom depths of the Santa Rosa Formation are approximate. These approximate depths were determined from available data and conversations with the District Office of the New Mexico Office of Oil Conservation.

Geologic Zones

	Formation	Formation Top *ft*	Lithology
1.	Rustler	1,310	Anhydrite, limestone, dolomite
2.	Salt	1,490	Salt
3.	Yates	2,683	Limestone, dolomite
4.	Queen	3,772	Sand, shale, limestone
5.	San Andres	4,648	Limestone, dolomite
6.	Cherry Canyon	4,720	Sandstone
7.	Glorietta	5,838	Limestone, dolomite
8.	Abo	8,792	Dolomite

AFFIDAVIT OF PUBLICATION

State of New Mexico,
County of Lea.

I, KATHI BEARDEN

Publisher

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

of 1

weeks.

Beginning with the issue dated

August 17 2003

and ending with the issue dated

August 17 2003

Kathi Bearden

Publisher

Sworn and subscribed to before me this 18th day of August 2003

Shannon L. Rice

Notary Public.

My Commission expires

(Seal)

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Shannon L. Rice
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires: 5-8-07

LEGAL NOTICE
August 17, 2003

Salt Water Disposal Well Application

Lease name of application

1. Lease: Corbin-Abo SWD
2. Well No.: G-31
3. Section: 31
4. Township: 17 South
5. Range: 33 East
6. Footage: 1980' FNL, 1980' FEL

Contact data for application

1. Southwestern Energy Production Company
   2350 N. Sam Houston Pkwy, E., Suite 300, Houston, Texas 77032
2. Contact person: Lee I. Williams
   Production Engineer
   281-618-4788

Intended Purpose of well

1. The Corbin-Abo SWD #G-31 is a salt water disposal well that has been disposing of produced water from the Corbin Abo Pool since 1969. The #G-31 is currently injecting into the San Andres with the permitted injection interval of 4,530' - 6,375'. Southwestern Energy Production Company is seeking to continue to utilize the #G-31 as a salt water disposal well for the disposing of produced water from the Corbin Abo Pool, but with an increased injection interval of 3,100' - 6,375'.
2. The Corbin-Abo SWD #G-31 is located 1980' FNL & 1980' FEL of Section 31, Township 17 South, Range 33 East, in Lea County, New Mexico.
3. The proposed maximum surface injection pressure of the Corbin-Abo SWD #G-31 is 1,500 psi and the proposed maximum daily injection rate is 1,000 bwpd.
4. The proposed formations for the Corbin-Abo SWD #G-31 to inject into are the Yates Formation (formation top at 2,683'), the Queen Formation (formation top at 3,772'), and the San Andres Formation (formation top at 4,648').
5. Interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

#20050

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

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Southwestern Energy
2350 N. Sam Houston Pkwy. E.
Suite 300
HOUSTON, TX 77032

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