



Occidental Permian Ltd.

Occidental Permian Ltd.

580 Westlake Park Blvd.

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Phone 281-552-1000 Fax 281-552-1200

October 15, 2001

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

Attention: Mr. Richard Ezeanyim

**BEFORE THE
OIL CONSERVATION DIVISION**

Case No. 12722 Exhibit No. A

Submitted By:

oxy Permian LP

Hearing Date: ~~September~~ October 6, 2001

Re: ***Case Number 12722, Examiner Hearing September 6, 2001
Application of Occidental Permian Limited Partnership to Authorize Expansion of the
North Hobbs Grayburg-San Andres Unit Pressure Maintenance Project
Hobbs: Grayburg - San Andres Pool
Lea County, New Mexico***

Dear Richard:

Per our conversation last week, please find enclosed the following data to supplement the record in the referenced case:

1. Map entitled "North Hobbs Unit CO2 Flood Phase 1 Approximate Start Dates." This map is a blowup of the map included in Exhibit #26, and shows the estimated dates that CO2 injection will commence in various areas of Phase 1.
2. Bar chart labeled "Cumulative number of injection wells used in Phase 1 of NHU CO2 Project." This graph illustrates when the 103 injection wells will be utilized for tertiary injection service and is based on our modeling work. As you can see, over 90% of the wells will be utilized by 2012, 10 years after the start of injection into the project.
3. Corrected Injection Well Data Sheets for well #431A (in section 20 of 18S-38E), well #342A (in section 30 of 18S-38E) and well #331A (in section 32 of 18S-38E). These particular well data sheets were submitted in the C-108 package at the hearing, but the heading information was incomplete or incorrect. The information highlighted in yellow is the only data that was changed on these forms.
4. Table identified as "North Hobbs Unit CO2 Project Phase 1 Injection Well List." In reviewing the data sheets for item #3 above, I discovered that two wells of the 3 wells mentioned above (well #431A in section 20 of 18S-38E and well #342A in section 30 of 18S-38E) were incorrectly identified as proposed re-entries of old plugged and abandoned wells. In fact, these are new wells that will be drilled. Accordingly, this table has been corrected (corrections highlighted in yellow on the second page) and is submitted to replace the list previously submitted at the hearing and in a subsequent letter to Examiner Catanach dated 9/12/01.
5. A copy of the cement bond log run on well # 331 (in section 30 of 18S-38E). In our opinion, it shows the top of cement to be about 3650', which should be sufficient to prevent the migration of injectant from the proposed injection interval of 4000' to 4238'.

October 15, 2001

Page 2

6. Revised and corrected wellbore schematics for the following wells:

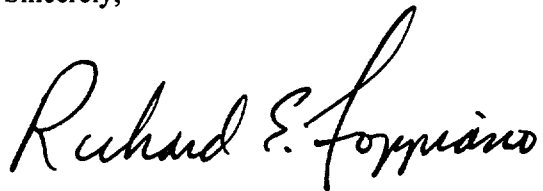
<u>Well Name & Number</u>	<u>API #</u>	<u>Location</u>
Grimes No. 5	30-025-07460	29-18S-38E
State "B-13" No. 3	30-025-05438	13-18S-37E
McKinley "B" No. 1	30-025-07380	20-18S-38E
State "E" No. 1	30-025-10199	14-18S-37E
State "F" No. 1	30-025-05465	23-18S-37E
State "I-29" No. 2	30-025-07443	29-18S-38E
NHGS AU No. 1	30-025-05449	13-18S-37E
Grimes No. 2	30-025-07457	29-18S-38E

These revisions and corrections result from a more thorough review of the NMOCD well records in Santa Fe that was recently conducted. OXY continues to believe that each of these wells is plugged in a manner that will allow confinement of the injectant to the proposed injection interval.

7. An affidavit certifying that the information contained herein is true and correct to the best of my knowledge and belief.

I hope this information is helpful. If you need anything else, please don't hesitate to call me at 281-552-1303 or page me at 877-326-0713.

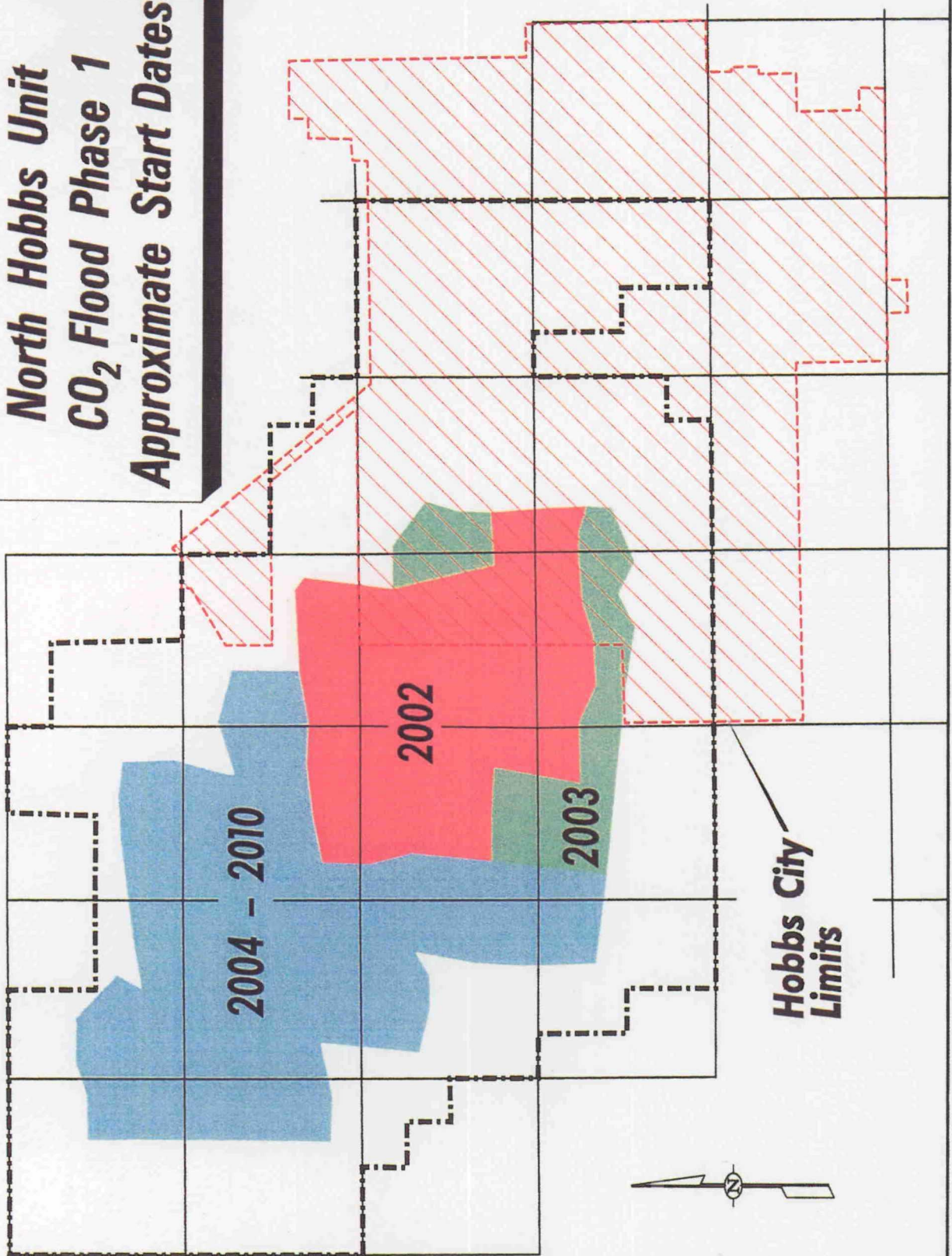
Sincerely,



Richard E. Foppiano
Senior Advisor – Regulatory Affairs

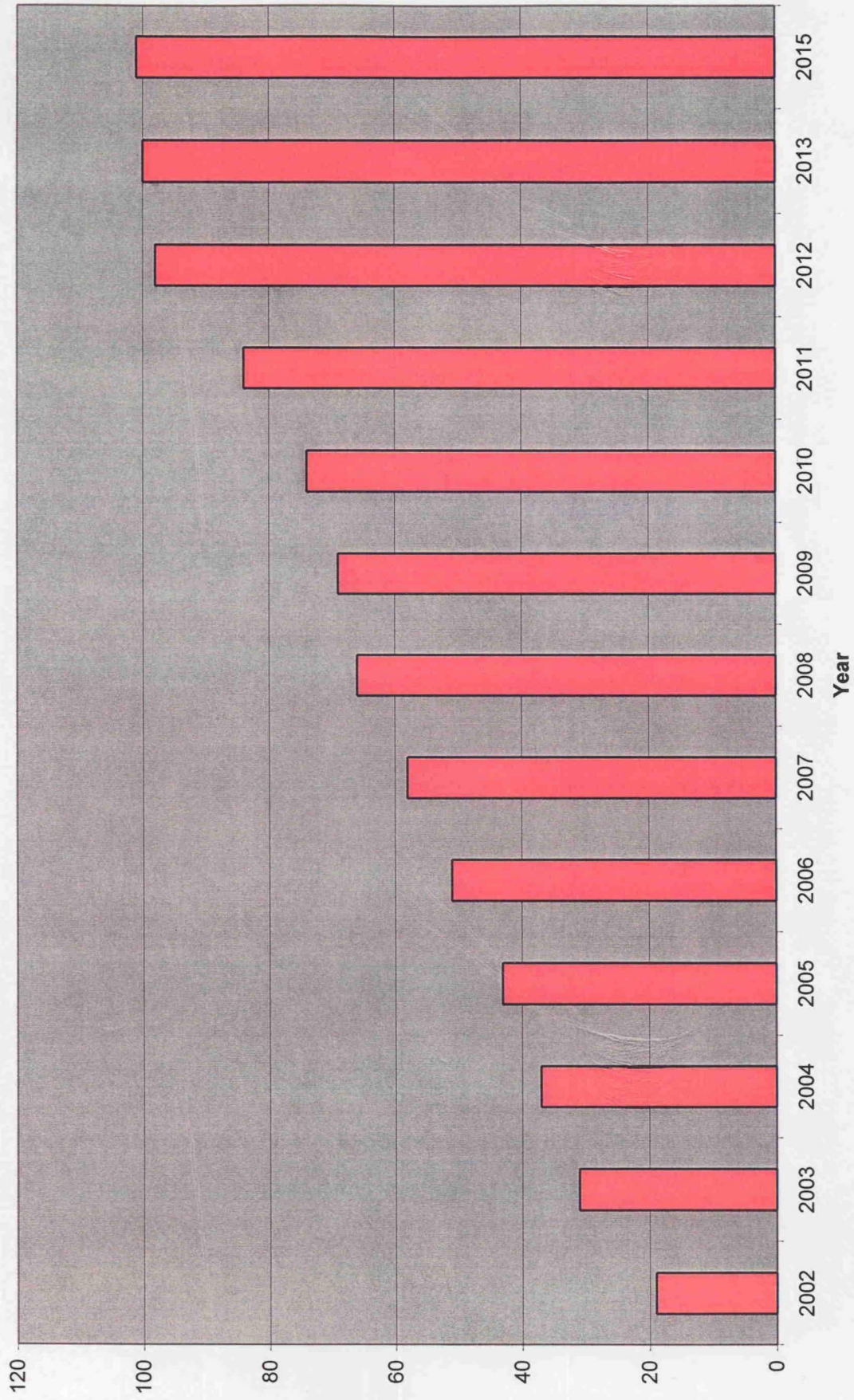
Cc: Dave Catanach, NMOCD (Santa Fe)
Tom Kellahin (Kellahin & Kellahin, Santa Fe)

**North Hobbs Unit
CO₂ Flood Phase 1
Approximate Start Dates**



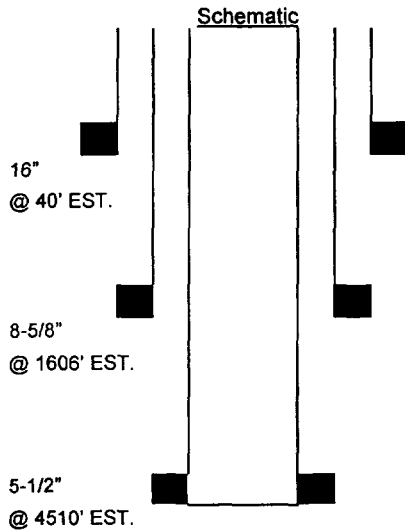
**Hobbs City
Limits**

Cumulative number of injection wells used in Phase 1 of NHU CO2 Project



INJECTION WELL DATA SHEET

Operator Occidental Permian Limited Partnership		Lease North Hobbs G/SA Unit		County Lea	
Well No. 431A	Footage Location 1650' FSL & 660' FEL	Section 20	Township 18-S	Range 38-E	Unit Letter I



<u>Surface Casing</u>		<u>Tubular Data</u>	
Size	16"	Cemented with	40 EST. sxs.
TOC	SURF	Determined by	CIRC
Hole size _____			
<u>Intermediate Casing</u>			
Size	8-5/8"	Cemented with	850 EST. sxs.
TOC	SURF	Determined by	CIRC
Hole size _____			
<u>Long string Casing</u>			
Size	5-1/2"	Cemented with	1000 EST. sxs.
TOC	SURF	Determined by	CIRC
Hole size _____			
<u>Liner</u>			
Size	_____	Cemented with	_____ sxs.
TOC	_____	Determined by	_____
Hole size _____			

Total depth 4510' EST.

Injection interval
Approx. 4000 feet to 4500 feet

Completion type Perforated Casing

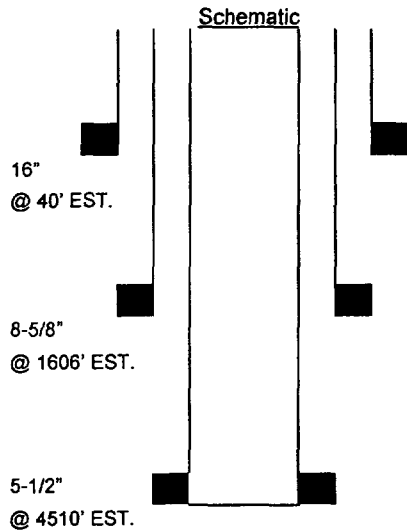
Tubing size 2-7/8" lined with Duoline (Fiberglass liner) set in a
Guiberson – Uni VI packer at Within 100 feet of the top perf.
 (brand and model)

Other Data

- Name of the injection formation San Andres
- Name of field or Pool Hobbs; Grayburg – San Andres
- Is this a new well drilled for injection? ☒ Yes No
 If no, for what purpose was the well originally drilled? Injection
- Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) None
- Give the depth to and name of any overlying and/or underlying oil and gas zones (pools) in this area.
Byers (Queen), +/- 3680'; Glorieta, 5300'

INJECTION WELL DATA SHEET

Operator Occidental Permian Limited Partnership		Lease North Hobbs G/SA Unit		County Lea	
Well No. 342A	Footage Location TBD	Section 30	Township 18-S	Range 38-E	Unit Letter O



<u>Surface Casing</u>		<u>Tubular Data</u>	
Size	<u>16"</u>	Cemented with	<u>40 EST.</u> sxs.
TOC	<u>SURF</u>	Determined by	<u>CIRC</u>
Hole size		<u> </u>	

Injection interval
Approx. 4000 feet to 4500 feet

Completion type Perforated Casing

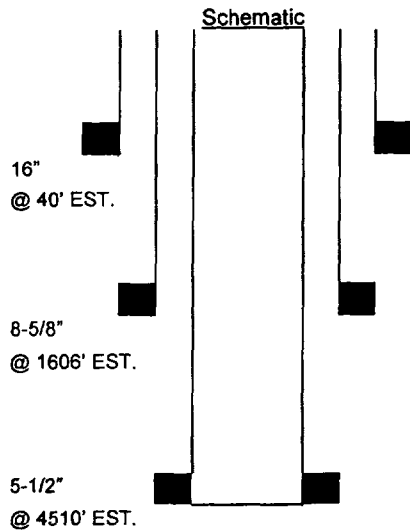
Tubing size 2-7/8" lined with Duoline (Fiberglass liner) set in a
Guiberson - Uni VI packer at Within 100 feet of the top perf.
 (brand and model)

Other Data

- Name of the injection formation San Andres
- Name of field or Pool Hobbs; Grayburg - San Andres
- Is this a new well drilled for injection? ☒ Yes ☐ No
 If no, for what purpose was the well originally drilled? Injection
- Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) None
- Give the depth to and name of any overlying and/or underlying oil and gas zones (pools) in this area.
Byers (Queen), +/- 3680'; Glorieta, 5300'

INJECTION WELL DATA SHEET

Operator Occidental Permian Limited Partnership		Lease North Hobbs G/SA Unit		County Lea	
Well No. 331A	Footage Location 2310 FSL & 2310 FEL	Section 32	Township 18-S	Range 38-E	Unit Letter J



<u>Surface Casing</u>		<u>Tubular Data</u>	
Size	<u>16"</u>	Cemented with	<u>40 EST.</u> sxs.
TOC	<u>SURF</u>	Determined by	<u>CIRC</u>
Hole size _____			
<u>Intermediate Casing</u>		<u>Long string Casing</u>	
Size	<u>8-5/8"</u>	Cemented with	<u>850 EST.</u> sxs.
TOC	<u>SURF</u>	Determined by	<u>CIRC</u>
Hole size _____			
Size	<u>5-1/2"</u>	Cemented with	<u>1000 EST.</u> sxs.
TOC	<u>SURF</u>	Determined by	<u>CIRC</u>
Hole size _____			
<u>Liner</u>			
Size	_____	Cemented with	_____ sxs.
TOC	_____	Determined by	_____
Hole size _____			
Total depth		<u>4510' EST.</u>	

Injection Interval
Approx. 4000 feet to 4500 feet

Completion type Perforated Casing

Tubing size 2-7/8" lined with Duoline (Fiberglass liner) set in a
Guiberson – Uni VI packer at Within 100 feet of the top perf.
 (brand and model)

Other Data

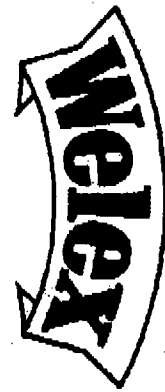
1. Name of the injection formation San Andres
2. Name of field or Pool Hobbs; Grayburg – San Andres
3. Is this a new well drilled for injection? ☒ Yes ☐ No
 If no, for what purpose was the well originally drilled? Injection
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) None
5. Give the depth to and name of any overlying and/or underlying oil and gas zones (pools) in this area.
Byers (Queen), +/- 3680'; Glorieta, 5300'

North Hobbs Unit CO2 Project

Phase 1 Injection Well List

Well	Footage Location	Section	Township	Range	Current Status	Future Status
112	990' FNL & 990' FWL	19	18S	38E	Injector	
142	1200' FSL & 1300' FWL	19	18S	38E	Injector	
231	2310' FSL & 2310' FWL	19	18S	38E	Injector	
332	1430' FSL & 2535' FEL	19	18S	38E	Injector	Injector
431	1650' FSL & 990' FEL	19	18S	38E	Injector	Injector
212	1263' FNL & 2605' FWL	24	18S	37E	Injector	
413	1200' FNL & 206' FEL	24	18S	37E	Injector	
432	2741' FSL & 1286' FEL	24	18S	37E	Injector	
442	1260' FSL & 200' FEL	24	18S	37E	Injector	
422	1550' FNL & 1300' FEL	25	18S	37E	Injector	
221	1910' FNL & 1650' FWL	28	18S	38E	Injector	Injector
231	1325' FSL & 1325' FWL	28	18S	38E	Injector	Injector
122	1600' FNL & 180' FWL	29	18S	38E	Injector	Injector
132	1623' FSL & 1218' FWL	29	18S	38E	Injector	Injector
141	330' FSL & 330' FWL	29	18S	38E	Injector	Injector
222	1370' FNL & 850' FWL	29	18S	38E	Injector	Injector
241	330' FSL & 2310' FWL	29	18S	38E	Injector	Injector
331	1650' FSL & 1650' FEL	29	18S	38E	Injector	Injector
342	1230' FSL & 2500' FEL	29	18S	38E	Injector	Injector
442	1230' FSL & 220' FEL	29	18S	38E	Injector	Injector
112	200' FNL & 1310' FWL	30	18S	38E	Injector	
222	1470' FNL & 1395' FWL	30	18S	38E	Injector	
223	1770' FNL & 2405' FWL	30	18S	38E	Injector	Injector
232	1400' FSL & 1370' FWL	30	18S	38E	Injector	
233	2455' FSL & 1480' FWL	30	18S	38E	Injector	
313	405' FNL & 2272' FEL	30	18S	38E	Injector	Injector
332	2470' FSL & 1600' FEL	30	18S	38E	Injector	Injector
333	1400' FSL & 2430' FEL	30	18S	38E	Injector	Injector
422	1520' FNL & 1300' FEL	30	18S	38E	Injector	Injector
432	2260' FSL & 178' FEL	30	18S	38E	Injector	Injector
442	1300' FSL & 1050' FEL	30	18S	38E	Injector	Injector
443	1300' FSL & 160' FEL	30	18S	38E	Injector	Injector
312	1262' FNL & 1520' FEL	31	18S	38E	Injector	Injector
112	1370' FNL & 330' FWL	32	18S	38E	Injector	Injector
222	1720' FNL & 1370' FWL	32	18S	38E	Injector	Injector
223	2630' FNL & 1420' FWL	32	18S	38E	Injector	Injector
312	210' FNL & 1400' FEL	32	18S	38E	Injector	Injector
321	1650' FNL & 2310' FEL	32	18S	38E	Injector	Injector
323	1370' FNL & 1400' FEL	32	18S	38E	Injector	Injector
423	2540' FNL & 1280' FEL	32	18S	38E	Injector	Injector
431	2310' FSL & 330' FEL	32	18S	38E	Injector	Injector
212	205' FNL & 1420' FWL	33	18S	38E	Injector	Injector
222	1520' FNL & 1470' FWL	33	18S	38E	Injector	Injector
118JP	J/P	18	18S	38E	New	
118LN	L/N	18	18S	38E	New	
118MN	M/N	18	18S	38E	New	
112A	D	19	18S	38E	New	
142A	N	19	18S	38E	New	
120DF	D/F	20	18S	38E	New	Injector
312A	B	24	18S	38E	New	
331A	J	24	18S	38E	New	
124G	G	24	18S	38E	New	
124F	F	24	18S	38E	New	

125AB	A/B	25	18S	38E	New	
323A	G	29	18S	38E	New	Injector
342A	O	29	18S	38E	New	Injector
442A	P	29	18S	38E	New	Injector
129E	E	29	18S	38E	New	Injector
222A	F	30	18S	38E	New	
422A	H	30	18S	38E	New	Injector
442A	P	30	18S	38E	New	Injector
312A	B	31	18S	38E	New	Injector
222A	F	32	18S	38E	New	Injector
323A	G	32	18S	38E	New	Injector
331A	2310' FSL & 2310' FEL	32	18S	38E	New	Injector
431A	1650' FSL & 660' FEL	20	18S	38E	New	Injector
342A	O	30	18S	38E	New	Injector
341	660' FSL & 1980' FEL	13	18S	37E	Producer	
441	330' FSL & 330' FEL	13	18S	37E	Producer	
232	2501' FSL & 1410' FWL	19	18S	38E	Producer	
141	1315' FSL & 1315' FWL	24	18S	37E	Producer	
331	1320' FSL & 1325' FEL	24	18S	37E	Producer	
411	990' FNL & 990' FEL	24	18S	37E	Producer	
414	10' FNL & 1280' FEL	24	18S	37E	Producer	
431	990' FSL & 330' FEL	24	18S	37E	Producer	
411	330' FNL & 330' FEL	25	18S	37E	Producer	
242	100' FSL & 1400' FWL	29	18S	38E	Producer	Injector
321	2310' FNL & 1650' FEL	29	18S	38E	Producer	Injector
113	1310' FNL & 195' FWL	30	18S	38E	Producer	
312	520' FNL & 1448' FEL	30	18S	38E	Producer	Injector
331	2335' FSL & 2310' FEL	30	18S	38E	Producer	Injector
444	215' FSL & 1225' FEL	30	18S	38E	Producer	Injector
131	2310' FNL & 330' FWL	32	18S	38E	Producer	Injector
422	1385' FNL & 110' FEL	32	18S	38E	Producer	Injector
111	330' FNL & 330' FWL	33	18S	38E	Producer	Injector
141	660' FSL & 660' FWL	13	18S	37E	TA Inj	
221	1980' FNL & 1980' FWL	13	18S	37E	TA Inj	
321	2310' FNL & 1650' FEL	14	18S	37E	TA Inj	
121	1650' FNL & 990' FWL	25	18S	37E	TA Inj	
341	660' FSL & 1650' FEL	25	18S	37E	TA Inj	
411	990' FNL & 990' FEL	29	18S	38E	TA Inj	Injector
321	1650' FNL & 1650' FEL	36	18S	37E	TA Inj	
121	1980' FNL & 660' FWL	13	18S	37E	TA Prod	
241	660' FSL & 1980' FWL	13	18S	37E	TA Prod	
341	660' FSL & 1650' FEL	14	18S	37E	TA Prod	
342	330' FSL & 2310' FEL	18	18S	38E	TA Prod	
311	1309' FNL & 2310' FEL	19	18S	38E	TA Prod	
411	1300' FNL & 1300' FEL	19	18S	38E	TA Prod	
233	1610' FSL & 1850' FWL	20	18S	38E	TA Prod	Injector
321	1650' FNL & 1650' FEL	23	18S	37E	TA Prod	
341	990' FSL & 1650' FEL	23	18S	37E	TA Prod	
121	1650' FNL & 990' FWL	24	18S	37E	TA Prod	
121	1980' FNL & 990' FWL	31	18S	38E	TA Prod	Injector
Note: Shading denotes wells that will be injecting CO2, water and produced gases. All other injectors shown above will be injecting CO2 and water.						



COMBINATION
MICRO-SEISMOGRAM
FRACTURE FINDER
BOND LOG

COMPANY	Shell Oil Company	WELL	North Hobbs	FIELD	North Hobbs	COUNTY	Lea	STATE	New Mexico
Sec.	30	Twp.	18-S	Rge.	38-E	Location	Unit 5	Other Services:	None
Permanent Datum	Ground level Elev. N.A.	Elev. K.B.	N.A.	D.F.	N.A.	G.I.	N.A.		
Log Measured From	Ground level Ft. Above Perm. Datum								
Drilling Measured From	N.A.								
Run No.	PNE								
Date & Time Survey	8-30-80								
Date & Time Cementing	N.A.								
Type Cementing Operation	N.A.								
Depth Driller	3850 (A80)								
Depth Welex	3842								
Logged Interval	3834 to 3850								
Casing Driller	5 1/4" @ 3850								
Flow Collar - D.V. Tool	N.A.								
Squeeze Depth	N.A.								
Amount & Type Cement	N.A.								
Amount & Type Admix	N.A.								
Type Fluid in Hole	Water								
Fluid Level	460								
Salinity PPM Cl	N.A.								
Weight lb/gal - Vis	N.A.								
Approx. Logged Conn. Top	N.A.								
Calculated Cement Top	N.A.								
Max. Hole Temperature	N.A.								
Tool No.	23954								
Spacing Recorded	4'								
Equipment - Location	9937 Hobbs								
Recorded by	C. H. Camabell								
Witnessed by	M. Parker								

Fold Here

BORE HOLE RECORD

CASING RECORD

Bit Size	From	To	Csg. Size	Wt.	From	To	Centralized Interval
			5 1/2"	15#	Sect	3850	
							Scratched Interval
							Open Perforations

Service Ticket No. 036486 Remarks Well Blew out Oil & Water while Logging

Welex does not guarantee the accuracy of any interpretation of log data, conversion of log data to physical rock parameters, or recommendations which may be given by Welex personnel or which may appear on the log or in any other form. Any user of such data, interpretations, conversions, or recommendations agrees that Welex is not responsible, except where due to gross negligence or willful misconduct, for any loss, damages, or expenses resulting from the use thereof.

GAMMA

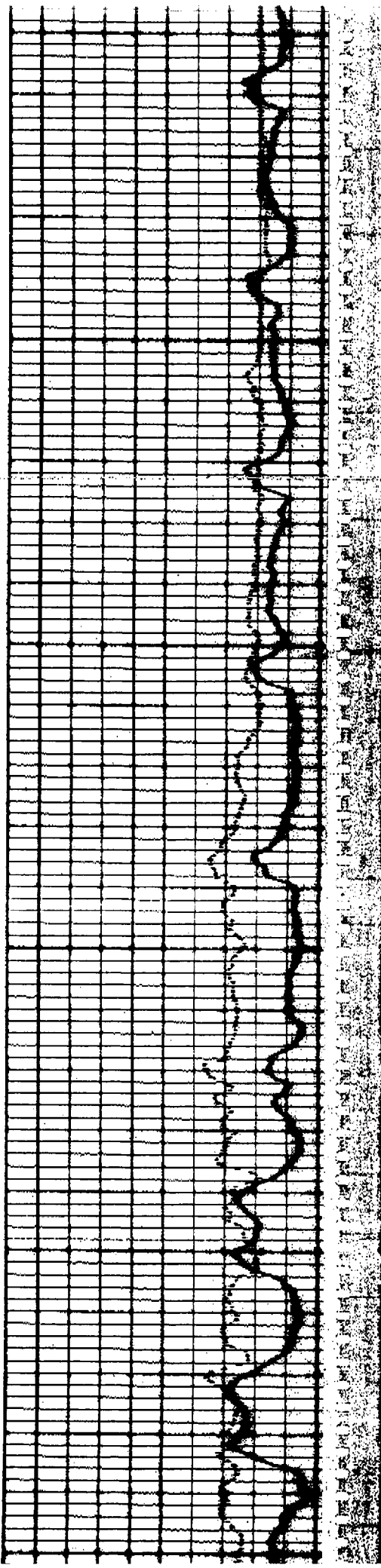
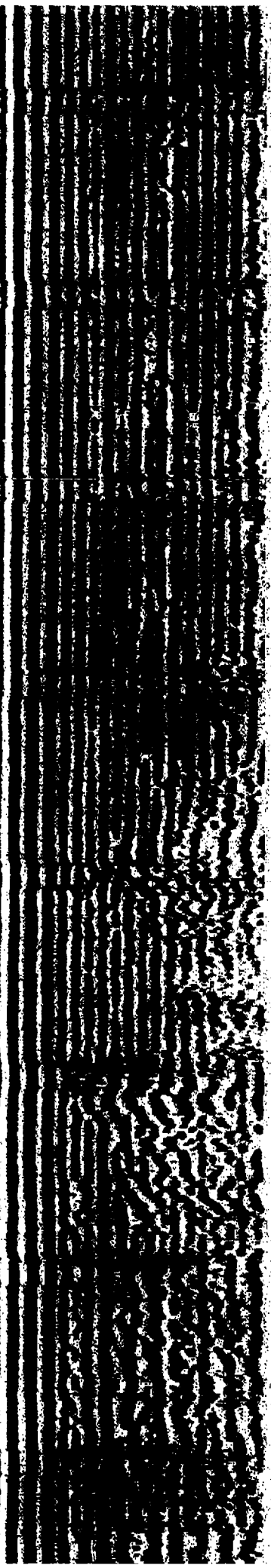
API Gamma Ray Units

0	100
100	200

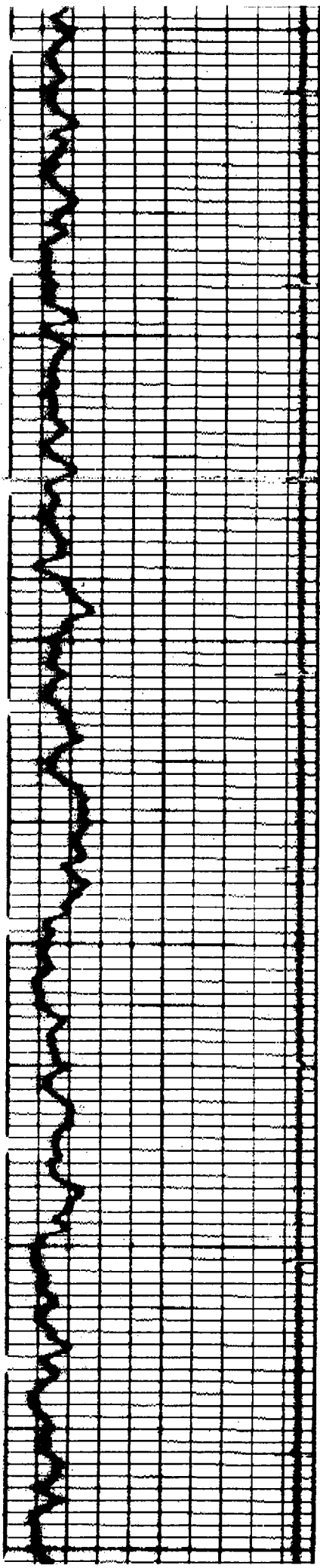
DEPTH

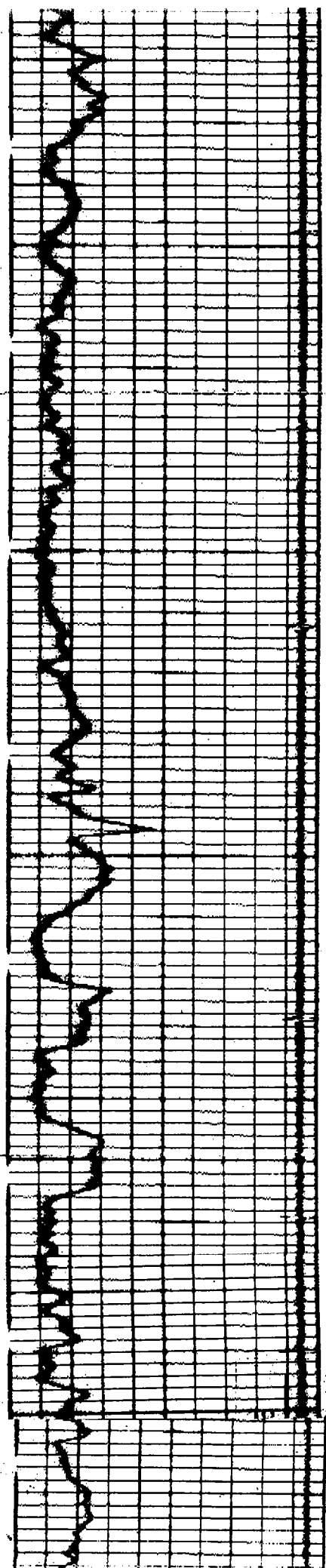
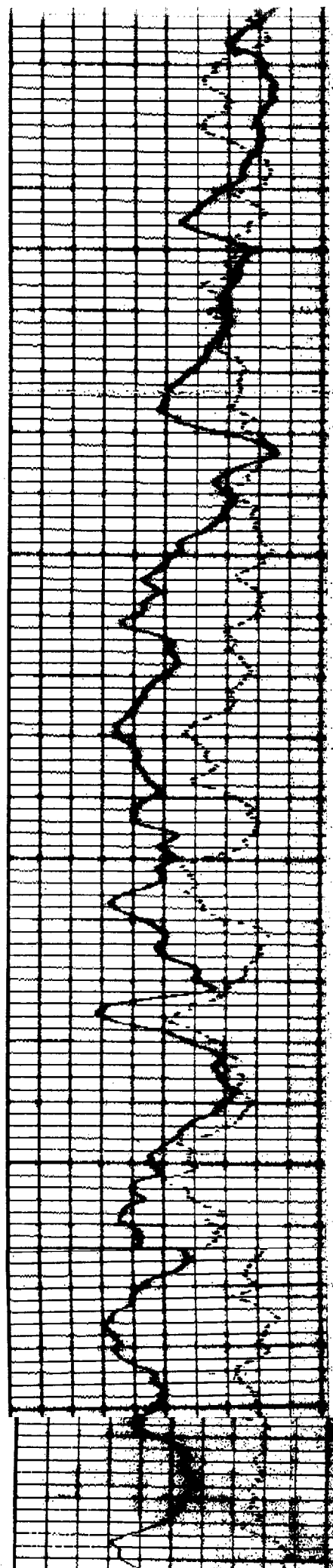
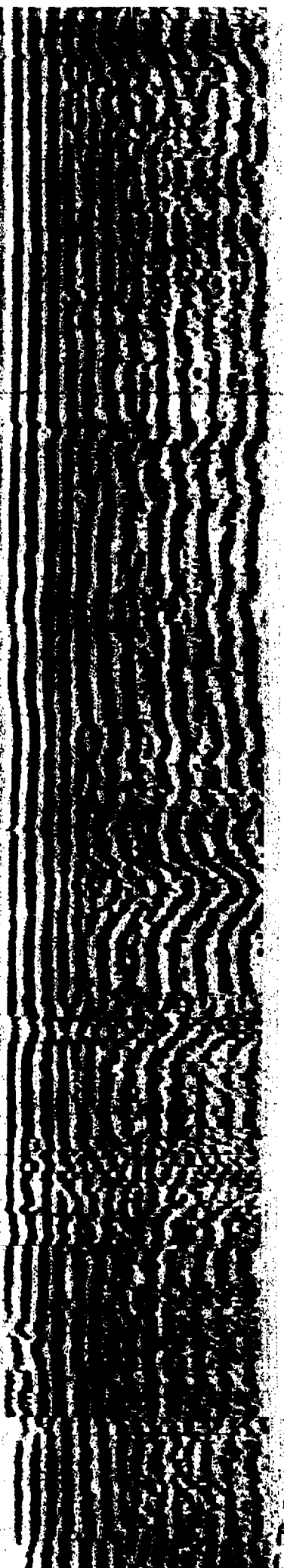
AMPLITUDE

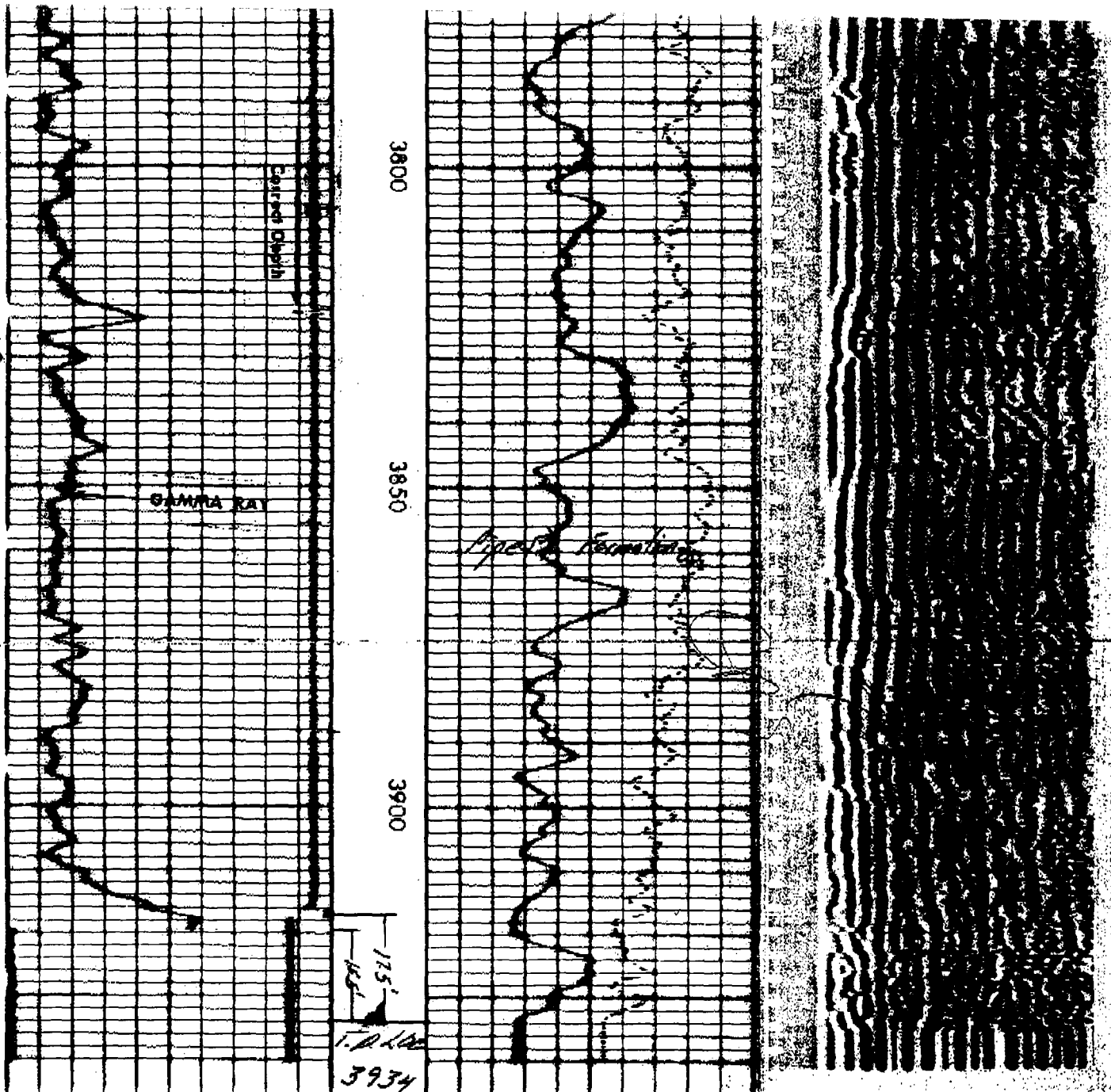
Pipe	MICRO-SEISMOGRAM & LOG
Formation	100 1100



3300 3350 3400 3450 3500 355



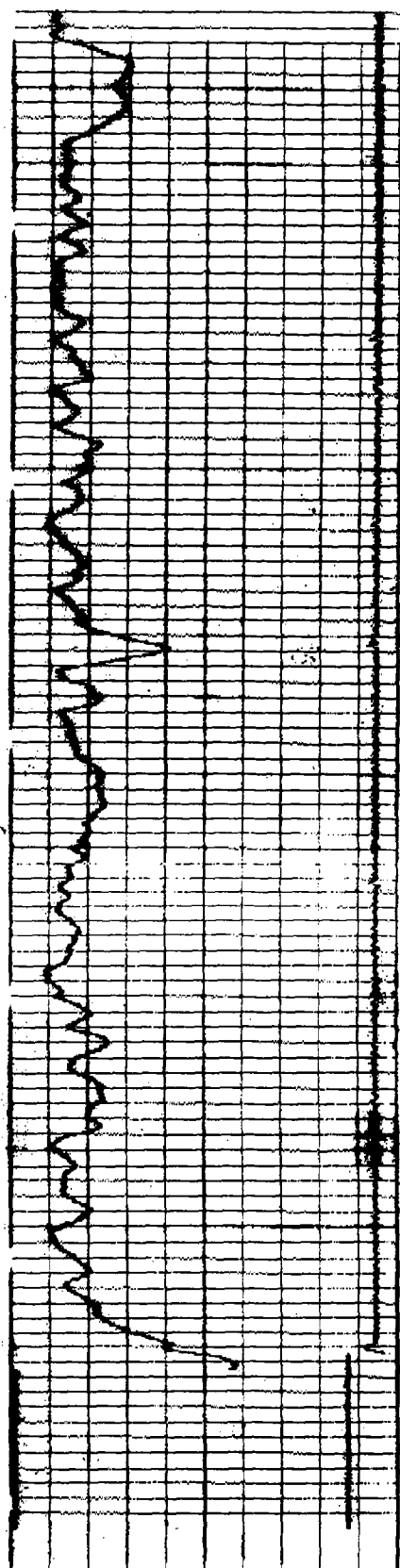




4020

	Formation Pine	MICRO-SEISMOGRAM® LOG
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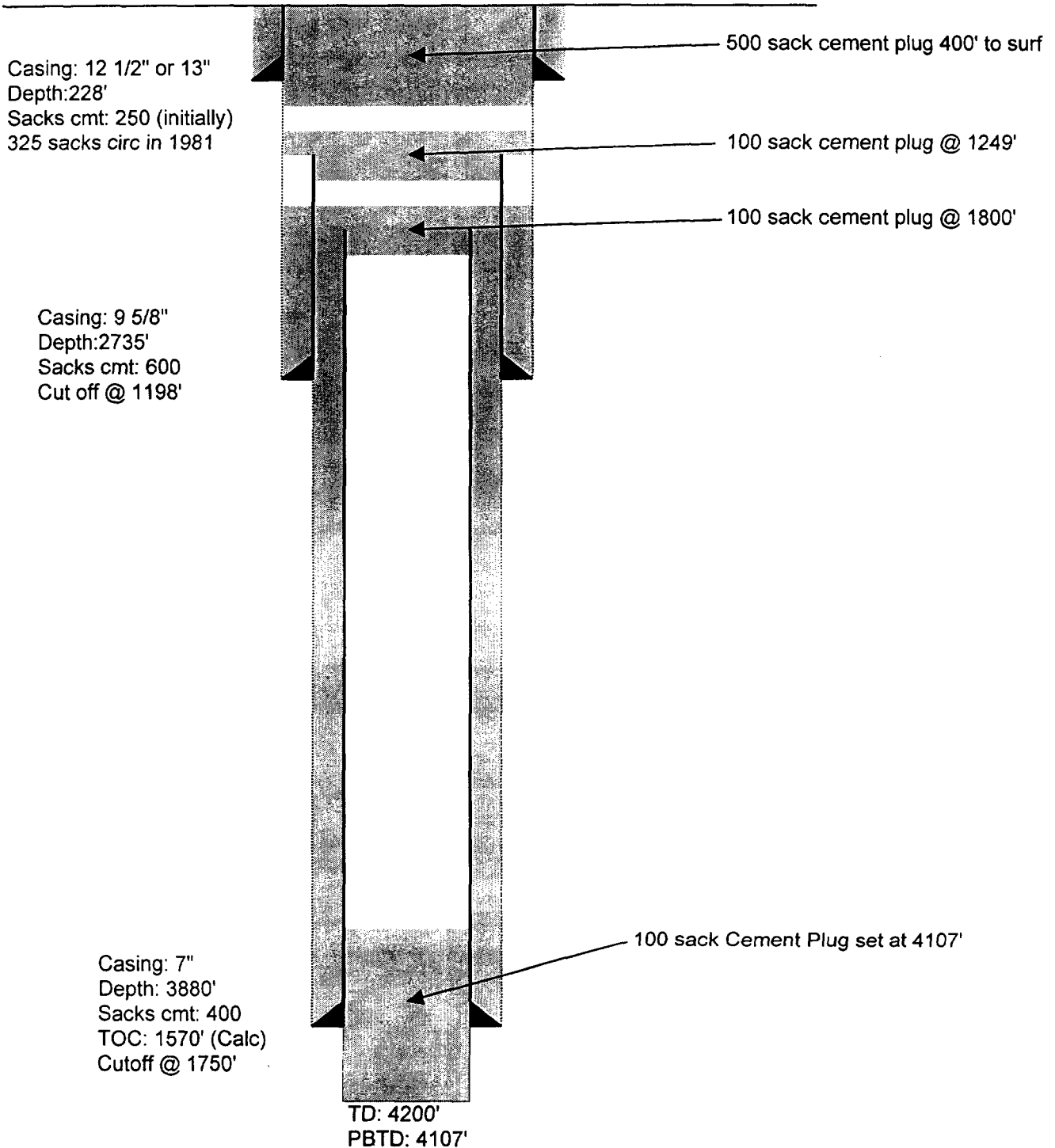
REPEAT SECTION



SHELL
Grimes #5
Section 29-18S-38E

API Number: 3002507460
P&A: 4/22/81
Datum: 3647

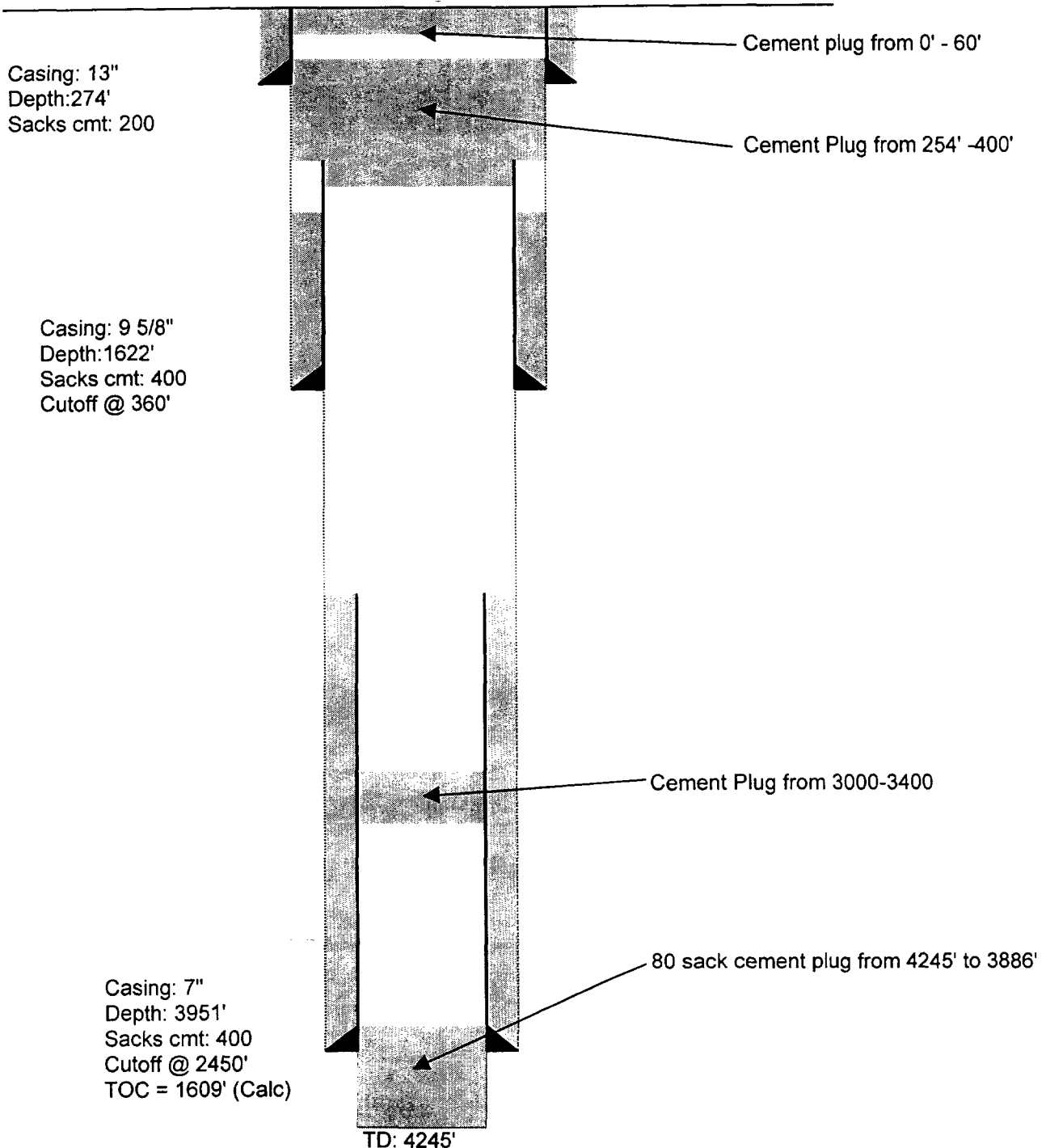
Wellhead cutoff 8' below GL, plate welded on top



Conoco
State B-13 #3
Section 13-18S-38E

API Number: 3002505438
P&A: 6/3/36
Datum: 3684

Wellhead cutoff 8' below GL, plate welded on top

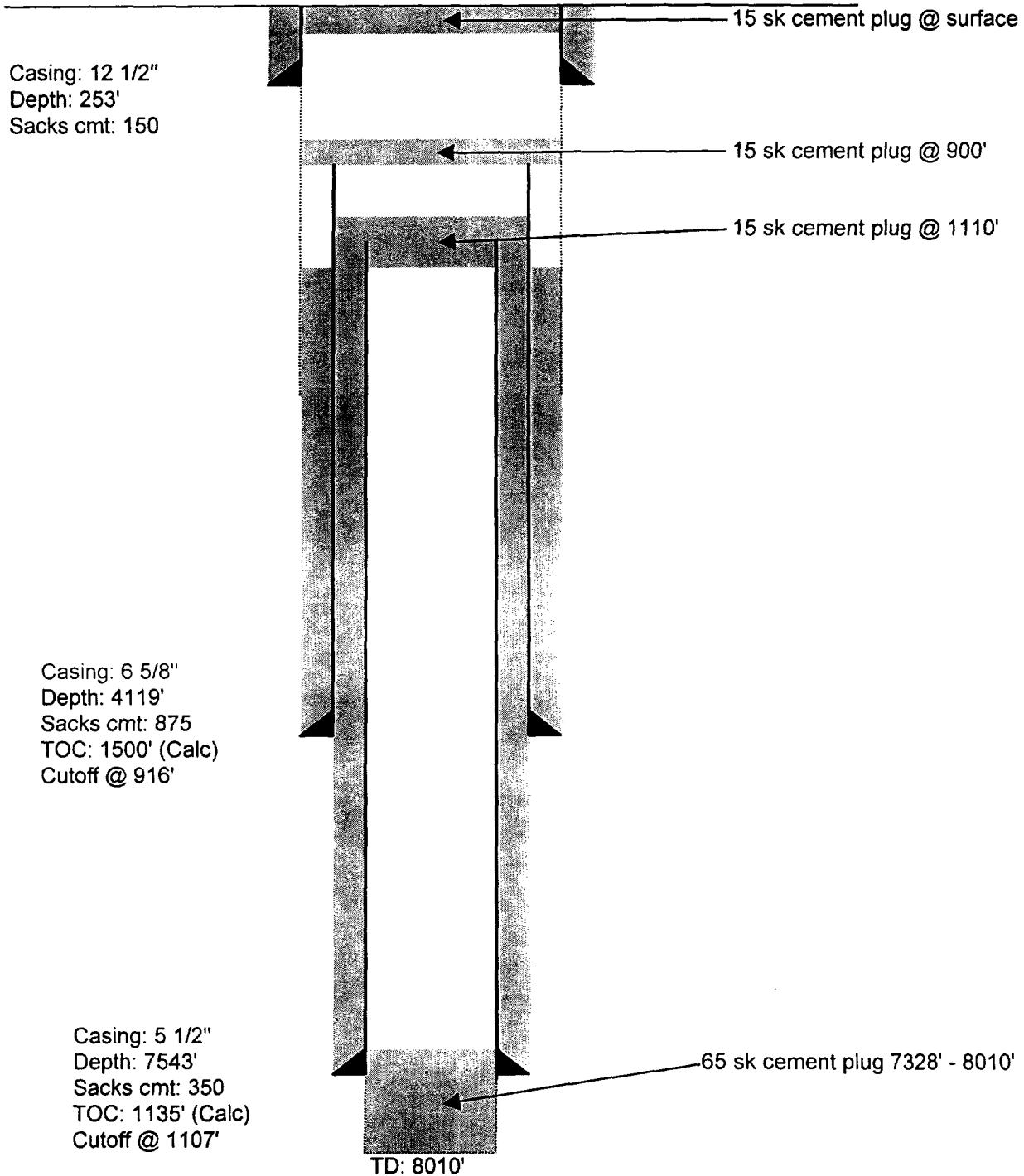


SUN
McKinley B #1
Section 20-18S-38E

API Number: 3002507380

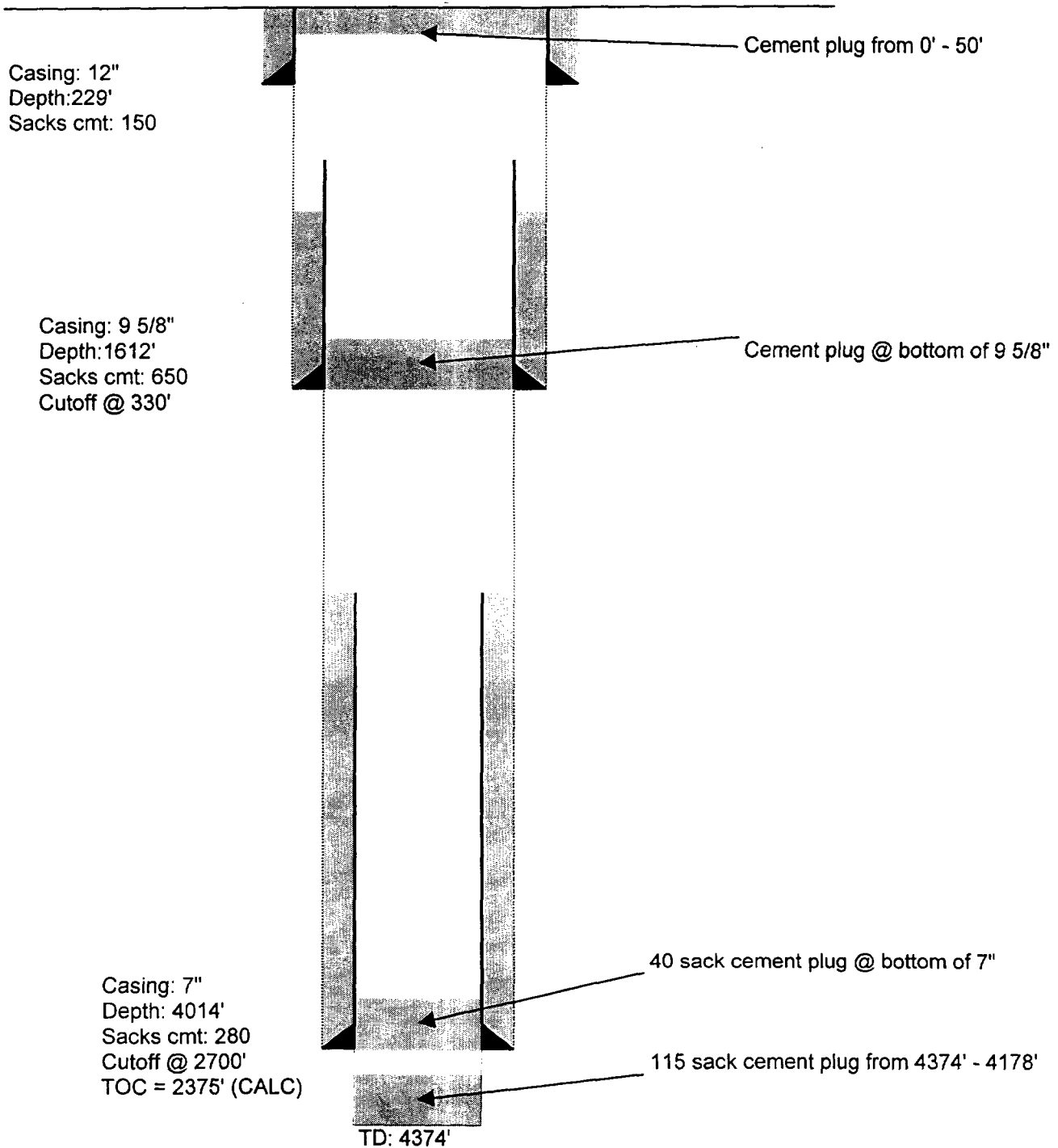
P&A: 2/15/47

Datum:



SHELL
State E #1
Section 14-18S-38E

API Number: 3002510199
P&A: 12/21/38
Datum: 3686



SHELL
State F #1
Section 23-18S-37E

API Number: 3002505465
P&A: 10/15/57
Datum: 3673

Casing: 8 5/8"
Depth: 1592'
Sacks cmt: 525

Casing: 4 1/2"
Depth: 4099'
Sacks cmt: 130
TOC = 3597' (Calc)

TD: 4150'

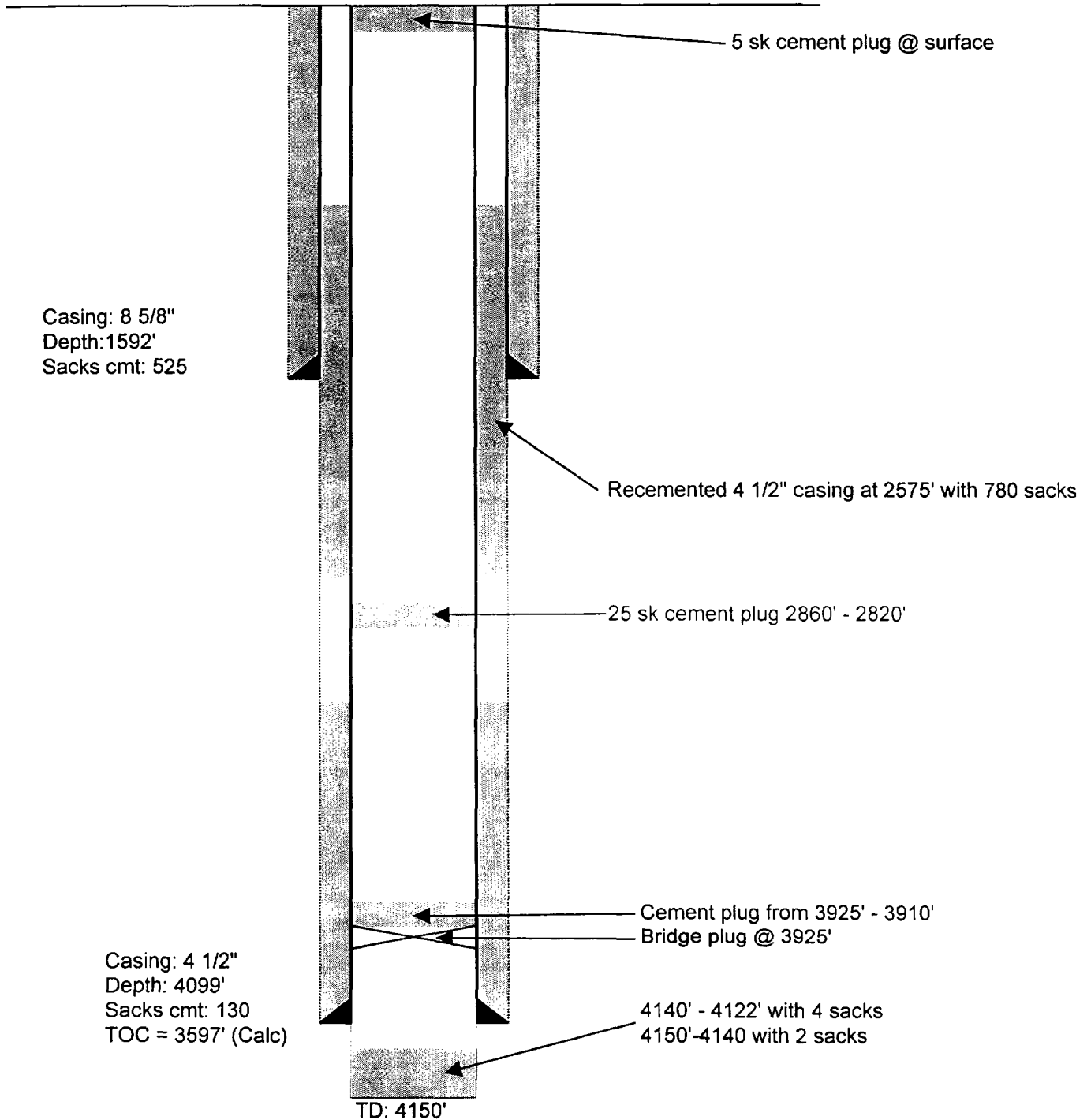
5 sk cement plug @ surface

Recemented 4 1/2" casing at 2575' with 780 sacks

25 sk cement plug 2860' - 2820'

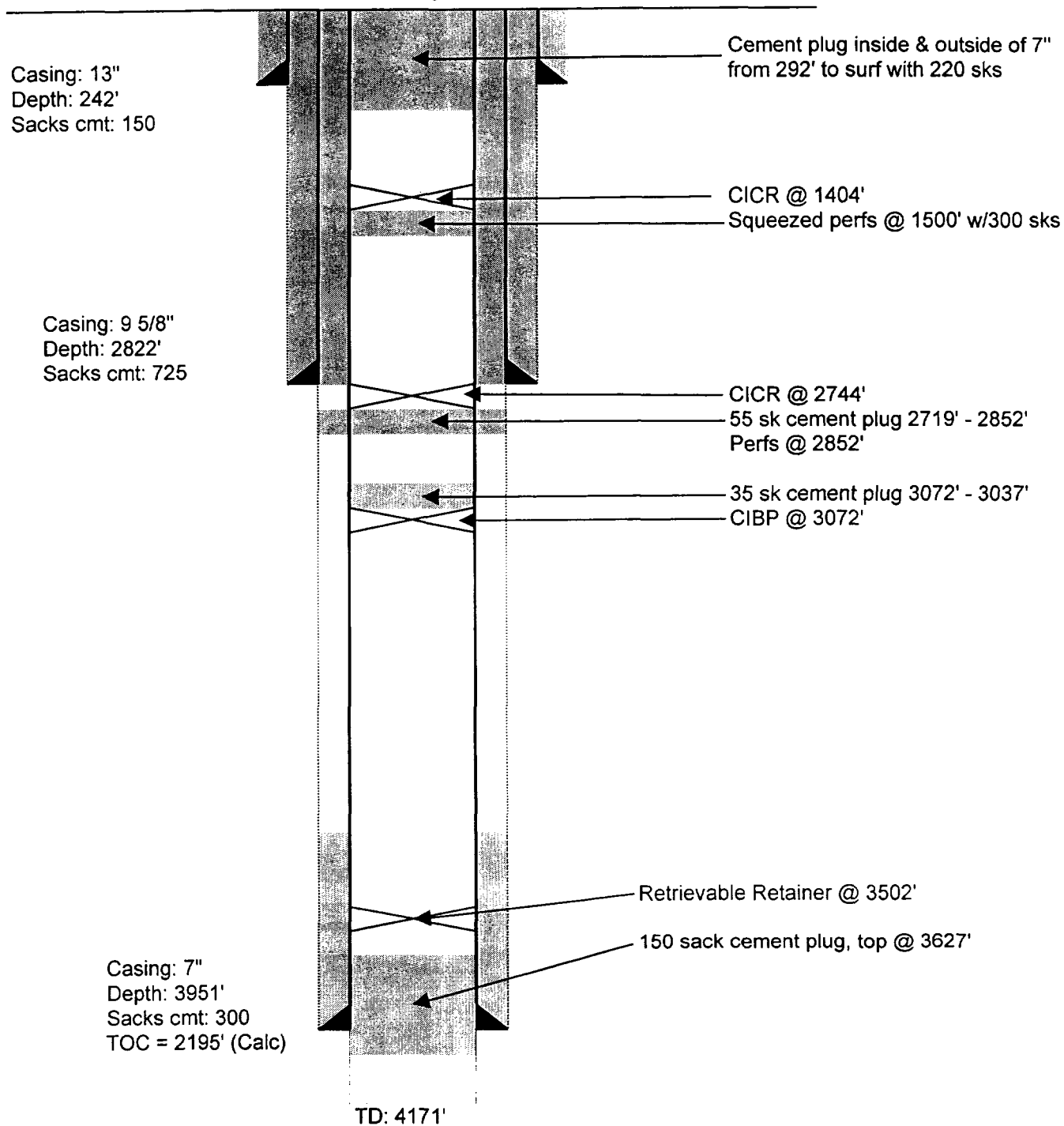
Cement plug from 3925' - 3910'
Bridge plug @ 3925'

4140' - 4122' with 4 sacks
4150' - 4140' with 2 sacks



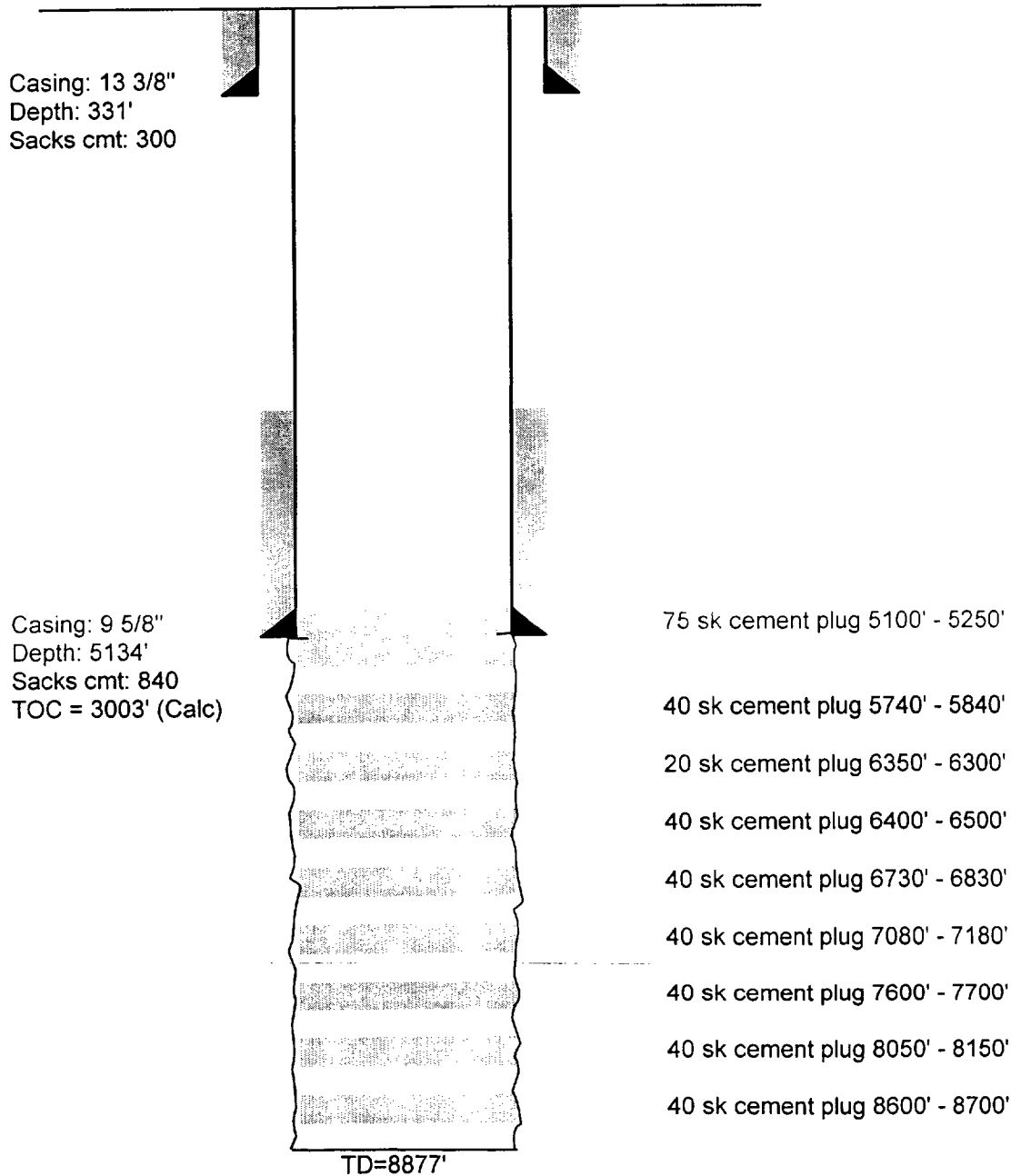
CHEVRON
State 1-29 #2
Section 29-18S-38E

API Number: 3002507443
P&A: 11/30/89
Datum: 3655



**Conoco
NHGSU #1
Section 13-18S-37E**

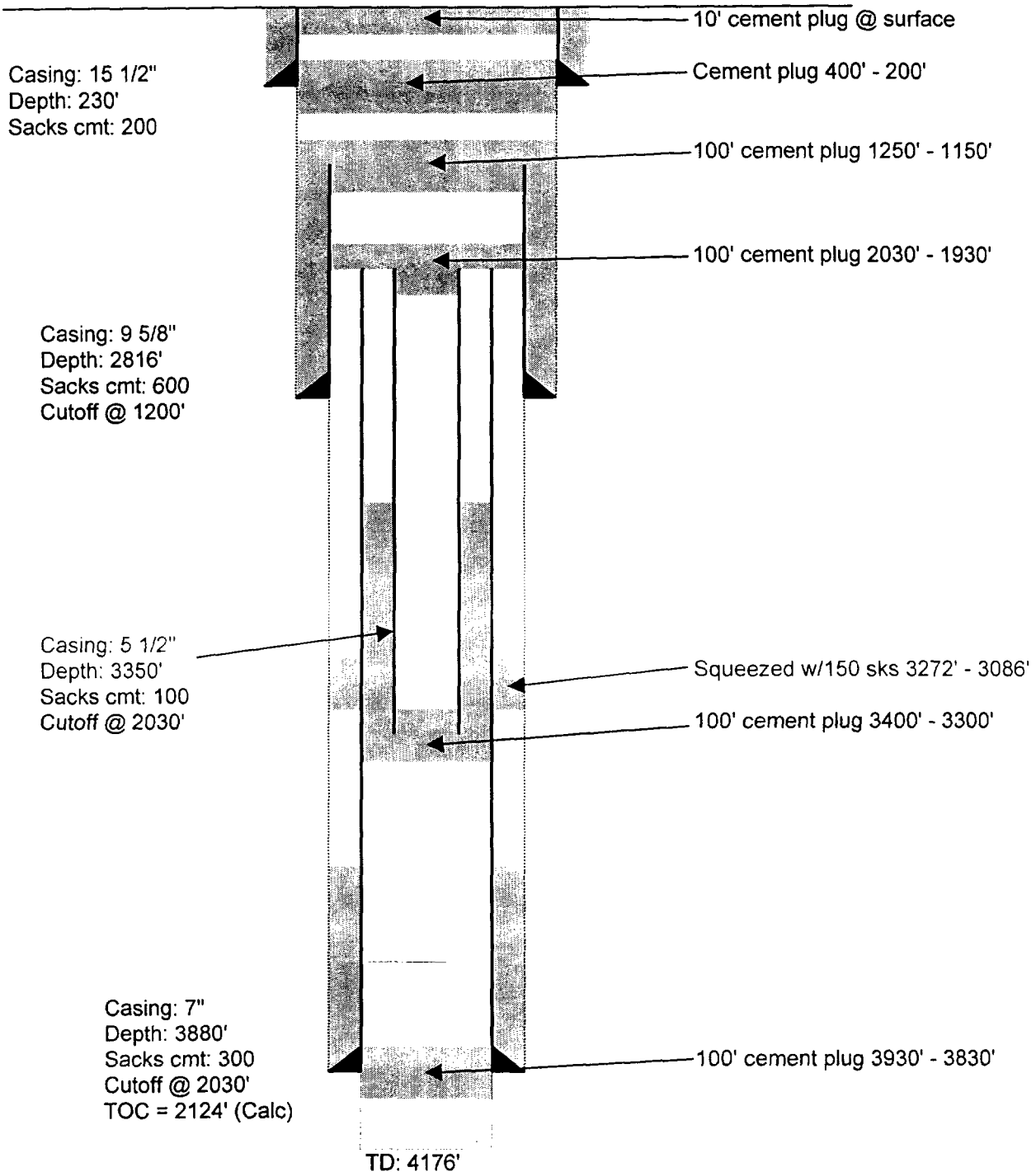
API Number: 3002505449
P&A: Well TA'd since 1979
Datum: 3686



SHELL
Grimes #2
Section 29-18S-38E

API Number: 3002507457
P&A: 7/13/51, replugged 3/2/81
Datum: 3650

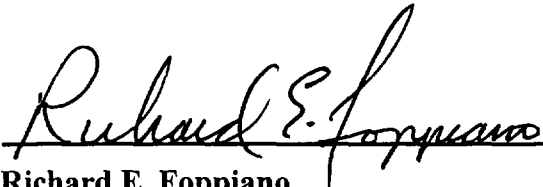
Plate welded on top

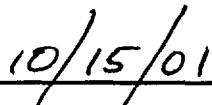


CERTIFICATION

STATE OF TEXAS §
 §
COUNTY OF HARRIS §

I, Richard E. Foppiano, having been first duly sworn, state that I am a petroleum engineer, a duly authorized representative of Occidental Permian Limited Partnership ("OXY"), have knowledge of the facts herein and therefor certify that the facts set forth herein are true and accurate to the best of my own belief and knowledge.


Richard E. Foppiano


Date