



April 25, 1997

Oil Conservation Division
Engineering Bureau
2040 Pacheco St.
Santa Fe, New Mexico 87505

Attn: Mr. David Catanach

Dear Sir:

We are in the process of submitting Form C-108, Application for Authorization to Inject, for our Fox A State No. 5 well located in the SE NW 4, Sec. 2, Twp. 9S, Rge. 36E, Lea County, N.M. in the Allison Penn Pool. Because of a unique situation in this well, we request a hearing be set for the May 1997 docket.

The proposed well was drilled in 1991 to test the Devonian zone. The initial test was 100% water as were two subsequent workover attempts. In the interim the well was completed in the Bough C Penn zone, but after a test period of several months the zone was abandoned as uneconomic.

The Bough C Penn zone is in a state of near total depletion due to the extremely low bottom hole pressure. Within the proposed project area in the southern end of the Allison Field there are only seven producing wells remaining. All are small marginal wells and are at or very near economic limit, subject to abandonment.

The project area of approximately 1800 acres has produced 5.4 MMBO plus an estimated 4 MMBW and 7 MMCFG. Sufficient reservoir data is not available to make an accurate volumetric calculation. However, since the primary producing mechanism appears to be solution-gas, with a possible assist from connate water expansion, it is reasonable to assume that oil recovery to date would not exceed 25% of original oil in place. Therefore, a successful secondary recovery attempt projected to recover an additional 10% of original oil in place would recover 2 MMBO which would otherwise not be produced.

The sizable void space in the reservoir will require a prolific and inexpensive water source to accomplish fill up. The only water currently available is a small amount of produced water (±350 BD) currently being disposed in another Bough C well. The only adequate source available is from the Devonian zone.

Since the Bough C zone is capable of accepting adequate volumes of water by gravity pressure, it follows that injection can be accomplished by completing both zones in the same well bore and utilizing the higher pressure and volume from the Devonian zone.

We propose to complete the injection well in both the Bough C and Devonian zones with tubing and packer set above the Bough C zone. This will allow the higher pressure Devonian water to flow into the Bough C zone. This flow, supplemented with available produced water, is expected to effect our desired rate of 2000 to 2500 BWPD. Following the anticipated successful performance of this well and the pilot area, we intend to re-complete two additional combination wells which are available in the project area.

Our application on Form C-108 with the required information and data will follow shortly. We will appreciate your placing our hearing on the May docket.

Very truly yours,

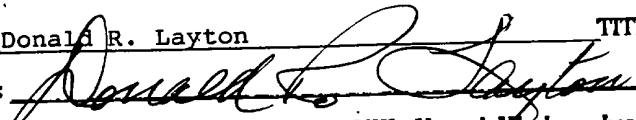
LAYTON ENTERPRISES, INC.

A handwritten signature in dark ink, appearing to read "Donald R. Layton", is written over the typed name and title.

Donald R. Layton
President

DRL/bwl

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: ☒ Secondary Recovery ☐ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ Yes ☒ No
- II. OPERATOR: LAYTON ENTERPRISES, INC.
ADDRESS: 3103 79th St. LUBBOCK, TEXAS 79423
CONTACT PARTY: Donald R. Layton PHONE: 806/745-4638
- III. WELL DATA: Complete the data required on the reverse side of this form for each well processed for injection. Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project: ☐ Yes ☒ 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 geological data on the injection zone including appropriate lithologic detail, geological name, thickness and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such 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 source 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: Donald R. Layton TITLE: President
SIGNATURE:  DATE: 5-5-97
- * 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 circumstance 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 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, PO Box 2088, Santa Fe, NM 87504-2088 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.



May 5, 1997

CERTIFIED MAIL

State of New Mexico
Commissioner of Public Lands
Oil, Gas, and Minerals Division
310 Old Santa Fe Trail
P. O. Box 1148
Santa Fe, New Mexico 87504-1148

Devon Energy Corporation
20 North Broadway, Suite 1500
Oklahoma City, OK 73102-8260

Yates Petroleum Corp.
105 South Fourth Street
Artesia, New Mexico 88210

Discovery Operating, Inc.
800 N. Marienfeld, Suite 100
Midland, Texas 79701

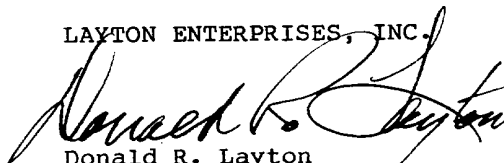
Re: Application for Injection
Fox A State No. 5
Allison Penn Field
Lea County, New Mexico

Gentlemen:

In accordance with the rules of the Oil Conservation Division, attached is a copy of the subject application as notification to you as surface owner or offset leaseholder.

Very truly yours,

LAYTON ENTERPRISES, INC.


Donald R. Layton
President

P 588 187 911

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to	
VATES PETROLEUM CORP.	
Street & Number	
105 S. 4TH ST	
Post Office, State, & ZIP Code	
ARTESIA, N.H. 88210	
Postage	\$ 78
Certified Fee	110
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$ 1.88
Postmark or Date	MAY 6 1997

PS Form 3800, April 1995

P 588 187 912

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to	
DEVON ENERGY CORP.	
Street & Number	
20 N. BROADWAY, STE 1500	
Post Office, State, & ZIP Code	
OKLA. CITY, OK 73102-8260	
Postage	\$ 78
Certified Fee	110
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$ 1.88
Postmark or Date	MAY 6 1997

PS Form 3800, April 1995

P 588 187 910

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to	
NEW MEXICO	
COMM. OF PUBLIC LANDS	
Street & Number	
PO BOX 1148 310 SANTA FE	
Post Office, State, & ZIP Code	
SANTA FE, N.M. 87504-1148	
Postage	\$ 78
Certified Fee	110
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$ 1.88
Postmark or Date	MAY 6 1997

PS Form 3800, April 1995

P 588 187 913

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to	
DISCOVERY OPERATING	
Street & Number	
800 N. MARIENFELD, STE 10	
Post Office, State, & ZIP Code	
MIDLAND TX 79701	
Postage	\$ 78
Certified Fee	110
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$ 1.88
Postmark or Date	MAY 6 1997

PS Form 3800, April 1995

FORM C-108 — RESPONSE TO QUESTIONS — SIDE 1:

- VII. 1. 2000-2500 BWPd est. initial rate
1000-1500 BWPd after stabilization
2. Closed System
3. Gravity Pressure
4. See Attached Analyses.

VIII. Geological Data

The Bough C Pennsylvania Zone occurs at a depth of 9650 (-5576) with a gross thickness of 25 to 30 feet. It is a stratigraphic trap consisting of a series of algal mounds or mats resting on a gently southwest dipping surface. The zone is comprised of a fine crystalline, tan and gray vuggy limestone carrying late Cisco fossils confirming that it is Pennsylvanian in age. The limited core data indicates net thickness of 10-15 ft., porosity 10-12% and permeability of 200 md. Estimates of original oil in place are 40-65%. The trap is controlled by up-dip porosity pinchout. Barren areas can occur within the field as a result of inter-mound locations.

The only known freshwater source in the area is a small well located in the SW SE $\frac{1}{4}$ of Section 2 at a depth of approximately 200 feet, apparently Ogalalla.

- IX. 500 Gal 15% HCl acid wash on each zone
- X. Last production test August 1996
0.2 BOPD — 15 BWPd — 4 MCFD
- XI. See Attached Analysis.

TABULATION OF DATA ON ALL WELLS OF PUBLIC RECORD
IN THE AREA OF REVIEW - PARAGRAPH VI OF C-108

LAYTON ENTERPRISES INC.
FOX A STATE #1

UNIT F SEC 2, T9S, R36E

DRILLED JUNE 1961

CSG: $13\frac{3}{8}"$ @ 360 w/ 325 SX
 $8\frac{5}{8}"$ @ 4245 w/ 2520 SX
 $4\frac{1}{2}"$ @ 9725 w/ 500 SX

PERFS: 9651-63

PRODUCING

LAYTON ENTERPRISES, INC.
FOX A STATE #2

UNIT H SEC 2, T9S, R36E

DRILLED MAY 1959

CSG: $13\frac{3}{8}"$ @ 360 w/ 400 SX
 $8\frac{5}{8}"$ @ 4166 w/ 1700 SX
 $5\frac{1}{2}"$ @ 9815 w/ 700 SX

PERFS: 9644-54

PRODUCING

LAYTON ENTERPRISES, INC.
FOX A STATE #3

UNIT N SEC 2, T9S, R36E

DRILLED JULY 1954

CSG: $13\frac{3}{8}"$ @ 450 w/ 350 SX
 $9\frac{5}{8}"$ @ 4200 w/ 3000 SX
 $5\frac{1}{2}"$ @ 9809 w/ 600 SX

PERFS: 9675-89

PRODUCING

LAYTON ENTERPRISES, INC.
FOX A STATE #4

UNIT B SEC 2, T9S, R36E

DRILLED AUGUST 1958

CSG: $13\frac{3}{8}"$ @ 358 w/ 400 SX
 $8\frac{5}{8}"$ @ 4104 w/ 1700 SX

PBTD $5\frac{1}{2}"$ @ 5970 w/ 1000 SX

SHUT IN

COASTAL STATE: PROD. UNIT D SEC 2, T9S, R36E
LEA STATE #2

DRILLED NOVEMBER 1961

CSG. $13\frac{3}{8}"$ @ 366 w/ 300 SX
 $8\frac{5}{8}"$ @ 4170 w/ 1590 SX
 $5\frac{1}{2}"$ @ 9784 w/ 600 SX

CEMENT PLUGS: 25 SX @ 9750

PERFS: 9758-62

25 SX @ 7012

10 SX @ SURFACE

P & A APRIL 1967

CACTUS DRILLING
SUNRAY STATE A #1

UNIT B SEC 2, T9S, R36E

DRILLED AUGUST 1958

CSG: $13\frac{3}{8}"$ @ 358 w/ 700 SX
 $8\frac{5}{8}"$ @ 4104 w/ 1700 SX
 $5\frac{1}{2}"$ @ 9840 w/ 500 SX

PERFS: 9668-78

PULLED 6000' OF $5\frac{1}{2}"$

CEMENT PLUGS: 15 SX @ 9668

25 SX @ 6050

25 SX @ 4175

P & A APRIL 1965 10 SX @ SURFACE

ADA OIL CO.
ADAMS STATE #1

UNIT M SEC 2, T9S, R36E

DRILLED MARCH 1955

CSG: $13\frac{3}{8}"$ @ 357 w/ 350 SX
 $8\frac{5}{8}"$ @ 4166 w/ 2000 SX
 $5\frac{1}{2}"$ @ 9730 w/ 200 SX

OPEN HOLE: 9730-60

PULLED 4175' $5\frac{1}{2}"$

BRIDGE PLUG: 9700 w/ 50' CEMENT

CEMENT PLUGS: 25 SX @ 4175

10 SX @ SURFACE

P & A OCTOBER 1962

MARATHON
STATE E 6859 #1

UNIT O SEC 2 T9S R36E

DRILLED JULY 1959

CSG: 16" @ 384 w/ 710 SX

10 $\frac{3}{4}$ " @ 4175 w/ 1900 SX

7" @ 9730 w/ 900 SX

PERFS: 9690-95

PULLED 4750' OF 7"

CEMENT PLUGS: 40 SX @ 9700

20 SX @ 4750

40 SX @ 4172

10 SX @ SURFACE

P & A JANUARY 1967

GULF OIL CORP.
GOODE FED. #1

UNIT N SEC 35 T8S R36E

DRILLED DECEMBER 1959

CSG: 13 $\frac{3}{8}$ " @ 394 w/ 450 SX

8 $\frac{5}{8}$ " @ 4249 w/ 2400 SX

5 $\frac{1}{2}$ " @ 9810 w/ 425 SX

PERFS: 9714-30

PULLED 3450' OF 5 $\frac{1}{2}$ "

BRIDGE PLUG: 9682 w/ 25 SX

CEMENT PLUGS: 30 SX @ 4248

35 SX @ 3500

50 SX @ SURF

P & A JANUARY 1968

SCENARIO OF P-H Wells in Area of Review

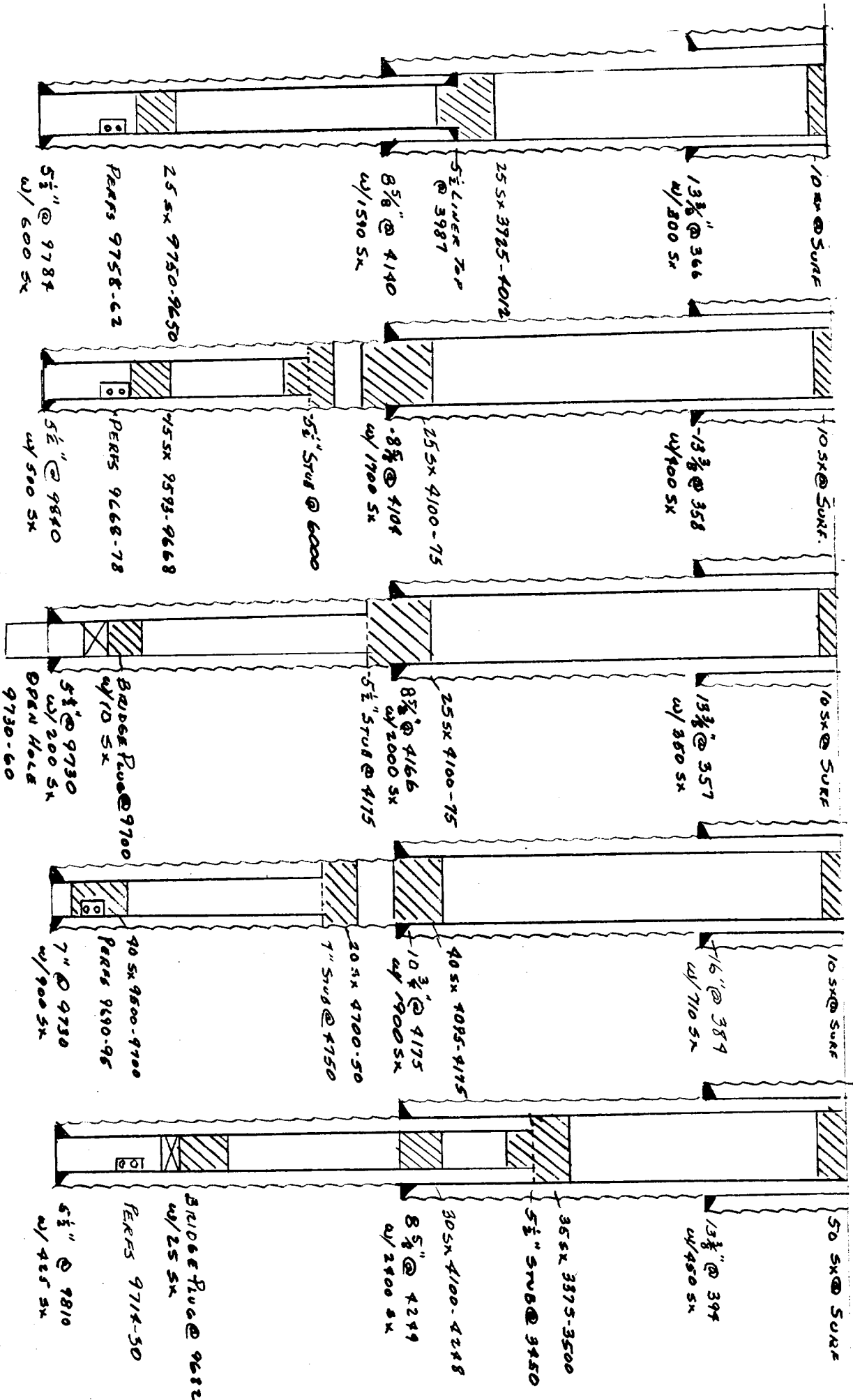
Coastal States
Lea State #2
Unit D
Sec 2, T9S, R36E

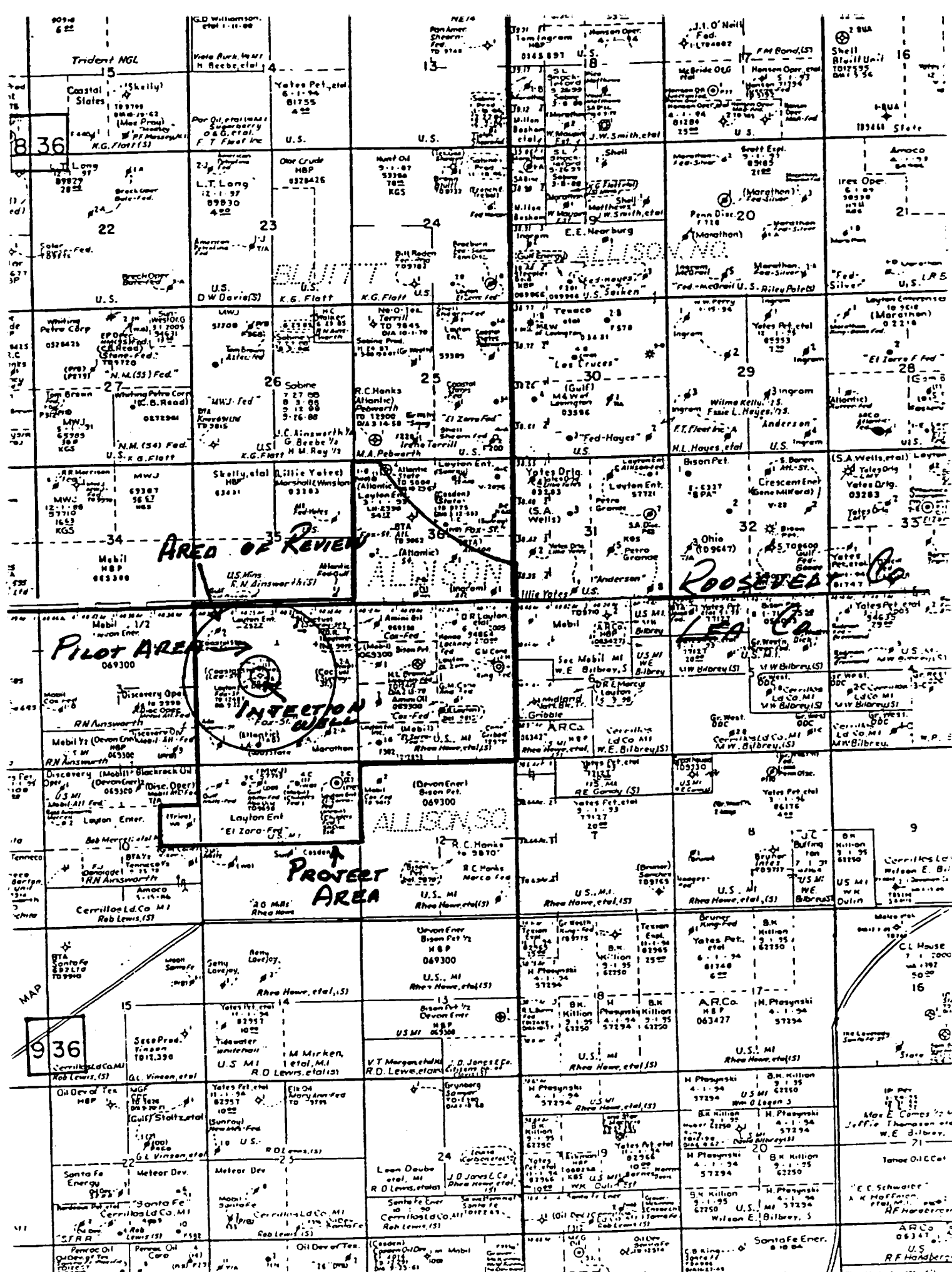
Cartus Drilling
Sunray State #1
Unit B
Sec 2, T9S, R36E

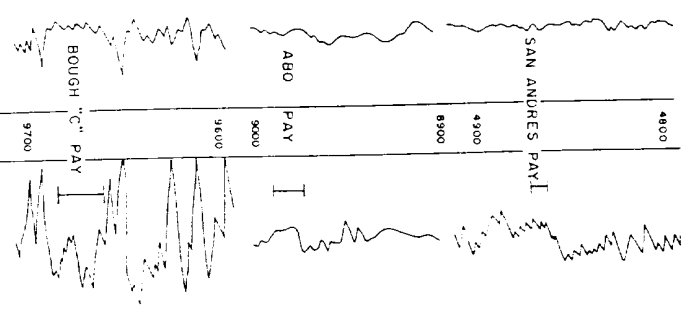
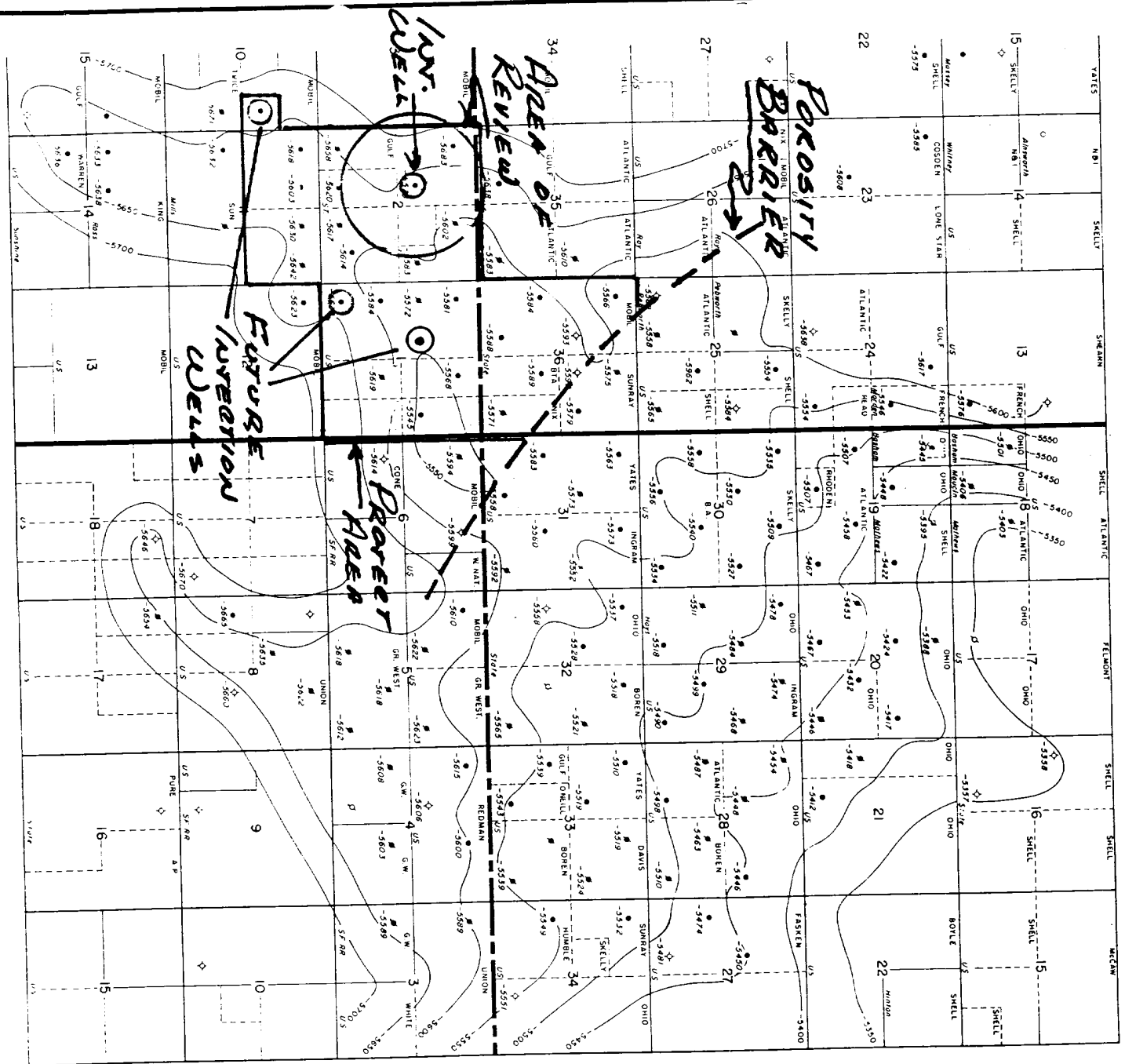
ADA Oil Co.
Adams State #1
Unit M
Sec 2, T9S, R36E

Marathon
State E 6859 #1
Unit O
Sec 2, T9S, R36E

Gulf Oil Corp
Goode Fed #1
Unit N
Sec 35, T8S, R36E







ALLISON FIELD
 LEA B ROOSEVELT COS NM ON
 STRUCTURAL CONTOURS
 BOUGH "C"
 1:10000
 SCALE IN METERS
 1:10000
 ARCHIVE FILE

InterChem

(915) 550-7027 - 3803 Mankins - Odessa, Tx. 79763

WATER ANALYSIS REPORT

AMPLE

Co. : Layton Enterprises
 Lease : Fox A
 Well No. : State #1 BOUGH C
 Analysis:

Sample Loc. :
 Date Sampled : 29-April-1991
 Attention :
 Chemical Co. : Pro-Kem, Inc.

ANALYSIS

1. pH 5.700
2. Specific Gravity 60/60 F. 1.068
3. CaCO₃ Saturation Index @ 80 F. -1.033
 @ 140 F. -0.108

Dissolved Gasses

MG/L EQ. WT. *MEQ/L

4. Hydrogen Sulfide Not Present
5. Carbon Dioxide Not Determined
6. Dissolved Oxygen Not Determined

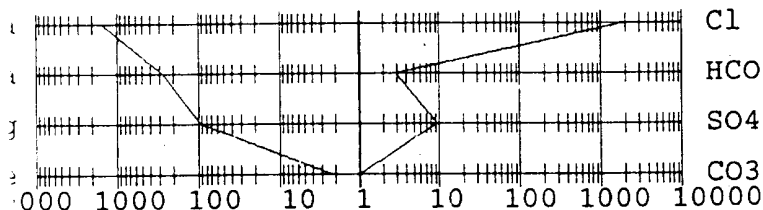
Cations

7. Calcium (Ca⁺⁺) 5,210 / 20.1 = 259.20
8. Magnesium (Mg⁺⁺) 1,094 / 12.2 = 89.67
9. Sodium (Na⁺) (Calculated) 34,373 / 23.0 = 1,494.48
10. Barium (Ba⁺⁺) Not Determined

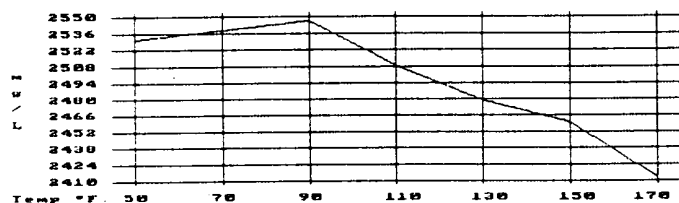
Anions

11. Hydroxyl (OH⁻) 0 / 17.0 = 0.00
12. Carbonate (CO₃⁼) 0 / 30.0 = 0.00
13. Bicarbonate (HCO₃⁻) 169 / 61.1 = 2.77
14. Sulfate (SO₄⁼) 450 / 48.8 = 9.22
15. Chloride (Cl⁻) 64,985 / 35.5 = 1,830.56
16. Total Dissolved Solids 106,281
17. Total Iron (Fe) 39 / 18.2 = 2.14
18. Total Hardness As CaCO₃ 17,516
19. Resistivity @ 75 F. (Calculated) 0.083 /cm.

LOGARITHMIC WATER PATTERN *meq/L.



Calcium Sulfate Solubility Profile



PROBABLE MINERAL COMPOSITION COMPOUND EQ. WT. X *meq/L = mg/L.

Cl	Ca(HCO ₃) ₂	81.04	2.77	224
HCO ₃	CaSO ₄	68.07	9.22	628
SO ₄	CaCl ₂	55.50	247.22	13,721
CO ₃	Mg(HCO ₃) ₂	73.17	0.00	0
	MgSO ₄	60.19	0.00	0
	MgCl ₂	47.62	89.67	4,270
	NaHCO ₃	84.00	0.00	0
	NaSO ₄	71.03	0.00	0
	NaCl	58.46	1,493.67	87,320

*Milli Equivalents per Liter

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

Oilfield Solutions, Inc.
2614 S.C.R. 1257, Midland, Tx. 79706

WATER ANALYSIS REPORT

Company: Layton Enterprises
 Location: Fox A State #5 DEVONIAN
 Source: Well Head
 Date Sampled: April 29, 1997

Sampled By: Chem Tech Services, Inc.
 Analysis Date: May 5, 1997
 Salesman: Dick Tubb

ANALYSIS	mg/L	EQ. WT.	MEQ/L
1. pH	6.25		
2. Specific Gravity 60/60 f.	1.047		
3. Hydrogen Sulfide	0 PPM		
4. Carbon Dioxide	Not Determined		
5. Dissolved Oxygen	Not Determined		
6. Hydroxyl (OH-)	0 /	17.0 =	0.00
7. Carbonate (CO3=)	0 /	30.0 =	0.00
8. Bicarbonate (HCO3-)	526 /	61.1 =	8.59
9. Chloride (Cl-)	39,991 /	35.5 =	1,126.51
10. Sulfate (SO4=)	1,450 /	48.8 =	29.71
11. Calcium (CA++)	2,806 /	20.1 =	139.80
12. Magnesium (Mg++)	1,216 /	12.2 =	99.67
13. Sodium (Na+)	21,267 /	23.0 =	925.54
14. Barium (Ba++)	Not Determined		
15. Total Iron (Fe)	2.00		
16. Dissolved Solids	67.275		
17. Filterable Solids	0.00		
18. Total Solids	67.275		
19. Total Total Hardness As CaCO3	12,011		
20. Suspended Oil	0		
21. Volume Filtered (ml)	0		
22. Resistivity @ 75 F. (calculated)	0.117 /cm.		
23. CAC03 Saturation Index			
@ 80 F.	-0.4191		
@ 100 F.	-0.1091		
@ 120 F.	0.1509		
@ 140 F.	0.5109		
@ 160 F.	0.8509		
24. Calcium Sulfate solubility @ 90 F.	3.651 mg/L		
PROBABLE MINERAL COMPOSITION			
COMPOUND	EQ. WT.	X	MEQ/L
Ca(HCO3)2	81.04		8.59
CaSO4	68.07		29.71
CaCl2	55.50		101.30
Mg(HCO3)2	73.17		0.00
MgSO4	60.19		0.00
MgCl2	47.62		99.67
NaHCO3	84.00		0.00
NaSO4	71.03		0.00
NaCl	58.46		925.54
			54,107

Chemist: _____

Oilfield Solutions, Inc.
2614 S.C.R. 1257, Midland, Tx. 79

WATER ANALYSIS REPORT

Company: Layton Enterprises
 Location: Fox A State
 Source: Fresh Water Well
 Date Sampled: April 29, 1997

Sampled By: Chem Tech Services, Inc.
 Analysis Date: May 6, 1997
 Salesman: Dick Tubb

ANALYSIS	mg/L	EQ. WT.	MEQ/L
1. pH	8.83		
2. Specific Gravity 60/60 f.	1.004		
3. Hydrogen Sulfide	6 PPM		
4. Carbon Dioxide	Not Determined		
5. Dissolved Oxygen	Not Determined		
6. Hydroxyl (OH ⁻)	0 /	17.0 =	0.00
7. Carbonate (CO ₃ ⁼)	0 /	30.0 =	0.00
8. Bicarbonate (HCO ₃ ⁻)	269 /	61.1 =	4.40
9. Chloride (Cl ⁻)	1,700 /	35.5 =	47.89
10. Sulfate (SO ₄ ⁼)	450 /	48.6 =	9.22
11. Calcium (Ca ⁺⁺)	180 /	20.1 =	8.96
12. Magnesium (Mg ⁺⁺)	12 /	12.2 =	0.98
13. Sodium (Na ⁺)	1,186 /	23.0 =	51.57
14. Barium (Ba ⁺⁺)	Not Determined		
15. Total Iron (Fe)	0.00		
16. Dissolved Solids	3,797		
17. Filterable Solids	0.00		
18. Total Solids	3,797		
19. Total Total Hardness As CaCO ₃	500		
20. Suspended Oil	0		
21. Volume Filtered (ml)	0		
22. Resistivity @ 75 F. (calculated)	2.248 /cm.		
23. CAC03 Saturation Index			
@ 80 F.	1.7276		
@ 100 F.	1.9776		
@ 120 F.	2.2376		
@ 140 F.	2.4276		
@ 160 F.	2.6376		
24. Calcium Sulfate solubility @ 90 F.	2.030 mg/L		

PROBABLE MINERAL COMPOSITION			
COMPOUND	EQ. WT.	X	MEQ/L
Ca(HCO ₃) ₂	81.04	4.40	357
CaSO ₄	68.07	4.58	310
CaCl ₂	55.60	0.00	0
Mg(HCO ₃) ₂	73.17	0.00	0
MgSO ₄	60.19	0.98	69
MgCl ₂	47.62	0.00	0
NaHCO ₃	84.00	0.00	0
NaSO ₄	71.03	3.68	261
NaCl	58.46	47.89	2,800

Chemist: _____

INJECTION WELL DATA SHEET

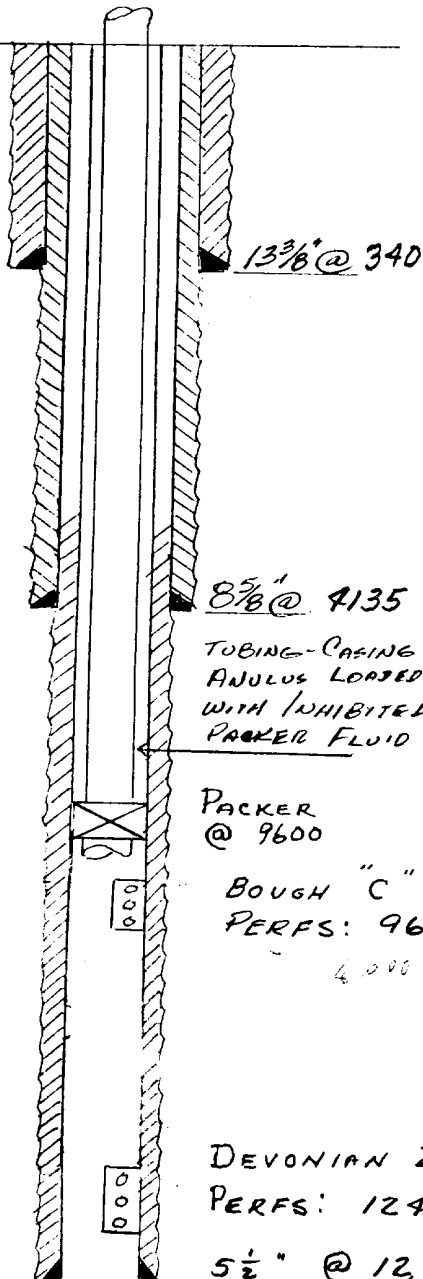
LAYTON ENTERPRISES, INC.

FOX "A" STATE

OPERATOR	LEASE	WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE
5	2310' FNL 2070' FWL	2	9S	36E	LEA COUNTY, NEW MEXICO	

Schematic

Tabular Data



Surface Casing

Size 13 3/8 " Cemented with 350 sx.
 TOC SURFACE feet determined by CIRCULATION
 Hole size 17 1/2 "

Intermediate Casing

Size 8 5/8 " Cemented with 1700 sx.
 TOC SURFACE feet determined by CIRCULATION
 Hole size 11 "

Long string

Size 5 1/2 " Cemented with 2000 sx.
 TOC 4000 feet determined by CALCULATION
 Hole size 7 7/8 "

Total depth 12,511

Injection interval

9648 feet to 9658 feet
 (perforated or open-hole, indicate which)

PACKER
@ 9600BOUGH "C" PENN ZONE
PERFS: 9648-66

DEVONIAN ZONE

PERFS: 12450-60, 70-78, 84-92

5 1/2 " @ 12,511

Tubing size 2 7/8 lined with RICE ENGR. FIBERGLASS DUO-LINE set in a
 (material)
BAKER LOK-SET (PLASTIC COATED) packer at 9600 feet
 (brand and model)

(or describe any other casing-tubing seal).

Other Data

- Name of the injection formation BOUGH "C" (PENN)
- Name of Field or Pool (if applicable) ALLISON PENN
- Is this a new well drilled for injection? ☐ Yes ☒ No
 If no, for what purpose was the well originally drilled? OIL PRODUCTION
- 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)
SAN ANDRES 7165-66, SQZ 300 SX, 5300-01, SQZ 150 SX; BOUGH D
9765-76, SQZ 300 SX; MORROW 11,978-88, SQZ 100 SX.
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.
8750 - ABO
7800 - SAN ANDRES